Appendix G
Environmental Overview

This environmental overview identifies project study area issues likely to require consideration during this and future studies. 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. This environmental overview does not provide a detailed analysis and assessment of any potential impacts. Additional information was collected through correspondence with other state and federal agencies. The study area is about 3.8 miles long (*i.e.*, north-south), and about 3.6 miles wide, as indicated by the highlighted area on Exhibits 1 and 2. Refer to Exhibits 1 and 2 in Appendix A, and Appendix B, color photographs of existing study area features, for the following environmental discussions concerning the study area.

Geographic Characteristics. The study area is located mainly in far eastern Jefferson County, and overlaps into western Shelby County. Jefferson and Shelby Counties are located in north central Kentucky, which is within the Bluegrass Region of the Interior Low Plateau physiographic region, a gently rolling plain of the eastern United States. The project study area lies within the Outer Bluegrass Subregion, which is further characterized by low to moderate topographic relief, with thick to thin soil cover over limestone and dolomite, respectively. Sinkholes may develop in the underlying limestone and shale. The US Department of Agriculture in the Soil Survey for Jefferson County describes the study area soils as gently sloping or sloping on narrow ridges, and strongly sloping or steep, shallow soils over limestone hillsides. Jefferson County has a land area of 385 square miles, and Shelby County has 384 square miles. Gently to moderately sloping dissected uplands landforms (ridges and slopes) characterizes the study area. Wide floodplain and terrace landforms associated with Floyds Fork and its tributaries occur in the western half. Elevation in Jefferson County ranges from 383 to 902 feet above sea level, and Shelby County 550 to 1,188 feet above sea level. Numerous east-to-west flowing small streams and tributaries are present throughout the study area, which feed into the dominant north-to-south flowing water features of Floyds Fork and Long Run Creek. Floyds Fork lies mostly just west of the study area, while Long Run Creek winds through the western half. Elevation within the study area ranges from about 560-780 feet above mean sea level, with the lowest elevations occurring in the vicinity of Floyds Fork and the highest on hill tops. No sinkholes were identified in the study area.

Culturally Sensitive Locations. This preliminary study identified the following culturally sensitive locations in the study area: 5 churches, and 5 cemeteries. No public or private schools, pre-schools, or libraries are located within the study area. The churches are generally situated near the northern and southern study area boundaries: 3 churches along Eastwood Cutoff Road, 1 on Shelbyville Road east of Long Road, and 1 on Old Taylorsville Road in the southwest corner. No hospitals, emergency care facilities, nursing homes, or other heath care facilities are located within the study area. No retirement communities are located within the study area.

Land Use, Existing and Future. Land use in the study area over the last few years has been transitioning from a rural area to a residential suburban area. For example, during the course of this highway planning process single-family neighborhoods have been proposed, approved, and some developed during the study area. They are located both within the interior of the study area and along US 60 and KY 155. More intense land use, including multi-family developments and a commercial area have been proposed and approved within the larger Eastwood area along US 60.

Within the interior of the study area (i.e., excluding the US 60 and KY 155/KY 148 corridors), existing land use mostly sing-family residential subdivision, rural residential homes, and a combination of open, undeveloped rural agricultural and forested land. Some crop and pastureland is present. The Floyds Fork and Long Run floodplains, and the land use in the east, within and near Shelby County, are account for the majority of the less intensive, rural land uses. The planned Floyds Fork park system has, when land is acquired, included deed restrictions that such land will remain in a rural, parkland state for perpetuity. One unique are to note is a small industrial area located off English Station Road in Fisherville, just north of KY 148 and the NS railroad.

It is anticipated by Louisville Metro that the land use in the Jefferson County portion of the study area will continue the trend of rapid suburban development based on the existing zoning, which is mostly R4 (approximately 4 houses per acre), the recent expansion of the sewer service in the area, especially the expansion of the Floyds Fork Treatment Plant located just south of I-64, and the amenities from the planned park lands. The planned connector road and interchange, which has been in local plans for many years, is also a contributing element in the forecasted growth, as well as a necessary element to manage the growth. Future land use in Shelby County, according to local officials, is anticipated to remain rural within and adjacent to the study area. Shelby County's plan is for future growth to be concentrated around existing urbanized areas, such as Shelbyville and Simpsonville.

