

APPENDIX D – ENVIRONMENTAL OVERVIEW

**ENVIRONMENTAL OVERVIEW
KY 86 SCOPING STUDY
KYTC ITEM #4-8901.00**

Breckinridge & Hardin Counties: From US 60
near Hardinsburg to US 62 in Cecilia



Prepared for:
Kentucky Transportation Cabinet
Central Office
Highway District 4

Prepared by:
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Executive Summary

This Environmental Overview has been prepared for the KY 86 Scoping Study in Breckinridge and Hardin Counties, Kentucky (KYTC Item #4-8901.00). The purpose of the Scoping Study is to identify deficiencies and evaluate improvements to the KY 86 corridor between US 60, near Hardinsburg in Breckinridge County, and US 62, near Elizabethtown and I-65 in Hardin County. The purpose of this Environmental Overview is to identify environmental resources of significance, potential jurisdictional features, and other environmental areas of concern that should be considered during project development. Natural and human environment resources within the study area were identified from secondary sources, as well as a pedestrian survey conducted on December 20, 2016. Based on this information, the key environmental features within the study area include:

Surface Streams: Rough River and West Rhudes Creek and their associated 100-year floodplains, cross the study area near the communities of Vertrees and Cecilia, respectively. Vertrees Creek runs parallel to the existing KY 86 alignment flowing towards Rough River. Additional 100-year floodplain is associated with a narrow sinkhole/depression northwest of the community of Dyer.

Wetlands: 158 NWI wetlands are mapped in the study area including 135 lakes or ponds, 17 emergent wetlands and 6 sinkhole basins. No extensive wetland complexes are present in the study area.

Threatened and Endangered Species: Twelve (12) federal-listed species (10 endangered, 1 threatened and 1 candidate) have the potential to occur in the study area, with five (5) federal-listed species recorded within 5-miles of the study area. Potential summer roost and foraging habitat for the federal-endangered Indiana bat and Gray myotis (Gray bat) and the federal-threatened northern long-eared bat occurs in wooded valleys and stream corridors throughout the study area. Rough River, Vertrees Creek and West Rhudes Creek may provide suitable habitat for federal-endangered clubshell and fanshell mussels, two small to medium river and stream species. Suitable habitat for Gray myotis is known to be present, as several cave entrances are known within the study area vicinity. The majority of the study area lies within USFWS-designated habitat areas for Forest Dwelling bats (Indiana bat and Northern long-eared bat), having required mitigation measures for impacts to forested habitat.

Groundwater: One-hundred-seventeen (117) water wells are mapped within the study area, with 73 being domestic use. One (1) wellhead protection area, associated with the Hardin Co #1 water system, is present west of Cecilia. Two (2) springs are mapped within the study area, neither of which are named features or used as a source water supply.

Karst: The project area is underlain by bedrock with moderate to high potential for karst. Eighty-four (84) sinkholes are mapped underlying the study area, accounting for approximately 8% of the land area, being most prominent between Franklin Cross Roads and KY 920 in Hardin County, with a second concentration between Graysville and US 60 in Breckinridge County. Six (6) cave entrances are known within the study area.

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Farmland: Approximately 68% of the soils in the study area are identified as Prime Farmland and Farmland of Statewide Importance. Outside of existing right-of-way, extensive portions of the study area are currently utilized as farmland.

Hazardous Materials Concerns: Thirty-two (32) potential hazardous materials concern sites are identified within or immediately adjacent to the study area, including: 21 sites with UST records, 7 sites with RCRA records, 2 sites with AIRS air emission records, 2 automotive sales/service businesses, 2 former commercial sites, 1 unlisted UST site and 2 electrical substations. The Howe Valley Landfill Superfund Site (National Priority List [Superfund] record) is located less than one-mile south of the KY 86 and KY 920 intersection in Howe Valley. Sites of potential concern are concentrated in Cecilia and at major crossroads along KY 86.

Environmental Justice (EJ): Based on a review of available census data, one of four census tracts in the study area has a minority population percentage greater than the county average but less than state levels, while one census tract has a low-income population percentage greater than the county and state averages.

Cultural and Historic Resources: One NRHP-listed cultural-historic resource (Heller Hotel) was identified in the study area, in addition to one resource that meets NR Criteria (not currently listed). Forty (40) previously surveyed cultural-historic resources having an undetermined NRHP status are also present in the study area. Additional resources are likely present in the study area and vicinity based on historical and land use context of the study area, and additional investigations may be required. Very little of the study area has been surveyed for archeological resources, but based on the presence of six recorded sites (none NRHP-listed) it is likely that work proposed outside of existing right-of-way will require archaeological surveys and may encounter additional resources.

Community Resources: Community resources and sensitive noise receptors include: 4 elementary schools (one under construction), 11 houses of worship, 14 cemeteries, 2 post offices, 2 fire departments and 2 Masonic lodges located throughout the study.

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Environmental Overview

Stantec Consulting Services, Inc. has prepared this Environmental Overview as part of the KY 86 Scoping Study (KYTC Item #4-8901.00) being conducted for the Kentucky Transportation Cabinet (KYTC). This overview identifies known natural and human features which occur within the study area that should be considered during project development. The KY 86 alignment under review begins at the intersection with US 60 near Hardinsburg in Breckinridge County and proceeds to the east to the intersection with US 62 Cecilia in Hardin County, Kentucky (see **Figure 1**), a total length of 26.3-miles. The study area extends as a 2,000-foot wide corridor centered on the existing KY 86 alignment from begin point to end point, for a total area of 10.1-square miles (see **Figure 2**).

Table 1 below provides a summary of the features that were identified within the study area. Natural environment features within the study area are identified on **Figures 3.1, 3.2 and 3.3**, and human environment features are identified on **Figures 4.1 and 4.2**. The information listed in Table 1 and shown on the attached mapping was obtained from secondary sources and a pedestrian survey conducted on December 20, 2016. A photo inventory of the study area also is attached (**Attachment 8**), which highlights environmental features throughout the study area and shows representative views of land uses in the study area. This information provides an overview of resources of significance within the study area, as well as other environmental issues of potential concern. More detailed environmental studies may be required as the project is further developed in accordance with the National Environmental Policy Act (NEPA).

| Table 1: Environmental Resources/Features in the KY 86 Study Area Breckinridge and Hardin Counties, KY | | |
|---|--|--|
| Environmental Category | Resource/Feature | Source/Information |
| USGS Streams | Rough River, Vertrees Creek, West Rhudes Creek and 32 USGS unnamed streams are located within the study area. No streams in the study area are designated as Special Use Waters as defined by the KDOW. No streams in the study area have a KDOW existing Designated Use as of the most recent reporting year (2014). | Source: USGS 24K NHD dataset (2004a), KDOW Special Use Waters (2008), KDOW 305b and 303(d) Report (2014), KDOW Watershed Viewer (2016b), ESRI USGS map service layer |
| Other Streams | Nine (9) additional streams are mapped in the study area as ephemeral or potential sub-surface conduits, present due to the karst plain features of the area, including sinkholes, sinking creeks and caverns. Topographic contours indicate the potential presence of additional ephemeral drainage features throughout the study area. | Source: USGS topographic maps, KDOW (2016b), Carey and Stickney (2005a and 2005b), field survey |

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| Table 1: Environmental Resources/Features in the KY 86 Study Area Breckinridge and Hardin Counties, KY | | |
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| Environmental Category | Resource/Feature | Source/Information |
| Watersheds | <p>The study area crosses through three (3) Watershed Cataloging Units, including: Upper Green River (HUC-8: 05110001), Rough River (HUC-8: 05110004) and Blue-Sinking Creek-Lower Ohio River (HUC-8: 05140104), from east to west respectively.</p> <p>One (1) KDOW designated Priority Watershed is located at the western end of the study area: Sinking Creek at Hardinsburg (HUC-11: 05140104250). A TMDL is currently under development for the Impaired uses for Aquatic Habitat (non-supporting) and swimming (non-supporting), with causes listed as nutrients, sediments, organic enrichment and fecal coliform.</p> <p>The study area lies within one Source Water Assessment and Protection Program (SWAPP) area; the Hardin County Water District #2 (Upper Green River watershed) covers the study area east of Howe Valley.</p> | Source: USGS 8-Digit HUC (2004b), KDOW 305b and 303(d) Report (2014), KDOW (2016a and 2016b), KDOW SWAPP (2013) |
| Wetlands | <p>158 NWI wetlands are mapped in the study area including: 133 ponds (PUB), 17 emergent (PEM), 6 sinkhole basins (PUS) and 2 aquatic bed (PAB). No extensive wetland complexes are present in the study area.</p> <p>Hydric soils occur across approximately 5% of the study area, concentrated in the Vertrees Creek/Rough River valley in the center and the heavily karst terrain between Cecilia and Franklin Cross Roads to the east. This soil type indicates the potential for additional non-NWI mapped wetlands to be present in the study area.</p> | Source: KEPPC 24K NWI map dataset (2002), USDA SSURGO KY607 (2015), USDA SSURGO KY621 (2015), field survey |
| Ponds | 133 ponds are mapped (NWI) within the study area, with additional ponds present. Several appear to be intermittent, occurring in sinkhole depressions and do not appear to hold water permanently, while several others appear to have been constructed for aquaculture or recreational fishing opportunities. | Source: KEPPC 24K NWI map dataset (2002), ESRI Aerial map service layer, KGS (2003), field survey |
| USFWS Species List | <p>Indiana bat (<i>Myotis sodalis</i>, endangered), Gray bat (<i>Myotis grisescens</i>, endangered), and Northern long-eared bat (<i>Myotis septentrionalis</i>, threatened) are known to occur in Breckinridge and Hardin Counties. Eight (8) endangered mussels [clubshell (<i>Pleurobema clava</i>), fanshell (<i>Cyprogenia stegaria</i>), fat pocketbook (<i>Potamilus capax</i>), orangefoot pimpleback (<i>Plethobasus cooperianus</i>), pink mucket (<i>Lampsilis abrupta</i>), ring pink (<i>Obovaria retusa</i>), rough pigtoe (<i>Pleurobema plenum</i>), and sheepnose (<i>Plethobasus cyphus</i>)] and one candidate insect [rattlesnake-master borer moth (<i>Papaipema eryngii</i>)] may or could potentially occur in the study area.</p> <p>The majority of the study area lies within a Known Swarming 1 and/or Known Summer 1 habitat designated areas for Forest</p> | Source: USFWS IPaC Trust Resource Report (2016b), USFWS Kentucky Ecological Services Field Office, Indiana bat and northern long-eared bat habitat areas map (2016a), USFWS Conservation Strategy (2016c), KYTC Environmental Overview web map (2016a), KYTC Programmatic Biological Assessment (2012), ESRI Aerial map service layer, NatureServe (2016), KGS (2005), KSS (2016) |

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| Table 1: Environmental Resources/Features in the KY 86 Study Area Breckinridge and Hardin Counties, KY | | |
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| Environmental Category | Resource/Feature | Source/Information |
| | <p>Dwelling bats (Indiana bat and Northern long-eared bat), with the exception of the vicinity of Cecilia. Sensitive Area habitat, requiring site-specific coordination with the USFWS Kentucky Field Office, is also present near the community of Dyer. These designated habitat types refer to mitigation measures required for impacts to potential habitat for forest dwelling bats.</p> <p>Potential summer roost and foraging habitat for Indiana bat and Northern long-eared bat (woodlots and riparian woodlands) is present in extensive woodlots throughout the study area from Franklin Cross Roads and to the west.</p> <p>Of the eight (8) federally-listed mussel species included in the IPaC report for the study area, only clubshell and fanshell have potentially suitable habitat present in Rough River, Vertrees Creek and West Rhudes Creek. The remaining six (6) mussel species are all considered medium to big river (<20-meter width) species and not likely to occur in the streams of the study area.</p> <p>Habitat for Gray bat may be present as several cave entrances are known in the study area vicinity and the entire project area is in areas of moderate to major karst development potential.</p> | |
| KDFWR Species List | <p>KDFWR lists 53 additional State-Threatened, Endangered, and Special Concern Species (beyond the 12 species listed by USFWS, above) as occurring (either recently or historically) in Breckinridge and/or Hardin Counties. These include:</p> <ul style="list-style-type: none"> • 13 state-endangered species (1 amphibian, 6 birds, 1 mussel, 4 insects, 1 mammal) • 12 state-threatened species (6 birds, 3 mussels, 1 mammal, 2 reptiles) • 28 state-special concern species (6 fish, 1 amphibian, 11 birds, 1 mussel, 1 gastropod, 1 insect, 2 crustaceans, 3 mammals, 2 reptiles) | Source: KDFWR - Species List for Breckinridge and Hardin Counties (2016) |

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| Environmental Category | Resource/Feature | Source/Information |
| KSNPC Species Database | <p>KSNPC provided 19 records for 13 federal or state-endangered, threatened, or special concern listed species within 1-mile of the study area. These include:</p> <ul style="list-style-type: none"> • 4 plants (3 state-endangered and 1 state-species of concern); • 1 crustacean (state-species of concern); • 1 fish (federal-species of management concern); • 1 amphibian (state-species of concern); • 2 reptiles (1 each state-threatened and state-species of concern); • 3 birds (1 each federal-species of management concern, state-threatened, and state species of concern); and • 1 mammal (federal-endangered). <p>Occurrence records for the fish and crustacean species related to cave-dwelling species. Additional federal listed species known within 5-miles include federal-endangered Indiana bat and Gray myotis (Gray bat), federal-threatened Northern long-eared bat, and federal-candidate Rattlesnake-master borer moth.</p> <p>The KSNPC data response specifically highlights the study area lies close to known hibernacula for federal-listed Indiana bat, Gray myotis (bat) and Northern long-eared bat. The ghost crayfish, a state-special concern and cave-obligate species, is known within 1-mile of the study area. Seven (7) bird species protected under the Migratory Bird Treaty Act are known to occur within 10-miles of the study area. Additional concerns include large forest blocks (specifically fragmentation of such) and three (3) unique ecological communities known in the study area vicinity.</p> | Source: KSNPC Natural Heritage Database response (December 30, 2016) |
| Groundwater | <p>117 water wells are mapped within the study area, including: 73 domestic use, 28 monitoring use, 2 remediation and 14 of unknown use. Domestic use water wells are located throughout the extent of the study area and are prevalent in the surrounding areas. One (1) wellhead protection area occurs in the study area, associated with the Hardin Co #1 water system, located between Cecilia and KY 920 in the eastern portion.</p> <p>Two (2) springs are mapped within the study area, neither of which are named features or used as a source water supply. One spring is located immediately adjacent to the existing KY 86 alignment near the Vertrees Creek crossing, while the other is located just south of Franklin Cross Roads along KY 1375.</p> | Source: KGS Water Wells and Springs data repository and dataset layer (2016a), KGS ArcGIS Service Layer (2016b), KDOW Wellhead Protection Areas data download (2012b) |

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| Table 1: Environmental Resources/Features in the KY 86 Study Area Breckinridge and Hardin Counties, KY | | |
|---|--|--|
| Environmental Category | Resource/Feature | Source/Information |
| Karst | <p>The project area is underlain by bedrock with moderate to high potential for karst, in addition to having intense karst geology. 84 sinkholes are mapped underlying the study area, accounting for approximately 8% of the area. Sinkholes are most prominent between Franklin Cross Roads and KY 920 in Hardin County, with a second concentration between Graysville and US 60 in Breckinridge County.</p> <p>Six (6) cave entrances are known within study area, with an additional four (4) entrances within 100-feet of the boundary. Due to the sensitive nature of this resource, location information and mapping of locations are not included in this report.</p> <p>KYTC has a policy for use of specific drainage designs (grass swales and detention basins) in roadway improvement projects in known karst areas.</p> | Source: Paylor and Currens (2002), KGS (2005), Breckinridge County Karst Areas (Carey and Stickney 2005a), Hardin County Karst Areas (Carey and Stickney 2005b), KGS (2003), KSS Data Request response (December 8, 2016), KYTC-DEA (2016) |
| Floodplain | FEMA 100-Year floodplains cross the study area at three locations: an unnamed tributary to Muddy Fork (west of KY 401), Rough River, and West Rhudes Creek. At each location the floodplain is relatively narrow, ranging from 200 to 600 feet in width. | Source: FEMA National Flood Hazard Layers (2008 and 2016) |
| Floodway | No FEMA designated floodway occurs in the study area or vicinity. | Source: FEMA National Flood Hazard Layers (2008 and 2016) |
| Farmlands | Approximately 68% of the soils in the study area are identified as Prime Farmland (35%), Farmland of Statewide Importance (27%), or Prime farmland if drained or protected from flooding (7%). Extensive portions of the study area are currently utilized as farmland including row crop, hay and pasture. Multiple active farms were observed in and around the study area. | Source: USDA SSURGO KY607 (2015), USDA SSURGO KY621 (2015), field survey |

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| Environmental Category | Resource/Feature | Source/Information |
| Hazardous Materials | <p>Database records review summary: 26 sites of potential concern (with a total of 78 records) occur within the study area, including 7 RCRA records, 2 AIRS air emission records (radiotelephone communication sites), 21 UST sites (3 active) and 1 LUST site. An additional 3 RCRA records are mapped within 0.25-mile of the study area, concentrated around Cecilia at the east end. The Howe Valley Landfill Superfund Site (National Priority List record) is located less than one-mile south of the KY 86 and KY 920 intersection in Howe Valley.</p> <p>Field survey indicated six (6) additional potential hazardous materials concern sites, including: 2 automotive service businesses, 1 former commercial site, 1 unlisted UST site, and 2 electrical substations.</p> <p>Summary: 32 potential hazardous materials concern sites. Multiple UST records within the study area report removal of tanks more than 15 years ago. Sites of potential concern are concentrated in Cecilia and at major crossroads along KY 86.</p> | Source: USEPA Envirofacts (2016), KDWM (2016), aerial photo review, ESRI USGS map service layer, field survey |
| Oil and Gas Wells | One oil/gas well is mapped within the study area, a producing gas well located south of KY 86 just east of the Hardin County border. An additional 10 wells are located within 0.5-mile of the study area, 5 producing oil or gas, and all located Hardin County. | Source: KGS (2016c) |
| Section 4(f) | No Section 4(f) resources were identified in the study area through secondary source information or during field survey. No public use recreational facilities are present in the study area. | Source: ESRI USA Parks dataset (2015), KGN LocalParks dataset (2007), field survey |
| Section 6(f) | Based on current Land and Water Conservation Fund (LWCF) records, there are no Section 6(f) resources in the study area. | Source: NPS LWCF list (2016), ESRI USA Parks dataset (2015), ESRI Aerial map service layer, field survey |
| Air Quality | <p>The study area is not located in a Nonattainment Area for 8-hour ozone (2008 standard), or a Maintenance area for PM2.5 (1997 Standard or 2012 Standard) for the transportation-related criteria pollutants for which the EPA has established National Ambient Air Quality Standards (NAAQS) for Transportation Criteria Pollutants.</p> <p>Two (2) USEPA permitted air emissions facilities are located within the study area, evenly spaced along the length of the project alignment, both being cellular transmission towers.</p> | Source: KYTC (2013), KYTC (2016b), USEPA Green Book (2016), USEPA Envirofacts (2016) |

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|---|--|--|
| Environmental Category | Resource/Feature | Source/Information |
| Noise | <p>Noise sensitive land use areas are present in the city of Cecilia, as well as scattered through the study area (Activity Category “B” and “C” land uses – consisting of several single-family residences, 4 schools and 11 houses of worship).</p> <p>The study area is primarily rural and dominated by agricultural land uses, with commercial land uses concentrated in Cecilia at the east endpoint.</p> | Source: KYTC Noise Policy (2011), field survey |
| Environmental Justice | <p>The project area includes portions of Census Tracts 9601, 9605.01 and 9605.02 in Breckinridge County, and Census Tract 17 in Hardin County.</p> <p>Based on the most recent U.S. Census (2010) and American Community Survey (ACS; 2011-2015) data available, Tract 9601 is the only tract with a percentage minority population (4.9%) greater than its county average (Breckinridge-4.2%), but less than the state average (11.9%).</p> <p>Tract 9605.01 is the only tract with a percentage low income population (22.3%) greater than its county average (Breckinridge-19.2%), though all three tracts in Breckinridge County exceed the state average of 18.5%.</p> <p>Additional analysis of socio-economic conditions in the study area is being conducted by the local ADD, and will be provided in a separate report.</p> | Source: US Census Bureau, ACS 5-year data 2011-2015 (2016), KYTC Environmental Justice Analysis (2014) |
| Cultural - Archaeology | <p>Based on a review of National Register of Historic Places (NRHP) and Office of State Archaeology (OSA) Preliminary Site Check response, no archaeological sites listed on the NRHP are located in the study area. However, five (5) previous archaeological surveys conducted in or adjacent to the study area have recorded six (6) archaeological sites within the study area. Of the six sites, one was not assessed for NRHP listing, two were not recorded for NRHP eligibility and three were determined to be ineligible for NRHP.</p> <p>Only a minimal amount of the study area has been previously surveyed for archaeological resources. Because there are several archaeological sites in close proximity to the study area, it is likely that work proposed outside of existing right-of-way will require archaeological surveys and may encounter additional resources.</p> | Source: NPS (2014), KOSA (2016) |

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| Table 1: Environmental Resources/Features in the KY 86 Study Area Breckinridge and Hardin Counties, KY | | |
|---|--|--|
| Environmental Category | Resource/Feature | Source/Information |
| Cultural - Historic | <p>Based on a review of Kentucky Heritage Council (KHC) Site Check response the following resources were identified within the study area:</p> <ul style="list-style-type: none"> • 1 NRHP-listed structure - Heller Hotel, in Cecilia • 1 structure that meets NR Criteria (not currently listed) - Stamper-Pirtle House, in Howe Valley • 40 additional structures with undetermined NRHP status <p>Twenty-two (22) of the 42 previously recorded resources included sufficient location information for mapping. The majority of these are generally concentrated along Main Street (KY 86) in Cecilia. Due to the presence of these resources and the significant number of rural agricultural properties in the study area vicinity, additional cultural historic properties with large potential boundaries are likely to be present. Existing historic properties should be avoided and additional cultural historic investigations are recommended for any proposed project activities.</p> | Source: KHC (2016), National Register of Historic Places website review |
| Houses of Worship | Eleven (11) houses of worship (church, mosque, synagogue, etc.) were identified throughout the study area. | Source: ESRI USA topo map service layer, Google Maps, KDOW Watershed Viewer (2016b), field survey |
| Schools | Four (4) primary schools were identified within the study area: Custer Elementary and Howe Valley Elementary (located in their communities), Cecilia Elementary (under construction) and St. Ambrose School in Cecilia. | Source: ESRI USA topo map service layer, ESRI Aerial map service layer, Google Maps, KDOW Watershed Viewer (2016b), field survey |
| Cemeteries | Fourteen (14) cemeteries are located within the study area. Most are either small family plots or are associated with an adjacent church. Several cemeteries are located immediately adjacent to the existing KY 86 alignment. | Source: ESRI USA topo map service layer, ESRI Aerial map service layer, Google Maps, KDOW Watershed Viewer (2016b), field survey |

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| Table 1: Environmental Resources/Features in the KY 86 Study Area Breckinridge and Hardin Counties, KY | | |
|---|---|--|
| Environmental Category | Resource/Feature | Source/Information |
| Public Services | <p>Public service and utility facilities located within the study area include:</p> <ul style="list-style-type: none">• Paducah and Louisville Railroad at-grade crossing in Cecilia• 2 post offices, in Cecilia and Custer• 2 electric substations: on KY 920 in Howe Valley and on KY 86 in Custer• 2 fire department stations: KY 86 Fire Dept. west of Cecilia and Custer Fire Dept. south of Custer• 2 Masonic Lodges: #212 in Franklin Cross Roads and #624 in Custer• 4 cellular towers: 3 in Hardin County, 1 in Breckinridge County• 3 powerline crossings in the central portion of the study area• 1 pipeline crossing just west of Cecilia• 1 water tower near Graysville, owned by Hardinsburg Municipal Utilities | Source: ESRI USA topo map service layer, ESRI Aerial map service layer, Google Maps, KDOW Watershed Viewer (2016b), KIA (2007), field survey |
| Residences and Businesses | <p>Residential land use in the study area includes single-family homes in Cecilia and scattered rural residential homes along KY 86 with small concentrations present in the rural communities along the alignment. No suburban-style residential developments, mobile home parks or apartment complexes were identified.</p> <p>Commercial businesses are concentrated in Cecilia at the eastern end of the study area. Individual business structures are scattered along the KY 86 corridor.</p> | Source: ESRI Aerial map service layer, field survey |

