

APPENDIX D – ENVIRONMENTAL OVERVIEW

**ENVIRONMENTAL OVERVIEW
KY 151 CORRIDOR SCOPING STUDY
KYTC ITEM #5-806.00**

Anderson & Franklin Counties: From US 127 in
Anderson County to I-64 in Franklin County



Prepared for:
Kentucky Transportation Cabinet
Central Office
Highway District 5 and District 7

Prepared by:
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Executive Summary

This Environmental Overview has been prepared for the KY 151 Corridor Scoping Study in Anderson and Franklin Counties, Kentucky (KYTC Item #5-806.00). The purpose of the Scoping Study is to identify deficiencies and evaluate improvements to the KY 151 corridor between US 127, near Lawrenceburg in Anderson County, and I-64 west of Frankfort in Franklin 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 January 11, 2018. Based on this information, the key environmental features within the study area include:

Surface Streams: South Benson Creek and Little Benson Creek pass through the study area. 100-year floodplain is associated with South Benson Creek crossing of KY 151 in addition to an unnamed tributary of Hammond Creek in the southwest corner of the study area.

Wetlands: 58 NWI wetlands are mapped in the study area including: 54 ponds (PUB), 1 emergent (PEM), 2 scrub-shrub (PSS) and 1 forested (PFO). No extensive wetland complexes are present in the study area.

Threatened and Endangered Species: Nine (9) federal-listed species (8 endangered and 1 threatened) have the potential to occur in the study area, with four (4) federal-listed species recorded within 5-miles of the study area. Potential summer roost and foraging habitat for the federal-endangered Indiana bat the federal-threatened northern long-eared bat is present in several woodlots throughout the study area. No suitable roost habitat for Gray myotis (Gray bat) is present (no cave entrances known) within the study area or vicinity, though potential foraging habitat is present as riparian corridors along larger streams. The study area south of KY 512/Alton Station Road lies within USFWS-designated habitat (Known Summer 1) for Northern long-eared bat, having required mitigation measures for impacts to forested habitat. Three (3) mussel species are listed as known from the vicinity of the study area, all considered medium to big river species and not likely to occur in the streams present. Three (3) endangered plants [Braun's rock-cress (*Arabis perstellata*), Short's bladderpod (*Physaria globosa*) and running buffalo clover (*Trifolium stoloniferum*)] are listed for the study area. Habitat for the Braun's rock-cress and Short's bladderpod may be present on appropriate wooded slopes as the entire study area is underlain by limestone-based geology. Habitat for running buffalo clover is likely present along wooded stream banks having an open understory and rural homesteads with large mature trees around the property.

Groundwater: Sixty (60) water wells are mapped within the study area, with one being domestic use and the remaining for monitoring or remediation use. No wellhead protection areas or springs are mapped within the study area.

Karst: The project area is underlain by bedrock with moderate to high potential for karst. Five (5) sinkholes are mapped underlying the study area, accounting for less than 0.1% of the land area, and are scattered around the Anderson County portion of the study area. No cave entrances are known within the study area or vicinity.

ENVIRONMENTAL OVERVIEW
KY 151 CORRIDOR SCOPING STUDY
KYTC ITEM #5-806.00

Farmland: Approximately 85% of the soils in the study area are identified as Prime Farmland and Farmland of Statewide Importance. Extensive portions of the study area are currently utilized as hay and pasture lands, with few cultivated crops.

Hazardous Materials Concerns: Twenty-eight (28) potential hazardous materials concern sites are identified within or immediately adjacent to the study area, including: 17 sites with UST records, 11 sites with RCRA records, 5 sites with AIRS air emission records, and 3 sites with TRI toxics release inventory records. The Benson Valley Area Landfill (and associated McGuire Sanitation Services) is located along KY 151 in Franklin County, partially within the study area (contained solid waste landfill). Sites of potential concern are concentrated around the KY 151 / I-64 interchange and the KY 151 / US 127 intersection.

Environmental Justice (EJ): Based on a review of available census data, none of four census tracts in the study area has a minority population percentage greater than the county average or state level, while one census tract has a low-income population percentage greater than the county and state averages.

Cultural-Historic and Archaeological Resources: No NRHP-listed resources are located in the study area. Thirteen (13) previously surveyed cultural-historic resources are listed in the study area, ten of which have been demolished and one listed as having met National Register criteria. An additional eight (8) potentially significant resources were identified in the study area during a windshield survey, along with four cemeteries. Three (3) previous archaeological surveys conducted in or adjacent to the study area have recorded six (6) archaeological sites within the study area, none of which have been assessed for NRHP eligibility. Twenty-two (22) sites in the study area were identified as having a high potential to contain archaeological remains in relation to historic structures, and two areas were identified as potentially containing prehistoric archaeological deposits.

Easements: One known conservation easement is present within the study area; The Monohan Farm, 192 acres, held by Bluegrass Conservancy as a permanent Open Space - Farm easement, closed to public access, located south of KY 151 east of Lin Moore Road in Anderson County.

Community Resources: Community resources and sensitive noise receptors include: 1 community and technical college facility, 6 houses of worship, 4 cemeteries, 1 park, 1 fire department, and 2 day-care centers located primarily along KY 151, KY 512 and US 127 in the study area.

Table of Contents

EXECUTIVE SUMMARY	i
ENVIRONMENTAL OVERVIEW.....	1
REFERENCES	R-1

LIST OF TABLES

TABLE 1: ENVIRONMENTAL RESOURCES/FEATURES IN THE KY 151 STUDY AREA	2
TABLE 2: KY 151 HAZARDOUS MATERIALS CONCERN SITES	Attachment 3
TABLE 3: EJ POPULATIONS	Attachment 6

LIST OF FIGURES

1. Study Area Map
2. Project Location Map
- 3.1 Environmental Footprint: Natural Environment
- 3.2 Environmental Footprint: Natural Environment - Farmland Classification of Soils
- 4 Environmental Footprint: Human Environment

LIST OF ATTACHMENTS

1. Threatened and Endangered Species
 - USFWS KY 151 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, Anderson and Franklin Counties
 - KSNPC Natural Heritage Database Response (redacted)
2. Karst
 - Anderson County Karst Areas Map
 - Franklin County Karst Areas Map
 - KSS Cave Data Request Response
3. Hazardous Materials Concerns
 - Table 2: KY 151 Hazardous Materials Concern Sites Identified Through Database Review and Site Visit
4. National Park Service Land and Water Conservation Fund (LWCF: Section 6(f) Resources)
 - LWCF List for Anderson and Franklin Counties
5. Air Quality - Transportation Related Pollutants
 - Areas of Air Quality Concern in Kentucky (October 2016)
6. Environmental Justice

ENVIRONMENTAL OVERVIEW
KY 151 CORRIDOR SCOPING STUDY
KYTC ITEM #5-806.00

- EJ Analysis
- 2010 Census - Census Tract Reference Map for Study Area and Vicinity
- 7. Cultural-Historic and Archaeological Resources
 - Cultural Historic Records Review and Windshield Survey for the Proposed KY 151 Corridor Study in Anderson and Franklin Counties, Kentucky (CRA Project Number: K17S003), February 12, 2018
 - Archaeological Records Review and Windshield Survey for KY 151 From U.S. 127 in Anderson County to I-64 in Franklin County, Kentucky (Item No. 5-806.00) (CRA Project Number: K17s002), February 20, 2018
- 8. Photo Log
 - Photograph Log
 - Photograph Index Maps, with labelled features

Environmental Overview

Stantec Consulting Services, Inc. has prepared this Environmental Overview as part of the KY 151 Corridor Scoping Study (KYTC Item #5-806.00) 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 151 alignment under review begins at the intersection with US 127 near Lawrenceburg in Anderson County (MP 0.000) and proceeds north to the I-64 interchange in Franklin County (MP 2.141), Kentucky (see **Figure 1**), a total length of 6.7-miles. The general study area includes a 2,000-foot wide corridor centered on the existing KY 151 alignment. However, as the project may consider the possibility of constructing alternate routes where right-of-way or impacts to potential sensitive resources may be of concern, the study area is enlarged in Anderson County, particularly near the community of Alton, for a total size of 8.01-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** and **3.2**, and human environment features are identified on **Figure 4**. The information listed in Table 1 and shown on the attached mapping was obtained from secondary sources and a pedestrian survey conducted on January 11, 2018. 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).