Scenic Corridors. Several roads within the study area have been designated as "Scenic Corridors" by local ordinances. The Louisville Metro Legislative Council approved ordinances designating Eastwood-Fisherville Road, Clark Station Road, Flat Rock, and Long Run as Scenic Corridors. The 2005 *Eastwood Neighborhood Plan* identified Gilliland Road and Eastwood-Fisherville Road as "Scenic Corridors from I-64 to the Village Center boundary" (*i.e.*, south of Eastwood Cutoff Road). No state-designated scenic corridor are located within the study area.

Parkland. Existing and future parks are an important part of this study area. Three public park sites in or near the study area were identified:

- Eastwood Park (about 5 acres) is located south of Eastwood Cutoff Road on the east side of Eastwood.

- William F. Miles Park (about 130 acres) borders outside the study area's northwestern boundary, and is located south of US 60, between Floyds Fork and the study area.

- Floyds Fork Park (about 102 acres) is located outside the study area boundaries, west of the southwest corner, and south of Old Taylorsville Road.

In May 2006, Louisville Metro and several non-profit organizations (21st Century and Future Fund) began acquiring hundreds of acres for future parkland development along Floyds Fork between US 60 and US 31E. Most, but not all, of this corridor is outside but adjacent to the study area boundaries. Some parts of the land acquired and planned to be acquired are within the study area and could cause Section 4(f) involvement for the proposed project.

Cultural Historic Resources. The historic cultural resources overview identified 6 National Register of Historic Places (NRHP) listed sites in the study area, 5 located in Jefferson County, and 1 in Shelby County: East Cedar Hill Institute (Site AA, JF-235), Robert Fisher House (Site K, JF-250), Robert Hord House (Site AAA, JF-377), Masonic Hall in Fisherville (Site N, JF-245), Frederick-Sturgeon Farm (Site 7, JF-739), and Sturgeon-Gregg House (Site QQ, SH-10). The East Cedar Hill Institute and the Masonic Hall have been torn down, but the

properties remain NRHP listed. The NRHP sites are listed below, and identified on the exhibits as National Register properties. (A number in parentheses indicates the county site number of a previously identified site.)

A windshield survey and preliminary assessment identified an additional 47 properties that appear potentially eligible to meet NRHP criteria, consisting of: 12 individual historic sites located outside potential historic district boundaries, and 2 potential historic districts. The two potential historic districts are Fisherville Historic district (12 contributing properties and 1 NRHP site) and Eastwood Historic District (23 contributing properties). The potentially eligible sites are listed below, and identified on the exhibits as National Register Potential properties. Preliminary NRHP boundaries for individual sites and districts follow the property lines on record at the respective PVA offices.

As would be expected, the historic properties tend to be concentrated in and around the potential historic districts. The potential Fisherville Historic District is located in the study area's southwest corner, just inside the southern boundary, along Old Taylorsville Road, and consists of residential dwellings and commercial sites. Additional individual sites are located to the east along Taylorsville Road (KY 155/KY 148). The potential Eastwood Historic District is located in the study area's northwest corner, south of Shelbyville Road (US 60), along Eastwood Cutoff Road. It consists of residential dwellings, churches, and commercial sites. Additional individual sites are located to the east along Shelbyville Road and the railroad tracks. Several other individual sites are cluster around the vicinity of the I-64 crossings of Gilliland Road and Fisherville-Eastwood Road. The remaining individual sites are south of I-64, scattered throughout the study area.

An additional 26 sites were surveyed for documentation only (*i.e.*, no apparent NRHP potential; identified on the exhibits as "S" for survey); and 5 sites documented in SHPO surveys apparently have been torn down (*i.e.*, identified as "NA" for not applicable). The historic resource overview is preliminary in nature, and should not be considered a detailed, all-inclusive survey of historic sites in the study area. The study area historic resource survey 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, and evaluation relative to integrity standards established by similar properties in Jefferson and Shelby Counties, and consultation with the SHPO.