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ENVIRONMENTAL OVERVIEW

KY 86 SCOPING STUDY

KYTC ITEM #4-8901.00

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FIGURES

1. Study Area Map
2. Project Location Map
- 3.1 Environmental Footprint: Natural Environment – West Section
- 3.2 Environmental Footprint: Natural Environment – East Section
- 3.3 Environmental Footprint: Natural Environment – Farmland
Classification of Soils
- 4.1 Environmental Footprint: Human Environment – West Section
- 4.2 Environmental Footprint: Human Environment – East Section

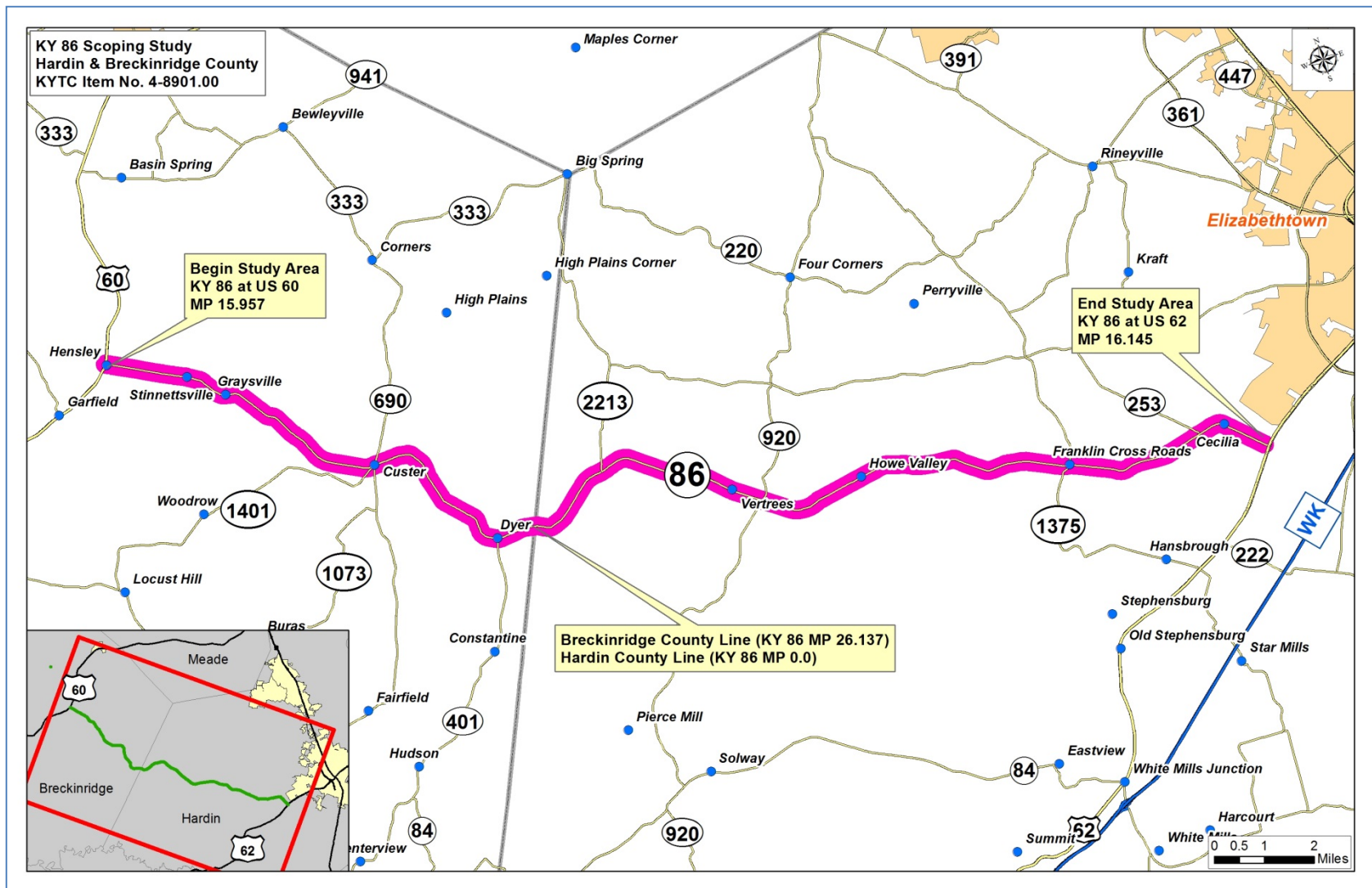
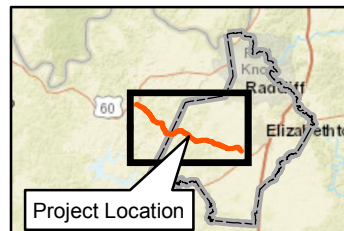
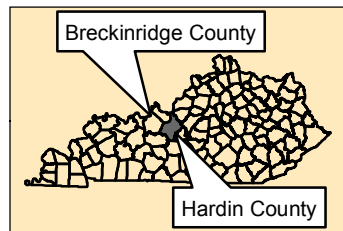
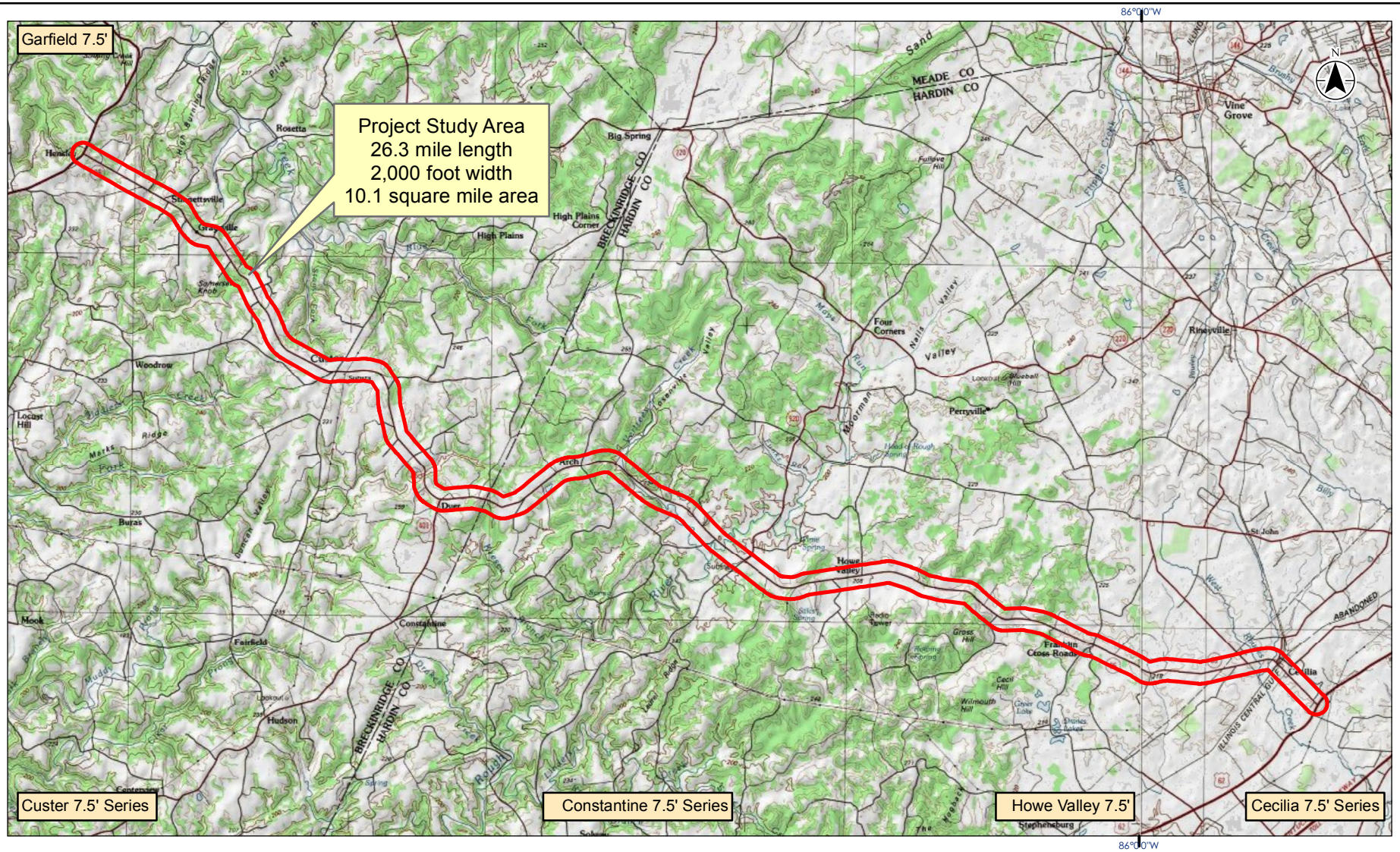


Figure 1 – Study Area



0 1 2 Miles
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- Notes**
1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
 2. Base features produced from project planning elements.
 3. Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



Project Location
 KY 86 from US 60 to US 42
 Breckinridge and Hardin Counties,
 Kentucky

178556010
 Prepared by BL on 2016-10-21

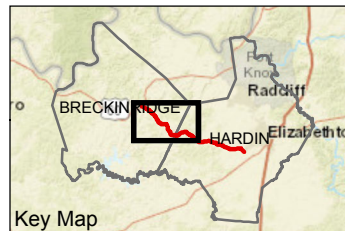
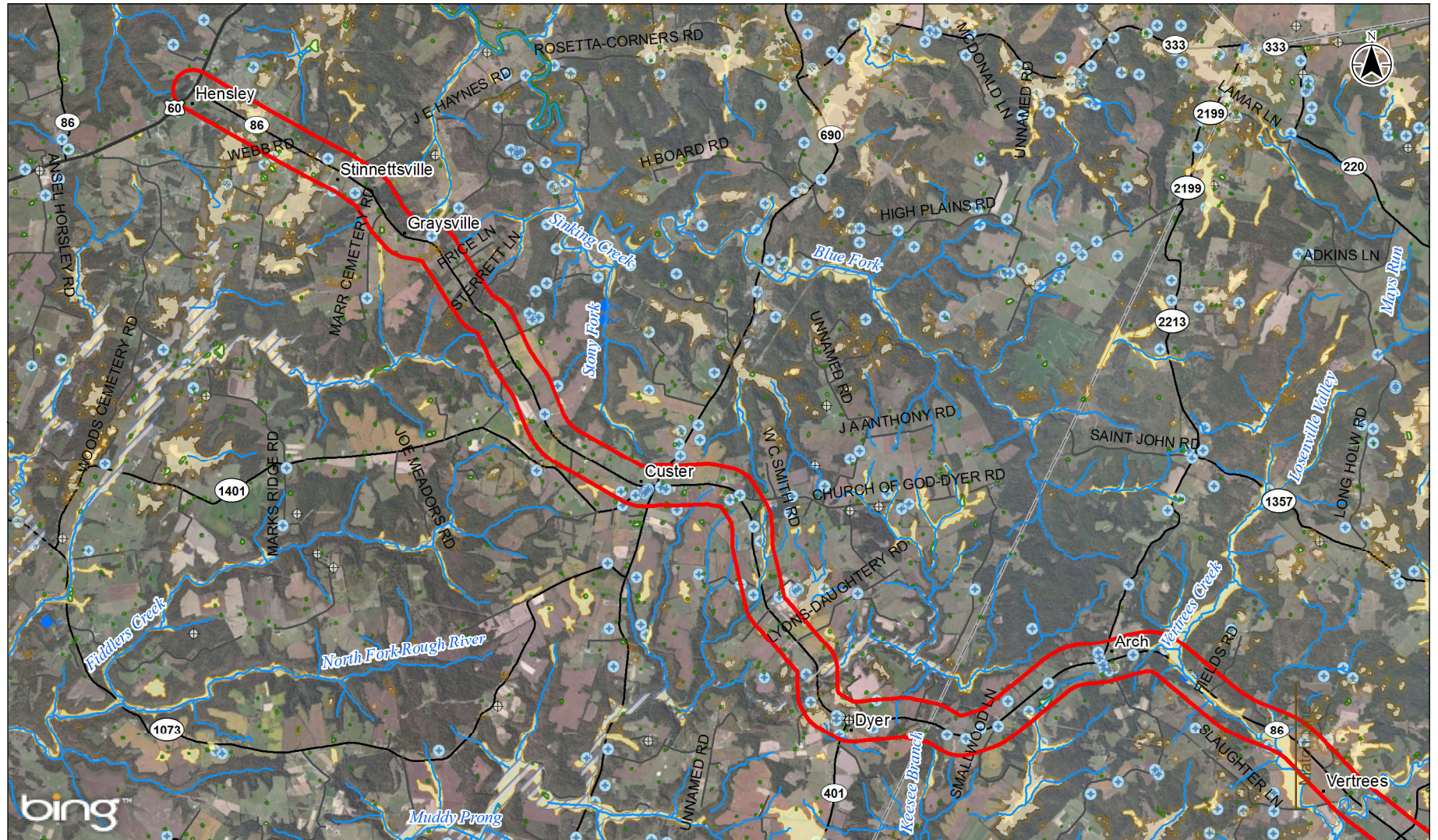
Client/Project
 KYTC District 4
 Environmental Overview
 KY 86 Scoping Study, KYTC Item #4-8901.00

Figure No.

2

Title

Project Location Map



Legend

- ▬ Study Area
- Spring (KGS)
- Streams (NHD)
- ▨ NWI Wetland (USFWS)
- ▨ 100-Year Flood Zone (FEMA)

- ▭ Sinkhole (KGS)
- ▭ Hydric Soils (USDA)
- ▭ County Boundary
- Water Well (KDOW)**
 - ⊕ Domestic Use
 - ⊕ Other



Notes

1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
2. Base features: see Sources and References.
3. BING map services, (C) Microsoft Corporation, 2016.

Project Location
KY 86 from US 60 to US 42
Breckinridge and Hardin Counties,
Kentucky

Client/Project
KYTC District 4
Environmental Overview
KY 86 Scoping Study, KYTC Item #4-8901.00

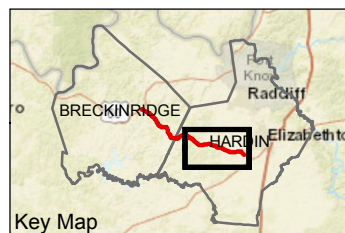
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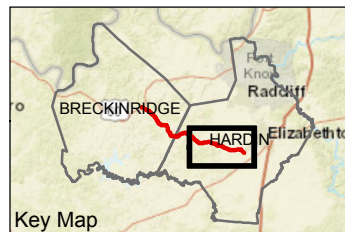
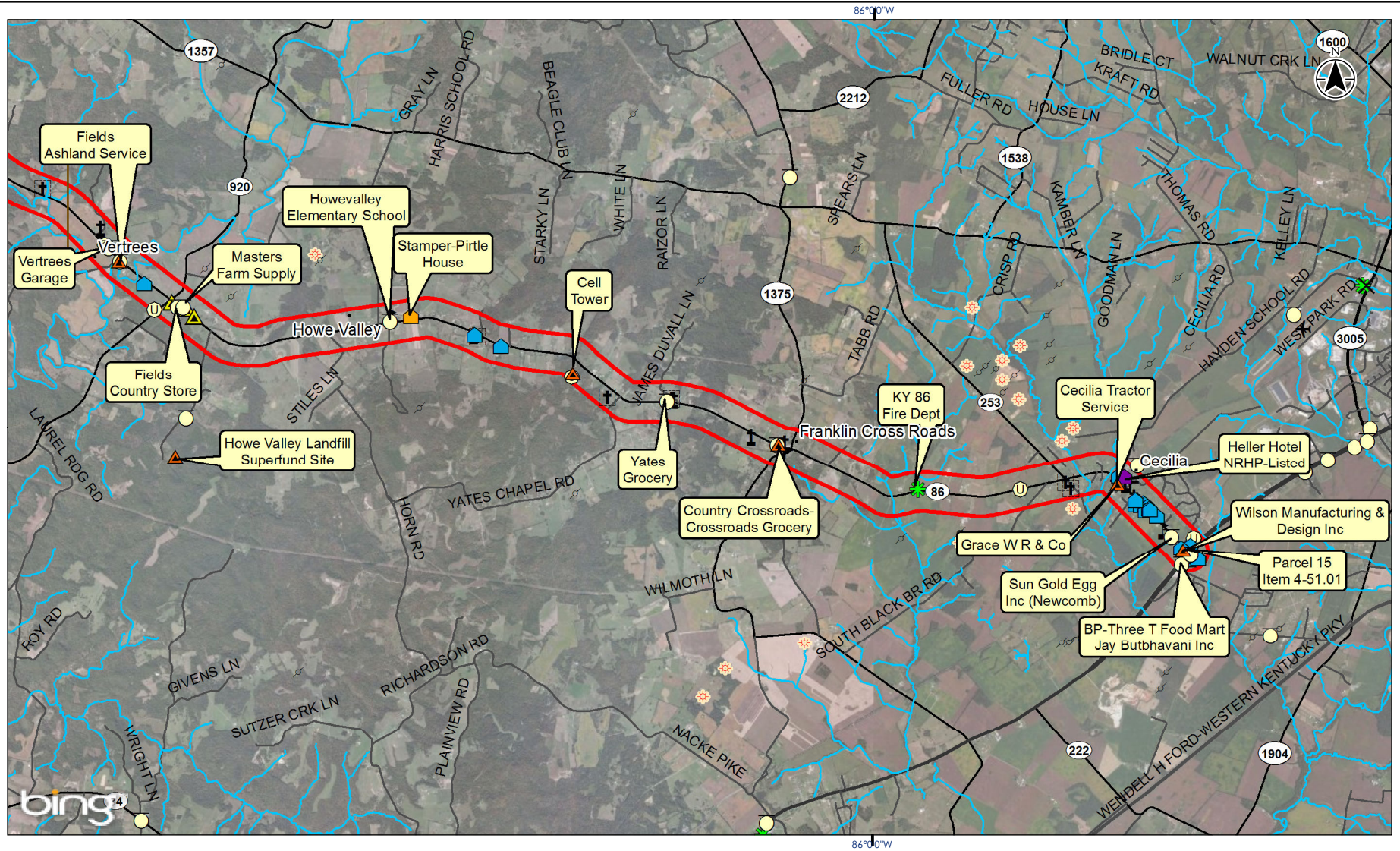
Title

**Environmental Overview
Natural Environment**









Legend

- Study Area
- Cemetery
- House of Worship
- Public Service
- School
- Utility
- Potential HazMat
- ▲ HazMat Record (USEPA)
- UST Record (KDWM)
- ★ Fire Departments
- Cultural-Historic Site (KHC)**
- NRHP-Listed
- Meets NR Criteria
- Previously Surveyed Site
- Streams (NHD)
- County Boundary
- Oil/Gas Well (KGS)**
- ★ Producing
- ★ Other

Notes

1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
2. Base features: see Sources and References.
3. BING map services, (C) Microsoft Corporation, 2016.

0 5,000 10,000 Feet
1:90,000 (At original document size of 8.5x11)



Project Location
KY 86 from US 60 to US 42
Breckinridge and Hardin Counties,
Kentucky
178556010
Prepared by BL on 2016-12-15

Client/Project
KYTC District 4
Environmental Overview
KY 86 Scoping Study, KYTC Item #4-8901.00

Figure No.

4.2

Title

**Environmental Overview
Human Environment**

ATTACHMENTS

1. Threatened and Endangered Species
2. Karst
3. Hazardous Materials Concerns
4. National Park Service LWCF (Section 6(f)) Lists
5. Air Quality - Transportation Related Pollutants
6. Environmental Justice
7. Cultural-Historic Resources
8. Photo Log

ATTACHMENT 1

THREATENED AND ENDANGERED SPECIES

- USFWS KY 86 IPaC Trust Resource Report
- USFWS Maps of Known Indiana and Northern Long-eared Bat Habitat
- KYTC Online Environmental Overview: Sensitive Resources in Project Vicinity
- KDFWR State-Listed Species, Breckinridge and Hardin Counties
- KSNPC Natural Heritage Database Response (redacted)

KY 86 Environmental Overview

IPaC Trust Resources Report

Generated October 31, 2016 08:55 AM MDT, IPaC v3.0.9

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.

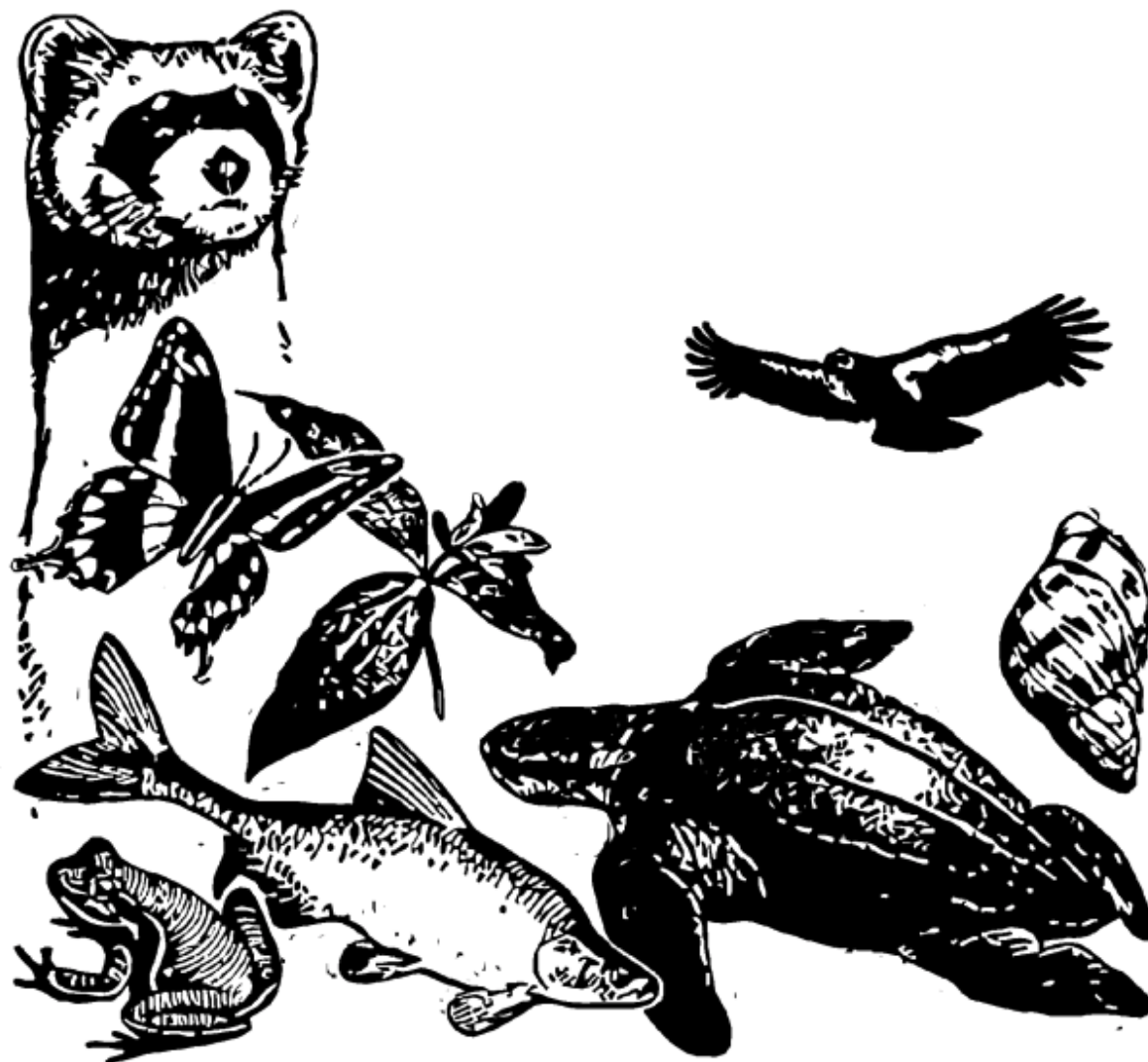


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| IPaC Trust Resources Report | <u>1</u> |
| Project Description | <u>1</u> |
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| Migratory Birds | <u>5</u> |
| Refuges & Hatcheries | <u>7</u> |
| Wetlands | <u>8</u> |

U.S. Fish & Wildlife Service

IPaC Trust Resources Report



NAME

KY 86 Environmental Overview

LOCATION

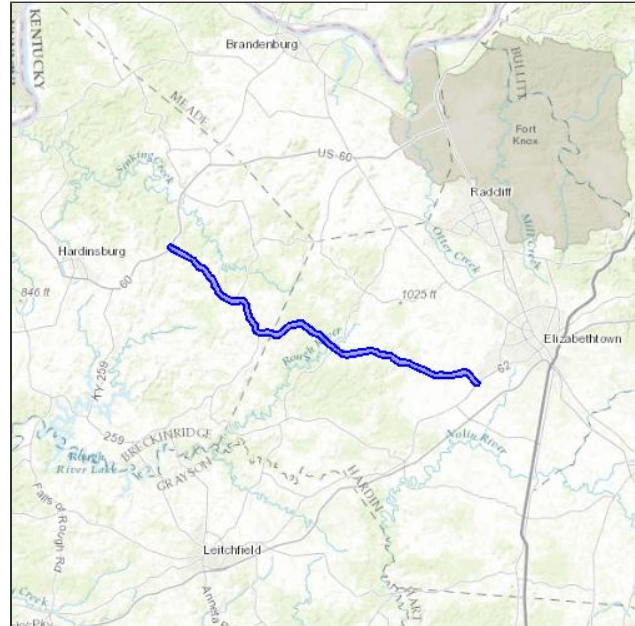
Breckinridge and Hardin counties,
Kentucky

DESCRIPTION

Identify deficiencies and evaluate
improvements to the KY 86 corridor
between US 60 and US 62.

