# Appendix J

## KY 163 South Study Area Environmental Overview

### Introduction

This environmental overview identifies the KY 163 project study area and the issues likely to require consideration during this and future phases. It summarizes the results of several environmental investigations, based primarily upon literature, archival, database, and map research, and limited amounts of fieldwork. Additional information was collected through correspondence with other state and federal agencies. However, this environmental overview does not provide a detailed analysis and assessment of any potential impacts.

### Topography and Geology

The topography of the area includes rolling plains, hills, and karst features. It is primarily underlain by Mississippian limestone, shale, chert, siltstone, and sandstone. Elevations in the study area range from about 700 to 1,046 feet above mean sea level. Numerous sinkholes can be found throughout the study area. The study area includes portions of two watersheds, with about 66 percent in the Green River watershed, and about 34 percent in the Upper Cumberland River watershed. The Green River watershed is comprised of Mill Creek, Sweetwater Creek, and Line Creek. The Upper Cumberland River watershed contains Baxter Branch and McFarlan Creek. One known cave is in the study area — Rhoton Cave, located on the study area's western boundary, immediately east of Rhoton Cave Road.

Land use within the study area is similar to the rest of Monroe County, consisting of forested areas (about 46 percent) and agricultural pasture/grassland (about 54 percent), with widely scattered rural-residential single-family dwellings and limited commercial/retail uses, including two lumber saw mills. No public parks, schools, or government facilities are located in the study area.

### Geotechnical Overview

A Geotechnical Overview Report was prepared to summarize geologic concerns for the study area (see Appendix G). The overview included field reconnaissance and geologic research of available geologic and topographic quadrangle maps, soil survey of Monroe County, Kentucky, as well as online resources available from the Kentucky Geological Survey and the United States Geological Survey. Previous KY 163 geotechnical investigation reports performed by the Geotechnical Branch for the area north of Tompkinsville were also reviewed in preparing the overview.

The available mapping indicates the study area is underlain by portions of the St. Louis Limestone, Salem and Warsaw Limestones, and the Fort Payne Formations. Alluvial and brecciated sandstone deposits also underlie parts of the study area. The majority of the existing alignment lies within lower portions of the St. Louis Limestone,

and upper portions of the Salem and Warsaw Limestones. These formations are well known for karst landscapes, particularly the St. Louis Limestone, and the upper portion of the Salem and Warsaw Limestones. Sinkholes, springs, disappearing streams, and caves are typical. The soil overburden generally consists of thick reddish brown residual clay soils containing abundant chert fragments, with overburden thickness varying greatly due to differing rates of chemical weathering and surface drainage patterns. The study area lies within a karst landscape containing several large diameter and deep sinkholes. (The term “sinkhole” refers to any closed surface depression within karst areas.) Sinkholes in this area are typically broad bowl-shaped depressions, tens or hundreds of feet in diameter. Surface drainage into the bowl-shaped depressions funnels into underground streams and caves.

The study area’s topography is typically described as gently rolling to steep, and the karst associated with the area’s geologic formations usually dictates the terrain’s topography. Steep slopes with pronounced relief are common in mature karst, such as that found in most of the study area. Based upon field observations and geologic mapping review, drainage in the study area is influenced by weather-resistant portions of the Salem and Warsaw Formations, where the bedrock is more resistant to weathering and further development of karst features. Bedrock in the lower elevations is less soluble than the overlying strata, resulting in more of a dendritic drainage pattern and a highly dissected study area with small streams and creeks. Some surface runoff is directed into the underlying karst network.