ENVIRONMENTAL OVERVIEW
KY 151 CORRIDOR SCOPING STUDY
KYTC ITEM #5-806.00

Table 1: Environmental Resources/Features in the KY 151 Corridor Study Area Anderson and Franklin Counties, KY		
Environmental Category	Resource/Feature	Source/Information
USGS Streams	<p>South Benson Creek, Little Benson Creek and 25 USGS unnamed streams are located within the study area.</p> <p>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).</p>	Source: USGS 24K NHD dataset (2004a), KDOW Special Use Waters (2008), KDOW 305b and 303(d) Report (2014), KDOW Watershed Viewer (2017b), ESRI USGS map service layer
Other Streams	Topographic contours indicate the potential presence of additional drainage features throughout the study area.	Source: USGS topographic maps, KDOW (2017b), field survey
Watersheds	<p>The study area crosses two (2) Watershed Cataloging Units, including: Lower Kentucky (HUC-8: 05100205) and Salt (HUC-8: 05140102), from north to south respectively.</p> <p>No KDOW designated Priority Watersheds are present in the study area.</p> <p>The study area lies within two Source Water Assessment and Protection Program (SWAPP) areas; the American Water Company (South Benson Creek-Lower Kentucky watershed) covers the study area between I-64 and KY 512/Alton Station Road, and the Frankfort Electric/Water Plant Board (Little Benson Creek-Lower Kentucky watershed) in the northeast corner of the study area along US 127.</p>	Source: USGS 8-Digit HUC (2004b), KDOW 305b and 303(d) Report (2014), KDOW (2017a and 2017b), KDOW SWAPP (2013)
Wetlands	<p>58 NWI wetlands are mapped in the study area including: 54 ponds (PUB), 1 emergent (PEM), 2 scrub-shrub (PSS) and 1 forested (PFO). No extensive NWI-mapped wetland complexes are present in the study area.</p> <p>Hydric soils occur across approximately 15% of the study area, concentrated in the shallow stream valleys in Anderson County. 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 KY601 (2017), field survey
Ponds	54 ponds are mapped (NWI) within the study area, with approximately 60 additional ponds evident on recent aerial imagery. Most appear to be utilized as farm ponds (livestock watering), followed by private recreational ponds.	Source: KEPPC 24K NWI map dataset (2002), ESRI Aerial map service layer, field survey

ENVIRONMENTAL OVERVIEW
KY 151 CORRIDOR SCOPING STUDY
KYTC ITEM #5-806.00

**Table 1: Environmental Resources/Features in the KY 151 Corridor Study Area
Anderson and Franklin Counties, KY**

Environmental Category	Resource/Feature	Source/Information
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 Anderson and Franklin Counties. Three (3) endangered mussels [orangefoot pimpleback (<i>Plethobasus cooperianus</i>), pink mucket (<i>Lampsilis abrupta</i>), and sheepsnose (<i>Plethobasus cyphyus</i>)] and three (3) endangered plants [Braun's rock-cress (<i>Arabis perstellata</i>), running buffalo clover (<i>Trifolium stoloniferum</i>) and Short's bladderpod (<i>Physaria globosa</i>)] may or could potentially occur in the study area.</p> <p>Known Summer 1 habitat designated area for Northern long-eared bat is mapped south of KY 512/Alton Station Road (no Indiana bat designated habitat is present). This designated habitat type refers to mitigation measures required for impacts to potential habitat for forest dwelling bats (Indiana bat and Northern long-eared bat).</p> <p>Potential summer roost and foraging habitat for Indiana bat and Northern long-eared bat (woodlots and riparian woodlands) is present in several woodlots throughout the study area.</p> <p>The three (3) mussel species listed for the project area are all considered medium to big river species and not likely to occur in the streams within the study area.</p> <p>Roost habitat for Gray bat is not known to be present as no cave entrances are known in the study area vicinity (nearest is over two miles), though the entire project area is in areas of moderate to major karst development potential. Foraging habitat is strongly correlated with open water of rivers, streams, lakes or reservoirs; as such potential foraging habitat is present for this species in the riparian corridors along the larger streams in the study area.</p> <p>Braun's rock-cress and Short's bladderpod both prefer limestone-bedrock rocky cliffs over stream valleys, the former on wooded north-facing slopes, the latter on dry, open south-facing slopes. Potential habitat for both species may be present in the study area.</p>	<p>Source: USFWS IPaC Trust Resource Report (2017), USFWS Kentucky Ecological Services Field Office, Indiana bat and northern long-eared bat habitat areas map (2016a), USFWS Conservation Strategy (2016b), KYTC Environmental Overview web map (2017), KYTC Programmatic Biological Assessment (2012), USFWS Gray Bat 5-Year Review (2009), ESRI Aerial map service layer, NatureServe (2018), KGS (2005), KSS (2018)</p>

ENVIRONMENTAL OVERVIEW
KY 151 CORRIDOR SCOPING STUDY
KYTC ITEM #5-806.00

Table 1: Environmental Resources/Features in the KY 151 Corridor Study Area Anderson and Franklin Counties, KY		
Environmental Category	Resource/Feature	Source/Information
KDFWR Species List	<p>KDFWR lists 41 additional State-Threatened, Endangered, and Special Concern Species (beyond the 9 species listed by USFWS, above) as occurring (either recently or historically) in Anderson and/or Franklin Counties. These include:</p> <ul style="list-style-type: none"> 12 state-endangered species (1 amphibian, 11 birds) 14 state-threatened species (10 birds, 2 mussels, 1 insect, 1 reptile) 15 state-special concern species (1 fish, 1 amphibian, 9 birds, 1 gastropod, 1 insect, 1 crustacean, 2 mammals) 	Source: KDFWR – State Species List for Anderson and Franklin Counties (2017)
KSNPC Species Database	<p>KSNPC provided 24 records for 13 federal or state-endangered, threatened, or special concern listed species within 10-miles of the study area. These include:</p> <ul style="list-style-type: none"> 7 birds (2 federal-species of management concern, 2 state-endangered, 1 state-threatened, and 2 state-species of concern); and 3 mammals (1 federal-endangered, 1 federal-threatened, 1 state-species of concern); 2 plants (2 federal-endangered); and 1 amphibian (federal-species of management concern). <p>Database records indicate no occurrences are located within the study area, and only one is within 1-mile (Globe bladderpod, federal-endangered). Additional federal listed species known within 10-miles include federal-endangered Gray myotis (Gray bat) and Braun’s Rockcress, federal-threatened Northern long-eared bat, and federal-species of management concern Eastern hellbender, Henslow’s sparrow and Bewick’s wren.</p> <p>The KSNPC data indicates a maternity roost site for Gray myotis is known from within 10-miles of the study area.</p>	Source: KSNPC Natural Heritage Database response (January 9, 2018)
Groundwater	<p>60 water wells are mapped within the study area, including: 1 domestic use, 56 monitoring use and 3 remediation use. The one (1) domestic use (single family) water well is located near the KY 151 and KY 512/Alton Station Road intersection. Remediation use wells are associated with one UST record (Smiths Grocery) and an empty field south of the Florida Tile manufacturing site. No wellhead protection areas are present in the study area.</p> <p>No springs are mapped within the study area.</p>	Source: KGS Water Wells and Springs data repository and dataset layer (2017), KDOW Wellhead Protection Areas data download (2012b)