IPAC LINK

[https://ecos.fws.gov/ipac/project/
T5D2K-QLXRJ-DQPHQ-PRVOP-5V2FQ4](https://ecos.fws.gov/ipac/project/T5D2K-QLXRJ-DQPHQ-PRVOP-5V2FQ4)



U.S. Fish & Wildlife Service Contact Information

Trust resources in this location are managed by:

Kentucky Ecological Services Field Office

J C Watts Federal Building, Room 265

330 West Broadway

Frankfort, KY 40601-8670

(502) 695-0468

Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the [Endangered Species Program](#) of the U.S. Fish & Wildlife Service.

This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

[Section 7](#) of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list either from the Regulatory Documents section in IPaC or from the local field office directly.

The list of species below are those that may occur or could potentially be affected by activities in this location:

Clams

Clubshell *Pleurobema clava* Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=F01D

Fanshell *Cyprogenia stegaria* Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=F02H

Fat Pocketbook *Potamilus capax* Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=F00T

Orangefoot Pimpleback (pearlymussel) *Plethobasus cooperianus* Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=F00R

Pink Mucket (pearlymussel) *Lampsilis abrupta* Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=F00G

Ring Pink (mussel) *Obovaria retusa* Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=F00S

Rough Pigtoe *Pleurobema plenum* Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=F00P

Sheepnose Mussel *Plethobasus cyphus* Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=F046

Insects

Rattlesnake-master Borer Moth *Papaipema eryngii*

Candidate

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=I0LJ

Mammals

Gray Bat *Myotis grisescens*

Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=A04J

Indiana Bat *Myotis sodalis*

Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=A000

Northern Long-eared Bat *Myotis septentrionalis*

Threatened

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=A0JE

Critical Habitats

There are no critical habitats in this location

Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the [Bald and Golden Eagle Protection Act](#).

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish & Wildlife Service.^[1] There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern
<http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Conservation measures for birds
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Year-round bird occurrence data
<http://www.birdscanada.org/birdmon/default/datasummaries.jsp>

The following species of migratory birds could potentially be affected by activities in this location:

Bald Eagle *Haliaeetus leucocephalus*

Bird of conservation concern

Season: Year-round

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B008

Bell's Vireo *Vireo bellii*

Bird of conservation concern

Season: Breeding

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JX

Black-billed Cuckoo *Coccyzus erythrophthalmus*

Bird of conservation concern

Season: Breeding

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HI

Blue-winged Warbler *Vermivora pinus*

Bird of conservation concern

Season: Breeding

Chuck-will's-widow *Caprimulgus carolinensis*

Bird of conservation concern

Season: Breeding

Dickcissel *Spiza americana*

Season: Breeding

Bird of conservation concern

Fox Sparrow *Passerella iliaca*

Season: Wintering

Bird of conservation concern

Henslow's Sparrow *Ammodramus henslowii*

Season: Breeding

Bird of conservation concern

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?scode=B09D

Kentucky Warbler *Oporornis formosus*

Season: Breeding

Bird of conservation concern

Least Bittern *Ixobrychus exilis*

Season: Breeding

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?scode=B092

Loggerhead Shrike *Lanius ludovicianus*

Season: Year-round

Bird of conservation concern

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?scode=B0FY

Prairie Warbler *Dendroica discolor*

Season: Breeding

Bird of conservation concern

Prothonotary Warbler *Protonotaria citrea*

Season: Breeding

Bird of conservation concern

Red-headed Woodpecker *Melanerpes erythrocephalus*

Season: Year-round

Bird of conservation concern

Rusty Blackbird *Euphagus carolinus*

Season: Wintering

Bird of conservation concern

Sedge Wren *Cistothorus platensis*

Season: Migrating

Bird of conservation concern

Short-eared Owl *Asio flammeus*

Season: Wintering

Bird of conservation concern

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?scode=B0HD

Willow Flycatcher *Empidonax traillii*

Season: Breeding

Bird of conservation concern

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?scode=B0F6

Wood Thrush *Hylocichla mustelina*

Season: Breeding

Bird of conservation concern

Worm Eating Warbler *Helmitheros vermivorum*

Season: Breeding

Bird of conservation concern

Wildlife refuges and fish hatcheries

There are no refuges or fish hatcheries in this location

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

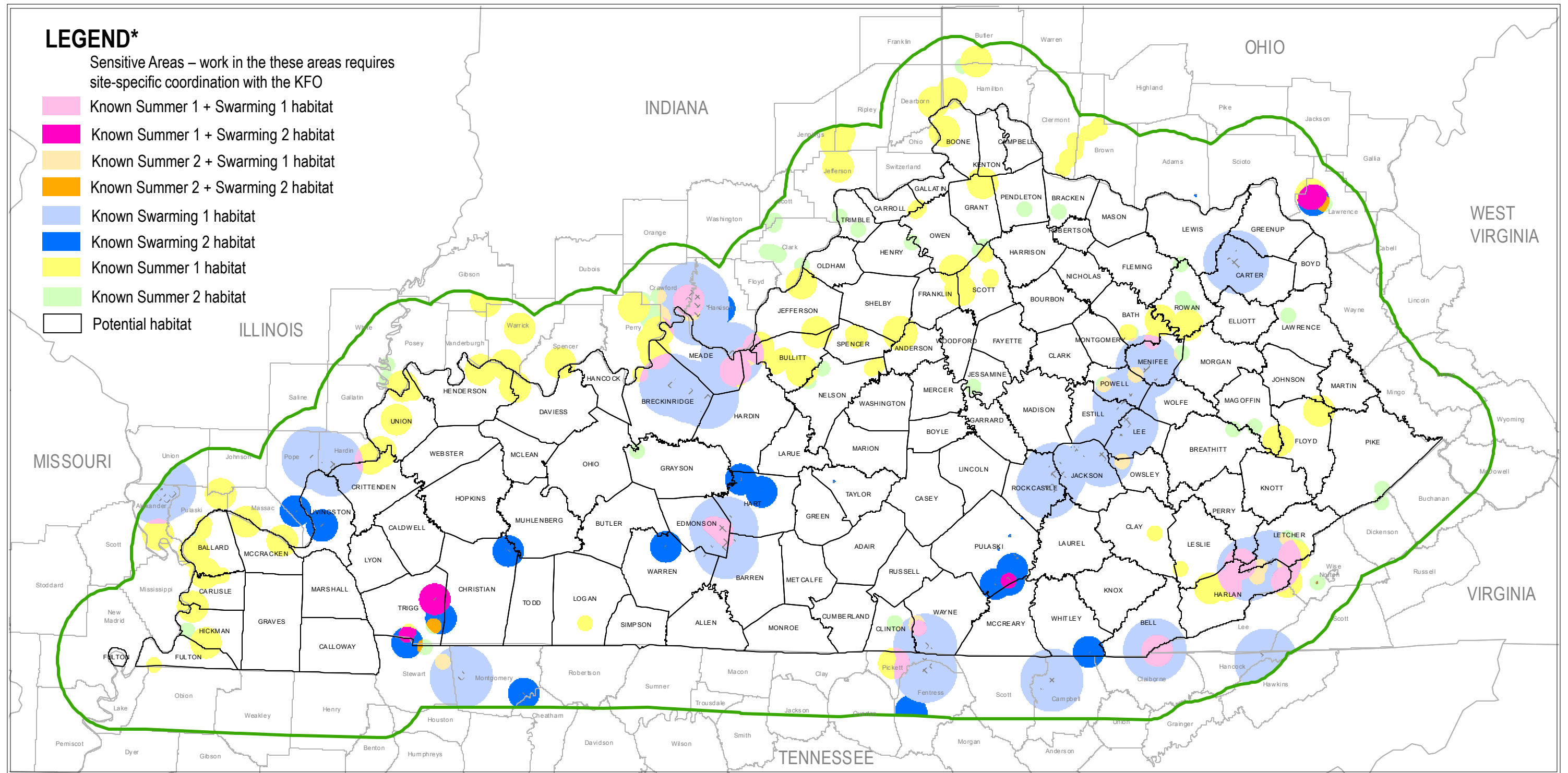
DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Wetland data is unavailable at this time.



Known Indiana bat habitat in Kentucky and within 20 miles (June 2016)



NOTE: This map is based on species occurrence information and is subject to change as new data become available. Please contact our office at 502/695-0468 to ensure you are working with the most current version.

*For an explanation of terms, please see the Conservation Strategy for Forest-Dwelling Bats in the Commonwealth of Kentucky.

0 10 20 40 60 80 Miles

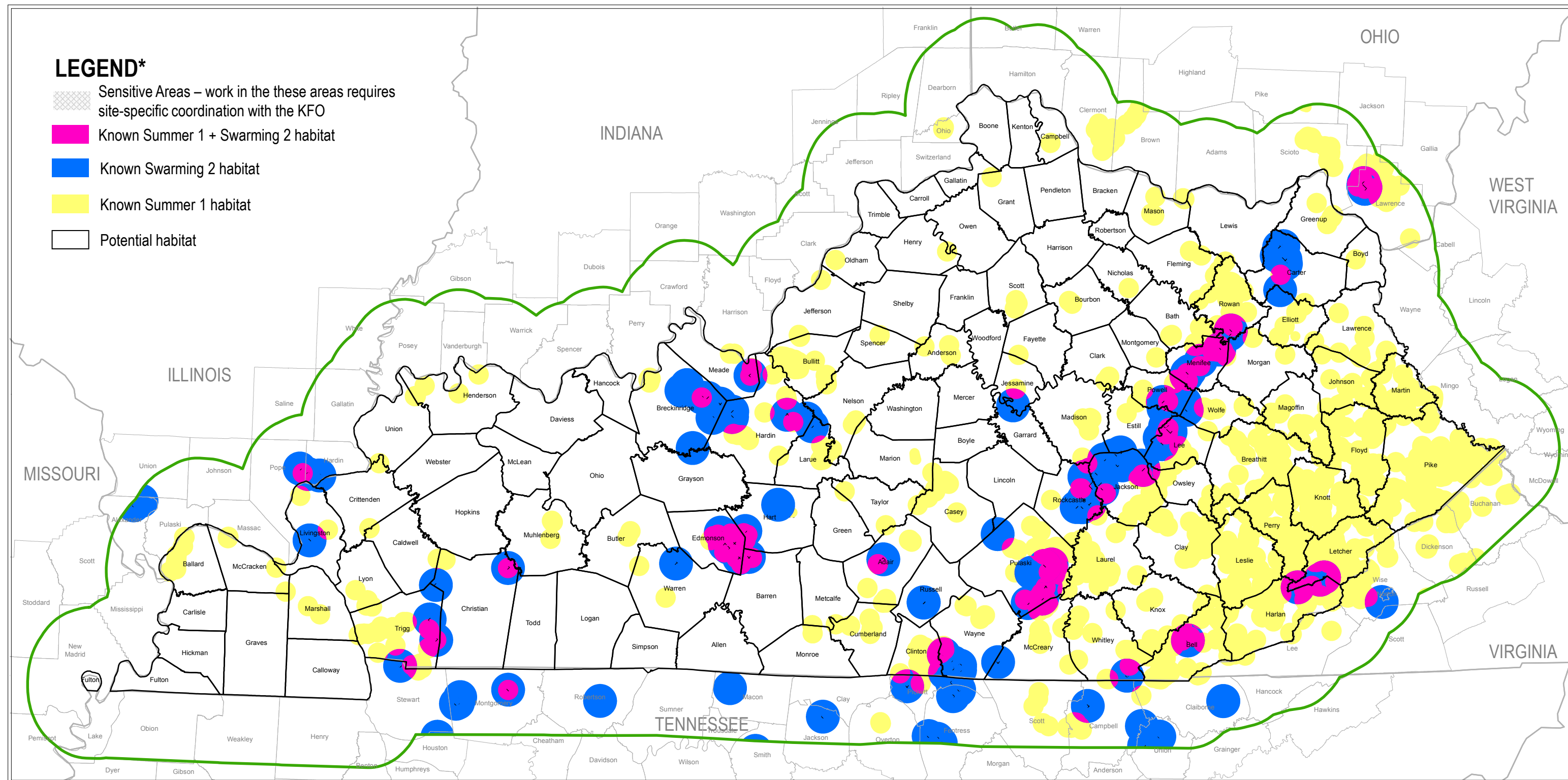
The USFWS makes no warranty for use of this map and cannot be held liable for actions or decisions based on map content. This map was produced as an appendix to the Conservation Strategy for Forest-Dwelling Bats in the Commonwealth of Kentucky and should only be used in the context of this Strategy.





U.S. Fish & Wildlife Service

Known northern long-eared bat habitat in Kentucky and within 20 miles (January 2016)



NOTE: This map is based on species occurrence information and is subject to change as new data become available. Please contact our office at 502/695-0468 to ensure you are working with the most current version.

*For an explanation of terms, please see the Conservation Strategy for Forest-Dwelling Bats in the Commonwealth of Kentucky.

0 10 20 40 60 80 Miles














The USFWS makes no warranty for use of this map and cannot be held liable for actions or decisions based on map content. This map was produced as an appendix to the Conservation Strategy for Forest-Dwelling Bats in the Commonwealth of Kentucky and should only be used in the context of this Strategy.

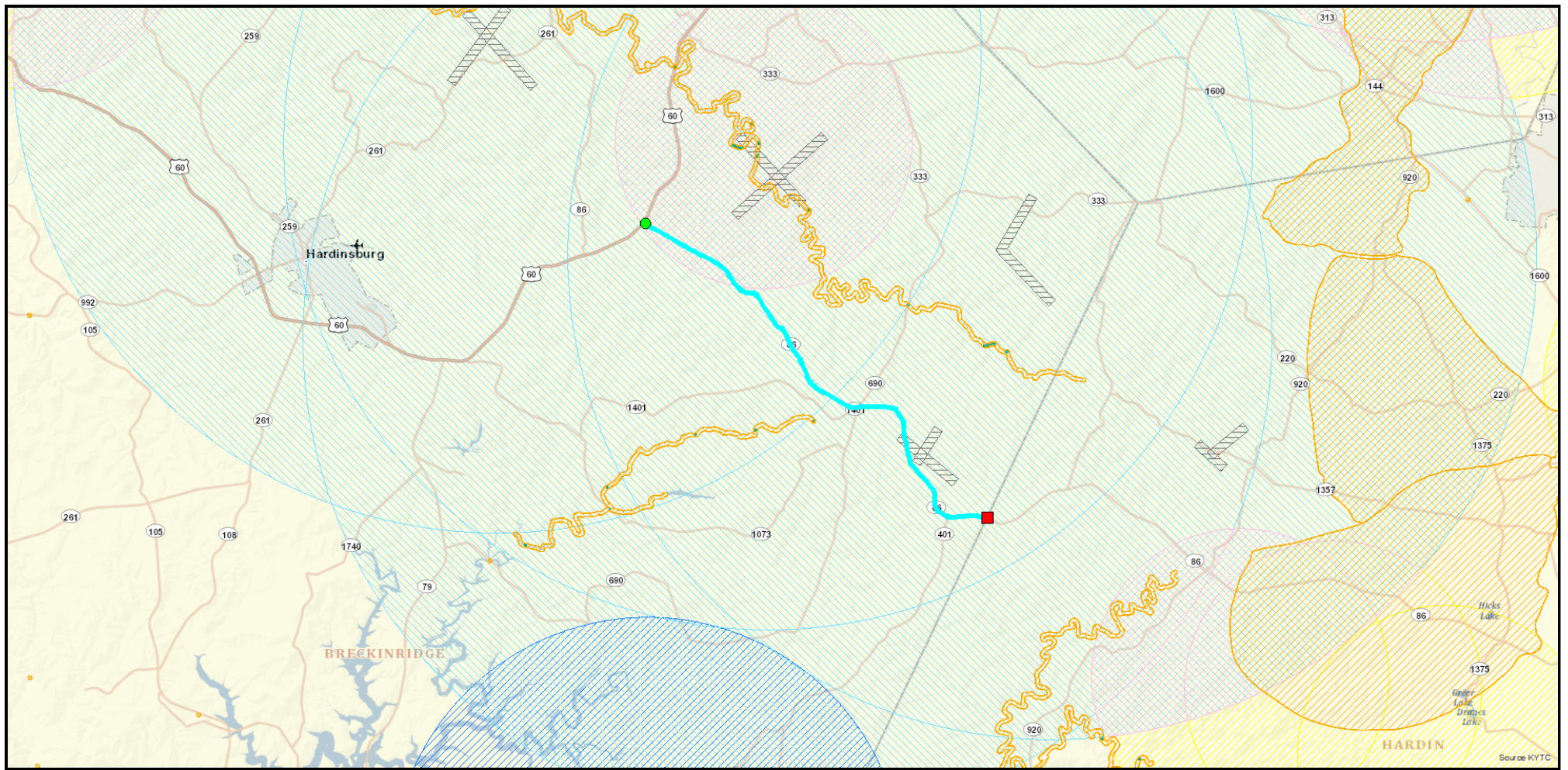


KYTC Environmental Overview

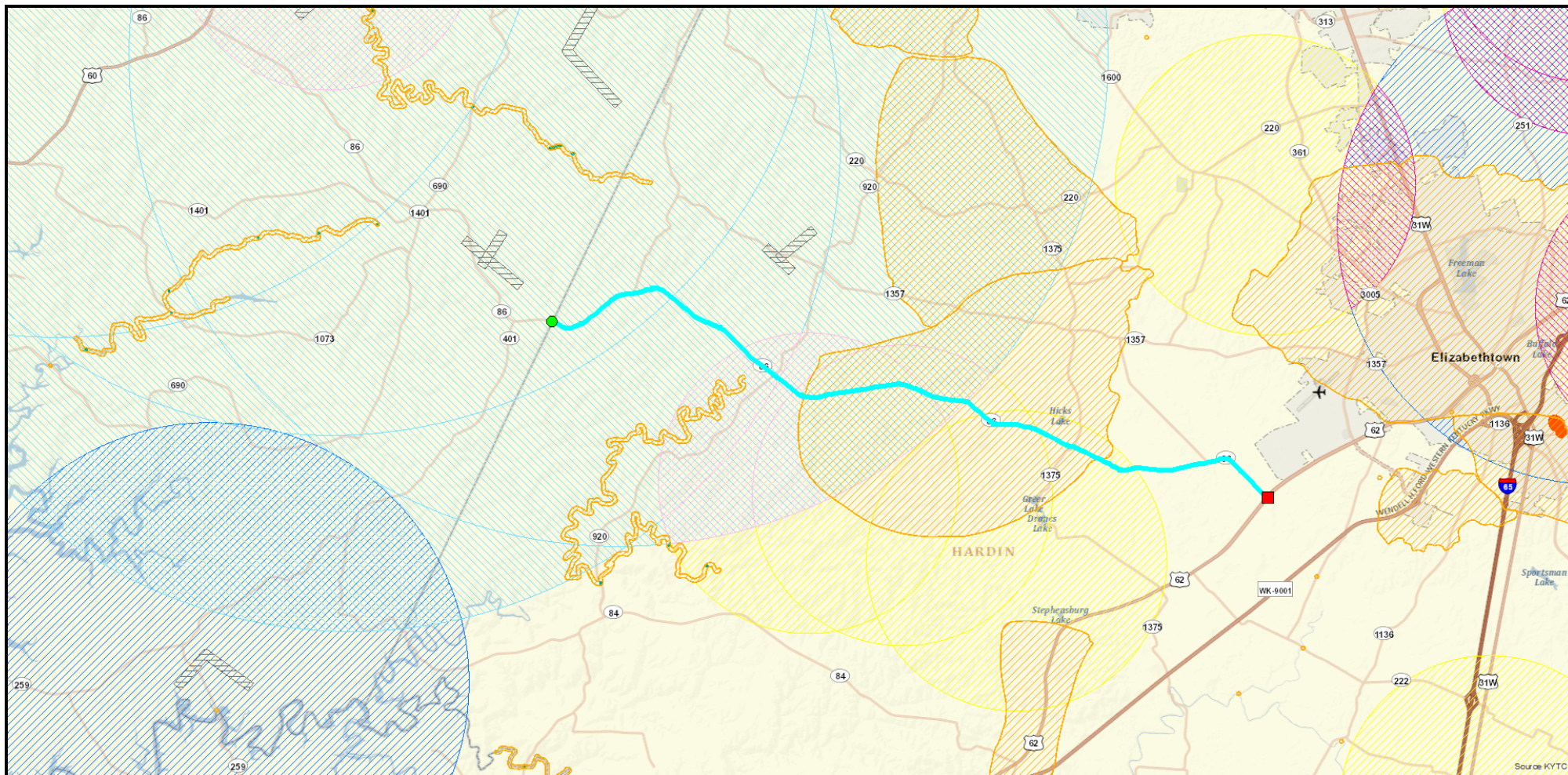
(<http://maps.kytc.ky.gov/photolog/?config=EnvironmentalOverview>)

Legend

- ▶ ☒ Road Shields
- ▶ ☒ Point Reference
- ▶ ☒ Environmental Overview
- ☒ Sensitive Water Area
 -  -Wellhead Protection Area: Hardin Co #1
- ☒ Deed Restricted Properties
 -  -None in vicinity
- ☒ DEA Managed Areas
 -  -None in vicinity
- ☐ 2015 Known Forest Dwelling Bat Habit
 -  Sensitive Areas - Requires Coordination with KFO -Present in Study Area
 -  Overlap: Summer 1 - Swarming 1 -Present in Study Area
 -  Overlap: Summer 1 - Swarming 2 -Not Present
 -  Overlap: Summer 2 - Swarming 1 -Not Present
 -  Overlap: Summer 2 - Swarming 2 -Not Present
 -  Known Swarming 2 Habitat -Not Present
 -  Known Swarming 1 Habitat -Present in Study Area
 -  Known Summer 1 Habitat -Present in Study Area
 -  Known Summer 2 Habitat -Not Present
- ☒ DEA Special Use Water Compliance
 - 



KY 86 alignment in Breckinridge County



KY 86 alignment in Hardin County

Species Information

State Threatened, Endangered, and Special Concern Species observations for selected counties

Linked life history provided courtesy of [NatureServe Explorer](#).