Summary of identified geological considerations:

- The study area is in a substantial karst area. Avoidance or impact minimization of karst features is preferred. Sinkholes or dropouts identified prior to, or during, construction should be handled in accordance with Kentucky Department of Highways current specifications.
- Subgrade soils are expected to have a CBR value less than 6. Residual clays encountered may have a moderate to high potential to shrink or swell when subjected to pronounced decreases or increases in moisture content for prolonged periods. Chemical treatment may be desired to effectively stabilize road subgrades. In areas where rock is encountered during roadway excavations, it should be utilized as a more affordable yet effective alternative.
- Several small streams and creeks are present; any new alignment will require structures to cross the streams, with a single or double reinforced concrete box culvert accommodating new roadway construction. Structure foundations will most likely consist of shallow spread footings bearing on competent bedrock, as identified from geotechnical exploration. Rock will normally be encountered near stream-crossing locations at depths of less than fifteen to twenty feet below the finished roadway grade.
- Roadway embankments and cut slopes will be required for new roadway construction in order to balance cut and fill for the selected finished road grade. Based upon prior experience with residual soils and rock types from the St.

Louis Limestone and Salem and Warsaw Formations, embankments of 2H:1V will likely provide an acceptable safety factor. Cuts exceeding 10 feet may require slopes from 2.5 H:1V to 3H:1V.

- Two (2) oil wells were identified either during site visits or from Kentucky Geological Survey oil and gas well records database search. One is located near the study area's eastern limits along KY 216 near Hestand, Kentucky. The second is west of Moore's Mill near the study area's western boundary. No gas wells were identified from site visits or KGS well records database search. Any oil or gas wells encountered during construction should be handled in accordance with KYTC Standard Specifications.
- Four (4) water wells were identified from a water well records search at www.kgs.gov, and more are likely to exist. Water wells encountered within the construction limits should be handled in accordance with KYTC Standard Specifications.
- Topographic relief is rather pronounced throughout the study area. The area east of the existing roadway is very steep, and would be the least cost effective for realignment, based solely on topography. The western section of the study area contains more drainage features (*i.e.*, streams, springs, caves, etc.), and will likely require the placement of the greatest number of structures.
- The city of Tompkinsville lies just north of the study area, and is about 210 miles east of New Madrid, Missouri, from which the New Madrid Fault derives its name. Based upon the Arkansas Earthquake of December 16, 1811, and the Modified Mercalli Intensity Scale, earthquake damage within the study area falls within the Very Strong category. Other models from www.earthquake.usgs.gov indicate the study area would experience moderate to severe damage from an earthquake.
- One cave, Rhoton Cave, was identified in the field and on topographic mapping. Two separate cave entrances were observed, in addition to several springs along the study area's western limits near Rhoton Cave Road. However, a search of the Kentucky Geological Survey water well and spring database identified no springs. Additional springs are likely to exist within the study area.

### Historic, Archaeological, and Cultural Resources

The historical cultural resource overview included records search, literature review, database inquiries, and a windshield survey of the study area. Researching State Historic Preservation Office (SHPO) files revealed 310 sites previously documented with survey forms throughout Monroe County. The study area contains one National Register of Historic Places (NRHP) listing — the Baxter Barlow House (Site L); and another site determined eligible for listing as a result of previous coordination conducted on the proposed Tompkinsville Bypass (Item No. 3-7020.00) — the Thompson/Brown/Hammer House (Site B). The windshield survey and preliminary assessment identified 2 additional individual sites, and one district (composed of 5 contributing properties), which appear potentially eligible to meet NRHP criteria. The

eligible and potentially eligible sites are listed below, and identified on Exhibit 3 as National Register listed or National Register Potential. (A number in parentheses indicates the county site number of a previously identified site.) Preliminary NRHP boundaries for the individual sites and district follow the property lines on record at the Property Valuation Administrator (PVA) Office.

An additional 7 sites were surveyed for documentation only, and one site had been destroyed. The study area historic resource overview included buildings visible from public roads only; buildings or structures inaccessible due to locked gates or farm fields were not included in the survey. No buildings were inspected in detail. This preliminary assessment was based primarily on Criterion C, architecture. NRHP eligibility determination will require additional research, photography, physical examination, evaluation relative to integrity standards established by similar properties in Monroe County, Kentucky, and Clay County, Tennessee, and consultation with the SHPO.

| **Individual Historic Sites** | | **Historic District** | |
|---|---|---|---|
| Site | Description | Site | Description |
| B | Thompson/Brown/Hammer House (NR eligible, MR-95*) | Hestand Historic District properties (NRP): | |
| G | Dwelling (MR-99*) | H | Dwelling |
| L | Baxter Barlow House (NR listed, MR-294*) | I | Germany Christian Church (MR-100*) |
| M | General Emmert Place (MR-101*) | J | Joshua Hestand House (MR-102*) |
| | | K | Hestand Post Office (MR-147*) |
| | | L | Baxter Barlow House (NR listed, MR-294*) |

* Kentucky Heritage Council site identification number; identifies the location by a County prefix a consecutive number.