ENVIRONMENTAL OVERVIEW
KY 151 CORRIDOR SCOPING STUDY
KYTC ITEM #5-806.00

Table 1: Environmental Resources/Features in the KY 151 Corridor Study Area Anderson and Franklin 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 underlying significant portions of the study area in Anderson County. 5 sinkholes are mapped within the study area, accounting for less than 0.01% of the area. Those sinkholes are scattered around the Anderson County portion of the study area.</p> <p>No cave entrances are known within study area, with the nearest recorded entrance over two miles distant.</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), Anderson County Karst Areas (Carey and Stickney 2002), Franklin County Karst Areas (Carey and Stickney 2005), KGS (2003), KSS Data Request response (January 23, 2018), KYTC-DEA (2016)
Floodplain	FEMA 100-Year floodplains are located within the study area at five locations: two unnamed tributaries to Hammond Creek in the south end of the study area; South Benson Creek headwaters in Anderson County; South Benson Creek mainstem crossing KY 151 in Franklin County; and an unnamed tributary to Benson Creek at the north endpoint of the study area in Franklin County. At each location the floodplain is relatively narrow, ranging from 200 to 600 feet in width.	Source: FEMA National Flood Hazard Layers (2009 and 2013)
Floodway	No FEMA designated floodway occurs in the study area.	Source: FEMA National Flood Hazard Layers (2009 and 2013)
Farmlands	Approximately 85% of the soils in the study area are identified as Prime Farmland (36%), Farmland of Statewide Importance (35%), or Prime farmland if drained or protected from flooding (14%). Extensive portions of the study area are currently utilized as hay and pasture lands with few cultivated crop fields. Multiple active farms were observed in and around the study area.	Source: USDA SSURGO KY601 (2017), NLCD 2011 (USGS 2014), field survey

ENVIRONMENTAL OVERVIEW
KY 151 CORRIDOR SCOPING STUDY
KYTC ITEM #5-806.00

Table 1: Environmental Resources/Features in the KY 151 Corridor Study Area Anderson and Franklin Counties, KY		
Environmental Category	Resource/Feature	Source/Information
Hazardous Materials	<p>Database records review summary: 27 sites of potential concern (with a total of 27 records) occur within the study area, including 11 RCRA records, 4 AIR air emission records, 2 TRI toxics release inventory records, and 16 UST sites (6 active). The Benson Valley Area Landfill (and associated McGuire Sanitation Services) is located along KY 151 in Franklin County, partially within the study area (contained solid waste landfill). One hazardous liquids pipeline crosses US 127 south of the KY 151 intersection, and 1 gas transmission pipeline follows KY 151 through most of the study area. Two (2) sites have Remediation-use water monitoring wells, Smith Grocery (UST site) and an empty field south of the Florida Tile manufacturing site (no other records).</p> <p>Field survey indicated 13 additional potential hazardous materials concern sites, including: 10 automotive service/sales businesses, 1 neighborhood wastewater treatment plant (WWTP), 1 electrical substation and 1 cellular tower.</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 along KY 151 and US 127 near Lawrenceburg.</p>	Source: USEPA Envirofacts (2017a), KDWM (2012), KDWM (2017), aerial photo review, ESRI USGS map service layer, field survey
Oil and Gas Wells	No oil/gas wells are mapped within the study area. and no active oil or gas wells are located within 1-mile.	Source: KGS (2017b)
Section 4(f)	One potential Section 4(f) resource was identified in the study area, the Alton Ruritan Ball Field Recreation Center off KY 512/Alton Station Road, hosting a baseball field, picnic shelter, restrooms and storage structure.	Source: ESRI Aerial map service layer, ESRI Parks (2015), 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: LWCF Coalition (2018), ESRI USA Parks dataset (2015), ESRI Aerial map service layer, field survey
Easements	One known conservation easement is present within the study area; The Monohan Farm, 192 acres, held by Bluegrass Conservancy as a permanent Open Space - Farm easement closed to public access. The easement property includes approximately 1,500 feet of frontage along the south side of KY 151 east of Lin Moore Road in Anderson County, and extends approximately 4,000 feet southward to the existing railroad tracks.	NCED (2017), USGS (2016)

ENVIRONMENTAL OVERVIEW
KY 151 CORRIDOR SCOPING STUDY
KYTC ITEM #5-806.00

Table 1: Environmental Resources/Features in the KY 151 Corridor Study Area Anderson and Franklin Counties, KY		
Environmental Category	Resource/Feature	Source/Information
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>Four (4) USEPA permitted air emissions facilities are located within the study area; three near Lawrenceburg and one in Franklin County.</p>	Source: KYTC (2016a), KYTC (2016b), USEPA Green Book (2017b), USEPA Envirofacts (2017a)
Noise	<p>Noise sensitive land use areas are present in the south portion of the study area (Activity Category “B” and “C” land uses – consisting of several residential neighborhoods, 1 school, 2 cemeteries and 6 houses of worship).</p> <p>The study area is a mix of rural and suburban residential with a limited amount of industrial and commercial development adjacent to Lawrenceburg.</p>	Source: KYTC Noise Policy (2011), ESRI aerial map service layer, field survey
Environmental Justice	<p>The project area includes portions of Census Tracts 9501 and 9503 in Anderson County, and Census Tracts 710 and 711 in Franklin County.</p> <p>Based on the most recent U.S. Census (2016 estimates) and American Community Survey (ACS; 2012-2016) data available, no tracts have a percentage minority population greater than its’ respective county average (Anderson=4.5%, Franklin=15.7%) or the state average (11.9%).</p> <p>Tract 9501 is the only tract with a percentage of families below poverty (20.9%) greater than its’ county average (Anderson=10.6%) or the state average of 18.5%.</p> <p>Additional analysis of socio-economic conditions in the study area is being conducted by the Bluegrass Area ADD, and will be provided in a separate report.</p>	Source: US Census Bureau, ACS 5-year data 2012-2016 (2017a), US Census Bureau QuickFacts (2017b), KYTC Environmental Justice Analysis (2014)