Records may include both recent and historical observations.

[US Status Definitions](#) [Kentucky Status Definitions](#)

List State Threatened, Endangered, and Special Concern Species observations in 2 selected counties.

Selected counties are: Breckinridge, Hardin.

| Scientific Name and Life History | Common Name and Pictures | Class | County | US Status | KY Status | WAP | Reference |
|---|--------------------------|----------------|--------------|-----------|-----------|-----|-----------|
| <i>Amblyopsis spelaea</i> | Northern Cavefish | Actinopterygii | Breckinridge | N | S | Yes | Reference |
| <i>Amblyopsis spelaea</i> | Northern Cavefish | Actinopterygii | Hardin | N | S | Yes | Reference |
| <i>Ictiobus niger</i> | Black Buffalo | Actinopterygii | Breckinridge | N | S | Yes | Reference |
| <i>Ictiobus niger</i> | Black Buffalo | Actinopterygii | Hardin | N | S | Yes | Reference |
| <i>Lota lota</i> | Burbot | Actinopterygii | Hardin | N | S | Yes | Reference |
| <i>Noturus stigmosus</i> | Northern Madtom | Actinopterygii | Hardin | N | S | Yes | Reference |
| <i>Phenacobius uranops</i> | Stargazing Minnow | Actinopterygii | Hardin | N | S | Yes | Reference |
| <i>Cryptobranchus alleganiensis alleganiensis</i> | Eastern Hellbender | Amphibia | Breckinridge | N | E | Yes | Reference |
| <i>Cryptobranchus alleganiensis alleganiensis</i> | Eastern Hellbender | Amphibia | Hardin | N | E | Yes | Reference |
| <i>Hyla versicolor</i> | Gray Treefrog | Amphibia | Breckinridge | N | S | Yes | Reference |
| <i>Hyla versicolor</i> | Gray Treefrog | Amphibia | Hardin | N | S | Yes | Reference |
| <i>Accipiter striatus</i> | Sharp-shinned Hawk | Aves | Breckinridge | N | S | Yes | Reference |
| <i>Accipiter striatus</i> | Sharp-shinned Hawk | Aves | Hardin | N | S | Yes | Reference |
| <i>Actitis macularius</i> | Spotted Sandpiper | Aves | Hardin | N | E | Yes | Reference |
| <i>Ammodramus henslowii</i> | Henslow's Sparrow | Aves | Breckinridge | N | S | Yes | Reference |
| <i>Ammodramus henslowii</i> | Henslow's Sparrow | Aves | Hardin | N | S | Yes | Reference |
| <i>Anas clypeata</i> | Northern Shoveler | Aves | Hardin | N | E | | Reference |
| <i>Anas discors</i> | Blue-winged Teal | Aves | Hardin | N | T | | Reference |
| <i>Bubulcus ibis</i> | Cattle Egret | Aves | Breckinridge | N | S | | Reference |
| <i>Chondestes grammacus</i> | Lark Sparrow | Aves | Breckinridge | N | T | Yes | Reference |
| <i>Chondestes grammacus</i> | Lark Sparrow | Aves | Hardin | N | T | Yes | Reference |
| <i>Circus cyaneus</i> | Northern Harrier | Aves | Breckinridge | N | T | Yes | Reference |
| <i>Circus cyaneus</i> | Northern Harrier | Aves | Hardin | N | T | Yes | Reference |
| <i>Cistothorus platensis</i> | Sedge Wren | Aves | Breckinridge | N | S | Yes | Reference |
| <i>Cistothorus platensis</i> | Sedge Wren | Aves | Hardin | N | S | Yes | Reference |
| <i>Fulica americana</i> | American Coot | Aves | Breckinridge | N | E | | Reference |
| <i>Fulica americana</i> | American Coot | Aves | Hardin | N | E | | Reference |
| <i>Haliaeetus leucocephalus</i> | Bald Eagle | Aves | Breckinridge | N | T | Yes | Reference |
| <i>Haliaeetus leucocephalus</i> | Bald Eagle | Aves | Hardin | N | T | Yes | Reference |
| <i>Ictinia mississippiensis</i> | Mississippi Kite | Aves | Hardin | N | S | Yes | Reference |

| | | | | | | | |
|---------------------------------------|-----------------------------|--------------------|--------------|---|---|-----|-----------|
| <i>Junco hyemalis</i> | Dark-eyed Junco | Aves | Breckinridge | N | S | | Reference |
| <i>Junco hyemalis</i> | Dark-eyed Junco | Aves | Hardin | N | S | | Reference |
| <i>Lophodytes cucullatus</i> | Hooded Merganser | Aves | Hardin | N | T | Yes | Reference |
| <i>Pandion haliaetus</i> | Osprey | Aves | Hardin | N | S | Yes | Reference |
| <i>Peucaea aestivalis</i> | Bachman's Sparrow | Aves | Hardin | N | E | Yes | Reference |
| <i>Phalacrocorax auritus</i> | Double-crested Cormorant | Aves | Hardin | N | T | | Reference |
| <i>Podilymbus podiceps</i> | Pied-billed Grebe | Aves | Hardin | N | E | Yes | Reference |
| <i>Poocetes gramineus</i> | Vesper Sparrow | Aves | Hardin | N | E | Yes | Reference |
| <i>Riparia riparia</i> | Bank Swallow | Aves | Breckinridge | N | S | Yes | Reference |
| <i>Thryomanes bewickii</i> | Bewick's Wren | Aves | Breckinridge | N | S | Yes | Reference |
| <i>Thryomanes bewickii</i> | Bewick's Wren | Aves | Hardin | N | S | Yes | Reference |
| <i>Tyto alba</i> | Barn Owl | Aves | Breckinridge | N | S | Yes | Reference |
| <i>Tyto alba</i> | Barn Owl | Aves | Hardin | N | S | Yes | Reference |
| <i>Vireo bellii</i> | Bell's Vireo | Aves | Breckinridge | N | S | Yes | Reference |
| <i>Vireo bellii</i> | Bell's Vireo | Aves | Hardin | N | S | Yes | Reference |
| <i>Alasmidonta marginata</i> | Elktoe | Bivalvia | Hardin | N | T | Yes | Reference |
| <i>Epioblasma triquetra</i> | Snuffbox | Bivalvia | Hardin | E | E | Yes | Reference |
| <i>Lampsilis ovata</i> | Pocketbook | Bivalvia | Hardin | N | E | Yes | Reference |
| <i>Pleurobema clava</i> | Clubshell | Bivalvia | Hardin | E | E | Yes | Reference |
| <i>Quadrula cylindrica cylindrica</i> | Rabbitsfoot | Bivalvia | Hardin | T | T | Yes | Reference |
| <i>Simpsonaias ambigua</i> | Salamander Mussel | Bivalvia | Breckinridge | N | T | Yes | Reference |
| <i>Villosa lienosa</i> | Little Spectaclecase | Bivalvia | Hardin | N | S | Yes | Reference |
| <i>Villosa ortmanni</i> | Kentucky Creekshell | Bivalvia | Hardin | N | T | Yes | Reference |
| <i>Ichthyomyzon castaneus</i> | Chestnut Lamprey | Cephalaspidomorphi | Breckinridge | N | S | Yes | Reference |
| <i>Antroselates spiralis</i> | Shaggy Cavesnail | Gastropoda | Breckinridge | N | S | | Reference |
| <i>Antroselates spiralis</i> | Shaggy Cavesnail | Gastropoda | Hardin | N | S | | Reference |
| <i>Mesamia stramineus</i> | Helianthus Leafhopper | Insecta | Hardin | N | E | | Reference |
| <i>Nannothemis bella</i> | Elfin Skimmer | Insecta | Hardin | N | E | | Reference |
| <i>Prairiana kansana</i> | A Cicadellid Leafhopper | Insecta | Hardin | N | E | | Reference |
| <i>Satyrium favonius ontario</i> | Northern Hairstreak | Insecta | Hardin | N | S | | Reference |
| <i>Stylurus notatus</i> | Elusive Clubtail | Insecta | Breckinridge | N | E | | Reference |
| <i>Barbicambarus cornutus</i> | Bottlebrush Crayfish | Malacostraca | Hardin | N | S | Yes | Reference |
| <i>Orconectes inermis inermis</i> | Ghost Crayfish | Malacostraca | Breckinridge | N | S | Yes | Reference |
| <i>Orconectes inermis inermis</i> | Ghost Crayfish | Malacostraca | Hardin | N | S | Yes | Reference |
| <i>Corynorhinus rafinesquii</i> | Rafinesque's Big-eared Bat | Mammalia | Breckinridge | N | S | Yes | Reference |
| <i>Myotis austroriparius</i> | Southeastern Myotis | Mammalia | Breckinridge | N | E | Yes | Reference |
| <i>Myotis austroriparius</i> | Southeastern Myotis | Mammalia | Hardin | N | E | Yes | Reference |
| <i>Myotis grisescens</i> | Gray Myotis | Mammalia | Breckinridge | E | T | Yes | Reference |
| <i>Myotis grisescens</i> | Gray Myotis | Mammalia | Hardin | E | T | Yes | Reference |
| <i>Myotis leibii</i> | Eastern Small-footed Myotis | Mammalia | Breckinridge | N | T | Yes | Reference |
| <i>Myotis leibii</i> | Eastern Small-footed Myotis | Mammalia | Hardin | N | T | Yes | Reference |

| | | | | | | | |
|--|------------------------------|----------|--------------|---|---|-----|-----------|
| <i>Myotis septentrionalis</i> | Northern Myotis | Mammalia | Breckinridge | T | E | | Reference |
| <i>Myotis septentrionalis</i> | Northern Myotis | Mammalia | Hardin | T | E | | Reference |
| <i>Myotis sodalis</i> | Indiana Bat | Mammalia | Breckinridge | E | E | Yes | Reference |
| <i>Myotis sodalis</i> | Indiana Bat | Mammalia | Hardin | E | E | Yes | Reference |
| <i>Nycticeius humeralis</i> | Evening Bat | Mammalia | Hardin | N | S | Yes | Reference |
| <i>Ursus americanus</i> | American Black Bear | Mammalia | Hardin | N | S | Yes | Reference |
| <i>Clonophis kirtlandii</i> | Kirtland's Snake | Reptilia | Hardin | N | T | Yes | Reference |
| <i>Elaphe guttata</i> | Eastern Corn Snake | Reptilia | Hardin | N | S | Yes | Reference |
| <i>Ophisaurus attenuatus longicaudus</i> | Eastern Slender Glass Lizard | Reptilia | Hardin | N | T | Yes | Reference |
| <i>Thamnophis sauritus sauritus</i> | Eastern Ribbon Snake | Reptilia | Hardin | N | S | Yes | Reference |

81 species are listed

22 species listed twice (once for each county)

59 separate species listed total:

6 species are also federal-listed, for a remainder of

53 species being state-listed only:

6 fishes - 6 species of concern

2 amphibians - 1 endangered, 1 species of concern

23 birds - 6 endangered, 6 threatened, 11 species of concern

5 mussels - 1 endangered, 3 threatened, 1 species of concern

1 gastropod - 1 species of concern

5 insects - 4 endangered, 1 species of concern

2 crustaceans (crayfish) - 2 species of concern

5 mammals - 1 endangered, 1 threatened, 1 species of concern

4 reptiles - 2 threatened, 2 species of concern

Matthew G. Bevin
Governor



Charles G. Snaveley
Secretary
Energy and Environment Cabinet

Commonwealth of Kentucky
Kentucky State Nature Preserves Commission
Teton Trail
Frankfort, Kentucky 40601-1403
502-573-2886 Voice
502-573-2355 Fax

Jason L. Weese
Director
KSNPC

December 30, 2016

William R. Leopold
Stantec Consulting Services
11687 Lebanon Road
Cincinnati, Ohio 45241

Data Request 17-049

Dear Mr. Leopold,

This letter is in response to your data request of November 23, 2016 for the KY 86 improvement project from US 60 in Breckenridge County to US 62 in Hardin County, Kentucky. We have reviewed our Natural Heritage Program Database to determine if any of the endangered, threatened, or special concern plants and animals or exemplary natural communities monitored by the Kentucky State Nature Preserves Commission occur within the general area of the project on the Garfield, Custer, Constantine, Howe Valley, and Cecilia USGS Quadrangles. Please see the attached reports for more information.

1-mile for all records – 22 record
5-mile for aquatic records – 38 records
5-mile for federally listed species – 14 records
10-mile for mammals and birds – 47 records

Sensitive species, including hibernacula for *Myotis sodalis* (Indiana Bat, USFWS endangered, KSNPC endangered) and *Orconectes inermis inermis* (Ghost Crayfish, KSNPC special concern) occur within one mile of the project area. Indiana Bat hibernacula are federally protected and require coordination with USFWS to ensure compliance with Section 7(c) of the Endangered Species Act. Hibernacula for two additional federally listed bat species are known to occur between one and five miles of the project, these are *Myotis grisescens* (Gray Myotis, USFWS endangered), and *Myotis septentrionalis* (Northern Long-eared Bat, USFWS Listed Threatened, KSNPC endangered), there are also additional Indiana bat hibernacula within 5 miles.

Papaipema eryngii (Rattlesnake-master Borer Moth, USFWS candidate, KSNPC endangered) occur within five miles of the project corridor.

In addition to the above-mentioned mammals (bats), two more bat species and several avian species (see attached list) occur within 10 miles. The Migratory Bird Treaty Act prohibits the take

of avian species. Please refer to USFWS guidance to ensure compliance with the MBTA.

Part of the Nature Preserves Commission mission is to register, track, and monitor natural communities. Three such communities, (Limestone Slope Glade, Tallgrass Prairie, and Sandstone Prairie) occur within one mile the proposed action area. Impacts that would permanently disrupt the integrity and quality of these communities should be avoided to preserve Kentucky's Natural Heritage.

This project as planned goes through one or more large forest blocks. KSNPC is now monitoring large forest blocks, which are defined as 900 or more acres of contiguous forest. Large forest blocks were determined using the best available data at this time. Forest fragmentation is one of the primary impacts to plants and animals that require large tracts of forest for all parts of their life cycles. Fragmenting or impacting large forest blocks should be avoided.

Several aquatic species including *Amblyopsis spelaea* (Northern Cavefish, USFWS species of management concern, and KSNPC special concern) and *Villosa ortmanni* (Kentucky Creekshell, USFWS species of management concern, KSNPC threatened) occur within five miles of the KY 86 corridor. Aquatic species are sensitive to changes in changes or alteration of hydrology, turbidity, erosion, etc. Large projects such as road improvements and major construction may adversely affect species within the watershed. Best management practices should be implemented if stream impacts are unavoidable.

I would like to take this opportunity to remind you of the terms of the data request license, which you agreed upon in order to submit your request. The license agreement states "Data and data products received from the Kentucky State Nature Preserves Commission, including any portion thereof, may not be reproduced in any form or by any means without the express written authorization of the Kentucky State Nature Preserves Commission." The exact location of plants, animals, and natural communities, if released by the Kentucky State Nature Preserves Commission, may not be released in any document or correspondence. These products are provided on a temporary basis for the express project (described above) of the requester, and may not be redistributed, resold or copied without the written permission of the Kentucky State Nature Preserves Commission's Data Manager (801 Teton Trail, Frankfort, KY, 40601. Phone: (502) 573-2886).

Please note that the quantity and quality of data collected by the Kentucky Natural Heritage Program are dependent on the research and observations of many individuals and organizations. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Kentucky have never been thoroughly surveyed and new plants and animals are still being discovered. For these reasons, the Kentucky Natural Heritage Program cannot provide a definitive statement on the presence, absence, or condition of biological elements in any part of Kentucky. Heritage reports summarize the existing information known to the Kentucky Natural Heritage Program at the time of the request regarding the biological elements or locations in question. They should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. We would greatly appreciate receiving any pertinent information obtained as a result of on-site surveys.

If you have any questions, or if I can be of further assistance, please do not hesitate to contact me.

Sincerely,

Sara Hines
Data Manager

RIH/SGH

Enclosures: Data Report and Interpretation Key

Standard Occurrence Report
KSNPC monitored species within 1 mile of the KY 86 Corridor between US 60 in Breckenridge County and US 62 in Hardin County, Kentucky.

| EOCODE EOID | SNAME EO Type | SCOMNAME | GRANK | SRANK | SPROT | USESA | OTHER STATUS | IDENT | LASTOBS | PREC | EO RANK | COUNTY | 7.5 MINUTE QUADRANGLE | LAT | LONG | EPA WATERBODY | DIRECTIONS | HABITAT |
|-----------------------------|-------------------------------------|----------------------|-------|-------|-------|-------|-----------------|-------|------------|------|---------|--------------|--------------------------|-------------|-------------|--|--|---|
| ARADB36123*033 10763 | <i>Thamnophis sauritus sauritus</i> | Eastern Ribbon Snake | G5T5 | S3 | S | | | Y | 1970s | M | H | Hardin | Howe Valley Cecilia | <div></div> | <div></div> | 051100011006 - Dorsey Run-Nolin River | Near Franklin Crossroads, <div></div> | |
| Breeding Birds | | | | | | | | | | | | | | | | | | |
| ABPBXA0030*036 8759 | <i>Ammodramus henslowii</i> | Henslow's Sparrow | G4 | S3B | S | SOMC | | Y | 1968-06-06 | M | H | Hardin | Howe Valley | <div></div> | <div></div> | 051100011006 - Dorsey Run-Nolin River | <div></div> | Open fields & meadows with relatively thick/dense grass interspersed with weeds or shrubby vegetation. |
| ABNJB10130*016 12362 | <i>Anas discors</i> | Blue-winged Teal | G5 | S1S2B | T | | | Y | 2008-06-11 | S | C | Hardin | Howe Valley | <div></div> | <div></div> | 051100011006 - Dorsey Run-Nolin River | <div></div> | |
| ABPBG10010*025 1275 | <i>Cistothorus platensis</i> | Sedge Wren | G5 | S3B | S | | | Y | 1973-06-16 | S | H | Hardin | Howe Valley | <div></div> | <div></div> | 051100040101 - Headwaters Rough River 051100011006 - Dorsey Run-Nolin River | <div></div> | Grasslands and savanna, especially where wet or boggy, sedge marshes, locally in dry cultivated grainfields. In migration and winter also in brushy grasslands. (B83COM01NA) |
| ABPBG10010*026 6764 | <i>Cistothorus platensis</i> | Sedge Wren | G5 | S3B | S | | | Y | 1973-06-02 | S | H | Breckinridge | Constantine | <div></div> | <div></div> | 051100040203 - Calamese Creek | <div></div> | |
| Communities | | | | | | | | | | | | | | | | | | |
| CTGLD00051*045 12984 | <i>Limestone slope glade</i> | | GNR | S2S3 | S | | | Y | 2009-07 | S | B | Hardin | Howe Valley | <div></div> | <div></div> | 051100040102 - Linders Creek | <div></div> | |

| EOCODE EOID | SNAME EO Type | SCOMNAME | GRANK | SRANK | SPROT | USESA | OTHER STATUS | IDENT | LASTOBS | PREC | EO RANK | COUNTY | 7.5 MINUTE QUADRANGLE | LAT | LONG | EPA WATERBODY | DIRECTIONS | HABITAT |
|-----------------------------|-------------------|----------|-------|-------|-------|-------|-----------------|-------|------------|------|---------|--------|--------------------------|------------|------------|--|------------|---------|
| CTGRS00030*002 5670 | Sandstone prairie | | GNR | S1 | E | | | ? | 1989-09-25 | S | C | Hardin | Howe Valley | [REDACTED] | [REDACTED] | 051100040101 - Headwaters Rough River 051100040102 - Linders Creek | [REDACTED] | |
| CTGRS70000*005 12637 | Tallgrass prairie | | GNR | S1 | E | | | ? | 2008-07-29 | S | B | Hardin | Howe Valley | [REDACTED] | [REDACTED] | 051100040102 - Linders Creek | [REDACTED] | |

SENSITIVE ELEMENTS: Locational information for sensitive plants, animals, and natural communities, if released by the Kentucky State Nature Preserves Commission, may not be released in any document or correspondence. Please refer to the Data License Agreement for a full description of rights and restrictions.

Extant in Kentucky

Vascular Plants

| | | | | | | | | | | | | | | | | | | |
|----------------------------|--------------|----------------|----|----|---|--|--|---|------------|---|---|--------|--|------------|------------|--|------------|---|
| PDCAR0U1G0*001 7799 | Silene regia | Royal Catchfly | G3 | S1 | E | | | Y | 1978-08-18 | S | X | Hardin | | [REDACTED] | [REDACTED] | | [REDACTED] | Dry woods, barrens and prairies, and on KY roadsides. |
| PDCAR0U1G0*003 7863 | Silene regia | Royal Catchfly | G3 | S1 | E | | | | 1979-07-20 | S | X | Hardin | | [REDACTED] | [REDACTED] | | [REDACTED] | |
| PDCAR0U1G0*005 9169 | Silene regia | Royal Catchfly | G3 | S1 | E | | | | 1943- | S | X | Hardin | | [REDACTED] | [REDACTED] | | [REDACTED] | |
| PDCAR0U1G0*006 1483 | Silene regia | Royal Catchfly | G3 | S1 | E | | | Y | 1996-07-22 | S | X | Hardin | | [REDACTED] | [REDACTED] | | [REDACTED] | |
| PDCAR0U1G0*010 1325 | Silene regia | Royal Catchfly | G3 | S1 | E | | | Y | 2011-07-29 | S | D | Hardin | | [REDACTED] | [REDACTED] | | [REDACTED] | |

Crustaceans

Standard Occurrence Report
KSNPC monitored species within 1 mile of the KY 86 Corridor between US 60 in Breckenridge County and US 62 in Hardin County, Kentucky.

| EOCODE EOID | SNAME EO Type | SCOMNAME | GRANK | SRANK | SPROT | USESA | OTHER STATUS | IDENT | LASTOBS | PREC | EO RANK | COUNTY | 7.5 MINUTE QUADRANGLE | LAT | LONG | EPA WATERBODY | DIRECTIONS | HABITAT |
|----------------------------|---|-------------------|-------|-------|-------|-------|-----------------|-------|------------|------|------------|--------------|--------------------------|-----|------|---------------|------------|---|
| ICMAL11031*024 4260 | <i>Orconectes inermis inermis</i> | Ghost Crayfish | G5T4 | S3 | S | | | Y | 1993-02 | S | B | Breckinridge | | | | | | Subterranean waters (Hobbs 1989) in cave streams. This species is often found in larger base-level pools where mud and silt substrates predominate (Taylor and Schuster, 2004). |
| Fishes | | | | | | | | | | | | | | | | | | |
| AFCLA01020*032 4919 | <i>Amblyopsis spelaea</i> | Northern Cavefish | G3G4 | S3 | S | SOMC | | Y | 198- | S | CD | Breckinridge | | | | | | Subterranean streams with consolidated mud-rock substrates in shoals and silt-sand substrates in pools (Kuehne 1962, Poulson 1963, Clay 1975, Cooper 1980). |
| Mammals | | | | | | | | | | | | | | | | | | |
| AMACC01100*119 9948 | <i>Myotis sodalis</i> Hibernaculum | Indiana Bat | G2 | S1S2 | E | LE | | Y | 2006-02-02 | S | D | Breckinridge | | | | | | Primarily use caves for hibernacula, although they are occasionally found in old mine portals. During summer, colonies are found behind slabs of exfoliating bark of dead trees, often in bottomland or floodplain habitats, but also in upland situations. |

Standard Occurrence Report
KSNPC monitored federal status species within 5 miles of the KY 86 Corridor between US 60 in Breckenridge County and US 62 in Hardin County, Kentucky.

