

APPENDIX E
ENVIRONMENTAL OVERVIEW



Architecture

Engineering

Construction

October 23, 2003

Mr. Daryl Greer
Kentucky Transportation Cabinet
Division of Planning
125 Holmes Street
Frankfort, Kentucky 40622

**Environmental Overview/Footprint
Union County, US 60**

Dear Mr. Greer:

Enclosed please find ten copies of our final version of the environmental overview and footprint for the above captioned project, plus one set of exhibits detailing archaeological site information. An electronic version of the overview and exhibits is provided on the enclosed CD-ROM in PDF format.

If you have any additional questions, please feel free to contact me.

Sincerely,

David E. Smith, PE
Vice President

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Enclosures

US 60, UNION COUNTY

From Sturgis (mile point 5.67) to Morganfield (mile point 16.34)

ITEM NUMBER 02-8102.00

ENVIRONMENTAL OVERVIEW

Prepared for:

**KENTUCKY TRANSPORTATION CABINET
DIVISION OF PLANNING**

October 2003

Prepared by:



ENVIRONMENTAL OVERVIEW

US 60

From Sturgis (mile point 5.67) to Morganfield (mile point 16.34)
UNION COUNTY, KENTUCKY

Item No.: 02-8102.00

Prepared for:

KENTUCKY TRANSPORTATION CABINET
DIVISION OF PLANNING

Prepared by:

William C. Crawford
David E. Smith



October 2003

ENVIRONMENTAL OVERVIEW

This environmental overview identifies US 60 project study area issues likely to require consideration during the US 60 roadway improvement planning study. The US 60 study area is located in Union County, in western Kentucky, is about 10.7 miles long, and ranges in width from 0.8 to 1.9 miles, as indicated by the highlighted area on Exhibits 1 and 2. The study area is larger than the project termini, which extend from mile point 5.67 (KY 109, Main Street) in Sturgis to mile point 16.34 (KY 56, West and East Main Street) in Morganfield. US 60 is a major north-south roadway for Union County. The existing US 60 is a two-lane, undivided highway, traversing flat to rolling terrain with a posted speed limit of 25–35 mph in the cities, and 55-mph the rural area.

This environmental overview examines considerations for improving the US 60 highway. It summarizes the results of several environmental investigations, based primarily upon literature, archival, known database, and map research. Limited amounts of fieldwork were conducted, consisting mainly of windshield surveys to confirm identified sites, and visually identify previously unknown sites. Additional information was collected through correspondence with other state and federal agencies. This environmental overview does not provide a detailed analysis and assessment of any potential impacts. Refer to Exhibits 1 and 2, and the color photographs of existing US 60 typical sections, for the following discussions concerning the study area.

Environmental Footprint

Topography and Geology. Elevation in the study area ranges from 340 to 560 feet above mean sea level. The study area is within the Green River-Southern Wabash Lowlands Ecoregion of the Interior River Valleys and Hills Ecoregion. Historically, it was covered by wetlands and bottomland forests, with upland forests on hills, but is now mostly cropland, and underlain by carboniferous sedimentary rock. The physiography consists of unglaciated, broad, nearly level bottomlands and low hills, drained by meandering, low gradient streams and rivers. Stream substrates are soft, and floodplains wide. The soils are underlain by rocks of the Pennsylvania age, comprised largely of sandstone, siltstone, and shale. Deep and surface coal mining is common, as are oil and gas wells.

Culturally Sensitive Locations. This preliminary study identified the following culturally sensitive locations in the study area: 5 cemeteries, numerous churches, the Methodist Hospital, Union County Vocational School, Union County High School, and the Union County Middle School. The only public park or recreational area within the study area is the Union County Fairgrounds, located east of Sturgis and just off of US 60 at the southeastern edge of the study area.

These 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.

Historic, Archaeological, and Cultural Resources. The study area contains no National Register of Historic Places (NRHP) listings for historic sites. However, a windshield survey of the study area located 17 historic sites, of which 5 sites were surveyed for overview documentation only (*i.e.*, no apparent NRHP potential; identified on the exhibits as "Survey"). The remaining sites, consisting of 11 individual building sites, and 1 historic district in Sturgis, have the potential to meet NRHP criteria, and are

identified on the exhibits with the suffix “NRP” (National Register Potential) and in the list below. None of these sites had been previously surveyed.