ENVIRONMENTAL OVERVIEW
KY 151 CORRIDOR SCOPING STUDY
KYTC ITEM #5-806.00

Table 1: Environmental Resources/Features in the KY 151 Corridor Study Area Anderson and Franklin Counties, KY		
Environmental Category	Resource/Feature	Source/Information
Cultural - Archaeology	<p>Based on a review of relevant information provided by Cultural Resource Analysts, Inc. for the project, no archaeological sites listed on the NRHP are located in the study area. However, three (3) previous archaeological surveys conducted in or adjacent to the study area have recorded six (6) archaeological sites within the study area, none of which have been assessed for NRHP eligibility, with five documented as relatively undisturbed.</p> <p>Twenty-two (22) sites in the study area were identified as having a high potential to contain archaeological remains in relation to historic structures, while an additional 100 historic structure locations were identified as having a lower potential to contain cultural deposits.</p> <p>Two areas within the study area were identified as potentially containing prehistoric archaeological deposits, both oriented around floodplains of major creeks or in a location similar to known prehistoric archaeological sites.</p> <p>Approximately 28 percent of the study area is identified as having a high probability for containing archaeological deposits, with an additional 69 percent as having a medium probability. An intensive archaeological survey, including pedestrian survey, shovel testing, and bucket augering, is recommended prior to any development outside of existing rights-of-way.</p>	Source: CRA (2018a)
Cultural - Historic	<p>Based on a review of relevant information provided by Cultural Resource Analysts, Inc. for the project, the following resources were identified within the study area:</p> <ul style="list-style-type: none"> • 13 previously surveyed sites • 1 structure that meets NR Criteria (not currently listed) – Wilson House, KY 151, Anderson County • 8 additional potentially significant sites with undetermined NRHP status • 4 cemeteries (3 unnamed) <p>Ten (10) of the 13 previously recorded resources are no longer extant (are demolished). Seven (7) previous cultural historic studies overlap the study area. Existing historic properties should be avoided, and additional cultural historic investigations are recommended for any proposed project activities.</p>	Source: CRA (2018b)
Houses of Worship	Six (6) houses of worship (church, mosque, synagogue, etc.) were identified throughout the study area.	Source: ESRI USA topo map service layer, Google Maps, field survey

ENVIRONMENTAL OVERVIEW
KY 151 CORRIDOR SCOPING STUDY
KYTC ITEM #5-806.00

Table 1: Environmental Resources/Features in the KY 151 Corridor Study Area Anderson and Franklin Counties, KY		
Environmental Category	Resource/Feature	Source/Information
Schools	One (1) school facility was identified in the study area, Bluegrass Community & Technical College on US 127. No primary or secondary schools are located in the study area. Two (2) day care facilities are located in the commercial district near the KY 151 / US 127 intersection.	Source: ESRI USA topo map service layer, ESRI Aerial map service layer, Google Maps, field survey
Cemeteries	Four (4) cemeteries are located within the study area; Alton Cemetery on Old Frankfort Road (KY 512), an unnamed USGS-mapped cemetery (Lowen's cemetery) along KY 151 near the Anderson/Franklin County line, an unmapped cemetery (Hancock family cemetery) along KY 151 near South Benson Creek crossing, and an unmapped cemetery along KY 151 south of Green Wilson Road (KY 2820).	Source: CRA (2018b), ESRI USA topo map service layer, ESRI Aerial map service layer, Google Maps, field survey
Public Services	<p>Public service and utility facilities located within the study area include:</p> <ul style="list-style-type: none"> • Eagle Lake Convention Center on KY 151 near the south endpoint • 1 fire department station: Anderson County Fire Station 2 at KY 151 and KY 512/Alton Station Road • 1 electric substation, behind Florida Tile manufacturing complex on KY 151 near Lawrenceburg • 1 cellular tower near US 127 and Old Frankfort Road (KY 512) • 2 pipelines; 1 hazardous liquids pipeline crossing east-west at Cable Drive near the south endpoint, and 1 gas transmission pipeline parallel to KY 151 from Benson Valley Landfill to Florida Tile (terminus) • 1 Norfolk Southern active rail line traversing study area from southeast to northwest, including an at-grade crossing of KY 512/Alton Station Road and a grade-separated crossing (underpass) of US 127 	Source: ESRI USA topo map service layer, ESRI Aerial map service layer, Google Maps, KIA (2017), USDOT (2017), field survey

ENVIRONMENTAL OVERVIEW
KY 151 CORRIDOR SCOPING STUDY
KYTC ITEM #5-806.00

Table 1: Environmental Resources/Features in the KY 151 Corridor Study Area Anderson and Franklin Counties, KY		
Environmental Category	Resource/Feature	Source/Information
Residences and Businesses	<p>Residential land use in the study area includes single-family, medium-density developments near Lawrenceburg (Sycamore Estates, Honeysuckle Lane Estates) and along KY 512/Alton Station Road (The Cottages of Alton Station), one multi-family development (Woodlawn Park) along US 127, and scattered rural residential development along KY 151 through most of the study area. One mobile home park is located on KY 512/Alton Station Road. New residential development is occurring on McCormick Road adjacent to KY 151, and expanding development is occurring in the Sycamore Estates subdivision, along Sycamore Drive between KY 151 and US 127.</p> <p>Commercial development is concentrated between KY 151 and US 127 near Lawrenceburg. Industrial development is present south and west of KY 151 at US 127 (General Cable Corp, Florida Tile and IMI South) and near the north study area terminus (Benson Valley Landfill).</p>	Source: ESRI Aerial map service layer, field survey

ENVIRONMENTAL OVERVIEW
KY 151 CORRIDOR SCOPING STUDY
KYTC ITEM #5-806.00

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KY 151 CORRIDOR SCOPING STUDY
KYTC ITEM #5-806.00

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ENVIRONMENTAL OVERVIEW
KY 151 CORRIDOR SCOPING STUDY
KYTC ITEM #5-806.00

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ENVIRONMENTAL OVERVIEW
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FIGURES

1. Study Area Map
2. Project Location Map
- 3.1 Environmental Footprint: Natural Environment
- 3.2 Environmental Footprint: Natural Environment – Farmland
Classification of Soils
4. Environmental Footprint: Human Environment