Historic Property Survey Results

Individual Historic Sites

Site	Property Name/Description
	NRHP Listed
AA	East Cedar Hill Institute (JF-235, torn down)
K	Fisher House (JF-250)
AAA	Robert Hord House (JF-377)
N	Masonic Hall in Fisherville (JF-245, torn down)
Site 7	Frederick-Sturgeon Farm (JF-739)
QQ	Sturgeon-Gregg House (SH-10)
	Potentially NRHP eligible
W	Concrete Bridges (JF-231)
Y	Clark Station (JF-234)
CC	Central Passage House (JF-237)
LL	Bungalow
MM	Long Run Station (JF-721)
PP	John Hume House (JF-382)
SS	Dave's Market and Deli
UU	Roadside Grocery (JF-1050)
WW	Long Run/Boston Store (JF-719)
XX	Major J.G. Malone House (JF-380)
Site 3	Muir Chapel (JF-709)
Site 9	Hobbs House (JF-330)

Historic District Sites

Site	Property Name/Description
	Fisherville Potential Historic District
E	Netherton House (JF-252)
F	Curry House (JF-251)
G	Bungalow (JF-249)
H	Gilliland House (JF-248)
I	Dwelling (JF-247)
J	Pound Oak Gallery
K	Fisher House (JF-250, NR)
L	T-Plan (JF-246)
O	Dwelling (JF-242)
P	Dwelling (JF-243)
Q	Country Trading Post (JF-241)
R	Dwelling
S	Dwelling
	Eastwood Potential Historic District
BBB	Eastwood Christian Church (JF-710)
CCC	Eastwood Cemetery (JF-725)
DDD	Eastwood Methodist Church (JF-711)
EEE	Barq House (JF-712)
FFF	Dwelling
GGG	Dwelling
HHH	Dwelling
III	Dwelling
JJJ	Bungalow (JF-1044)
KKK	Eastwood Post Office (JF-715)
LLL	Fire House Grill (JF-716)
MMM	Interurban Power Station (JF-1043)
NNN	Pearce House (JF-378) Floyd's Defeat Battle Site Marker (JF-714)
OOO	Eastwood School (JF-713)
PPP	Dwelling
QQQ	Dwelling
RRR	Bungalow
SSS	Bungalow
TTT	Dennis House (JF-729)
UUU	First Baptist Church (JF-718)
VVV	Dwelling
WWW	Dwelling
XXX	Lambdin House (JF-731)

Archaeological Resources. The archaeological overview identified 7 previous professional phase I archeological surveys conducted in or within a 1.2-mile radius of the study area between 1976 and 2004; and 66 recorded archaeological sites in or within a 1.2-mile radius of the study area. Thirty-eight (38) of those sites are within the study area. Only 3 sites appear recorded in connection with the phase 1 archaeological surveys, and no survey reports are on file for the remaining 63 sites. It appears none of the sites were evaluated for NRHP eligibility. Nearly all the archaeological sites are prehistoric open habitations without mounds; located primarily on floodplains, with some others found on hillsides, dissected uplands, and terraces. The precise locations and current conditions of the sites were not assessed for this study;

therefore, additional archaeological investigation will be needed if a known site is impacted by roadway improvements.

The archaeological overview concluded the site patterns were probably geographically and chronologically biased. Investigations may have only occurred near Floyds Fork and Long Run (*i.e.*, floodplains), and excluded the dissected upland eastern half of the study area. There is almost a complete absence of historic sites, indicating the survey focus may have been on prehistoric sites. Based on the distribution of known archaeological sites, prehistoric sites should be expected throughout the study area on a variety of landforms. Prehistoric sites probably occur in low density in the dissected upland eastern half of the study area; and in higher density in the western half along the floodplains and terraces associated with Floyds Fork and Long Run. Since sites located on floodplains and terraces of major streams are likely to have intact cultural deposits buried under alluvium, and, hence, archaeological integrity, there is high probably sites eligible for NRHP listing will be located in these areas.