The archaeological resource overview revealed the study area to be largely uninvestigated, with only 4 archaeological surveys conducted within the study area boundaries; and 10 surveys identified within a 1.24-mile buffer encircling the study area. The 4 archaeological surveys within the study area (conducted in 1987, 1988, 2002, and 2004) did not identify any archaeological sites. The archaeological resource overview's purpose was to identify potential archaeological issues likely to require consideration during the KY 163 south planning study, and examined an area approximately 8 miles long and 2.5 miles wide. The overview summarizes the results of archaeological resource research based upon available archival literature, the Office of State Archaeology, National Park Service and Kentucky Heritage Council databases, and historic map research. No fieldwork was conducted. The archaeological resource overview was for planning purposes only, and does not provide a detailed analysis or assessment of any potential impacts to archaeological resources.

Since few archaeological investigations have been conducted within the study area, the study area was assessed for the potential to discover prehistoric and/or historic archaeological sites. Various factors were considered in evaluating this potential, including: topographic or landform setting (*e.g.*, floodplains, hillsides); proximity to water; location along major transportation routes (*i.e.*, roads and navigable

waterways); and the extent of ground disturbances resulting from erosion, construction, or agricultural activities. The region's topography is often the ideal location for seasonal prehistoric archaeological sites. The study area contains cemeteries, approximately 70 historic structures, and resources potentially eligible for NRHP listing, which could have associated archaeological sites. Considering the documented Civil War activities in Monroe County, the potential exists for historic archaeological sites relating to Civil War battles or campsites. The county's long historic occupation suggests the possible presence of historic archaeological sites relating to farmsteads and associated agricultural activities.

In general, the study area is considered to have a moderate to high potential for containing numerous prehistoric and historic archaeological sites. High probability archaeological sites include areas in close proximity to water, close proximity to transportation routes, and fairly level ground. Low probability archaeological sites include areas with steep elevations, and not in close proximity to water or transportation routes. Medium probability areas are those areas outside the high or low probability areas. The lack of widespread development (*i.e.*, commercial, industrial, and residential) has probably left many archaeological sites relatively undisturbed.

For reference, the 10 surveys conducted in the buffer zone surrounding the study area identified 12 archaeological sites, consisting of: 5 prehistoric, 6 historic, and 1 unknown. The prehistoric sites consist of three archaic period lithic scatters (a scatter of stone tools) and two unidentified lithic scatters (stone flakes). All the historic sites were twentieth century residences/farmsteads (*e.g.,* nails, window glass, and standing structures).

If improvements to KY 163 are implemented which require an environmental document (*i.e.*, federal funds or permit), then the impacted study area portions should be subjected to a Phase I level archaeological investigation (*i.e.*, shovel test probe excavations in accessible areas) and a historic structure survey. The Phase I survey would identify archaeological sites and help determine whether a site is eligible for NRHP listing in compliance with Section 106 of the National Historic Preservation Act of 1966 (as amended); 16 USC 470(f); and Presidential Executive Order 11593, Protection and Enhancement of the Cultural Environment. A Section 4(f) evaluation must be conducted, and avoidance options considered, if the right of way overlaps any NRHP listed or eligible for listing archaeological site requiring preservation in place (*e.g.*, a burial site, or Civil War battlefield area).

Culturally Sensitive Locations

The preliminary study identified the following culturally sensitive locations in the study area: eight known cemeteries, two churches, and several potentially historic sites/structures; including one cave with Civil War connections and a historic marker for Moore's Mill (the mill itself has been destroyed). Additional unmarked family cemeteries are possible. Local residents claimed the probability of encountering unmarked gravesites is good. No public schools or public parks are located within the

study area; however KY 163 south is part of the designated school bus route with stops along the roadway. Monroe County public schools (elementary, middle, and high) are located north of the study area in Tompkinsville. No health care/medical facilities are located within the study area boundaries.