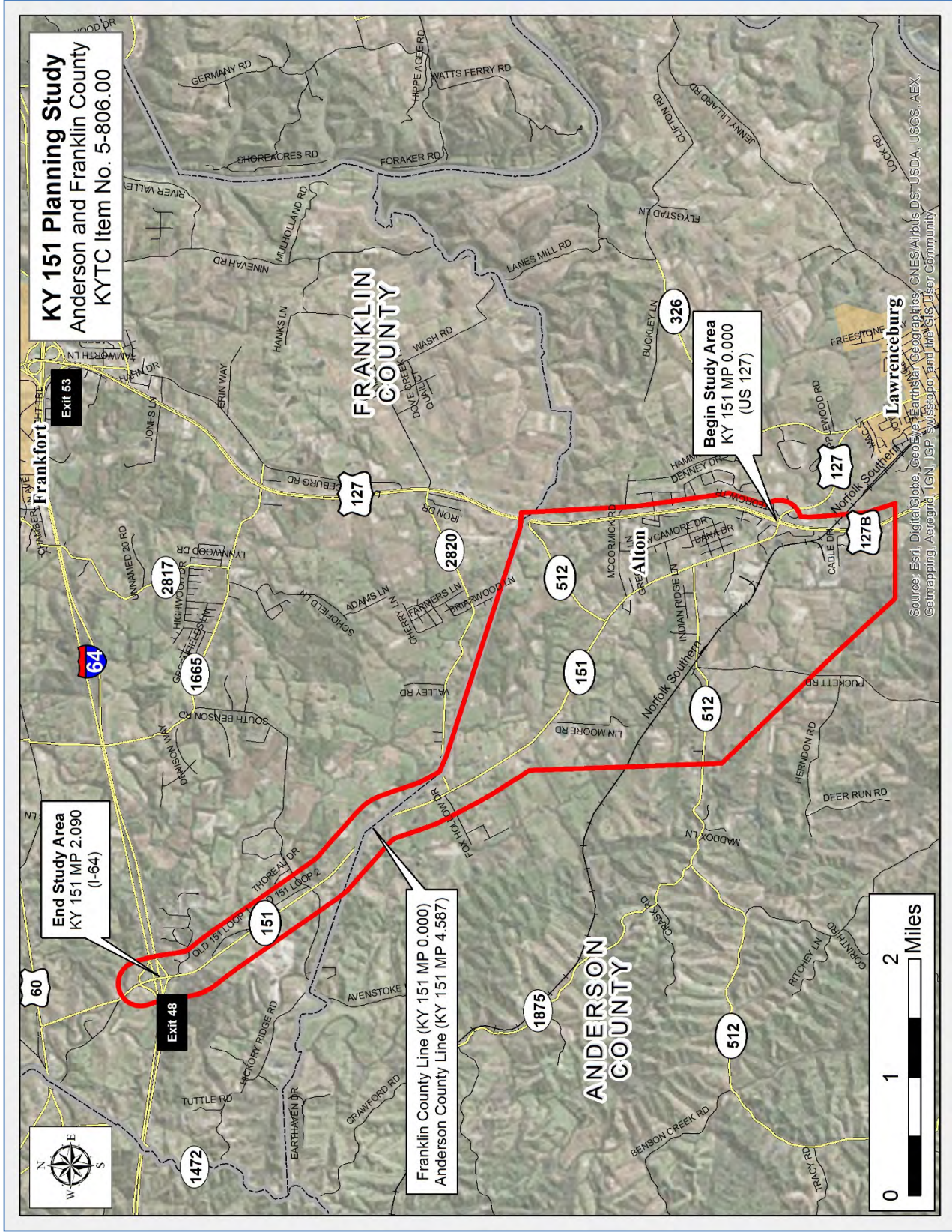
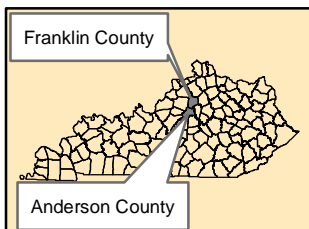
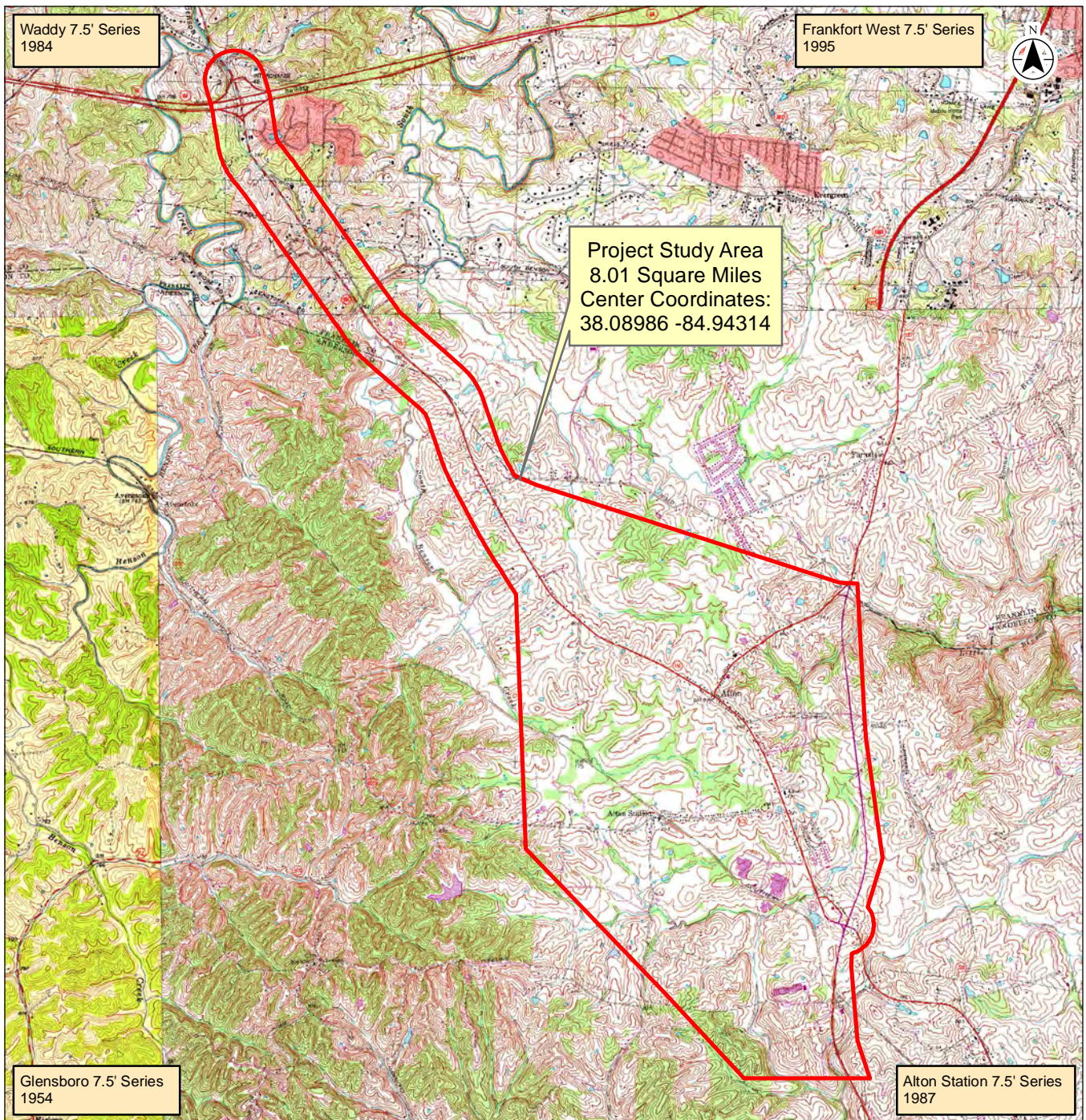