The Kentucky Historical Society database contained no information on cemeteries for the study area. A review of historic mapping identified 8 unnamed cemeteries on two maps (years 1937 and 1982), of which 3 are presumed to be the same, resulting in 5 cemeteries in the study area. Two cemeteries are located east of Eastwood, one cemetery north of where KY 1531 crosses Shakes Run, and two cemeteries in Fisherville.

Historic mapping review revealed a high density of structures near the communities along the northern and southern study area boundaries (*i.e.*, Boston, Clark, Fisherville, and Eastwood) and historic sites should be expected in those areas. The oldest communities appear to be Boston and Fisherville, therefore historic sites in these areas probably have the highest probably of NRHP eligibility. Isolated farms/residences indicated on the earliest maps could also have associated archaeological sites eligible for NRHP listing. NRHP listed properties may also have associated archaeological remains eligible for the NRHP.

Aquatic Resources. Topographic maps and a windshield survey of the study area indicate the presence of jurisdictional waters, wetlands, and ponds. Blue-line streams include perennial (water always present), intermittent (water present except in late summer and fall), and ephemeral (water present only during or immediately after precipitation events) streams. (see Section 2.6.5 for wetlands and ponds discussion)

Perennial streams include Floyds Fork and Long Run, and their tributaries South Long Run, Shakes Run, and Brush Run. Floyds Fork and Long Run flow from north to south in the study area's western portion, whereas the tributaries flow from east to west in the eastern portion. About 57 intermittent streams were identified, with the majority in the study area's eastern portion and tributary to the perennial streams.

About 13 ephemeral streams were identified, with most channels serving as drainage ways to or from wetlands and ponds, and flow into intermittent or perennial streams. A more detailed field survey would likely identify additional intermittent and ephemeral channels within the study area.

No aquatic macro-invertebrates, fishes, or water quality sampling was conducted. If construction of a new I-64 interchange with a connector road were implemented, then all streams in the study area may be impacted by sedimentation resulting from roadway construction. 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. Any rechannelization could disturb stream flow and water quality.

Jurisdictional waters, as defined by the United States Army Corps of Engineers (USACE), are located within the study area. Potential ephemeral stream impacts will require assessment prior to submission of a permit packet to USACE. Section 404 and Section 401 permits may be required.

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 "special use" designated waters are located within the study area.

The KDOW 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, which mainly originates from other public information sources. No outstanding resource waters, or municipal/public surface water intakes, were identified in the study area.

According to the KDOW website concerning ground-water resources, public drinking water is supplied to about 99-percent of Jefferson County's residents, and to about 91-percent of Shelby County's residents. Of the Jefferson County residents not serviced by public water, about half use wells and half use other sources; while in Shelby County about one-third of the residents not on public water use wells, and the remainder use other sources. If all proposed public water line extensions are implemented by 2020, then virtually 100-percent of Jefferson County will be served by public water, and over 94-percent of Shelby County.

Jefferson County's water is supplied by the Louisville Water Company, which obtains its water from the Ohio River. Most water is drawn directly from the river, and some water is obtained through riverbank infiltration (RBI) wells located near the river. Louisville Water Company's Wellhead Protection Area (WHPA, *i.e.*, the area surrounding a well that supplies water to the well) is located in northeastern Jefferson County, well outside the study area, and in a different watershed/drainage area. Construction or operation of the proposed project would not present any risk of pollution or contamination to this water supply.

Shelby County is served by six water districts: Shelbyville Municipal Water System, North Shelby Water Company, West Shelby Water District, Henry County Water District No. 2, US 60 East Water District, and Taylorsville Water System. Guist Creek Lake is the drinking water source for the majority of Shelby County, and a designated environmentally sensitive area. Guist Creek Lake is located east of Shelbyville, just north of US 60, and far removed from the study area. Guist Creek Lake is the only known public drinking water source in the area, and classified as a surface water source. No public water wells are present, therefore a Wellhead Protection Area is not required. The West Shelby Water District provides service in the study area and receives water from both the Shelbyville Municipal Water System and the Louisville Water Company. Project implementation is not expected to impact the Shelby County public water supply.