The culturally sensitive locations vary from having local community significance to possible regional significance with state and/or federal jurisdictional responsibilities. Any future roadway improvements proposed should thoroughly consider potential impacts to these resources.

### Aquatic Resources

The study area contains streams and wetland areas representative of types that are typical throughout the region. No rivers or other large bodies of water are present in the study area. This section provides more detailed information of the local aquatic resources and any impacts that potential construction may cause.

Streams

Topographic maps of the study area and field verification indicate the presence of 13 blue-line streams, consisting of perennial streams (water always present) and intermittent streams (water present except in late summer and fall). Ephemeral streams (water present only during or immediately after precipitation events) may also be present. All streams are located, or partially located, within the study area and may be impacted by any road construction and/or improvements, if implemented. Potential perennial and intermittent stream impacts include the following:

Mill Creek, with 5 unnamed tributaries

Baxter Branch, with 3 unnamed tributaries

Sweetwater Creek (named tributary of Line Creek), with 1 unnamed tributary

1 unnamed tributary of McFarlan Creek

If KY 163 improvements are implemented, then all streams in the study area may be impacted by sedimentation resulting from roadway construction improvements. Soil from exposed and erodible surfaces may directly enter surface water, temporarily increasing turbidity levels. Surface and ground water may also experience temporary increases in specific conductance, suspended solids, and nutrients. Streams could experience a loss of riparian vegetation and habitat for aquatic species. Rechannelization could disturb stream flow and water quality.

Kentucky Division of Water (KDOW) will require a non-point source pollution control plan, a groundwater protection plan, and an erosion control plan. Application of Kentucky Transportation Cabinet's (KYTC) *Standard Specifications for Road and Bridge Construction* and the Federal Highway Administration's (FHWA) *Best Management Practices for Erosion and Sediment Control* can be used to alleviate most sedimentation problems.

Jurisdictional waters, as defined by the United States Army Corps of Engineers (USACE), are located within the study area. Ephemeral streams may also be considered jurisdictional waters; therefore potential ephemeral stream impacts will require assessment prior to submission of a permit packet to USACE.

USACE Section 404 and KYDOW Section 401 permits may be required. On-site stream impact mitigation may require consideration for this project. Potential restoration, mitigation, and/or in-lieu fees may be required. Work in a stream, such as bank stabilization, road culverts, utility line crossings, or stream alterations will require a Floodplain Construction Permit and a Water Quality Certification from the KDOW.

No nationally listed wild and scenic rivers are located within the study area. No other rivers or streams are listed on the Kentucky Wild River System. No “special use” designated waters are located within the study area. No spring or wellhead protection areas are located within, or adjacent to, the study area. No outstanding resource waters were identified in the study area.

Wetlands and Ponds

National Wetland Inventory (NWI) map reconnaissance indicated the presence of wetlands and ponds within the study area. Also consulted were USGS National Hydrology Dataset (NHD), Soil Survey of Monroe County, Kentucky (for locations of hydric and potentially hydric soils), and aerial photographs.

NWI maps indicated the presence of 44 palustrine unconsolidated bottom (PUBH) ponds; however, only 30 PUBH ponds were field verified, and field surveys identified an additional 8 PUBH ponds. Two palustrine emergent (PEM) wetlands were identified and field verified, with 1 additional PEM wetland identified. Two palustrine forested (PFO) wetlands were field verified, with 1 additional PFO wetland identified during field verification.

Field investigations were conducted only to verify the presence of wetlands and ponds identified through secondary sources. Wetlands were not delineated (*i.e.*, a determination of size, jurisdictional, or non-jurisdictional). Farm ponds may be considered jurisdictional if they have a surface connection to a surface tributary. More intensive field surveys would be required to confirm and delineate NWI map wetlands, as well as identify any wetlands not appearing on the maps, and determine jurisdictional status.