Exhibit 1 – Study Area



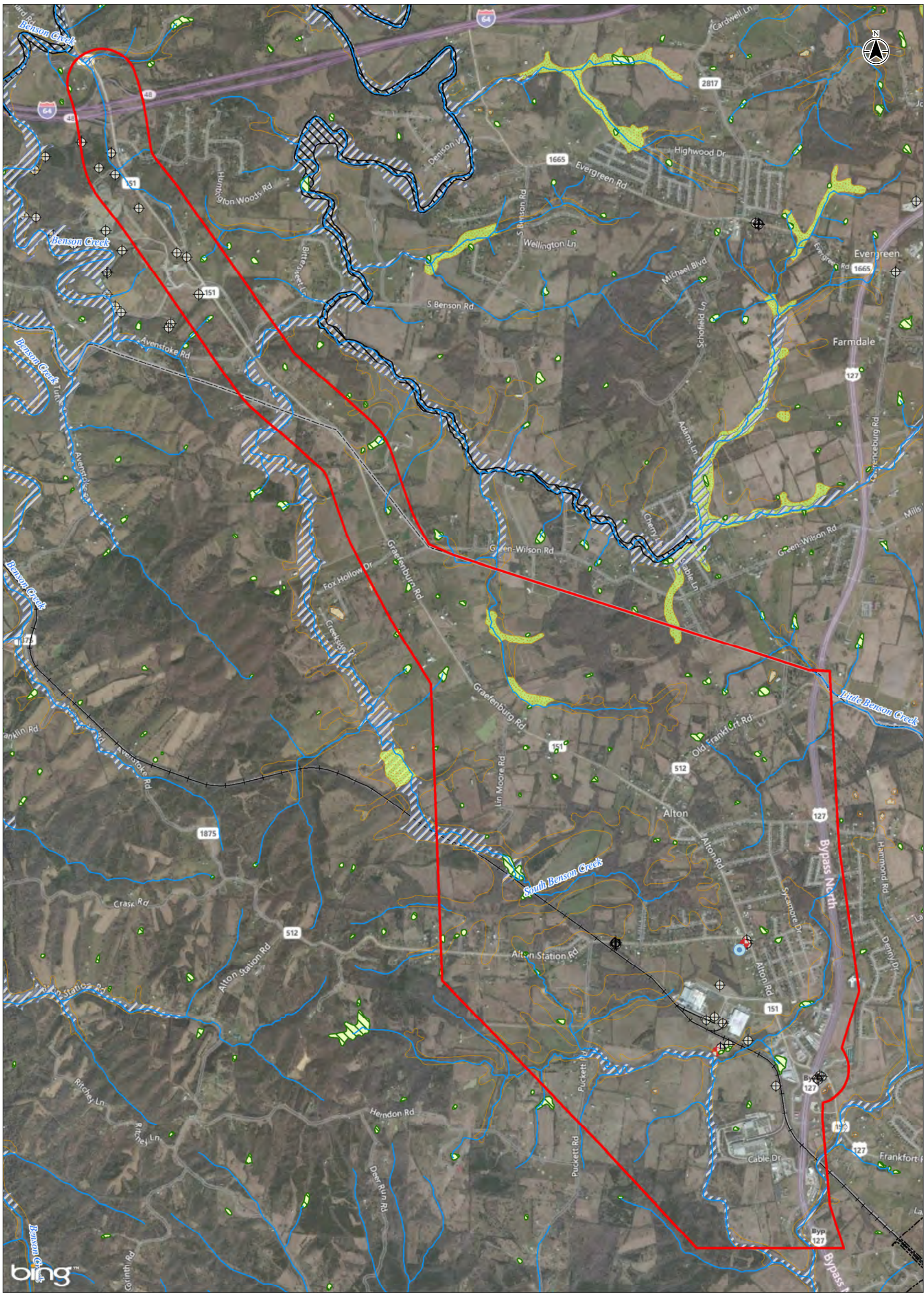
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Project Location 178556010 LA#4
From US 127 in Anderson County to I-64 in Franklin County
Anderson and Franklin Counties, Kentucky
Client/Project
KYTC-DEA, KYTC District 5 and District 7
Environmental Overview
KY 151 Corridor Scoping Study, KYTC Item #5-806.00
Figure No.
2

Title
Project Location Map

- Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
 2. Base features produced from project design elements.
 3. Base Image: USGS historical topographic maps, The National Map



- Legend**
- Study Area
 - Streams (NHD)
 - NWI Wetland (USFWS)
 - NFHL (FEMA)
 - Floodway
 - Sinkhole (KGS)
- Hydric Soils (USDA)**
- Partial
 - All
- Water Wells (KDOW)**
- Domestic
 - Remediation
 - Other
- City Boundary**
- County Boundary**

0 1,600 3,200 Feet
1:32,000 (At original document size of 11x17)

Project Location
KY 151 from US 127 in Anderson County to I-64 in Franklin County
Anderson and Franklin Counties, Kentucky

Client/Project
KYTC-DEA, KYTC District 5 and District 7
Environmental Overview
KY 151 Corridor Scoping Study, KYTC Item #5-806.00

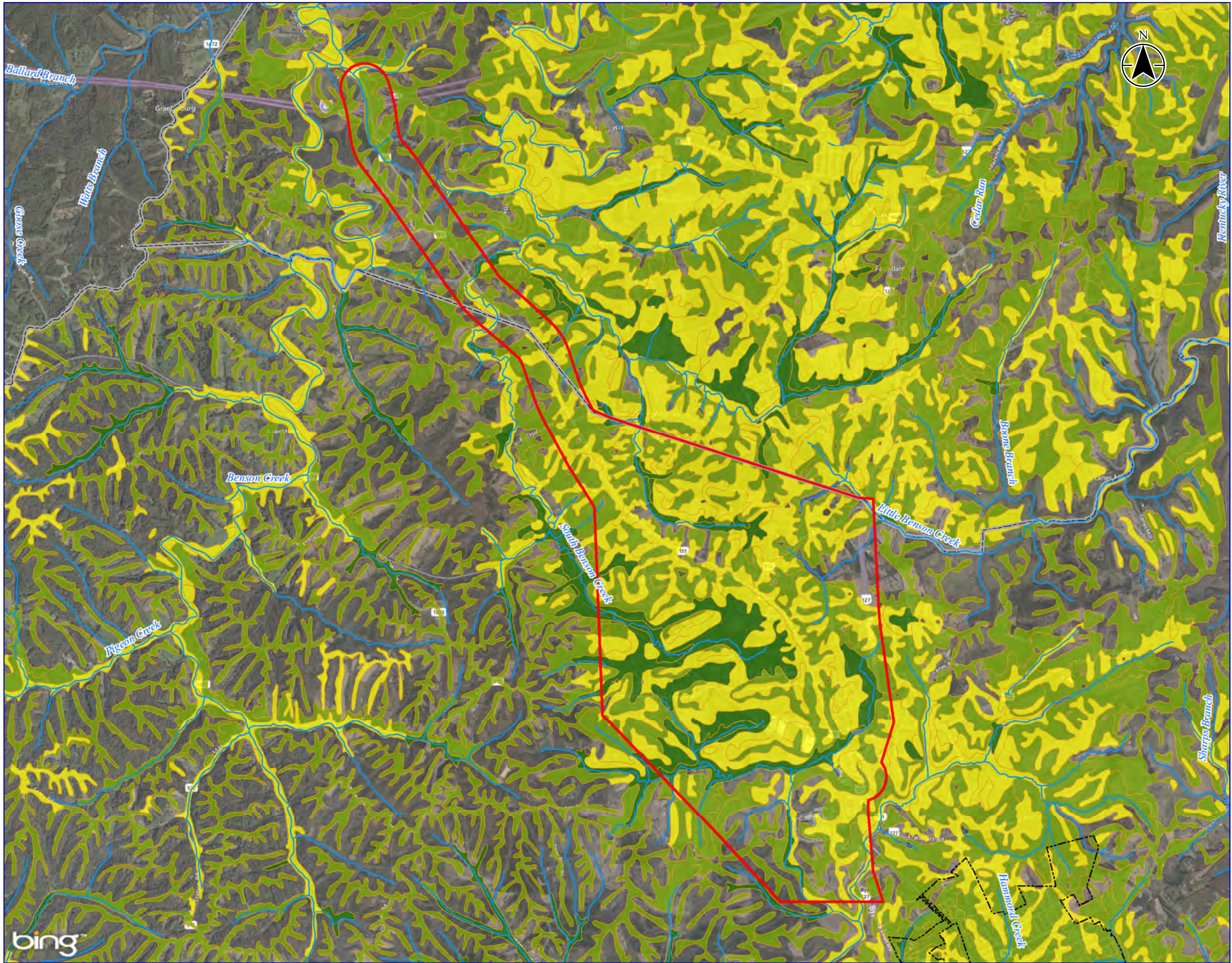
Figure No.
3.1

Title
Environmental Footprint
Natural Environment

Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
2. Base features: see Sources and References.
3. Base Imagery: BING map services (C) Microsoft 2018.

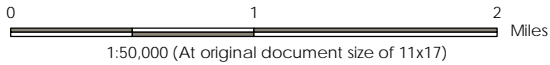


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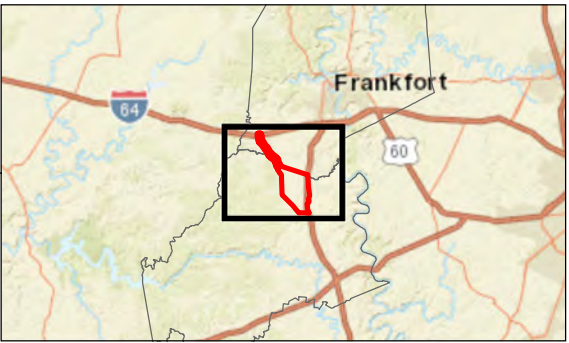


Legend

- Study Area
- Streams (NHD)
- Farmland Classification (USDA)**
 - All areas are prime farmland
 - Farmland of statewide importance
 - Prime farmland if drained/protected
- City Boundary
- County Boundary



- Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
 2. Base features: see Sources and References
 3. Base Imagery: BING map services (c) Microsoft corporation, 2018.