| EOCODE EOID | SNAME EO Type | SCOMNAME | GRANK | SRANK | SPROT | USESA | OTHER STATUS | IDENT | LASTOBS | PREC | EO RANK | COUNTY | 7.5 MINUTE QUADRANGLE | LAT | LONG | EPA WATERBODY | DIRECTIONS | HABITAT |
|-------------------------|---|-------------------------|-------|-------|-------|-------|-----------------|-------|------------|------|---------|--------------|--------------------------|-----|------|---------------|------------|---|
| AMACC01150*017 13707 | <i>Myotis septentrionalis</i> hibernaculum | Northern Long-Eared Bat | G1G2 | S3 | E | LT | | Y | 1994-02-13 | S | C | Breckinridge | | | | | | |
| AMACC01150*038 13728 | <i>Myotis septentrionalis</i> hibernaculum | Northern Long-Eared Bat | G1G2 | S3 | E | LT | | Y | 1987-03-31 | S | C | Hardin | | | | | | |
| AMACC01150*093 13818 | <i>Myotis septentrionalis</i> hibernaculum | Northern Long-Eared Bat | G1G2 | S3 | E | LT | | Y | 2010-02-12 | S | C | Breckinridge | | | | | | |
| AMACC01100*035 6504 | <i>Myotis sodalis</i> Hibernaculum | Indiana Bat | G2 | S1S2 | E | LE | | Y | 2008-02-01 | S | D | Breckinridge | | | | | | Primarily use caves for hibernacula, although they are occasionally found in old mine portals. During summer, colonies are found behind slabs of exfoliating bark of dead trees, often in bottomland or floodplain habitats, but also in upland situations. |
| AMACC01100*054 10010 | <i>Myotis sodalis</i> Hibernaculum | Indiana Bat | G2 | S1S2 | E | LE | | Y | 2008-02-01 | S | D | Hardin | | | | | | |
| AMACC01100*071 9105 | <i>Myotis sodalis</i> Hibernaculum | Indiana Bat | G2 | S1S2 | E | LE | | Y | 2010-02-13 | S | D | Breckinridge | | | | | | |
| AMACC01100*119 9948 | <i>Myotis sodalis</i> Hibernaculum | Indiana Bat | G2 | S1S2 | E | LE | | Y | 2006-02-02 | S | D | Breckinridge | | | | | | |
| AMACC01100*134 9695 | <i>Myotis sodalis</i> Hibernaculum | Indiana Bat | G2 | S1S2 | E | LE | | Y | 2010-02-12 | S | B | Breckinridge | | | | | | |
| AMACC01100*185 11755 | <i>Myotis sodalis</i> Hibernaculum | Indiana Bat | G2 | S1S2 | E | LE | | Y | 2006-12-07 | S | D | Hardin | | | | | | |

Standard Occurrence Report
KSNPC monitored aquatic species within 5 miles of the KY 86 Corridor between US 60 in Breckenridge County and US 62 in Hardin County, Kentucky.

| EOCODE EOID | SNAME EO Type | SCOMNAME | GRANK | SRANK | SPROT | USESA | OTHER STATUS | IDENT | LASTOBS | PREC | EO RANK | COUNTY | 7.5 MINUTE QUADRANGLE | LAT | LONG | EPA WATERBODY | DIRECTIONS | HABITAT |
|-------------------------|----------------------------|------------------|-------|-------|-------|-------|-----------------|-------|------------|------|---------|--------------|--------------------------|-----|------|---------------|------------|---|
| IMGASJ8010*009 6388 | Antroselates spiralis | Shaggy Cavesnail | G3 | S2 | S | | | Y | 1994-05-18 | S | D | Breckinridge | | | | | | Found on the undersides of large stones in running water of springs and streams in caves (Hubricht 1963, Burch 1989). Occurs only in base-level cave streams and their spring orifices, and was taken on the undersides of submerged planks and slabs of breakdown in deep water (Lewis 1993a). |
| IMGASJ8010*010 6389 | Antroselates spiralis | Shaggy Cavesnail | G3 | S2 | S | | | Y | 1994-04-24 | S | C | Breckinridge | | | | | | |
| IMGASJ8010*011 7566 | Antroselates spiralis | Shaggy Cavesnail | G3 | S2 | S | | | Y | 1994-02-18 | S | C | Breckinridge | | | | | | |
| IMGASJ8010*012 806 | Antroselates spiralis | Shaggy Cavesnail | G3 | S2 | S | | | Y | 1994-02-04 | S | D | Hardin | | | | | | |
| Crustaceans | | | | | | | | | | | | | | | | | | |
| ICMAL11031*006 1876 | Orconectes inermis inermis | Ghost Crayfish | G5T4 | S3 | S | | | Y | 1963-11-02 | S | H | Hardin | | | | | | Subterranean waters (Hobbs 1989) in cave streams. This species is often found in larger base-level pools where mud and silt substrates predominate (Taylor and Schuster, 2004). |
| ICMAL11031*009 3102 | Orconectes inermis inermis | Ghost Crayfish | G5T4 | S3 | S | | | Y | 1998-02-09 | S | A | Breckinridge | | | | | | |
| ICMAL11031*010 3101 | Orconectes inermis inermis | Ghost Crayfish | G5T4 | S3 | S | | | Y | 1958-06-05 | M | H | Breckinridge | | | | | | |
| ICMAL11031*011 10480 | Orconectes inermis inermis | Ghost Crayfish | G5T4 | S3 | S | | | Y | 1964-09-20 | M | H | Breckinridge | | | | | | |

Standard Occurrence Report
KSNPC monitored aquatic species within 5 miles of the KY 86 Corridor between US 60 in Breckenridge County and US 62 in Hardin County, Kentucky.

| EOCODE EOID | SNAME EO Type | SCOMNAME | GRANK | SRANK | SPROT | USESA | OTHER STATUS | IDENT | LASTOBS | PREC | EORANK | COUNTY | 7.5 MINUTE QUADRANGLE | LAT | LONG | EPA WATERBODY | DIRECTIONS | HABITAT |
|------------------------|-----------------------------------|----------------|-------|-------|-------|-------|-----------------|-------|------------|------|--------|--------------|--------------------------|-----|------|---------------|------------|---|
| ICMAL11031*012 184 | <i>Orconectes inermis inermis</i> | Ghost Crayfish | G5T4 | S3 | S | | | Y | 1994-01-16 | M | C | Breckinridge | | | | | | Subterranean waters (Hobbs 1989) in cave streams. This species is often found in larger base-level pools where mud and silt substrates predominate (Taylor and Schuster, 2004). |
| ICMAL11031*022 7465 | <i>Orconectes inermis inermis</i> | Ghost Crayfish | G5T4 | S3 | S | | | Y | 1995-03-05 | S | A | Hardin | | | | | | |
| ICMAL11031*023 1225 | <i>Orconectes inermis inermis</i> | Ghost Crayfish | G5T4 | S3 | S | | | Y | 2006-02-22 | S | C | Breckinridge | | | | | | |
| ICMAL11031*024 4260 | <i>Orconectes inermis inermis</i> | Ghost Crayfish | G5T4 | S3 | S | | | Y | 1993-02 | S | B | Breckinridge | | | | | | |
| ICMAL11031*032 9940 | <i>Orconectes inermis inermis</i> | Ghost Crayfish | G5T4 | S3 | S | | | Y | 1994-12-28 | S | C | Breckinridge | | | | | | |
| ICMAL11031*033 831 | <i>Orconectes inermis inermis</i> | Ghost Crayfish | G5T4 | S3 | S | | | Y | 1994-04-24 | S | A | Breckinridge | | | | | | |
| ICMAL11031*034 9573 | <i>Orconectes inermis inermis</i> | Ghost Crayfish | G5T4 | S3 | S | | | Y | 1994-04-24 | S | A | Breckinridge | | | | | | |
| ICMAL11031*035 5013 | <i>Orconectes inermis inermis</i> | Ghost Crayfish | G5T4 | S3 | S | | | Y | 1994-05-18 | S | B | Breckinridge | | | | | | |
| ICMAL11031*036 8729 | <i>Orconectes inermis inermis</i> | Ghost Crayfish | G5T4 | S3 | S | | | Y | 1994-05-18 | S | B | Breckinridge | | | | | | |
| ICMAL11031*037 5148 | <i>Orconectes inermis inermis</i> | Ghost Crayfish | G5T4 | S3 | S | | | Y | 1994-03-04 | S | A | Breckinridge | | | | | | |
| ICMAL11031*038 1252 | <i>Orconectes inermis inermis</i> | Ghost Crayfish | G5T4 | S3 | S | | | Y | 1994-02-04 | S | A | Hardin | | | | | | |

Fishes

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Standard Occurrence Report
KSNPC monitored aquatic species within 5 miles of the KY 86 Corridor between US 60 in Breckenridge County and US 62 in Hardin County, Kentucky.

| EOCODE EOID | SNAME EO Type | SCOMNAME | GRANK | SRANK | SPROT | USESA | OTHER STATUS | IDENT | LASTOBS | PREC | EO RANK | COUNTY | 7.5 MINUTE QUADRANGLE | LAT | LONG | EPA WATERBODY | DIRECTIONS | HABITAT |
|----------------------------|--------------------|-------------------|-------|-------|-------|-------|-----------------|-------|------------|------|---------|--------------|--------------------------|-----|------|---------------|------------|---|
| AFCLA01020*004 6756 | Amblyopsis spelaea | Northern Cavefish | G3G4 | S3 | S | SOMC | | Y | 1994-12 | S | B | Breckinridge | | | | | | Subterranean streams with consolidated mud-rock substrates in shoals and silt-sand substrates in pools (Kuehne 1962, Poulson 1963, Clay 1975, Cooper 1980). |
| AFCLA01020*012 9629 | Amblyopsis spelaea | Northern Cavefish | G3G4 | S3 | S | SOMC | | Y | 1994-04-24 | S | D | Breckinridge | | | | | | |
| AFCLA01020*019 8205 | Amblyopsis spelaea | Northern Cavefish | G3G4 | S3 | S | SOMC | | Y | 2006-02-22 | S | CD | Breckinridge | | | | | | |
| AFCLA01020*021 4405 | Amblyopsis spelaea | Northern Cavefish | G3G4 | S3 | S | SOMC | | Y | 1994-12-28 | S | D | Breckinridge | | | | | | |
| AFCLA01020*022 9640 | Amblyopsis spelaea | Northern Cavefish | G3G4 | S3 | S | SOMC | | Y | 1995-02-25 | S | D | Breckinridge | | | | | | |
| AFCLA01020*023 5804 | Amblyopsis spelaea | Northern Cavefish | G3G4 | S3 | S | SOMC | | Y | 1994-04-24 | S | C | Breckinridge | | | | | | |
| AFCLA01020*024 7244 | Amblyopsis spelaea | Northern Cavefish | G3G4 | S3 | S | SOMC | | Y | 1994-05-18 | S | D | Breckinridge | | | | | | |
| AFCLA01020*025 13 | Amblyopsis spelaea | Northern Cavefish | G3G4 | S3 | S | SOMC | | Y | 1966- | S | H | Breckinridge | | | | | | |
| AFCLA01020*026 8469 | Amblyopsis spelaea | Northern Cavefish | G3G4 | S3 | S | SOMC | | Y | 1994-02-04 | S | D | Hardin | | | | | | |
| AFCLA01020*031 5405 | Amblyopsis spelaea | Northern Cavefish | G3G4 | S3 | S | SOMC | | ? | 1993- | S | F | Hardin | | | | | | |
| AFCLA01020*032 4919 | Amblyopsis spelaea | Northern Cavefish | G3G4 | S3 | S | SOMC | | Y | 198- | S | CD | Breckinridge | | | | | | |
| AFCLA01020*034 6944 | Amblyopsis spelaea | Northern Cavefish | G3G4 | S3 | S | SOMC | | ? | 190- | S | F | Breckinridge | | | | | | |

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| EOCODE EOID | SNAME EO Type | SCOMNAME | GRANK | SRANK | SPROT | USESA | OTHER STATUS | IDENT | LASTOBS | PREC | EO RANK | COUNTY | 7.5 MINUTE QUADRANGLE | LAT | LONG | EPA WATERBODY | DIRECTIONS | HABITAT |
|-------------------------|--|--------------------|--------------|-------|-------|-------|-----------------|-------|------------|------|---------|--------------|--------------------------|-----|------|---------------|------------|---|
| AFCLA01020*037 3184 | Amblyopsis spelaea | Northern Cavefish | G3G4 | S3 | S | SOMC | | ? | 196- | S | H | Breckinridge | | | | | | Subterranean streams with consolidated mud-rock substrates in shoals and silt-sand substrates in pools (Kuehne 1962, Poulson 1963, Clay 1975, Cooper 1980). |
| AFCLA01020*038 9420 | Amblyopsis spelaea | Northern Cavefish | G3G4 | S3 | S | SOMC | | ? | 198- | S | F | Breckinridge | | | | | | |
| Amphibians | | | | | | | | | | | | | | | | | | |
| AAAAC01011*034 10825 | Cryptobranchus alleganiensis alleganiensis | Eastern Hellbender | G3G4T3 T4 | S1 | E | SOMC | | Y | 1977-10-22 | S | H | Hardin | | | | | | |

Standard Occurrence Report
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| EOCODE EOID | SNAME EO Type | SCOMNAME | GRANK | SRANK | SPROT | UESA | OTHER STATUS | IDENT | LASTOBS | PREC | EO RANK | COUNTY | 7.5 MINUTE QUADRANGLE | LAT | LONG | EPA WATERBODY | DIRECTIONS | HABITAT |
|-------------------------|-----------------------------|-------------------|-------|-------|-------|------|-----------------|-------|------------|------|---------|--------------|--------------------------|-----|------|--|--|--|
| Extant in Kentucky | | | | | | | | | | | | | | | | | | |
| Breeding Birds | | | | | | | | | | | | | | | | | | |
| ABPBX91050*015 3094 | <i>Aimophila aestivalis</i> | Bachman's Sparrow | G3 | S1B | E | SOMC | | Y | 1969-06-01 | M | X | Hardin | Constantine | | | 051100040102 - Linders Creek | Along KY 920 nr bridge over Linders Creek (Hudson BBS Route, Stop 50). | Early successional areas with scattered saplings (often pines), bushes, or understory, brushy or overgrown hillsides, overgrown fields with thickets and brambles. |
| ABPBX91050*016 9986 | <i>Aimophila aestivalis</i> | Bachman's Sparrow | G3 | S1B | E | SOMC | | Y | 1967-05-31 | M | X | Hardin | Constantine | | | 051100040106 - Culbertson Branch-Rough River 051100040102 - Linders Creek | Along KY 920, ca 1.5 rd mi NE of Pole Bridge Church (Hudson BBS Route, Stop 44). | |
| ABPBX91050*019 6133 | <i>Aimophila aestivalis</i> | Bachman's Sparrow | G3 | S1B | E | SOMC | | Y | 1967-08-11 | M | X | Hardin | Flaherty | | | 051401040103 - Upper Otter Creek | Along KY 920, 0.3 mi S of jct w/ KY 2210 (Salem School Road) (Eastview BBS Route, Stop 34). | |
| ABPBXA0030*005 9968 | <i>Ammodramus henslowii</i> | Henslow's Sparrow | G4 | S3B | S | SOMC | | Y | 1990-05-15 | M | E | Breckinridge | Constantine | | | 051100040203 - Calamese Creek 051100040106 - Culbertson Branch-Rough River | NE of Constantine, just N of jct KY 401 and Constantine-Duncan Valley Road. | Open fields & meadows with relatively thick/dense grass interspersed with weeds or shrubby vegetation. |
| ABPBXA0030*036 8759 | <i>Ammodramus henslowii</i> | Henslow's Sparrow | G4 | S3B | S | SOMC | | Y | 1968-06-06 | M | H | Hardin | Howe Valley | | | 051100011006 - Dorsey Run-Nolin River | Stephensburg, ca 3.5 mi N of town along KY 1764 (Old KY 1375) at lake, just N of jct w/ Pick Handle Road (Eastview BBS Route, Stop 7). | |
| ABPBXA0030*037 6740 | <i>Ammodramus henslowii</i> | Henslow's Sparrow | G4 | S3B | S | SOMC | | Y | 1963-07-04 | M | H | Meade | Big Spring Flaherty | | | 051401041302 - Rosetta-Sinking Creek | Along KY 333, just S of Maples Corner. | |
| ABPBXA0030*054 5179 | <i>Ammodramus henslowii</i> | Henslow's Sparrow | G4 | S3B | S | SOMC | | Y | 2004-05-21 | M | E | Breckinridge | Custer | | | 051100040203 - Calamese Creek 051100040302 - Peter Cave Creek-Rough River 051100040106 - Culbertson Branch-Rough River | Hudson, along KY 401 ca 1.0 mi NE of town (Hudson BBS Route, Stop 13) (054A) and along KY 84, 1.0 rd mi SE of jct KY 401 (054B). | |
| ABPBXA0030*070 11099 | <i>Ammodramus henslowii</i> | Henslow's Sparrow | G4 | S3B | S | SOMC | | Y | 2004-05-27 | M | C | Hardin | Sonora | | | 051100011006 - Dorsey Run-Nolin River | North side of KY 84, ca 2.25 to 3.0 rd mi WNW of RR crossing in Sonora. | |

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|-----------------------------|-----------------------|------------------|-------|-------|-------|-------|-----------------|-------|------------|------|---------|--------------|--|-----|------|---|--|--|
| ABNJB10130*016 12362 | Anas discors | Blue-winged Teal | G5 | S1S2B | T | | | Y | 2008-06-11 | S | C | Hardin | Howe Valley | | | 051100011006 - Dorsey Run-Nolin River | Hicks Lake, on W side of KY 1375, ca. 0.5 air mi N of Franklin Crossroads. | |
| ABPBX96010*006 4902 | Chondestes grammacus | Lark Sparrow | G5 | S2S3B | T | | | Y | 1988-06-06 | M | E | Breckinridge | Big Spring | | | 051401041302 - Rosetta-Sinking Creek | Corners, along KY 333 ca 1.0 rd mi N of jct KY 690. | Open situations with scattered bushes and trees, prairie, forest edge, cultivated areas, orchards, fields with bushy borders, and savanna (B83COM01NA). |
| ABPBX96010*030 9918 | Chondestes grammacus | Lark Sparrow | G5 | S2S3B | T | | | | 1939-06-12 | G | H | Meade | Guston Big Spring Flaherty Rock Haven | | | 051401040106 - Doe Run 051401040104 - Middle Otter Creek 051401041302 - Rosetta-Sinking Creek 051401040103 - Upper Otter Creek 051401040105 - Lower Otter Creek | On Lafe Newton Farm nr Fort Knox, Meade Co. | |
| ABPBX96010*039 9826 | Chondestes grammacus | Lark Sparrow | G5 | S2S3B | T | | | Y | 1968-06-01 | M | H | Hardin | Constantine Big Clifty | | | 051100040102 - Linders Creek | Along KY 920, ca 0.5 rd mi N of jct KY 84 (Hudson BBS Route, Stop 50). | |
| ABPBG10010*017 10290 | Cistothorus platensis | Sedge Wren | G5 | S3B | S | | | Y | 1963-07-04 | M | H | Meade | Big Spring | | | 051401041302 - Rosetta-Sinking Creek | Along KY 333 just S of Maples Corner. | Grasslands and savanna, especially where wet or boggy, sedge marshes, locally in dry cultivated grainfields. In migration and winter also in brushy grasslands. (B83COM01NA) |
| ABPBG10010*025 1275 | Cistothorus platensis | Sedge Wren | G5 | S3B | S | | | Y | 1973-06-16 | S | H | Hardin | Howe Valley | | | 051100040101 - Headwaters Rough River 051100011006 - Dorsey Run-Nolin River | Along KY 1375, ca 1.0 rd mi N jct KY 86 at Franklin Cross Roads (Eastview BBS Route, Stop 12)(025A) and along KY 220, ca 0.6 rd mi E jct Salt River Road at Four Corners (Eastview BBS Route, Stop 26) (025B). | |

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|-----------------------------|--|---------------------|-------|--------------|-------|-------|-----------------|-------|------------|------|---------|--------------|--------------------------|-----|------|--|---|--|
| ABPBG10010*026 6764 | <i>Cistothorus platensis</i> | Sedge Wren | G5 | S3B | S | | | Y | 1973-06-02 | S | H | Breckinridge | Constantine | | | 051100040203 - Calamese Creek | Dyer, along KY 86, ca 0.4 rd mi E of town (Hudson BBS rt, stop 24). | Grasslands and savanna, especially where wet or boggy, sedge marshes, locally in dry cultivated grainfields. In migration and winter also in brushy grasslands. (B83COM01NA) |
| ABPBG10010*030 10618 | <i>Cistothorus platensis</i> | Sedge Wren | G5 | S3B | S | | | Y | 1973-06-02 | S | H | Breckinridge | Custer | | | 051100040203 - Calamese Creek | Along KY 401, ca 1.2 rd mi E of Hudson (Hudson BBS rt, stop 14). | |
| ABNJB20010*020 12854 | <i>Lophodytes cucullatus</i> | Hooded Merganser | G5 | S1S2B, S3S4N | T | | | Y | 2009-04 | S | C | Hardin | Elizabethtown | | | 051100011003 - Upper Valley Creek | Pond at homestead on W side of Thoroughbred Lane, se of Elizabethtown. | |
| ABPBG07010*021 8068 | <i>Thryomanes bewickii</i> | Bewick's Wren | G5 | S3B | S | SOMC | | Y | 1988-06-06 | M | E | Breckinridge | Garfield | | | 051401041303 - Irvington-Sinking Creek | Circa 3.5 air mi NNE of Garfield. | Brushy areas, thickets and scrub in open country, open and riparian woodland. Found in rural towns and farmsteads. |
| ABPBG07010*038 10182 | <i>Thryomanes bewickii</i> | Bewick's Wren | G5 | S3B | S | SOMC | | Y | 1986 | M | E | Hardin | Cecilia Elizabethtown | | | 051100011003 - Upper Valley Creek | In a field nr Freeman Lake w/in NE block of Cecilia quadrangle. | |
| Mammals | | | | | | | | | | | | | | | | | | |
| AMACC01030*034 12415 | <i>Myotis austroriparius</i> Maternity area mist-net record | Southeastern Myotis | G4 | S1S2 | E | SOMC | | | 1990-06-14 | S | E | Breckinridge | Hardinsburg | | | 051401041305 - Hardins Creek | Hardins Creek, along unnamed tributary between US 60 and KY 259, ca. 1.8 air mi NW of Hardinsburg (034A) and along unnamed tributary on W side of creek, ca 3.8 air mi NNW of Hardinsburg (034B). | |

| EOCODE EOID | SNAME EO Type | SCOMNAME | GRANK | SRANK | SPROT | USESA | OTHER STATUS | IDENT | LASTOBS | PREC | EO RANK | COUNTY | 7.5 MINUTE QUADRANGLE | LAT | LONG | EPA WATERBODY | DIRECTIONS | HABITAT |
|----------------|--------------------------------|-------------|-------|-------|-------|-------|-----------------|-------|------------|------|------------|--------------|--------------------------|-----|------|--|---|--|
| AMACC01040*064 | <i>Myotis grisescens</i> | Gray Myotis | G4 | S2 | T | LE | | Y | 1990-07-14 | S | E | Breckinridge | Hardinsburg | | | 051401041305 - Hardins Creek | Dorridge Creek at Friendship Church-Horsely Chapel Rd. | Primarily use caves throughout the year, although they move from one cave to another seasonally. Males and young of the year use different caves in summer than females. Smaller colonies also occasionally roost under bridge structures. |
| 566 | Summer mist-net record | | | | | | | | | | | | | | | | | |
| AMACC01040*075 | <i>Myotis grisescens</i> | Gray Myotis | G4 | S2 | T | LE | | Y | 1992-06-19 | M | E | Breckinridge | Garfield | | | 051401041303 - Irvington-Sinking Creek | Sinking Creek, at a highway project crossing [plotted at US 60 crossing]. | |
| 10172 | Summer mist-net record | | | | | | | | | | | | | | | | | |
| AMACC01040*108 | <i>Myotis grisescens</i> | Gray Myotis | G4 | S2 | T | LE | | Y | 1991-07 | S | E | Breckinridge | Hardinsburg | | | 051401041305 - Hardins Creek | Hardins Creek, ca 0.35 air me downstream (NE) of KY 259 bridge. | |
| 11404 | Maternity area mist-net record | | | | | | | | | | | | | | | | | |
| AMACC01040*126 | <i>Myotis grisescens</i> | Gray Myotis | G4 | S2 | T | LE | | Y | 2002-08-12 | S | E | Hardin | Tonieville | | | 051100011005 - Cox Run-Nolin River | Nolin River at US 31W bridge. | |
| 12031 | Summer mist-net record | | | | | | | | | | | | | | | | | |