According to information obtained through the Kentucky Geological Survey Groundwater Repository, Spring and Water Well Records Database website, 5 water wells are located within the study, and no springs. Located south of Taylorsville Road, on the same property, are 2 monitoring wells. Three domestic water wells are listed: 1 south of Taylorsville Road (and just east of the monitoring wells); 1 north of US 60 and east of Long Run Road, just inside the study area boundary; and 1 just southwest of the study area's geographic center.

Flood Insurance Rate Maps (FIRM) developed by the Federal Emergency Management Agency (FEMA) were consulted for information regarding floodplains. Jefferson County FIRM maps encompassing the project area are map numbers 21111C0115D, 21111C0185D (include Floyds Fork), 21111C0120D, and 21111C0205D (include Long Run), with effective dates of February 2, 1994. The Shelby County FIRM map encompassing the project area is map number 2102090004B. The flood hazard boundary map was revised in July 15, 1977, and converted by letter to FIRM effective September 1, 2001.

Approximately 1,081 acres of the study area are located within the 100-year flood plain, with majority of the 100-year flood plains located in the western portion along Floyds Fork (floodplain with water surface elevations determined) and Long Run (floodplain without water surface elevations determined). 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.

Wetlands and Ponds. National Wetland Inventory (NWI) map reconnaissance revealed numerous wetlands and open water within the study area, totaling about 90 acres. Most are small ponds used for livestock or aesthetic purposes. About 25 acres are permanently flooded wetlands within the Floyds Fork floodplain located in the study area's southwestern portion. Windshield surveys indicated several small areas of emergent and forested wetland.

No specific field investigations were conducted, nor a determination of size, jurisdictional, or non-jurisdictional wetland made. Farm ponds/open waters 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 an evaluation of potential locations for on-site, in-kind mitigation should be considered. If on-site mitigation cannot be accomplished, then consider using a wetland bank for mitigation.

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.

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 study area encompasses a mixed landscape of forested and agricultural land. Forested areas, cropland, and pastures dominate the western portion along Floyds Fork and Long Run. The eastern portion consists primarily of forested areas and pastures, with several major drainages flowing from east to west. The plant and animal life is considered typical for the area with no unique populations present.

Threatened and Endangered Species. The US Fish and Wildlife Service (USFWS) website database was researched for federally protected species potentially affected by the project. Database research identified thirteen endangered, one threatened, and no candidate species. One endangered species was a historical reference. The Kentucky Department of Fish and Wildlife Resources (KDFWR) materials were researched to identify threatened or endangered species known to occur in the project vicinity. No known occurrences of federally protected species were identified, however two species of state concern were noted (*i.e.*, dark-eyed junco, great blue heron). Table F.1, *Protected Species in the Study Area*, provides a list of protected species identified by the federal and state agencies as potentially occurring in the study area, along with potential habitat descriptions.

No surveys for protected species were performed. Potential habitat for the least tern and piping plover is believed to not be present in the study area. The cracking pearly mussel is believed extirpated from Kentucky. More detailed field surveys are required to confirm the presence of protected species in the study area, determine the presence or absence of suitable habitat for the species, and ascertain any potential impacts and mitigation requirements. Surveys must be conducted by a qualified biologist who holds the appropriate collection permits. Surveys would not be necessary if sufficient site-specific information was available demonstrating: (1) no potentially suitable habitat exists within the study area or its vicinity; or (2) the species would not be present in the study area or its vicinity due to site-specific factors.