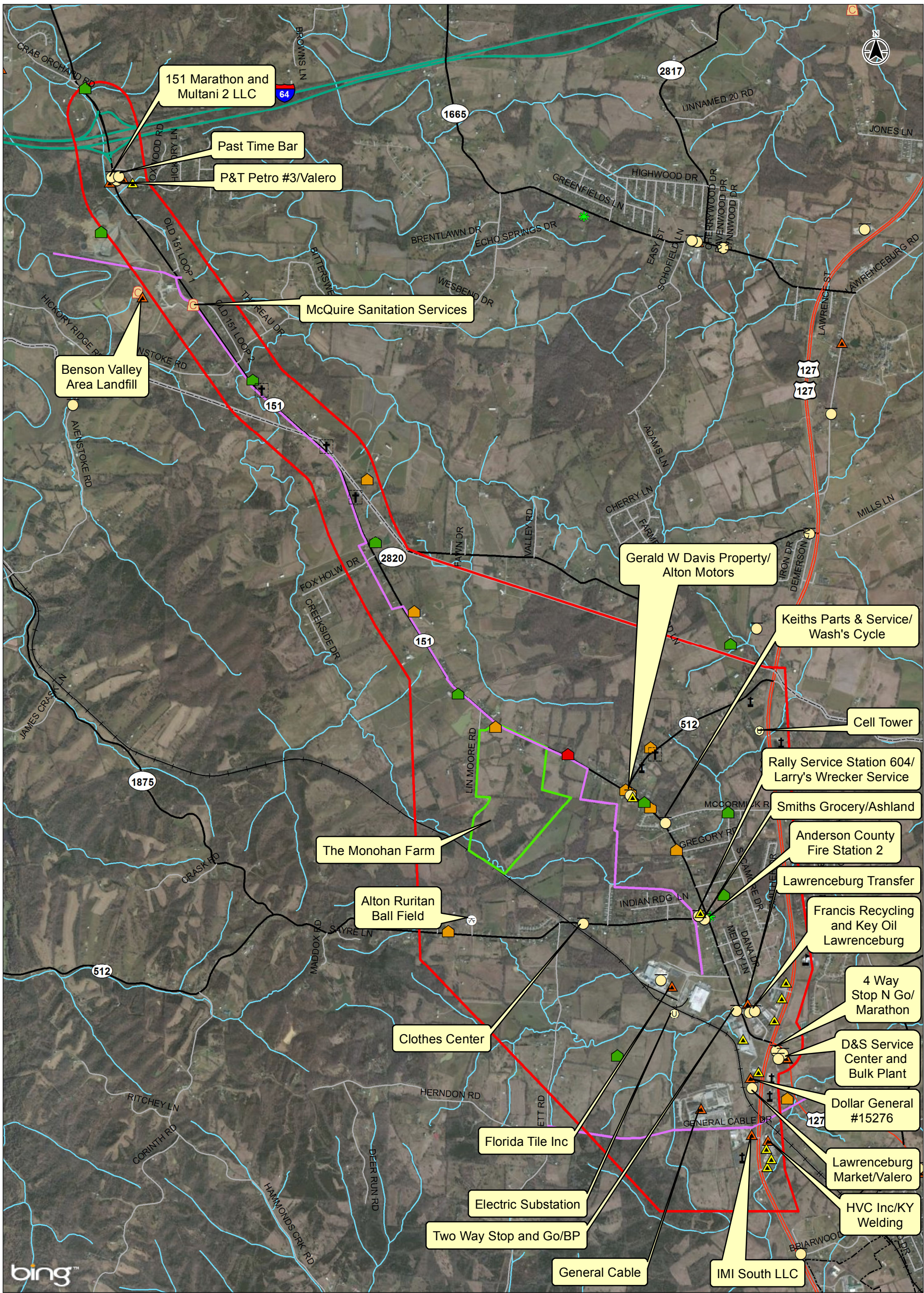
Project Location
KY 151 from US 127 in Anderson County
to I-64 in Franklin County
Anderson and Franklin Counties, Kentucky

178556010 LA#4
Prepared by BL on 2018-01-03

Client/Project
KYTC-DEA, KYTC District 5 and District 7
Environmental Overview
KY 151 Corridor Scoping Study, KYTC Item #5-806.00

Figure No.
3.2

Title
Environmental Footprint
Natural Environment - Farmland
Classification of Soils



Legend		Cultural-Historic Sites	
Study Area	HazMat Record (USEPA)	Determined Eligible NRHP	
Cemetery	Potential HazMat Site	Potentially Significant	
House of Worship	UST Record (KDWM)	Previously Recorded-Demolished	
Park	Solid Waste Landfill (KDWM)		
School	Conservation Easement (NCED)		
Utility	Stream (NHD)		
Pipeline (NPMS)	City Boundary		
Fire Departments	County Boundary		

Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
2. Base features: see Sources and References.
3. Base Imagery: BING map services (C) Microsoft 2018.

0 1,800 3,600 Feet
1:34,000 (At original document size of 11x17)

Project Location
KY 151 from US 127 in Anderson County to I-64 in Franklin County
Anderson and Franklin Counties, Kentucky

Client/Project
KYTC-DEA, KYTC District 5 and District 7
Environmental Overview
KY 151 Corridor Scoping Study, KYTC Item #5-806.00

Figure No. 4

Environmental Footprint
Human Environment

ATTACHMENTS

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

ATTACHMENT 1

THREATENED AND ENDANGERED SPECIES

- USFWS KY 151 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, Anderson and Franklin Counties
- KSNPC Natural Heritage Database Response (redacted)

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

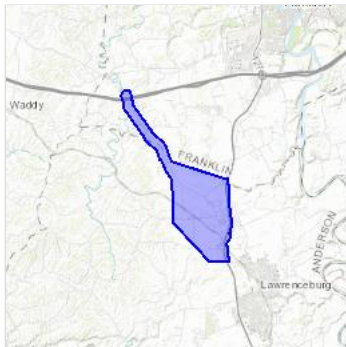
Project information

NAME

KY 151 Corridor Scoping Study

LOCATION

Anderson and Franklin counties, Kentucky



DESCRIPTION

Determine potential improvements for safety and traffic flow

Local office

Kentucky Ecological Services Field Office

☎ (502) 695-0468

📠 (502) 695-1024

J C Watts Federal Building, Room 265

330 West Broadway

Frankfort, KY 40601-8670

<http://www.fws.gov/frankfort/>

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

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 from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species¹ are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service.

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Gray Bat <i>Myotis grisescens</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat <i>Myotis sodalis</i> This species only needs to be considered if the following condition applies: <ul style="list-style-type: none"> • All activities in this location should consider possible effects to this species. The project area includes "potential" habitat. There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> This species only needs to be considered if the following condition applies: <ul style="list-style-type: none"> • The specified area includes areas in which incidental take would not be prohibited under the 4(d) rule. For reporting purposes, please use the "streamlined consultation form," linked to in the "general project design guidelines" for the species. No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Clams

NAME	STATUS
Orangefoot Pimpleback (pearlymussel) <i>Plethobasus cooperianus</i> This species only needs to be considered if the following condition applies: <ul style="list-style-type: none"> • The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Green, Ohio, Salt, or Tennessee. No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1132	Endangered

Pink Mucket (pearlymussel) *Lampsilis abrupta*

Endangered

This species only needs to be considered if the following condition applies:

- The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Barren, Green, Licking, Rolling Fork, or Salt.