<u>Site</u>	<u>Description</u>	<u>Site</u>	<u>Description</u>
A	Captain James W. Finnie House	J	Blueberry Hill Inn
B	Employees Mutual Benefit Association (EMBA) Building	K	School
C	Classic Revival Building/Residence	L	Dwelling and Log Crib Barn
D	Sturgis Commercial & Residential District	M	Salem Church Cemetery
G	Cypress Creek Christian Church Cemetery	N	Mill
I	Central Passage House	O	Bungalow

The individual NRP sites include 5 dwellings (Sites A, C, I, L, O), 4 buildings (Sites B, J, K, N), and 2 cemeteries (Sites G, M). The sites are distributed along US 60, and most are in relative close proximity to the existing US 60 roadway. The NRP historic district (Site D) consists of commercial and residential buildings along sections of US 60/Main Street and Adams Street in Sturgis. No buildings were inspected in detail. This preliminary assessment was based primarily on Criterion C, architecture. NRHP eligibility determination will require additional research, physical examination, evaluation, and consultation with the SHPO. *Kentucky’s Historic Farms* publication listed two historic farms (McCoughtry-Hoheimer Farm, Morganfield, and Land-O-Nan Farms, Sturgis) as potentially in the vicinity of the study area. The farms’ exact locations and property boundaries could not be determined without further research; therefore their relationship and proximity to the study area is unknown.

The archaeological overview identified five previous professional investigations conducted in or partially overlapping the study area, and four archaeological sites in or adjacent to the study area. The archaeological overview revealed the study area to be largely uninvestigated, with virtually no information on 3 of the 4 known archaeological sites. The NRHP eligibility of the 3 sites was not assessed, and the available information states they are indeterminate sites. Therefore, additional archaeological investigation will be needed for any site impacted by roadway improvements. The fourth site was considered sparse and small in size, with no further archaeological investigation recommended, and not eligible for NRHP listing. Consequently, the archaeological overview considered the study area to be full of archaeological potential. The potential for finding prehistoric sites appears low given the amount of ground disturbance by modern development, yet it cannot be ruled out and the potential appears to be greater on the higher ground areas. The area in and surrounding the study area contains potential historic buildings in Morganfield and Sturgis, potential historic structures scattered throughout the study area, old roadways, historic settlement centers, abandoned rail lines, and 5 cemeteries. Historic mapping review indicated approximately 72 potential archaeological resource sites. Based upon the background literature review, the potential for encountering prehistoric and historic archaeological sites within the study area is considered high. If improvements to US 60 are to be implemented, requiring an environmental document, then the unsurveyed 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.

Aquatic Resources. The Trade Water River drains the region, with a reported 64 surface streams located in the study area, including Cypress Creek and Eagle Creek, and

numerous unnamed tributaries. The production of coal, gas, and oil, the conversion of forests into cropland, and the channelization of most streams have resulted in water quality degradation. If US 60 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.

Kentucky Division of Water (KDOW) will require a non-point source pollution control plan, and an erosion control plan. Application of Kentucky Transportation Cabinet's (KYTC) *Specific 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.

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 outstanding resource waters, municipal/public surface water intakes, or recorded water wells were identified in the study area. The KDOW recently implemented a policy change and now regards the location of municipal water supplies and groundwater protection areas as classified information. Therefore, only a limited amount of information is available, and originates from other public information sources.

A limited amount of floodplain information is available for the study area. The Federal Emergency Management Agency (FEMA) does not maintain floodplain maps for all of Union County, but only individual communities/cities in the county. The Flood Hazard Boundary Maps for Sturgis and Morganfield (dated September 19 and December 19, 1975, respectively) were converted to Flood Insurance Rate Maps (FIRM) on September 1, 1986, by Letter of Map Change (LOMC). New maps were not published, and the existing maps are subject to change "after a more detailed study." According to the maps, the study area north of Sturgis and Cypress Creek does not cross any special flood hazard areas (*i.e.*, Zone A), and is located entirely within Zone X (areas outside 500-year floodplain). On the east side of Sturgis, along the west bank of Cypress Creek, the study area includes and the existing US 60 crosses the 100-year floodplain of Cypress Creek.

Wetlands and Ponds. National Wetland Inventory (NWI) map reconnaissance revealed 109 wetlands either within or crossing the study area boundary, with the highest concentration in the southern portion along Cypress Creek. The wetlands are identified on the exhibits as "WET #." Palustrine, emergent wetlands (*i.e.*, dominated by herbaceous vegetation) accounted for 22 sites, ranging in size from about 0.1 acre to 106 acres. Palustrine, forested, broad-leaved, deciduous wetlands numbered 13 sites, ranging in size from about 0.1 acre to 16.2 acres. Palustrine, shrub/scrub wetlands numbered 1 site, about 2.0 acres. Palustrine, aquatic wetlands (*i.e.*, rooted and floating plants) numbered 1 site, about 5.4 acres. One site was listed as rock bottom wetland, approximately 0.1 acre, and is probably a ditch. Ponded water habitats with unconsolidated bottoms accounted for 71 sites, most of which are probably created ponds or lakes. In addition to the 71 NWI probable ponds, another 15 ponds appear on the topographical maps, for a total of 86 ponds. Ponds may be considered jurisdictional if a jurisdictional stream flows through them. The ponded water habitats range in area from 0.1 acre to 16.7 acres, and include livestock watering ponds, recreational lakes, and sewage disposal ponds. More intensive field surveys would be required to confirm and delineate NWI map wetlands, as well as identify any wetlands not appearing on the map.