Wetlands should be avoided if possible, or impacts minimized, during project development. If wetlands cannot be avoided and mitigation is required, then the Kentucky Department of Fish and Wildlife Resources (KDFWR) will recommend, at a minimum, a 2:1 mitigation ratio for any permanent loss or degradation of wetland habitats. Final wetland determination and any potential impacts would be coordinated with the USACE during final design of any proposed improvement.

A specific roadway design is needed before the type of USACE permit required (*i.e.*, Nationwide or Individual) can be determined. The *Nationwide Permit 14, Linear Transportation Crossings,* (NP 14) only authorizes activities with minimal adverse effects on the aquatic environment. An *Individual Permit* (IP) is required if the stream impact is greater than 0.5 acres, or the wetland impact is greater than 0.1 acres; and must include a compensatory mitigation proposal.

Potable Water

According to the Kentucky Geological Survey's (KGS) Ground-Water Resources website (http://www.uky.edu/KGS/water/library/webintro.htm, Monroe County report, 2004) and the Water Resource Development Commission reports on county water-supply infrastructure accessible through the KGS county reports (Barren River Area Development District, Monroe County, October 1999), the study area is served by the Monroe County Water District, which purchases all of its water from the Tompkinsville Water Works. The water is drawn from the Tompkinsville City Lake, located northwest of, and outside, the study area boundaries. An estimated 95 percent of the Monroe County population is on this public water system.

An estimated 550 people in Monroe County rely on private domestic water supplies because they either do not want to be served, or regard it as too expensive to extend pipes to their home. Of those who use private water supplies, about 400 are using wells, and 150 are using other sources. In the southern third of Monroe County, and along the low-lying areas in the east and South Fork of the Little Barren River, only a few wells yield enough water for domestic use. Five (5) domestic water wells are recorded within 0.75 miles of Hestand; and numerous pre-regulation (*i.e.*, before 1985) wells probably exist within the study area. Domestic water supply springs are also possible. There are no recorded monitoring wells inside the study area, and no known water quality samples have been collected within the study boundary. No groundwater dye tracing has been recorded for the study area.

Floodplains

Flood Insurance Rate Maps (FIRM) developed by the Federal Emergency Management Agency (FEMA) were consulted for information regarding floodplains. According to the FEMA website, no published information is available for Monroe County; therefore, none of the streams in the study area have mapped 100-year flood plains. Any potential floodplain encroachment impacts are general in nature, and include loss of riparian vegetation, disturbance of habitat, and the potential for increased sedimentation into the streams. In general, any construction in a floodplain on new alignment would have greater impact than construction on existing alignment. No floodplain issues or concerns are anticipated with this project.

The KDOW will probably require a Kentucky Pollutant Discharge Elimination System (KPDES) General Stormwater Permit. Any roadway construction or improvements involving filling within the one-hundred-year floodplain will require a Floodplain Construction Permit from the Water Resources Branch.

## Terrestrial Resources

The plant and animal life is considered typical for the area; however some federally protected species could possibly occur in the project area.

## Threatened and Endangered Species

In accordance with the provisions of the Fish and Wildlife Coordination Act, and the Endangered Species Act, coordination was made with the appropriate state and federal agencies (see Section 4.4, Resource Agency Coordination, and Appendix H). The following government agencies were contacted to identify protected species potentially present in the study area: the US Fish and Wildlife Service (USFWS) for lists of federally protected species potentially affected by the project; the Kentucky Department of Fish and Wildlife Resources (KDFWR) to identify threatened or endangered species known to occur in the project vicinity; and the Kentucky State Nature Preserves Commission (KSNPC) for important elements and natural areas in the project vicinity. Table J1, *Protected Species in the Study Area*, lists the protected species identified by the federal and state agencies as potentially occurring in the study area.