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Extant in Kentucky

Mammals

| | | | | | | | | | | | | | | | | | | |
|----------------|---------------------------------|----------------------------|------|------|---|------|--|---|------------|---|---|--------------|--|--|--|--|--|---|
| AMACC08020*139 | <i>Corynorhinus rafinesquii</i> | Rafinesque's Big-eared Bat | G3G4 | S3 | S | SOMC | | Y | 2011-02-20 | S | B | Breckinridge | | | | | | This bat uses a variety of sites for roosting including caves, protected sites along clifflines, large, hollow trees, old mine portals, abandoned tunnels, cisterns, old or seldom used buildings, etc. |
| 3725 | Hibernaculum | | | | | | | | | | | | | | | | | |
| AMACC01030*011 | <i>Myotis austroriparius</i> | Southeastern Myotis | G4 | S1S2 | E | SOMC | | Y | 1995-03-05 | S | C | Hardin | | | | | | Primarily uses caves for hibernacula and uses caves, bridges, and hollow trees as summer maternity and roosting sites. |
| 8971 | Hibernaculum | | | | | | | | | | | | | | | | | |

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|-------------------------|--|---------------------|-------|-------|-------|-------|-----------------|-------|------------|------|---------|-----------------|--------------------------|-----|------|---------------|------------|--|
| AMACC01030*021 2017 | <i>Myotis austroriparius</i> Hibernaculum | Southeastern Myotis | G4 | S1S2 | E | SOMC | | Y | 1998-02-09 | S | C | Breckinridge | | | | | | Primarily uses caves for hibernacula and uses caves, bridges, and hollow trees as summer maternity and roosting sites. |
| AMACC01040*011 8812 | <i>Myotis grisescens</i> Hibernaculum | Gray Myotis | G4 | S2 | T | LE | | Y | 2006-02-22 | S | D | Breckinridge | | | | | | Primarily use caves throughout the year, although they move from one cave to another seasonally. Males and young of the year use different caves in summer than females. Smaller colonies also occasionally roost under bridge structures. |
| AMACC01040*026 2842 | <i>Myotis grisescens</i> Former maternity site? | Gray Myotis | G4 | S2 | T | LE | | Y | 1979-08-11 | S | H | Hardin | | | | | | |
| AMACC01040*037 5880 | <i>Myotis grisescens</i> Transient roost site; former maternity site? | Gray Myotis | G4 | S2 | T | LE | | Y | 2007-08-14 | S | C | Meade Hardin | | | | | | |
| AMACC01040*059 5059 | <i>Myotis grisescens</i> Transient roost site | Gray Myotis | G4 | S2 | T | LE | | Y | 2006-02-22 | S | E | Breckinridge | | | | | | |
| AMACC01040*100 10946 | <i>Myotis grisescens</i> Hibernaculum | Gray Myotis | G4 | S2 | T | LE | | Y | 2002-01-31 | S | D | Breckinridge | | | | | | |
| AMACC01040*112 11756 | <i>Myotis grisescens</i> Hibernaculum; summer roost site | Gray Myotis | G4 | S2 | T | LE | | Y | 2009-06-12 | S | CD | Hardin | | | | | | |

Standard Occurrence Report
KSNPC monitored avian and mammalian species within 5 miles of the KY 86 Corridor between US 60 in Breckenridge County and US 62 in Hardin County, Kentucky.

| EOCODE EOID | SNAME EO Type | SCOMNAME | GRANK | SRANK | SPROT | USESA | OTHER STATUS | IDENT | LASTOBS | PREC | EO RANK | COUNTY | 7.5 MINUTE QUADRANGLE | LAT | LONG | EPA WATERBODY | DIRECTIONS | HABITAT |
|-----------------------------|--|-----------------------------|-------|-------|-------|-------|-----------------|-------|------------|------|---------|--------------|--------------------------|-----|------|---------------|------------|--|
| AMACC01130*013 7910 | <i>Myotis leibii</i> Transient mist-net record; hibernaculum? | Eastern Small-footed Myotis | G4 | S2 | T | SOMC | | | 1964-08-20 | S | H | Breckinridge | | | | | | These bats use a wide variety of habitats for roosting. They occur in caves, mines, protected sites along clifflines, abandoned buildings, and are occasionally found roosting under rocks on the ground or on the floors of caves. Summer habitat is currently unknown, but may be similar sites. |
| AMACC01130*025 8408 | <i>Myotis leibii</i> Hibernaculum | Eastern Small-footed Myotis | G4 | S2 | T | SOMC | | Y | 2010-02-13 | S | CD | Breckinridge | | | | | | |
| AMACC01150*017 13707 | <i>Myotis septentrionalis</i> hibernaculum | Northern Long-Eared Bat | G1G2 | S3 | E | LT | | Y | 1994-02-13 | S | C | Breckinridge | | | | | | |
| AMACC01150*038 13728 | <i>Myotis septentrionalis</i> hibernaculum | Northern Long-Eared Bat | G1G2 | S3 | E | LT | | Y | 1987-03-31 | S | C | Hardin | | | | | | |
| AMACC01150*093 13818 | <i>Myotis septentrionalis</i> hibernaculum | Northern Long-Eared Bat | G1G2 | S3 | E | LT | | Y | 2010-02-12 | S | C | Breckinridge | | | | | | |
| AMACC01150*094 13820 | <i>Myotis septentrionalis</i> hibernaculum | Northern Long-Eared Bat | G1G2 | S3 | E | LT | | Y | 2010-02-13 | S | C | Breckinridge | | | | | | |
| AMACC01100*035 6504 | <i>Myotis sodalis</i> Hibernaculum | Indiana Bat | G2 | S1S2 | E | LE | | Y | 2008-02-01 | S | D | Breckinridge | | | | | | Primarily use caves for hibernacula, although they are occasionally found in old mine portals. During summer, colonies are found behind slabs of exfoliating bark of dead trees, often in bottomland or floodplain habitats, but also in upland situations. |
| AMACC01100*054 10010 | <i>Myotis sodalis</i> Hibernaculum | Indiana Bat | G2 | S1S2 | E | LE | | Y | 2008-02-01 | S | D | Hardin | | | | | | |

THESE DATA ARE VALID ONLY ON THE DATE ON WHICH THE REPORT WAS GENERATED.
THESE DATA MAY ONLY BE USED FOR THE PROJECT NAMED ABOVE.

Standard Occurrence Report
KSNPC monitored avian and mammalian species within 5 miles of the KY 86 Corridor between US 60 in Breckenridge County and US 62 in Hardin County, Kentucky.

| EOCODE EOID | SNAME EO Type | SCOMNAME | GRANK | SRANK | SPROT | UESA | OTHER STATUS | IDENT | LASTOBS | PREC | EO RANK | COUNTY | 7.5 MINUTE QUADRANGLE | LAT | LONG | EPA WATERBODY | DIRECTIONS | HABITAT |
|-------------------------|---------------------------------------|-------------|-------|-------|-------|------|-----------------|-------|------------|------|---------|--------------|--------------------------|-----|------|---------------|------------|---|
| AMACC01100*071 9105 | <i>Myotis sodalis</i> Hibernaculum | Indiana Bat | G2 | S1S2 | E | LE | | Y | 2010-02-13 | S | D | Breckinridge | | | | | | Primarily use caves for hibernacula, although they are occasionally found in old mine portals. During summer, colonies are found behind slabs of exfoliating bark of dead trees, often in bottomland or floodplain habitats, but also in upland situations. |
| AMACC01100*108 1068 | <i>Myotis sodalis</i> Hibernaculum | Indiana Bat | G2 | S1S2 | E | LE | | Y | 2008-01-25 | S | D | Breckinridge | | | | | | |
| AMACC01100*118 4133 | <i>Myotis sodalis</i> Hibernaculum | Indiana Bat | G2 | S1S2 | E | LE | | Y | 2008-01-25 | S | CD | Breckinridge | | | | | | |
| AMACC01100*119 9948 | <i>Myotis sodalis</i> Hibernaculum | Indiana Bat | G2 | S1S2 | E | LE | | Y | 2006-02-02 | S | D | Breckinridge | | | | | | |
| AMACC01100*134 9695 | <i>Myotis sodalis</i> Hibernaculum | Indiana Bat | G2 | S1S2 | E | LE | | Y | 2010-02-12 | S | B | Breckinridge | | | | | | |
| AMACC01100*185 11755 | <i>Myotis sodalis</i> Hibernaculum | Indiana Bat | G2 | S1S2 | E | LE | | Y | 2006-12-07 | S | D | Hardin | | | | | | |

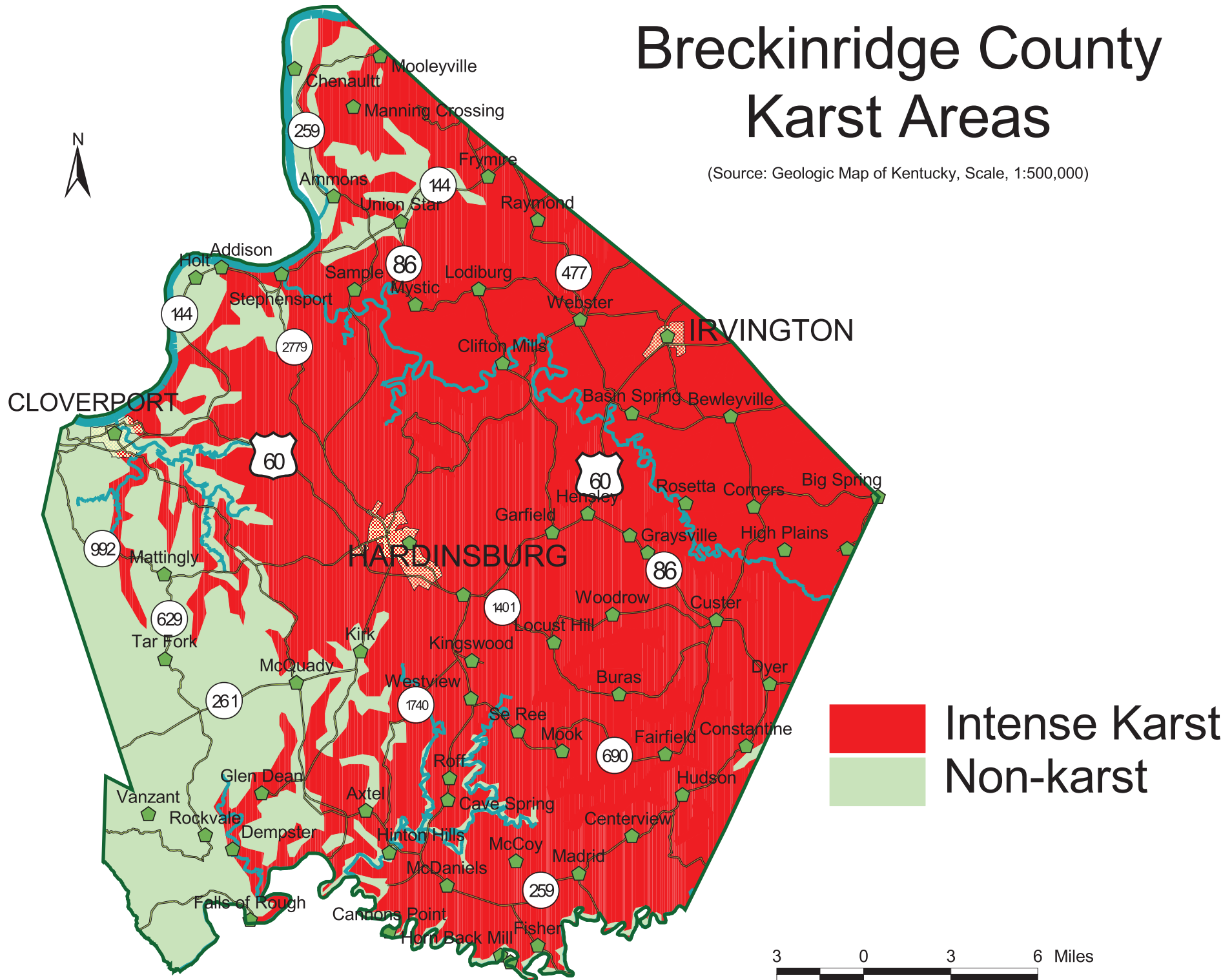
ATTACHMENT 2

KARST

- Breckinridge County Karst Areas Map
- Hardin County Karst Areas Map
- KSS Cave Data Request Response (redacted)

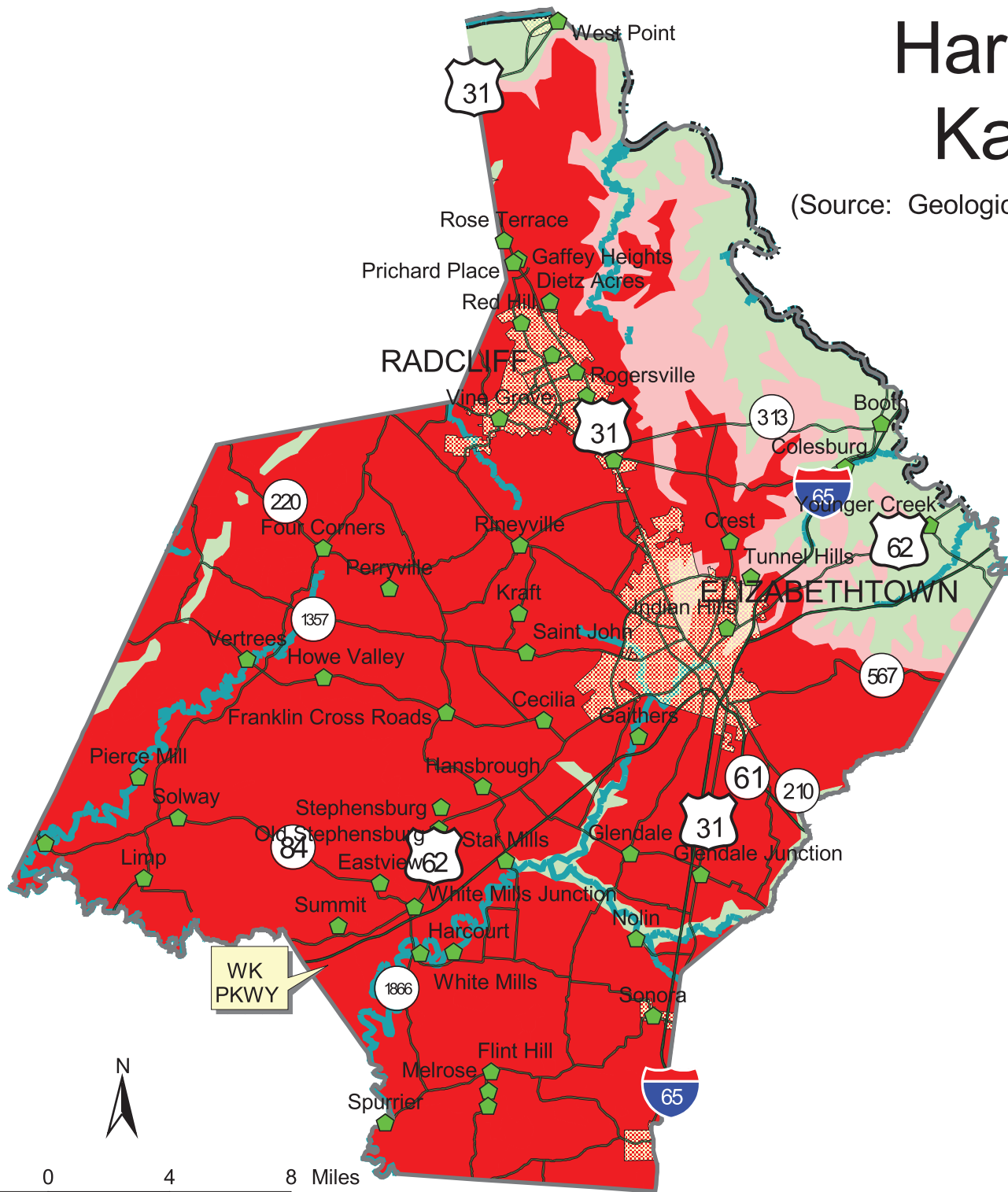
Breckinridge County Karst Areas

(Source: Geologic Map of Kentucky, Scale, 1:500,000)



Hardin County Karst Areas

(Source: Geologic Map of Kentucky, Scale, 1:500,000)



Intense Karst
Karst Prone
Non-karst



| Accession | AltID | CaveName | CountyCode | CountyName | Creationdate |
|-----------|-------|----------------------------------|------------|--------------|--------------|
| 47-0038 | | Franklin Crossroads Karst Window | 47 | HARDIN | 02/06/2016 |
| 47-0063 | | Spring Cave? | 47 | HARDIN | 02/06/2016 |
| 47-0098 | | Stewart Cave | 47 | HARDIN | 02/06/2016 |
| 47-0089 | | Kenfoot Cave | 47 | HARDIN | 02/06/2016 |
| 14-0016 | | Carman's Cave | 14 | BRECKINRIDGE | 01/26/2016 |
| 14-0016 | | CARMANS CAVE | 14 | BRECKINRIDGE | 01/26/2016 |
| 14-0009 | | Big Bat Mushroom | 14 | BRECKINRIDGE | 01/26/2016 |
| 14-0009 | | Big Bat Natural | 14 | BRECKINRIDGE | 01/26/2016 |
| 14-0081 | | STINNETTSVILLE PIT | 14 | BRECKINRIDGE | 01/26/2016 |
| 14-0081 | | Stinnettsville Pit | 14 | BRECKINRIDGE | 01/26/2016 |

ATTACHMENT 3

HAZARDOUS MATERIALS CONCERNS

- Table 2: KY 86 Hazardous Materials Concern Sites Identified Through Database Review and Site Visit