A specific roadway design is needed before the type of United States Army Corps of Engineers (USACE) permit required (*i.e.*, Nationwide or Individual) can be determined. The nationwide permit only authorizes activities with minimal adverse effects on the aquatic environment. The project would likely require filling in the one-hundred-year floodplain of Cypress and Eagle Creeks, as well as other types of stream work. Therefore, the KDOW will probably require a Kentucky Pollutant Discharge Elimination System (KPDES) General Stormwater Permit, a Floodplain Construction Permit if filling within the one-hundred-year floodplain, and a Water Quality Certification.

Terrestrial Resources. The plant and animal life is considered typical for the area. Historically, the area was covered with wetlands and bottomland forests, with upland forests on the hills. Most of the forests have been converted to cropland, except in hilly areas. The once common wetlands and oxbow lakes have been drained or filled. Few riparian areas are forested. Potential natural vegetation consists of oak-hickory forests on uplands, and bottomland forests on lowlands and floodplains.

Threatened and Endangered Species. Coordination with the United States Fish and Wildlife Service (USFWS) indicated the federally endangered Indiana bat (*Myotis sodalis*) and gray bat (*Myotis grisescens*) could potentially use the study area. Records from Sloughs Wildlife Management Area, located north of the study area, indicate several instances of known Indiana bat maternity colonies. It is recommended a thorough search for caves, underground mines, or rock shelters be conducted in the study area, and their potential use as winter hibernacula for Indiana bats, or summer and/or winter roosting habitat by gray bats, be assessed. If Indiana bat hibernacula are identified in the study area, or are known to occur within 10-miles of the project area, then the USFWS recommends trees only be removed between November 15 and March 31 to avoid impacting the species' "swarming" behavior.

Coordination with Kentucky Department of Fish and Wildlife Resources (KDFWR) indicated no known records of federally or state protected species in the study area.

Coordination with the Kentucky State Nature Preserves Commission (KSNPC) indicated no records of rare plants, animals, natural communities, or managed areas in the study area, with the exception the Indiana bat is known to occur in Union County.

Managed Land Areas. Managed land areas are under governmental or private regulatory control, typically to encourage environmental protection or resource procurement. No known managed land areas are located within the study area. The Sloughs Wildlife Management Area is located north of Morganfield and outside of the study area. The Higginson-Henry Wildlife Management Area is located east and outside of the study area's northern portion. Shawnee National Forest is located west, across the Ohio River. No agricultural districts would be impacted by the project.

Farmlands. The Union County Natural Resources Conservation Service (NRCS) provided the United States Department of Agriculture (USDA) published Union County Soil Survey maps. Union County as a whole has about 64 percent of its soil meeting the requirements for prime farmland, and this number increases to about 70 percent when statewide important farmlands are included. This farmland is distributed throughout the county. A visual examination indicates about 40 - 50 percent of the existing US 60 roadway crosses prime and statewide important farmland. The study area crosses four different soil associations, with the predominant soil type in the study area the Patton-Wilbur-Wakeland Association. (The other associations in order of abundance are:

Uniontown-Patton-Henshaw, Patton-Wilbur-Wakeland, and Memphis-Wellston.) Some of this prime and statewide important farmland's value has already been compromised due to residential and commercial development, and roadway construction.

Hazardous Materials Concerns. Land use in the study area is predominantly agricultural, with residential development and commercial facilities scattered throughout. Relevant data was collected from numerous sources, including federal and state databases, and a windshield survey of the area within and near the study area. The survey identified 29 possible contamination sites (see Table 1, *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 (UST's), fuel spills/leaks/soil contamination, waste petroleum products, heavy metals, solvents, corrosives, tires, lacquers/paints, 55-gallon drums, miscellaneous debris piles, etc.). Other sources of potential contamination include: the county hospital (biohazards, hazardous chemicals), agricultural/farm services (pesticides, herbicides, rodenticides, fertilizers), electrical and plumbing services (construction debris piles, lead, heavy metals, PCB's), and recycling/salvage centers (waste materials requiring special handling). Additional potential contamination concerns include: pole-mounted electrical transformers (PCB's), aboveground storage tanks (AST's), waste dumping (mainly household refuse, but special waste possible), and pesticide/herbicide use on farms. Construction activities in and near these sites may require special procedures and permits.