Previous coordination with the USFWS has indicated their belief that habitat for the federally endangered Indiana bat (*Myotis sodalis*) may exist within the study area. The USFWS position is based upon their knowledge of the species' life history characteristics; that the study area and surrounding area may contain forested habitats within the species' natural range which potentially provide suitable summer roosting and foraging habitat; and caves, rock shelters, and abandoned underground mines in and surrounding the study area could provide suitable winter habitat for Indiana bats. USFWS recommends conducting a thorough search for caves, underground mines, and rock shelters in the study area, and avoiding impacts to those sites pending an assessment of their potential use as Indiana bat habitat by the USFWS. The USFWS recommends removing trees only between October 15 and March 31 to avoid impacting summer roosting Indiana bats. However, if any Indiana bat hibernacula are identified within the project area, or are known to occur within 10-miles of the study area, then the USFWS recommends removing trees only between November 15 and March 31 to avoid impacting the species' "swarming" behavior. Surveys must be conducted by a qualified biologist who holds the appropriate collection permits. Surveys would not be necessary if sufficient site-specific information was available demonstrating: (1) no potentially suitable habitat exists within the study area or its vicinity; or (2) the species would not be present in the study area or its vicinity due to site-specific factors.

Table G.1: Federally List Species in Jefferson and Shelby Counties

Common Name	Scientific Name	Federal Status	Listing Source and County
Vascular Plants			
running buffalo clover	*Trifolium stoloniferum*	E	USFWS & KSNPC – Jefferson & Shelby
short's goldenrod	*Solidago shortii*	E	KSNPC – Jefferson
Insects			
American burying beetle	*Nicrophorus americanus*	E	USFWS & KSNPC – Jefferson
Reptiles			
Copperbelly Water Snake	*Nerodia erythrogaster neglecta*	PS: T	KDFWS – Jefferson, Partial Status (PS), dependent on the species range
Birds			
Interior least tern	*Sterna antillarum*	E	USFWS, KSNPC, & KDFWS – Jefferson
Peregrine Falcon	*Falco peregrinus*	PS: E	KDFWS – Jefferson, Partial Status (PS), dependent on the species range
piping plover	*Charadrius melodus*	T	KDFWS – Jefferson
Mammals			
gray bat	*Myotis grisescens*	E	USFWS, KSNPC, & KDFWS – Jefferson & Shelby
Indiana bat	*Myotis sodalis*	E	USFWS, KSNPC, & KDFWS – Jefferson USFWS – Shelby
Mussels			
Clubshell	*Pleurobema clava*	E	USFWS, KSNPC, & KDFWS – Jefferson
Fanshell	*Cyprogenia stegaria*	E	USFWS, KSNPC, & KDFWS – Jefferson
fat pocketbook	*Potamilus capax*	E	USFWS, KSNPC, & KDFWS – Jefferson
Orangefoot pimpleback	*Plethobasus cooperianus*	E	USFWS, KSNPC, & KDFWS – Jefferson
ring pink	*Obovaria retusa*	E	USFWS, KSNPC, & KDFWS – Jefferson
pink mucket	*Lampsilis abrupta*	E	USFWS, KSNPC, & KDFWS – Jefferson
rough pigtoe	*Pleurobema plenum*	E	USFWS – Jefferson

E = endangered; T = threatened
USFWS = U.S. Fish and Wildlife Services, KY Ecological Services Field Office, June 1, 2005
KSNPC = Kentucky State Nature Preserves Commission, Report of Endangered, Threatened, and Special Concern Plants, Animals, and Natural Communities for Jefferson County and Shelby County, Kentucky, June 2007
KDFWS = Kentucky Department of Fish and Wildlife Services

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

Farmlands. The respective Jefferson and Shelby County Natural Resources Conservation Service offices (NRCS) provided the available soil survey maps, and identified farmland, in the study area. Both counties have published United States Department of Agriculture (USDA) Soil Survey maps.

Jefferson County has a land area of about 385 square miles (246,457 acres), with 41,061acres in farms (2002 Agricultural Census, up 5 percent from 1997). Major crops include: pasture (forage and hay), soybeans, corn, sod, and wheat.

Shelby County has a total area of about 384 square miles (245,881 acres), with 201,667 acres in farms (2002 Agricultural Census, down 1 percent from 1997). Major crops include: pasture (forage and hay), soybeans, corn, and wheat.