**Table J1 Protected Species in the Study Area (Table 5 from Report)**

| Common Name | Scientific Name | Federal Status[1] | State Status[1] |
|---|---|---|---|
| Mammals | | | |
| Indiana bat | *Myotis sodalis* | E | |
| gray bat | *Myotis grisescens* | E | T |
| Freshwater Mussels | | | |
| fanshell | *Cyprogenia stegaria* | E | E |
| ring pink | *Obovaria retusa* | E | E |
| orangefoot pimpleback | *Plethobasus cooperianus* | E | E |
| rough pigtoe | *Pleurobema plenum* | E | E |

[1] Status: E=endangered; T=threatened; C=candidate.

The KSNPC reported a review of their database using a one-mile buffer of the project area returned “no records” of endangered, threatened, or special concern plants and animals or exemplary natural communities monitored by the KSNPC. Within a five-mile buffer, the *Thoburnia atripinnis* (Blackfin sucker; KSNPC Special Concern, federal species of management concern) occurs in the East Fork of the Barren River and Mill Creek. This species only lives in the Kentucky counties of: Allen, Barren, Metcalfe, and Monroe. KSNPC recommended using a written erosion control plan with stringent erosion control methods to minimize water quality impacts.

## Managed Land Areas

Managed land areas are lands that are under governmental or private regulatory control, typically to encourage environmental protection or resource procurement. However, no nature preserves, wildlife management areas, state or national forests are located within the study area.

## Farmlands

Monroe County has a land area of about 212,479 acres. Of that, 162,481 acres (76%) are in agricultural use, which is the county's lowest total area of land in farms since the Census of Agriculture began in 1909. Approximately half of the agricultural land is used for pasture, and the other half is divided between woodland and cropland. The same general percentages represent the agricultural land in the study area. Major crops include: corn for grain, burley tobaccos, and alfalfa. According to a color-coded map of Important Farmland (dated March 1984) provided by the Monroe Natural Resources Conservation Service (NRCS), prime farmland totals about 55,500 acres, while statewide importance farmland totals about 38,500 acres. No unique or local importance farmland was reported. Monroe County has about 30% of its soil classified as prime farmland, most of which is located in the northern and central parts of the county. In the county's southern half (where the study area is located), prime farmland is generally located around the streams and valleys.

## Hazardous Materials Concerns

Land use in the study area is predominantly agricultural, with rural-residential single-family dwellings, limited commercial facilities, and some light industry. Relevant data related to Hazardous Materials (HAZMAT) concerns was collected from numerous sources including federal and state databases, and a windshield survey of the study area. The database search and survey identified 3 possible contamination sites (see Table J2, *Possible Contamination Sites*). Most of these sites involve fuel distribution and/or vehicle/equipment maintenance facilities, and have similar potential contamination concerns (*e.g.*, underground storage tanks (USTs), fuel spills/leaks, soil contamination, waste petroleum products, heavy metals, solvents, corrosives, batteries, tires, miscellaneous debris piles, repair parts, abandoned equipment/vehicles, etc.). Other sources of potential contamination concerns include: pole-mounted electrical transformers, aboveground storage tanks (ASTs), and pesticide/herbicide/rodenticide use on farms. Structures with possible asbestos containing building materials (ACBM) were also observed. Construction activities in and near these sites will require further investigations to determine the risk and extent of any contamination, and may require special procedures and permits.

**Table J2 Possible Contamination Sites (Table 6 from Report)**

| Site Number | Site Name or Description | Suspected Contaminant or Area of Concern |
|---|---|---|
| 1 | Graham Pallet Co.<br>3255 Celina Road (KY 163) | Possible soil contamination from UST systems usage in the form of heavy metals, volatile organic compounds, and semi-volatile organic compounds. |
| 2 | John King Garage,<br>3611 Celina Road (KY 163) | Possible soil contamination from UST systems usage in the form of heavy metals, volatile organic compounds, and semi-volatile organic compounds. Possible soil contamination from leaking UST systems. |
| 3 | Poindexter Grocery,<br>1402 Vernon Road (KY 216) | Possible soil contamination from UST systems usage in the form of heavy metals, volatile organic compounds, and semi-volatile organic compounds. Possible soil contamination from leaking UST systems. |
| Not Mapped* | Power Pole Mounted Electrical Transformers | Polychlorinated Biphenyls (PCB's) |

| Site Number | Site Name or Description | Suspected Contaminant or Area of Concern |
|---|---|---|
| Not Mapped* | Agricultural Operations | Petroleum products, pesticides, herbicides, and rodenticides |
| Not Mapped* | Aboveground Storage Tanks (ASTs) | Heating fuel oils, gasoline, and liquid propane |
| Not Mapped* | Residential Dwellings and Commercial Buildings | Asbestos Containing Building Material (ACBM) |

* Sites are found at various locations within the study area.