| site_num | AI_ID | COUNTY | AI_NAME | ADDRESS_1 | MAILING_AD | MAIL/ MAILING | OWNER_NAME | OWNER_ADDR | OWNER_A | OWNER_CITY | OWNER_ST | SITE_SEQ_1 | DATABASE | AI_TYPE | |
|---------------|--------------|--------------|-------------------------------------|-------------------------|----------------------|---------------|---|---------------------------|----------------------|------------|----------|---------------------|----------|---|---|
| 1 | 45299 | Hardin | Howe Valley Elementary School | 8450 Hardinsburg Rd | Cecilia | KY | 42724 Hardin Co Board of Education | 65 W A Jenkins Rd | Elizabethtown | KY | 8494047 | UST | | EDU-Educational Services (61) | |
| | 45299 | Hardin | Howe Valley Elementary School | 8450 Hardinsburg Rd | Cecilia | KY | 42724 Hardin Co Board of Education | 65 W A Jenkins Rd | Elizabethtown | KY | 8494047 | UST | | EDU-Educational Services (61) | |
| 2 | 61323 | Hardin | The Country Store | 14193 Hardenburg Rd | Cecilia | KY | 42724 Melvin Frye | 14193 HARDINSBURG RD | Cecilia | KY | 1037047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| | 61323 | Hardin | The Country Store | 14193 Hardenburg Rd | Cecilia | KY | 42724 Melvin Frye | 14193 HARDINSBURG RD | Cecilia | KY | 1037047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| 3 | 61323 | Hardin | The Country Store | 14193 Hardenburg Rd | Cecilia | KY | 42724 Melvin Frye | 14193 HARDINSBURG RD | Cecilia | KY | 1037047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| | 110003252685 | Hardin | Country Store #2, The | 14193 HARDENBURG RD | CECILIA | KY | 42724 | | | | | RCRAINFO | | Gasoline Stations | |
| | 61332 | Hardin | Yates Grocery | 5593 Hardinsburg Rd | Cecilia | KY | 42724 Yates Grocery | 5593 HARDINSBURG RD | Cecilia | KY | 1407047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| | 61332 | Hardin | Yates Grocery | 5593 Hardinsburg Rd | Cecilia | KY | 42724 Yates Grocery | 5593 HARDINSBURG RD | Cecilia | KY | 1407047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| | 61332 | Hardin | Yates Grocery | 5593 Hardinsburg Rd | Cecilia | KY | 42724 Irene Brown | 8526 HARDINSBURG RD | Cecilia | KY | 1035047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| 4 | 61332 | Hardin | Yates Grocery | 5593 Hardinsburg Rd | Cecilia | KY | 42724 Irene Brown | 8526 HARDINSBURG RD | Cecilia | KY | 1035047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| | 61370 | Hardin | Masters Farm Supply | 10659 Hardinsburg Rd | Cecilia | KY | 42724 Carl Masters | 10659 HARDINSBURG RD | Cecilia | KY | 1538047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| | 61384 | Hardin | Parcel 15 Item 4-51.01 | Us 62 | Elizabethtown | KY | 42701 KYTC Environmental Analysis | 200 Mero St 5th Fl | Frankfort | KY | 3175047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| | 61384 | Hardin | Parcel 15 Item 4-51.01 | Us 62 | Elizabethtown | KY | 42701 KYTC Environmental Analysis | 200 Mero St 5th Fl | Frankfort | KY | 3175047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| | 61384 | Hardin | Parcel 15 Item 4-51.01 | Us 62 | Elizabethtown | KY | 42701 KYTC Environmental Analysis | 200 Mero St 5th Fl | Frankfort | KY | 3175047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| 6 | 61384 | Hardin | Parcel 15 Item 4-51.01 | Us 62 | Elizabethtown | KY | 42701 KYTC Environmental Analysis | 200 Mero St 5th Fl | Frankfort | KY | 3175047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| | 61403 | Hardin | Country Crossroads | 4430 Hardinsburg Rd | Cecilia | KY | 42724 William Cox | 12640 St John Rd | Cecilia | KY | 55047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| | 61403 | Hardin | Country Crossroads | 4430 Hardinsburg Rd | Cecilia | KY | 42724 William Cox | 12640 St John Rd | Cecilia | KY | 55047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| | 61403 | Hardin | Country Crossroads | 4430 Hardinsburg Rd | Cecilia | KY | 42724 William Cox | 12640 St John Rd | Cecilia | KY | 55047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| | 61403 | Hardin | Country Crossroads | 4430 Hardinsburg Rd | Cecilia | KY | 42724 William Cox | 12640 St John Rd | Cecilia | KY | 55047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| | 61403 | Hardin | Country Crossroads | 4430 Hardinsburg Rd | Cecilia | KY | 42724 William Cox | 12640 St John Rd | Cecilia | KY | 55047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| | 61403 | Hardin | Country Crossroads | 4430 Hardinsburg Rd | Cecilia | KY | 42724 William Cox | 12640 St John Rd | Cecilia | KY | 55047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| | 61403 | Hardin | Country Crossroads | 4430 Hardinsburg Rd | Cecilia | KY | 42724 William Cox | 12640 St John Rd | Cecilia | KY | 55047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| | 61403 | Hardin | Country Crossroads | 4430 Hardinsburg Rd | Cecilia | KY | 42724 William Cox | 12640 St John Rd | Cecilia | KY | 55047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| | 110003247004 | Hardin | Crossroads Grocery | 4430 HARDENBURG RD | CECILIA | KY | 42724 | 12460 Saint John Road | Cecilia | KY | 42724 | RCRAINFO | | Gasoline Stations | |
| | 7 | 61420 | Hardin | Fields Ashland Service | 11377 Hardinsburg Rd | Cecilia | KY | 42724 Rodney Fields | 13052 Hardinsburg Rd | Cecilia | KY | 1034047 | UST | | SERV-Repair & Maintenance (811) |
| | | 61420 | Hardin | Fields Ashland Service | 11377 Hardinsburg Rd | Cecilia | KY | 42724 Rodney Fields | 13052 Hardinsburg Rd | Cecilia | KY | 1034047 | UST | | SERV-Repair & Maintenance (811) |
| 61420 | | Hardin | Fields Ashland Service | 11377 Hardinsburg Rd | Cecilia | KY | 42724 Rodney Fields | 13052 Hardinsburg Rd | Cecilia | KY | 1034047 | UST | | SERV-Repair & Maintenance (811) | |
| 110003252612 | | Hardin | Field'S Ashland | 11377 HARDINSBURG RD | CECILIA | KY | 42724 | 13052 Hardinsburg Rd | Cecilia | KY | 42724 | RCRAINFO | | Gasoline Stations | |
| 8 | 61421 | Hardin | Fields Country Store | 10765 Hardinsburg Rd | Cecilia | KY | 42724 Fields Country Store/M Fields | 10765 HARDINSBURG RD | Cecilia | KY | 5722047 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| | 61421 | Hardin | Fields Country Store | 10765 Hardinsburg Rd | Cecilia | KY | 42724 Fields Country Store/M Fields | 10765 HARDINSBURG RD | Cecilia | KY | 5722047 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| | 61421 | Hardin | Fields Country Store | 10765 Hardinsburg Rd | Cecilia | KY | 42724 Fields Country Store/M Fields | 10765 HARDINSBURG RD | Cecilia | KY | 5722047 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| | 61421 | Hardin | Fields Country Store | 10765 Hardinsburg Rd | Cecilia | KY | 42724 Fields Country Store/M Fields | 10765 HARDINSBURG RD | Cecilia | KY | 5722047 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| | 61421 | Hardin | Fields Country Store | 10765 Hardinsburg Rd | Cecilia | KY | 42724 Fields Country Store/M Fields | 10765 HARDINSBURG RD | Cecilia | KY | 5722047 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| | 61421 | Hardin | Fields Country Store | 10765 Hardinsburg Rd | Cecilia | KY | 42724 Fields Country Store/M Fields | 10765 HARDINSBURG RD | Cecilia | KY | 5722047 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| 9 | 61432 | Hardin | Allen Property | 14223 Hardinsburg Rd | Cecilia | KY | 42724 Sandra Allen | 640 N GRANDVIEW CHURCH RD | Cecilia | KY | 1036047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| | 61432 | Hardin | Allen Property | 14223 Hardinsburg Rd | Cecilia | KY | 42724 Sandra Allen | 640 N GRANDVIEW CHURCH RD | Cecilia | KY | 1036047 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| | 110003252676 | Hardin | Allen Property | 14223 HARDINSBURG RD | CECILIA | KY | 42724 | 640 N Grandview Church Rd | Cecilia | KY | 42724 | RCRAINFO | | Gasoline Stations | |
| 10 | 67344 | Hardin | Sun Gold Egg Inc (Newcomb) | Rt 2 | Cecilia | KY | 42724 Newcomb Oil Co LLC | 951 Withrow Ct | Bardstown | KY | 6281047 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| 11 | 67534 | Hardin | Cecilia Farm Services Inc | Robinson St | Cecilia | KY | 42724 Cecilia Farm Services Inc | ROBINSON ST | Po Box 7 | Cecilia | KY | 167047 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) |
| 12 | 70194 | Hardin | Vertrees Garage | Hwy 86 | Cecilia | KY | 42724 Vivian Lucas | 11530 Hardinsburg Rd | Cecilia | KY | 20155033 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| | 70194 | Hardin | Vertrees Garage | Hwy 86 | Cecilia | KY | 42724 Ze Lucas | 11530 Hardinsburg Rd | Cecilia | KY | 20155033 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| 13 | 70194 | Hardin | Vertrees Garage | Hwy 86 | Cecilia | KY | 42724 Ze Lucas | 11530 Hardinsburg Rd | Cecilia | KY | 20155033 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| | 56753 | Breckinridge | Betners Grocery | KY 86 | Custer | KY | 40115 Catherine Betner | 405 Scenic Dr | Vine Grove | KY | 1017014 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| | 56753 | Breckinridge | Betners Grocery | KY 86 | Custer | KY | 40115 Catherine Betner | 405 Scenic Dr | Vine Grove | KY | 1017014 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| | 56753 | Breckinridge | Betners Grocery | KY 86 | Custer | KY | 40115 Catherine Betner | 405 Scenic Dr | Vine Grove | KY | 1017014 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| | 56753 | Breckinridge | Betners Grocery | KY 86 | Custer | KY | 40115 Catherine Betner | 405 Scenic Dr | Vine Grove | KY | 1017014 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| 14 | 56753 | Breckinridge | Betners Grocery | KY 86 | Custer | KY | 40115 Catherine Betner | 405 Scenic Dr | Vine Grove | KY | 1017014 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| | 56757 | Breckinridge | Blairs Hardware | KY 86 & KY 401 | Custer | KY | 40115 Sherward Blair Estate C/O Phyllis E Blair | HC 84 BOX 140 | Custer | KY | 1020014 | UST | | RETAIL-Other Retail Trade (44-45) | |
| 15 | 56757 | Breckinridge | Blairs Hardware | KY 86 & KY 401 | Custer | KY | 40115 Sherward Blair Estate C/O Phyllis E Blair | HC 84 BOX 140 | Custer | KY | 1020014 | UST | | RETAIL-Other Retail Trade (44-45) | |
| | 56761 | Breckinridge | Clark Property | Hwy 86 | Custer | KY | 40115 Jesse Clark | PO Box 91 | Custer | KY | 1019014 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| 16 | 56702 | Breckinridge | Custer General Store | 6058 E Hwy 86 | Custer | KY | 40115 Randall Allgood | PO Box 99 | Custer | KY | 8854014 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| | 56702 | Breckinridge | Custer General Store | 6058 E Hwy 86 | Custer | KY | 40115 Randall Allgood | PO Box 99 | Custer | KY | 8854014 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| | 56702 | Breckinridge | Custer General Store | 6058 E Hwy 86 | Custer | KY | 40115 David Thomas | KY 86 | PO Box 99 | Custer | KY | 8854014 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) |
| | 56702 | Breckinridge | Custer General Store | 6058 E Hwy 86 | Custer | KY | 40115 David Thomas | KY 86 | PO Box 99 | Custer | KY | 8854014 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) |
| | 110041151614 | Breckinridge | Custer General Store | 6058 E HWY 86 | CUSTER | KY | 40115 | | | | | LUST-ARRA, RCRAINFO | | Gasoline Station with Convenience Stores | |
| 17 | 69878 | Breckinridge | Former Carman & Russell Service | Hwy 60 | Station | Garfield | KY | 40140 Billy Norton | GENERAL DELIVERY | Webster | KY | 1014014 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) |
| | 69878 | Breckinridge | Former Carman & Russell Service | Hwy 60 | Station | Garfield | KY | 40140 Billy Norton | GENERAL DELIVERY | Webster | KY | 1014014 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) |
| | 69878 | Breckinridge | Former Carman & Russell Service | Hwy 60 | Station | Garfield | KY | 40140 Billy Norton | GENERAL DELIVERY | Webster | KY | 1014014 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) |
| 18 | 49066 | Breckinridge | Former Custer Station | 6039 KY 86 E | Custer | KY | 40115 David Thomas | KY 86 | PO Box 99 | Custer | KY | 6513014 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) |
| | 49066 | Breckinridge | Former Custer Station | 6039 KY 86 E | Custer | KY | 40115 David Thomas | KY 86 | PO Box 99 | Custer | KY | 6513014 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) |
| | 49066 | Breckinridge | Former Custer Station | 6039 KY 86 E | Custer | KY | 40115 David Thomas | KY 86 | PO Box 99 | Custer | KY | 6513014 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) |
| 19 | 56709 | Breckinridge | Haynes & Son Grocery | Box 102 Hwy 86 | Custer | KY | 40115 J Haynes | 765 Blackburn Rd | Rineyville | KY | 1018014 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| | 56709 | Breckinridge | Haynes & Son Grocery | Box 102 Hwy 86 | Custer | KY | 40115 J Haynes | 765 Blackburn Rd | Rineyville | KY | 1018014 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| | 56709 | Breckinridge | Haynes & Son Grocery | Box 102 Hwy 86 | Custer | KY | 40115 J Haynes | 765 Blackburn Rd | Rineyville | KY | 1018014 | UST | | UNLISTED-Unlisted Agency Interest Type (nec) | |
| 20 | 64821 | Breckinridge | Lyons & Lyons Service Station | KY 86 | Dyer | KY | 40115 Roger Lyons | GENERAL DELIVERY | Custer | KY | 2251014 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| | 64821 | Breckinridge | Lyons & Lyons Service Station | KY 86 | Dyer | KY | 40115 Roger Lyons | GENERAL DELIVERY | Custer | KY | 2251014 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| 21 | 61326 | Hardin | Jay Butbhavani (BP-Three T Food Mai | 5629 Leitchfield Rd | Cecilia | KY | 42724 Jay Butbhavani | 187 Rodeo Dr | Cecilia | KY | 5212047 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| | 61326 | Hardin | Jay Butbhavani (BP-Three T Food Mai | 5629 Leitchfield Rd | Cecilia | KY | 42724 Jay Butbhavani | 187 Rodeo Dr | Cecilia | KY | 5212047 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| | 61326 | Hardin | Jay Butbhavani (BP-Three T Food Mai | 5629 Leitchfield Rd | Cecilia | KY | 42724 Jay Butbhavani | 187 Rodeo Dr | Cecilia | KY | 5212047 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| | 61326 | Hardin | Jay Butbhavani (BP-Three T Food Mai | 5629 Leitchfield Rd | Cecilia | KY | 42724 Jay Butbhavani | 187 Rodeo Dr | Cecilia | KY | 5212047 | UST | | RETAIL- Retail Trade, Gasoline Stations (447) | |
| non-UST sites | | | | | | | | | | | | | | | |
| 22 | 110008360077 | Hardin | Grace W R & Co | HWY 86 NEAR VERTREES (V | CECILIA | KY | 42724 Cecilia Tractor Service | 100 North Main Street | Memphis | TN | 38103 | RCRAINFO | | Radiotelephone Communications | |
| 23 | 110044955251 | Hardin | Ky Rsa #4 Cellular Gp - Howe Valley | 6551 HARDINSBURG RD | CECILIA | KY | 42724 | | | | | AIRS/AFS | | | |

ATTACHMENT 4

NATIONAL PARK SERVICE

LAND AND WATER CONSERVATION FUND (LWCF: SECTION 6(f) RESOURCES)

- LWCF List for Breckinridge County
- LWCF List for Hardin County

**United States Department of the Interior
National Park Service
Land & Water Conservation Fund**

Detailed Listing of Grants Grouped by County

Today's Date: 11/3/2016

KENTUCKY - 21

Page: 10

| Grant ID & Element | Type | Grant Element Title | Grant Sponsor | Amount | Status | Date Approved | Exp. Date | Cong. District |
|----------------------------|------|--------------------------------|-----------------------------------|--------------|---------------|---------------|------------|----------------|
| BREATHITT | | | | | | | | |
| 266 - XXX | C | JACKSON-BREATHITT COUNTY PARK | CITY OF JACKSON | \$37,689.36 | C | 3/1/1974 | 6/30/1978 | 5 |
| 1314 - XXX | R | JACKSON CITY PARK | CITY OF JACKSON | \$75,000.00 | C | 7/13/2004 | 7/31/2009 | 5 |
| 1361 - XXX | D | QUICKSAND ELK VIEWING SITE | BREATHITT COUNTY FISCAL COURT | \$40,000.00 | C | 9/13/2006 | 7/30/2011 | 5 |
| 1401 - XXX | D | BREATHITT COUNTY SKATE PARK | BREATHITT COUNTY FISCAL COURT | \$20,000.00 | C | 9/15/2009 | 7/14/2014 | 5 |
| Breathitt County Total: | | | | \$172,689.36 | County Count: | | 4 | |
| BRECKINRIDGE | | | | | | | | |
| 225 - XXX | D | CLOVERPORT CITY PARK | CITY OF CLOVERPORT | \$9,049.16 | C | 6/28/1974 | 12/31/1974 | 2 |
| 352 - XXX | D | HARDINSBURG RECREATION PARK | CITY OF HARDINSBURG | \$28,080.48 | C | 9/16/1975 | 12/31/1979 | 2 |
| 500 - XXX | D | IRVINGTON COMMUNITY PARK | CITY OF IRVINGTON | \$7,850.53 | C | 12/14/1977 | 12/31/1979 | 2 |
| 509 - XXX | D | CLOVERPORT CITY PARK | CITY OF CLOVERPORT | \$20,498.90 | C | 1/30/1978 | 6/30/1980 | 2 |
| 595 - XXX | C | CLOVERPORT PLAYGROUND | CITY OF CLOVERPORT | \$8,802.92 | C | 4/4/1979 | 3/31/1984 | 2 |
| 701 - XXX | D | IRVINGTON COMMUNITY PARK | CITY OF IRVINGTON | \$11,295.27 | C | 10/20/1980 | 9/30/1985 | 2 |
| 766 - XXX | C | HARDINSBURG BALLFIELD | CITY OF HARDINSBURG | \$10,182.71 | C | 4/8/1983 | 12/31/1987 | 2 |
| 954 - XXX | D | HARDINSBURG BALLFIELD | CITY OF HARDINSBURG | \$6,003.90 | C | 3/19/1986 | 3/31/1988 | 2 |
| 1085 - XXX | D | HARDINSBURG PARK | CITY OF HARDINSBURG | \$23,000.00 | C | 9/24/1990 | 9/30/1993 | 2 |
| 1110 - XXX | D | CLOVERPORT PARKS | CITY OF CLOVERPORT | \$12,811.00 | C | 5/28/1992 | 5/31/1994 | 2 |
| 1262 - XXX | R | COMMUNITY CENTER SWIMMING POOL | BRECKINGRIDGE COUNTY FISCAL COURT | \$30,975.00 | C | 11/8/2002 | 9/30/2007 | 2 |
| BRECKINRIDGE County Total: | | | | \$168,549.87 | County Count: | | 11 | |

**United States Department of the Interior
National Park Service
Land & Water Conservation Fund**

Detailed Listing of Grants Grouped by County

Today's Date: 11/3/2016

KENTUCKY - 21

Page: 36

| Grant ID & Element | Type | Grant Element Title | Grant Sponsor | Amount | Status | Date Approved | Exp. Date | Cong. District |
|--------------------|------|----------------------------------|-----------------------|--------------|--------|---------------|------------|----------------|
| HARDIN | | | | | | | | |
| 28 - XXX | D | UNIVERSITY DRIVE RECREATION PROJ | CITY OF ELIZABETHTOWN | \$10,616.63 | C | 1/17/1969 | 12/31/1970 | 2 |
| 59 - XXX | C | TAYLOR'S RIVER BEND PARK | HARDIN COUNTY | \$12,149.43 | C | 9/5/1969 | 12/31/1971 | 2 |
| 228 - XXX | D | WEST POINT CITY PARK | CITY OF WEST POINT | \$4,570.13 | C | 10/12/1973 | 12/31/1975 | 2 |
| 245 - XXX | A | VINE GROVE PARK | CITY OF VINE GROVE | \$4,050.80 | C | 2/15/1974 | 6/30/1976 | 2 |
| 309 - XXX | D | ELIZABETHTOWN UNIVERSITY PARK | CITY OF ELIZABETHTOWN | \$21,400.79 | C | 1/8/1975 | 6/30/1977 | 2 |
| 313 - XXX | A | DUVALL BALLPARK | CITY OF RADCLIFF | \$12,753.75 | C | 1/8/1975 | 6/30/1977 | 2 |
| 314 - XXX | A | COLVIN PARK | CITY OF RADCLIFF | \$12,243.75 | C | 1/9/1975 | 6/30/1977 | 2 |
| 366 - XXX | D | RADCLIFF CITY PARK | CITY OF RADCLIFF | \$10,052.36 | C | 3/1/1976 | 6/30/1978 | 2 |
| 443 - XXX | D | DUVALL BALLPARK | CITY OF RADCLIFF | \$20,791.68 | C | 3/14/1977 | 6/30/1979 | 2 |
| 529 - XXX | D | ELIZABETHTOWN NEIGHBORHOOD PARK | CITY OF ELIZABETHTOWN | \$70,503.12 | C | 4/24/1978 | 6/30/1980 | 2 |
| 558 - XXX | D | VINE GROVE CITY PARK | CITY OF VINE GROVE | \$30,627.87 | C | 11/15/1978 | 6/30/1984 | 2 |
| 559 - XXX | D | COLVIN PARK | CITY OF RADCLIFF | \$30,224.49 | C | 11/15/1978 | 12/31/1983 | 2 |
| 699 - XXX | D | FREEMAN LAKE PARK | CITY OF ELIZABETHTOWN | \$11,240.90 | C | 10/20/1980 | 10/31/1985 | 2 |
| 758 - XXX | D | RADCLIFF CITY PARK | CITY OF RADCLIFF | \$20,329.56 | C | 10/22/1981 | 10/31/1986 | 2 |
| 764 - XXX | D | UPTON COMMUNITY PARK | CITY OF UPTON | \$16,853.58 | C | 1/12/1983 | 12/31/1987 | 2 |
| 790 - XXX | D | DAWLEY PARK | CITY OF RADCLIFF | \$25,391.90 | C | 8/17/1983 | 9/15/1984 | 2 |
| 860 - XXX | R | WEST POINT CITY PARK | CITY OF WEST POINT | \$10,124.00 | C | 6/22/1984 | 6/30/1986 | 2 |
| 861 - XXX | D | DAWLEY PARK | CITY OF RADCLIFF | \$111,145.76 | C | 7/3/1984 | 5/31/1989 | 2 |
| 876 - XXX | D | ELIZABETHTOWN SOFTBALL COMPLEX | CITY OF ELIZABETHTOWN | \$33,501.60 | C | 9/5/1984 | 8/31/1986 | 2 |
| 952 - XXX | D | COLVIN PARK | CITY OF RADCLIFF | \$6,241.20 | C | 3/5/1986 | 2/28/1988 | 2 |
| 956 - XXX | C | WEST POINT MEMORIAL PARK | CITY OF WEST POINT | \$30,456.00 | C | 3/20/1986 | 2/1/1990 | 2 |

**United States Department of the Interior
National Park Service
Land & Water Conservation Fund**

Detailed Listing of Grants Grouped by County

Today's Date: 11/3/2016

KENTUCKY - 21

Page: 37

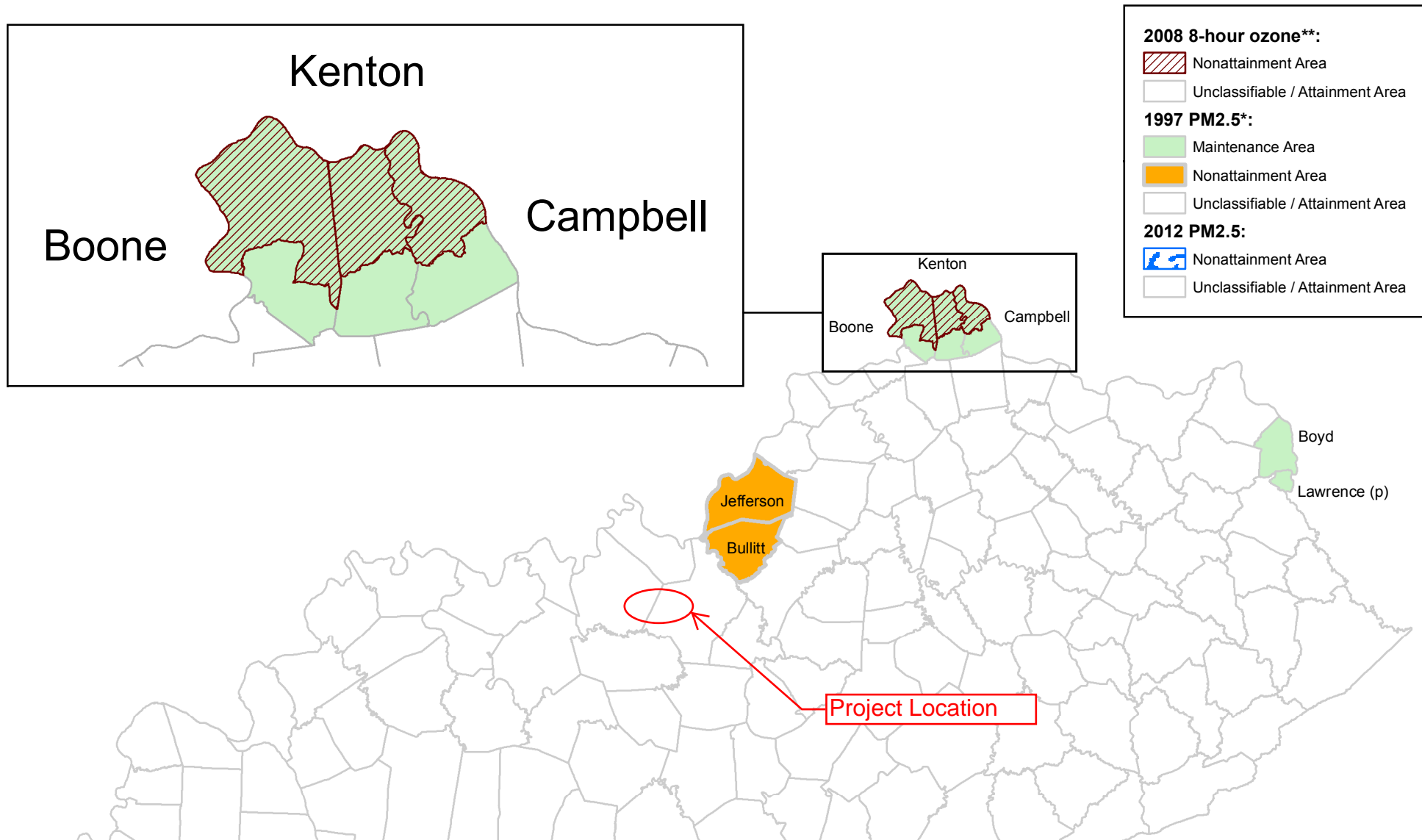
| Grant ID & Element | Type | Grant Element Title | Grant Sponsor | Amount | Status | Date Approved | Exp. Date | Cong. District |
|----------------------|------|---------------------------------|--------------------------------|--------------|---------------|---------------|------------|----------------|
| HARDIN | | | | | | | | |
| 1023 - XXX | D | AMERICAN LEGION PARK SHELTER | CITY OF ELIZABETHTOWN | \$5,391.00 | C | 8/4/1987 | 7/31/1989 | 2 |
| 1097 - XXX | D | VETERANS MEMORIAL PARK | CITY OF WEST POINT | \$21,762.41 | C | 7/31/1991 | 7/31/1994 | 2 |
| 1154 - XXX | D | DAWLEY PARK SOCCER EXPANSION | CITY OF RADCLIFF | \$17,422.50 | C | 6/27/1994 | 5/31/1996 | 2 |
| 1341 - XXX | D | RINEYVILLE COMMUNITY PARK | HARDIN COUNTY FISCAL COURT | \$75,000.00 | C | 8/25/2005 | 7/30/2010 | 2 |
| HARDIN County Total: | | | | \$624,845.21 | County Count: | | 25 | |
| HARLAN | | | | | | | | |
| 61 - XXX | D | LITTLE SHEPHERD TRAIL | DEPT. OF NATURAL RESOURCES | \$23,966.85 | C | 12/24/1969 | 12/31/1972 | 5 |
| 146 - XXX | C | CLOVERFORK COMMUNITY PARK | CITY OF EVARTS | \$11,099.06 | C | 9/12/1972 | 12/31/1974 | 5 |
| 337 - XXX | D | LYNCH CITY PARK | CITY OF LYNCH | \$20,384.00 | C | 6/13/1975 | 6/30/1977 | 5 |
| 850 - XXX | D | BENHAM CITY PARKS | CITY OF BENHAM | \$20,194.60 | C | 2/21/1984 | 2/28/1989 | 5 |
| 1107 - XXX | D | CLOVER VALLEY RECREATIONAL PARK | CITY OF EVARTS | \$21,052.64 | C | 8/15/1991 | 8/31/1994 | 5 |
| 1136 - XXX | D | BENHAM CITY PARK | CITY OF BENHAM | \$6,885.54 | C | 6/23/1993 | 6/30/1995 | 5 |
| 1157 - XXX | D | LOYALL PARK | CITY OF LOYALL | \$2,672.91 | C | 8/22/1994 | 7/31/1996 | 5 |
| 1158 - XXX | D | DRESSIN PARK | CITY OF HARLAN & HARLAN COUNTY | \$17,422.50 | C | 8/22/1994 | 7/31/1996 | 5 |
| 1248 - XXX | D | CUMBERLAND/SECC TENNIS COURTS | CITY OF CUMBERLAND | \$49,151.84 | C | 9/4/2002 | 9/30/2007 | 5 |
| 1325 - XXX | D | EVARTS PLAYGROUND | CITY OF EVARTS | \$17,588.00 | C | 8/25/2005 | 7/30/2010 | 5 |
| 1339 - XXX | D | BENHAM RV PARK | CITY OF BENHAM | \$16,237.38 | C | 9/14/2005 | 7/30/2010 | 5 |
| HARLAN County Total: | | | | \$206,655.32 | County Count: | | 11 | |

ATTACHMENT 5

AIR QUALITY - TRANSPORTATION RELATED POLLUTANTS

- Areas of Air Quality Concern in KY (October 2016)

Areas of Air Quality Concern in KY



*1997 PM2.5 standard to be revoked for Unclassifiable, Attainment, and Maintenance areas only on Oct. 24, 2016.
Nonattainment areas must continue transportation conformity until redesignated by EPA at a later date.