Hazardous Materials Concerns. Land use in the study area is predominantly rural residential, with agricultural uses, and some commercial facilities in the south. Relevant data was collected from numerous sources, including federal and state databases, and a windshield survey within the study area. The database search and survey identified 7 possible contamination sites (see Table F.2, *Possible Contamination Sites*). Most of these sites involve current or former fuel distribution, and/or vehicle/equipment storage and maintenance facilities, and have similar potential contamination concerns (*e.g.*, underground storage tanks (USTs), fuel spills/leaks, soil contamination, waste petroleum products, heavy metals, miscellaneous debris piles, etc.). Other sources of potential contamination concerns include: pole-mounted electrical transformers (PCBs), open dumping/littering, and aboveground storage tanks (ASTs). Structures with potential asbestos containing building materials (ACBM) were also observed. Any 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 G.2 Possible Contamination Sites

Site Number	Site Name or Description	Suspected Contaminant or Area of Concern
1	Davenport Trucking 200 Gilliland Rd	Identified in database search, but no business appears to be operating at the site. No obvious signs of an underground storage tank system. Possible soil contamination from UST systems usage in the form of heavy metals, volatile organic compounds, and semi-volatile organic compounds.
2	English Station Road Leaf Collection Facility 2827 S. English Station Rd	Permit approved for beneficial reuse site; no such activity is apparent at the location.
3	Thomas Bridwell Property 2799 English Station Rd	Former UST site (tank removed in 1987). Possible soil contamination from heavy metals, volatile organic compounds, and semi-volatile organic compounds.
4	2820 English Station Rd	Site of two oil/diesel spills in 1996 and 1999. Site is currently owned by Jordan Technologies, Inc.
5	Waste Management of Kentucky, Louisville Hauling East 2827 S. English Station Rd	Former UST site (tanks removed in 2001). Possible soil contamination from current AST systems usage in the form of heavy metals, volatile organic compounds, and semi-volatile organic compounds.
6	Construction Machinery Company and McMillan Landscaping 2911 S. English Station Rd	Construction equipment stored on property. Possible soil contamination from on-site operations in the form of volatile organic compounds, semi-volatile organic compounds, and heavy metals. Soil and rock stockpiles also on property.
7	Not Mapped*	Littering and open dumping along Echo Trail through first mile north of English Station Rd. General household waste, construction/demolition wastes, furniture, and waste tires.
Not Mapped*	Agriculture Operations	Petroleum products, fertilizers, pesticides, herbicides.
Not Mapped*	Power Pole Mounted Electrical Transformers	Polychlorinated Biphenyls (PCB's)
Not Mapped*	Residential Dwellings and Commercial Buildings	Asbestos Containing Building Material (ACBM)

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

Air Quality. Jefferson County is located within the Louisville Interstate Air Quality Control Region. The study area is designated as a Non-Attainment Area for 8-hour ozone and $PM_{2.5}$, as per the 1990 Clean Air Act Amendments. Transportation control measures are not likely to be required for the project. The project is listed on page 114 of KIPDA's *FY 2006-FY 2008 Transportation Improvement Program*, adopted November 2005, and on page 10-135 of KIPDA's *Horizon 2030 Long-Range Transportation Plan*, adopted November 2005. Further advancement of this project would require more detailed analysis and interagency review. If implemented, the project is not expected to adversely impact air quality in the region.

Traffic Noise. Highway traffic noise, or unwanted sound, is one of the most common citizen complaints regarding highways. Inducing a new road in a rural and transitioning area will generate concern over highway noise. Although several options existing for addressing noise impacts, none are more effective than noise barriers, and they even have limited effectiveness. Barriers can only be effective if no openings exist, as noise will bend and infiltrate through such openings. Therefore, noise barriers can only be installed along roadways that either have full access control or have a significant stretch of roadway that has no driveway openings or intersecting roads. Other noise mitigation measures that should be considered include quite pavements, horizontal and vertical alignment shifts, and the acquisition of property along the roadway to create a buffer zone. It should be noted that Louisville Metro has a noise policy that restricts that placement of residential developments within a buffer of interstate facilities. Although the new road would not be an interstate facility, similar restrictions could be considered by local jurisdiction.