### Air Quality

Monroe County is located within the South Central Kentucky Intrastate Air Quality Control Region. The study area is designated as an Attainment Area for all transportation-related pollutants, as per the 1990 Clean Air Act Amendments, and transportation control measures would not be required for the project. The project is not expected to adversely impact air quality in the region.

### Traffic Noise

The study area land use is mixed, mostly rural-agricultural in nature. The study area contains single-family residential dwellings, two churches, eight cemeteries, a few small commercial/retail businesses, and two lumber/saw mills. These land uses have direct driveway access to KY 163. The highest potential for noise impacts to properties stems from potential additional right-of-way needs. Properties/residences somewhat removed from the roadway are not anticipated to be adversely affected by traffic noise, and noise impacts could be minimized by the sparse development pattern in the area. It is usually unreasonable to construct noise barriers for single, widely spaced residences, and the need to maintain road access would render any noise barriers ineffective.

### Environmental Justice and Community Impacts

The purpose of an environmental justice report is to identify geographic areas containing disproportionately high concentrations of minority, low-income, or elderly households. *Environmental Justice Executive Order 12898: Federal Actions to Address Environmental Justices in Minority Populations and Low-Income Populations* (signed February 11, 1994), directed federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects on minority and low-income populations.

The Barren River Area Development District (BRADD) prepared the *KY 163 Alternatives Study, Monroe County, Environmental Justice Report*, April 2007 (See Appendix I). The Environmental Justice Report was based upon US Census Bureau 2000 Census data, Kentucky State Data Center information, field observations, local officials/stakeholders meetings and interviews. It focused on portions of the community that could be considered minority, low-income, and elderly (age 65 years and older) population areas, and made efforts to identify any high concentrations of a specific population. The report examined 2000 Census data at the Census Tract and Block

Group levels, comparing them to national, state, and county averages. The study area is completely contained within one census block group. The environmental justice report concluded that minority, low-income, and elderly population concentrations may exist in the study area. The complete review is in Appendix I.

In general, two minority populations in the study area's block group (Hispanic or Latino, and native Hawaiian and other Pacific islander) were notably higher than the county and state averages. The black or African American population was less than the county and state averages. According to local residents, a small cluster of mobile home trailers is occupied seasonally by transient workers in the vicinity of the sawmill located on KY 163 south of Ned Jackson Road. Environmental justice concerns associated with minority and/or low-income populations could occur at this site. Poverty levels throughout Monroe County tend to be higher than both the state and federal averages, with the study area's block group percentage comparable to the county's. Therefore, it is likely that implementing any improvement project would encounter impoverished people, and yet not have a disproportionate effect on this low-income population group because it is common for the area. Several surrounding counties in this particular portion of southern Kentucky have comparable poverty rates, and the area is often characterized as economically distressed due to high unemployment rates and the unavailability of quality employment opportunities. Local leaders, stakeholders, and many community members strongly regard KY 163 corridor improvements as potentially beneficial for increased economic growth and development opportunities. The elderly population in the study area's block group is notably higher than the county, state, and federal averages, but comparable to the block group's census tract as a whole. There do not appear to be specific locations with a high concentration of elderly in the study area. Therefore, implementation of the project is not anticipated to have a disproportionate effect on the population aged 65 and over.

Considering the rural nature of the study area, the generally widely spaced residential dwellings, and the preliminary nature of this alternatives study, specific population locations that would be potentially affected were not identified. It is recommended that a subsequent census data review and field survey be performed in future phases of the project to identify specific populations in the affected project area, and to take steps, if any, to insure they are not disproportionately affected by the project.