**Boone, Kenton, and Campbell are partial counties in Nonattainment for the 2008 8-hour ozone standard.

As of October 2016

ATTACHMENT 6

ENVIRONMENTAL JUSTICE

- EJ Analysis
- 2010 Census – Census Tract Reference Map for Study Area and Vicinity

KY 86 Environmental Overview Environmental Justice (EJ) Write-Up

The project area includes portions of Census Tracts 9601, 9605.01 and 9605.02 in Breckinridge County, and Census Tract 17 in Hardin County.

Based on the most recent U.S. Census (2010) and American Community Survey (ACS; 2011-2015) data available, Tract 9601 is the only tract having a percentage minority population (4.9%) greater than its county average (Breckinridge-4.2%), though it is less than the state average (11.9%).

Tract 9605.01 is the only tract having a percentage low-income population (22.3%) greater than its county average (Breckinridge-19.2%), though all three tracts in Breckinridge County exceed the state average of 18.5%.

Environmental Justice Analysis

The following Environmental Justice Analysis was completed utilizing the socioeconomic data from the most recent U.S. Census American Community Survey (ACS). The most current data set is the 2011-2015 ACS.

Table 3. EJ Populations

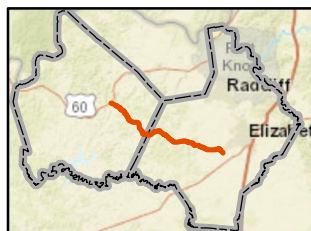
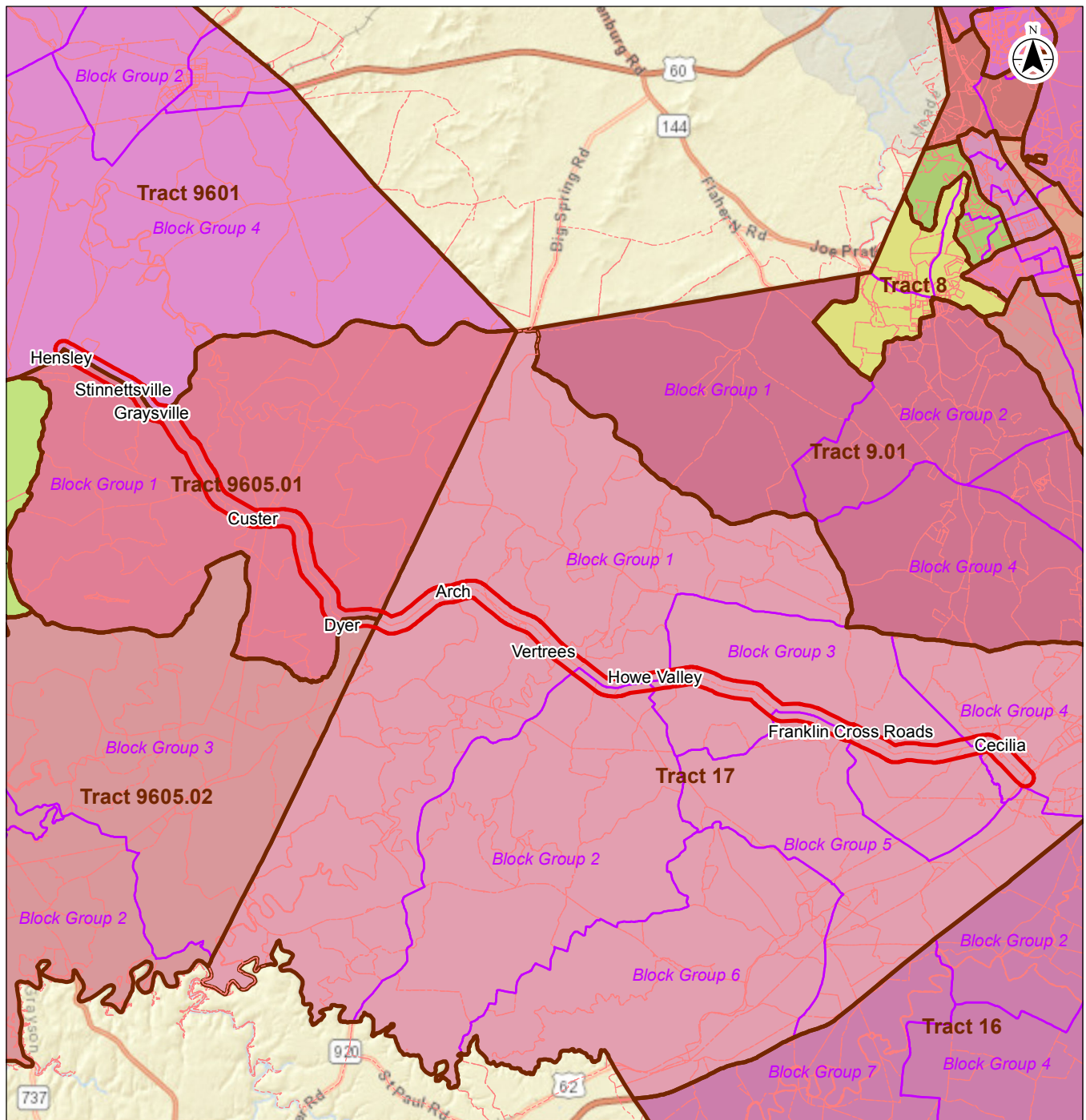
| EJ Population | Kentucky | County | | Census Tract | | | |
|------------------|----------|--------------|--------|--------------|---------|---------|--------|
| | | Breckinridge | Hardin | Breckinridge | | | Hardin |
| | | | | 9601 | 9605.01 | 9605.02 | |
| Minority | 11.9% | 4.2% | 19.2% | 4.9% | 1.4% | 0.0% | 2.5% |
| Low-Income | 18.5% | 19.2% | 14.3% | 19.0% | 22.3% | 18.8% | 13.1% |

Red Text = exceeds respective County average

Gray Shading = exceeds State of Kentucky average

Sources: US Census 2016, American Community Survey (ACS) 2011-2015

Prepared December 2016



Legend

- Study Area
- Census 2010 Boundary
- Block
- Blockgroup (labelled)
- Tract (labelled)

Notes

1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
2. Base features produced from project design elements; US Census Bureau TIGER/Shapefiles, 2010 and 2015.
3. Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

0 1 2 Miles
1:216,672 (at original document size of 8.5x11)



Project Location: 178556010
KY 86 Prepared by BL on 2016-10-21
Breckinridge and Hardin Counties, Kentucky

Client/Project: KYTC District 4
Environmental Overview
KY 86 Scoping Study, KYTC Item # 4-8901.00

Figure No.: **Attachment 6**
Title:

2010 Census - Census Tract Reference Map for Study Area

ATTACHMENT 7

CULTURAL-HISTORIC RESOURCES

- National Register of Historic Places (NRHP) Listing on Heller Hotel

Historic Resources of Hardin County

Historic Name: Heller Hotel (HD-152)
Common Name: Heller Hotel

Classification: Building

Owner: Hannah Brown, 901 Dogwood Circle, Elizabethtown, KY 42701.

Location: Robinson Street, Cecilia, KY

| <u>Contributing:</u> | | <u>Non-Contributing:</u> | |
|----------------------|---|--------------------------|---|
| Buildings | 2 | Buildings | 0 |
| Structures | 0 | Structures | 0 |
| Sites | 0 | Sites | 0 |
| <u>Total:</u> | 2 | <u>Total:</u> | 0 |

Description:

The Heller Hotel is a two-story gable front plan frame building constructed ca. 1890 with Italianate influenced detailing. The building has two sections: a two-story gable front, three bay section; and a one-story, single bay section with a false front. Both sections were built at the same time as a hotel, office and store complex. The two-story section has original glass and frame doors and nine light windows. The one-story section has an original glass and frame door and two-light transom. Across the main facade of both sections is a one-story porch with chamfered posts. Windows are six-over-six sash with those on the main facade displaying projecting cornices. At the second story roofline is eave vergeboard. The roofs are of metal standing seam. The interior of the building has not been altered and displays an original small lobby, Italianate design mantles, a staircase with milled newel post and balusters and original wood paneled doors. At the southeast corner of the building is an inset two-story porch. At the rear of the building is a two-story frame outbuilding constructed ca. 1890 as servant's quarters. This building has not been substantially altered and has original doors and four-over-four sash windows.

Period of Significance: ca. 1890 - 1933

Area of Significance: Transportation/Architecture

Criterion: A and C

Architect/Builder: Unknown

Statement of Significance:

The Heller Hotel is a notable example of a late 19th century gable front design hotel building and is also significant as a railroad hotel of the turn of the century. Cecilia was a major stop on the Elizabethtown and Paducah Railroad in the 19th century. To take advantage of the busy rail traffic this two-story hotel was built ca. 1890 by Maggie Heller. The hotel served guests and travellers until closing in 1933. The building has since been a private residence. The building has not been altered and retains its original character. It is a fine example of a late 19th century frame commercial building and is the only remaining building in Cecilia directly associated with the railroad. At the rear

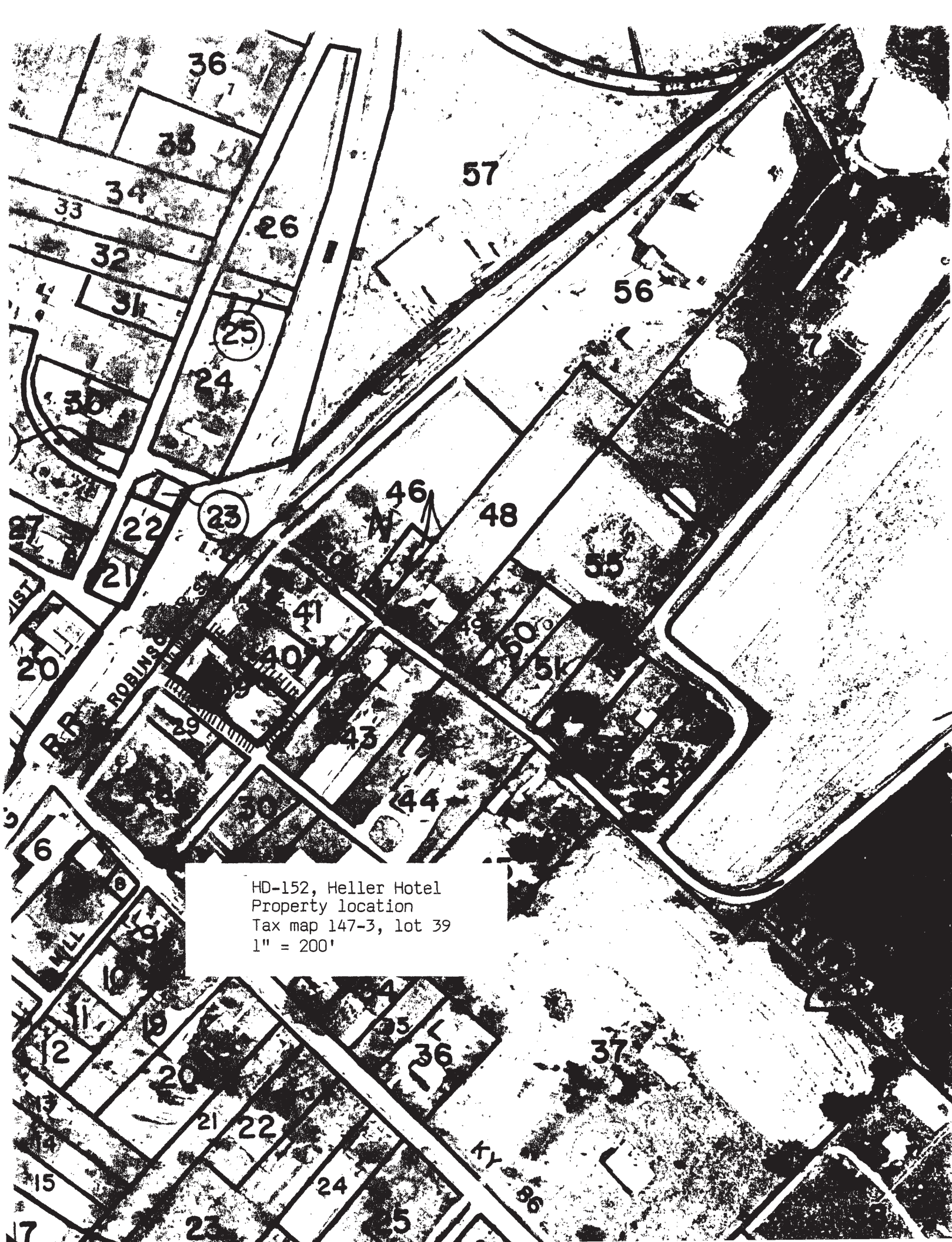
of the building is an intact two-story outbuilding which served as servant's quarters.

Acreage: Less than one acre.

UTM References: Cecilia Quad 16/594060/4169000

Verbal Boundary Description and Justification:

The boundary for the Heller Hotel is illustrated on the accompanying Hardin County property tax map 147-3, lot 39, and defined by the legal property boundary. The boundary includes the main building, a contributing outbuilding, and property sufficient to protect the historical setting of the site.



HD-152, Heller Hotel
Property location
Tax map 147-3, lot 39
1" = 200'



Heller Hotel (HD-152)
Multiple Resources of Hardin County, KY
Photo by: Catherine Harned
Date: 1983
Negative: Kentucky Heritage Council
View: Southeast, west and north facades.

Photo # 1063



Heller Hotel (HD-123)

Multiple Resources of Hardin County, KY

Photo by: Catherine Harned

Date: 1983

Negative: Kentucky Heritage Council

View: Southwest, north and east facades.

Photo # 2 of 3



Heller Hotel, HD-152

Multiple Resources of Hardin County, KY

Photo by: Catherine Harned

Date: 1983

Negative: Kentucky Heritage Council

View: Servant's Quarters, west facade

Photo # 3 of 3

ATTACHMENT 8

PHOTO LOG

- Photograph Log
- Photograph Index Maps, with labelled features



Photo 1: Rough River at KY 86, with narrow wooded riparian corridor on each bank; facing downstream, south.



Photo 2: Vertrees Creek at KY 86 bridge, with narrow to wide riparian corridor on each bank; facing upstream, northwest.



Photo 3: West Rhudes Creek at KY 86, with absent to narrow wooded riparian corridor on each bank; facing downstream, southeast.



Photo 4: Representative view of NWI mapped pond (PUB) wetland observed in study area; facing southwest.



Photo 5: Representative view of NWI mapped emergent (PEM) wetland with scrub-shrub component, adjacent to existing KY 86 in study area; facing northeast.



Photo 6: Representative view of an unmapped pond observed in study area; pond appears to have been constructed for recreational fishing activity or aquaculture (fish or freshwater prawn); facing northeast.

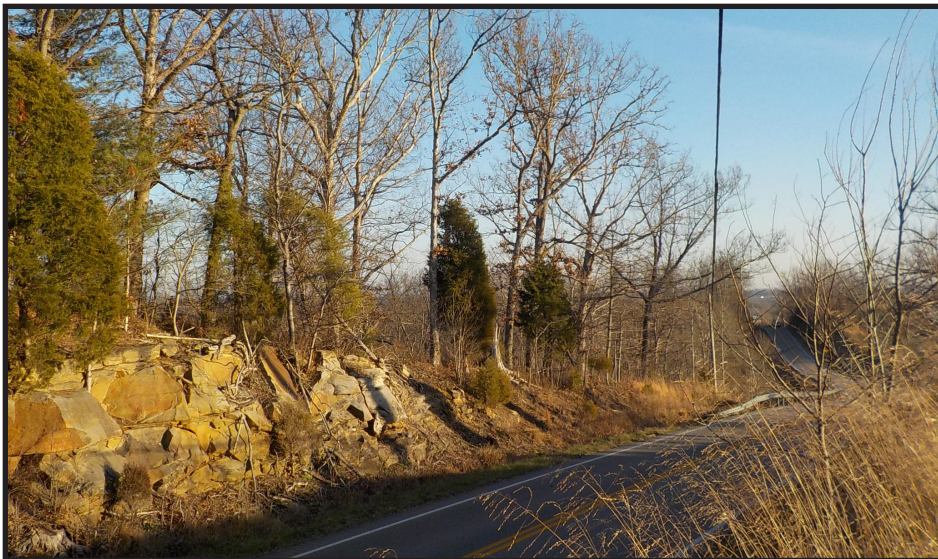


Photo 7: Representative view of potential Indiana bat and Northern long-eared bat foraging habitat, upland woodlot in study area; facing southeast. Note shallow soils and rock-cut for roadway.



Photo 8: Representative view of potential habitat for federal-listed clubshell and fanshell mussels, Rough River; and Indiana bat and Northern long-eared bat foraging habitat, riparian woodland; facing upstream, east.



Photo 9: Representative view of USFWS designated Sensitive Area habitat for Indiana bat and Northern long-eared bat; forested riparian corridor near known cave entrance present along Jr. Alexander Road in study area; facing southeast.



Photo 10: Representative view of evidence of karst landscape, sinkhole present in open field; facing west. Karst landscape presents potential habitat for Gray bat, and oldfield presents potential habitat for numerous KSNPC-listed bird species.



Photo 11: Representative view of karst landscape and shallow groundwater; mapped spring emanating from karst window opening; facing east.



Photo 12: Representative view of FEMA 100-year floodplain along unnamed USGS perennial stream, with floodplain forest and agriculture land cover; facing southwest.



Photo 13: Active agricultural-row crop farmland present in study area; facing northwest.



Photo 14: Active agricultural-pasture farmland in study area; facing north.



Photo 15: Custer General Store, gas station and convenience store; representative hazardous materials concern site having UST, LUST and RCRA database records; facing southeast.



Photo 16: The Country Store #2; representative abandoned/historical hazardous materials concern site having UST and RCRA database records; facing south.



Photo 17: Wilson Manufacturing & Design Inc, representative existing industrial business and hazardous materials concern site having RCRA database record; facing northwest.



Photo 18: Potential hazardous materials concern site, Diehl's On Wheels & Mechanic Shop; automotive sales and service with no database records; facing southeast.



Photo 19: Possible site of former Fields Country Store, representative hazardous materials concern site having UST database record; facing east. Prior structure demolished, database information inconsistent with county property information.



Photo 20: KY RSA #4 Cellular tower, potential hazardous materials concern site having AIRS/AFS database records; facing northwest.



Photo 21: Suburban residential neighborhood on Cecil Ave in Cecilia, representative noise sensitive receptor in study area, ; facing southeast.



Photo 22: Howevalley Elementary School, representative noise sensitive receptor (and 1 of 4 schools) in study area; facing north.



Photo 23: Liberty Chapel General Baptist Church, representative noise sensitive receptor in study area; facing southeast.



Photo 24: Rolling agricultural fields along KY 86, a representative view of the very limited extent of the study area having been previously surveyed for archaeological resources; facing southwest.



Photo 25: Heller Hotel, NRHP-listed cultural-historic resource in Cecilia; facing east.



Photo 26: Stamper-Pirtle House, 8244 KY 86, KHC-listed resource that meets NR Criteria (not currently listed); facing northwest.



Photo 27: St. Ambrose School, representative of KHC-listed structure with NRHP status undetermined (and 1 of 4 schools) in the study area; facing south.



Photo 28: Vertrees Baptist Church, representative example of the 11 churches identified in the study area; facing north.



Photo 29: Cecilia Elementary School (under construction), 1 of 4 schools identified in the study area; facing south.

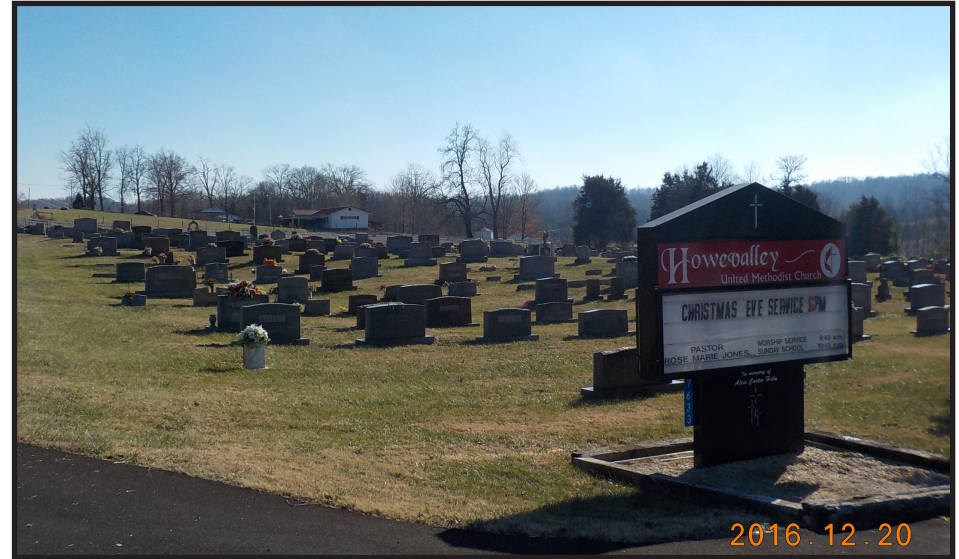


Photo 30: Howeavally Cemetery, representative example of a cemetery associated with a house of worship identified in the study area; facing southeast.



Photo 31: Old Union Cemetery, representative example of rural cemetery identified from historical USGS topographic maps; facing north.



Photo 32: Unnamed, unmarked cemetery found adjacent to existing KY 86; facing southwest.



Photo 33: View of Paducah and Louisville Railroad at-grade crossing at KY 86 in Cecilia; facing northwest.



Photo 34: View of electrical substation and cellular tower adjacent to existing KY 86 in Custer; facing south.



Photo 35: Custer Fire Department, Station 1, one of two fire stations on KY 86 in the study area; facing northwest.



Photo 36: Stephensburg F&AM #212 in Franklin Cross Roads, one of two Masonic lodges in the study area; facing southwest.



Photo 37: Powerline crossing, one of three locations where electrical transmission line utility crosses existing KY 86 alignment; facing west.



Photo 38: Hardinsburg Municipal Utilities owned water tower adjacent to existing KY 86; facing northeast.



Photo 39: View of KY 86 in Cecilia residential area; facing northwest.



Photo 40: View of KY 86 near Franklin Crossroads, representative view of typical rural residential land use along existing KY 86; facing northwest.



Photo 41: View of KY 86 near Vertrees, representative view of typical concentration of rural commercial land use; facing northwest.



Photo 42: KY 86 at KY 401 near Dyer, representative view of rural nature of majority of the study area; facing east.



Photo 43: KY 86 near Custer, representative view of extensive agricultural land use within the study area; facing west.



Photo 44: KY 86 at US 60, west terminus of study area, near Hensley; facing southeast.