Other Concerns. In March 2006, the Louisville Metro Planning Commission recommended approval of a zoning change needed for a 283-acre business park east of Jeffersontown, between Tucker Station and Rehl Roads. The property would be rezoned from single-family residential to planned employment center. The general plan is for 26 lots for distribution centers, office buildings, and light industry developed over 10 years or more. The Blankenbaker Station II business park would create an employment and economic activity center west, and outside, of the new I-64 interchange study area. As the business park develops and tenants establish operations, an increasing amount of commercial truck, customer, and employee traffic is anticipated on the road network. The planned business park development includes installation of a four-mile sewer main to the Floyds Fork sewage treatment plant near Eastwood to serve the park, which, in turn, would open up rural areas east of the business park to development, possibly including portions of the study area. The business park developers already have an agreement with the Metropolitan Sewer District to build the sewer main. Local realtors have been quoted as stating it is a desirable area and development would follow the sewers.

Environmental Justice. The Kentuckiana Regional Planning and Development Agency (KIPDA) prepared the Environmental Justice Community Impact Assessment and its related issues/concerns. The environmental justice report concluded: "… the community impact assessment did not uncover any significant concentrations of Environmental Justice populations, elderly, or persons with disabilities within the study area." The complete review is in Appendix I.

The Environmental Justice Community Impact Assessment was based upon US Census Bureau 2000 Census data, field observations, local officials meetings, and interviews with individuals familiar with the area. It focused on identifying the magnitude and location of

potentially impacted Environmental Justice populations based upon race, ethnicity, minorities, and low-income persons. Elderly (*i.e.*, 65 years or older) and disabled populations were also considered as part of the KYTC's standard planning study methodology, as well as a matter of good planning practice. The impact assessment examined 2000 Census data at the census Tract, Block Group, and Block levels. The analysis discovered a misallocation of the group quarters population of the Kentucky Correctional Institution for Women, and reallocated the population to the correct census geographies. The effects of two large group quarter facilities populations — the Kentucky Correctional Institution for Women and the Whitney Young Job Corps Center, both located in Shelby County and outside the study area boundary — were removed from the analysis to avoid skewing the actual populations studied. Concentrations of minority and low-income populations did not appear to be present within the study area. Elderly persons and person with disabilities were not present in the study area in significantly different proportions from county, state, or national percentages.

The purpose of an environmental justice review 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.

Geotechnical Overview. The KYTC Division of Structural Design, Geotechnical Branch, and the University of Kentucky, Kentucky Geological Survey, provided geotechnical comments for the study area (see Appendix G).

"The Geotechnical Branch does not anticipate any design or construction problems associated with the project." The Geotechnical Branch letter indicates Quaternary Age alluvium underlies the study area, and contains silt, clay, sand, and gravel 0-20-feet thick. The alluvium is found mainly along streams, valleys, and flood plains. Bedrock consists of the Saluda Dolomite Member, Bardstown Member, and the Rowland Member of the Drakes Formation and the Grant Lake Limestone. The Drakes Formation consists of limestone, dolomite, shale, mudstone, and dolomudstone, and covers most of the study area and will probably require cut slopes flatter than normal. Fill slopes constructed from these materials will likely be stable on normal slope angles. The Grant Lake Limestone consists of shaley limestone and shale, occurs as partings and beds up to 1.5-feet thick, and mainly found in the valleys.

Kentucky Geological Survey letter identified the study area as located on the outer edge of the Outer Bluegrass physiographic region, and other information already cited above. In addition, the study area may have karst features (*e.g.*, sinkholes, possible cavernous conditions), and would encounter unconsolidated sediments in drainage areas. No faulted areas, units prone to landslides, or resource conflicts. Inactive or abandoned limestone mines might be in the area. Probable peak ground acceleration due to earthquake ground motion of 0.09g.