Air Quality. Union County is located within the Evansville (Indiana) – Owensboro – Henderson (Kentucky) Interstate Air Quality Control Region. The 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 listed on page 210 of the *Kentucky Statewide Transportation Improvement Program (STIP), Fiscal Years 2003–2008*, approved September 2002. The project is not expected to adversely impact air quality in the region.

Traffic Noise. The study area is mixed, mostly rural in nature, with more urbanized areas at each end. Three schools, a hospital, and several churches and cemeteries are located within the study area. Otherwise, development along the existing road is sparse between the towns of Sturgis and Morganfield. If US 60 improvements are implemented, then traffic noise impacts are not anticipated for the urban areas, and residences somewhat removed from the roadway in rural areas. It is usually unreasonable to construct noise barriers for single, widely spaced residences, and the need to maintain road access would render noise barriers ineffective.

Other Concerns. The Sturgis wastewater treatment plant and sewage disposal pond is located east of Sturgis. Associated pump stations and package plants are scattered throughout the study area. An elevated water tank (500,000 gallon capacity) is located just northeast of Sturgis. Electrical substations and 2 radio transmission towers are located within the study area. The Sturgis Airport Industrial Park is located east of Sturgis, adjoining the study area. Numerous oil wells are located in and around the study area, predominantly in the north. A landfill is located in the north, at the study area's western perimeter.

Environmental Justice. The Green River Area Development District (GRADD) is preparing the environmental justice section and its related issues/concerns.

TABLE 1
Possible Contamination Sites
Union County, US 60

Site Number	Site Name or Description	Suspected Contaminant or Area of Concern
1	Former Gasoline Station (vacant CITGO gas station), Martz Auto Repair	Petroleum products, USTs, ASTs, heavy metals, semi-volatile organic compounds, possible soil contamination, auto repair activity, lubricants, waste oils, corrosives, and solvents.
2	Dunlop Tire Specialist	Waste oils, used auto tires, oils, greases, used oil filters, auto batteries, ASTs, solvents, and possible petroleum contamination.
3	Sturgis Airport Industrial Park	USTs, ASTs, petroleum products, oils, greases, solvents, lubricants, waste oils, used tires, batteries, corrosives, construction debris, propane tank sales and service, recycling center with a variety of materials requiring special handling and disposal, and a suspect variety of unidentified hazardous material storage on the interior of structures within the industrial park.
4	Former Service Station and Goodyear Tire Sales	Multiple large ASTs, USTs, possible spoil pile, suspect contaminated soils, multiple 55-gallon drums with unknown contents, used auto tires, petroleum products, and possibly a variety of other hazardous materials within inaccessible structures on site.
5	Whitehead Electric Company, Inc.	Discarded construction debris (material storage), construction equipment stockpiles, 55-gallon drums, ASTs, multiple used auto tires, lead and copper materials, oils, greases, transformers, possible PCBs, petroleum products, and possible unidentified hazardous materials within structures on site.
6	Former Commercial Property (Collins Muffler Service)	Possible former gas station and possible USTs, construction debris and building material stockpiles, and possibly a variety of unidentified hazardous material storage within structure on site.
7	CC Ford – Mercury Dealer Parts, Service & Sales	Auto repair facility with ASTs, waste oils, tires, batteries, oils, greases, petroleum products, solvents, corrosives, and a variety of other materials requiring special handling and disposal.
8	Holemens Garage Auto Repair Facility (possible former gas station)	Possible USTs, ASTs, petroleum products, oils, greases, solvents, lubricants, waste oils, used tires, batteries, corrosives, construction debris and possible spoil pile, and suspected unidentified hazardous material storage on the interior of subject structures.
9	True Value Hardware/Sturgis Auto Parts (possible former gas station)	Possible USTs, ASTs, petroleum product storage, and possible soil contamination.
10	Vacant Commercial Property (former auto repair facility & possible former gas station)	Possible USTs, ASTs, petroleum product storage and possible soil contamination, and suspected unidentified hazardous material storage on the interior of subject structures.
11	Antique Craft Mall (possible former gas station)	Possible USTs and ASTs, possible soil contamination, and suspected unidentified material storage on the interior of subject structure.
12	Hucks Food and Fuel	Petroleum products, USTs, ASTs, heavy metals, semi-volatile organic compounds, and possible soil contamination.
13	L&B Motors Inc. Auto Sales and Service	Auto repair facility with ASTs, waste oils, tires, batteries, oils, greases, petroleum products, solvents, corrosives, and a variety of other materials requiring special handling and disposal.