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/7829>

Sheepnose Mussel *Plethobasus cyphus*

Endangered

This species only needs to be considered if the following condition applies:

- The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Barren, Green, Kentucky, Licking, Ohio, or Tennessee.

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/6903>

Flowering Plants

NAME	STATUS
Braun's Rock-cress <i>Arabis perstellata</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/4704	Endangered
Running Buffalo Clover <i>Trifolium stoloniferum</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2529	Endangered
Short's Bladderpod <i>Physaria globosa</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7206	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service³. 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, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.
3. 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>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or are known to have particular vulnerabilities in your project location. To learn more about the levels of concern for birds on your list, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your specific project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the [E-bird data mapping tool](#) (search for the scientific name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain time-frame) and the [E-bird Explore Data Tool](#) (perform a query to see a list of all birds sighted in

your county or region and within a certain time-frame). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found [below](#).

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC), but is of concern in this area either because of the Eagle Act, or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Mar 20 to Sep 15
Eastern Whip-poor-will <i>Antrostomus vociferus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20
Henslow's Sparrow <i>Ammodramus henslowii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941	Breeds May 1 to Aug 31
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Semipalmated Sandpiper <i>Calidris pusilla</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Such measures are particularly important when birds are most likely to occur in the project area. To see when birds are most likely to occur in your project area, view the Probability of Presence Summary. Special attention should be made to look for nests and avoid nest destruction during the breeding season. The best information about when birds are breeding can be found in [Birds of North America \(BNA\) Online](#) under the "Breeding Phenology" section of each species profile. Note that accessing this information may require a [subscription](#). [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) that might be affected by activities in your project location. These birds are of priority concern because it has been determined that without additional conservation actions, they are likely to become candidates for listing under the [Endangered Species Act \(ESA\)](#).

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#). The AKN list represents all birds reported to be occurring at some level throughout the year in the counties in which your project lies. That list is then narrowed to only the Birds of Conservation Concern for your project area.

Again, the Migratory Bird Resource list only includes species of particular priority concern, and is not representative of all birds that may occur in your project area. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird entry on your migratory bird species list indicates a breeding season, it is probable the bird breeds in your project's counties at some point within the time-frame specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

[Avoidance and minimization measures](#) should be implemented to reduce impacts to birds on your list, and all other birds that may occur in your project area. Nationwide Standard Conservation Measures can be applied for any project, regardless of project type or location.

If measures exist that are specific to your activity or to any of the species on your list that are confirmed to exist at your project area, these should also be considered for implementation in addition to the Nationwide Standard Conservation Measures. Implementation of avoidance and minimization measures is particularly important for BCC birds of rangewide concern.

If your project has the potential to disturb or kill eagles, you will need to [obtain a permit](#) to avoid violating the BGEPA should such impacts occur.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT 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](#).

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEM1Fh](#)

FRESHWATER FORESTED/SHRUB WETLAND

[PSS1A](#)
[PEO1A](#)
[PSS1Fh](#)

FRESHWATER POND

[PUBHh](#)
[PUBHx](#)

A full description for each wetland code can be found at the National Wetlands Inventory website: <https://ecos.fws.gov/ipac/wetlands/decoder>

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

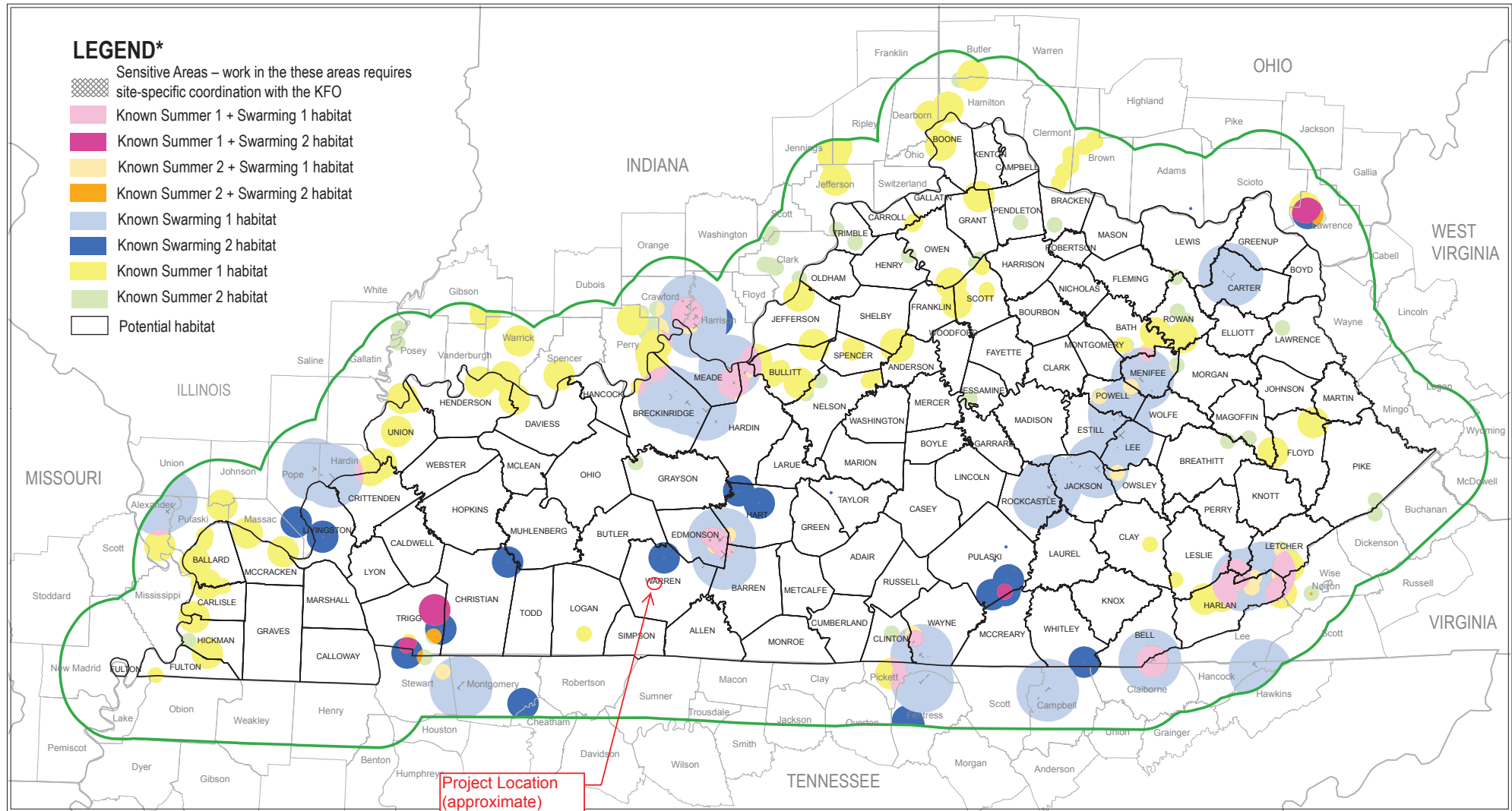
Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and 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.



Known Indiana bat habitat in Kentucky and within 20 miles (November 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.



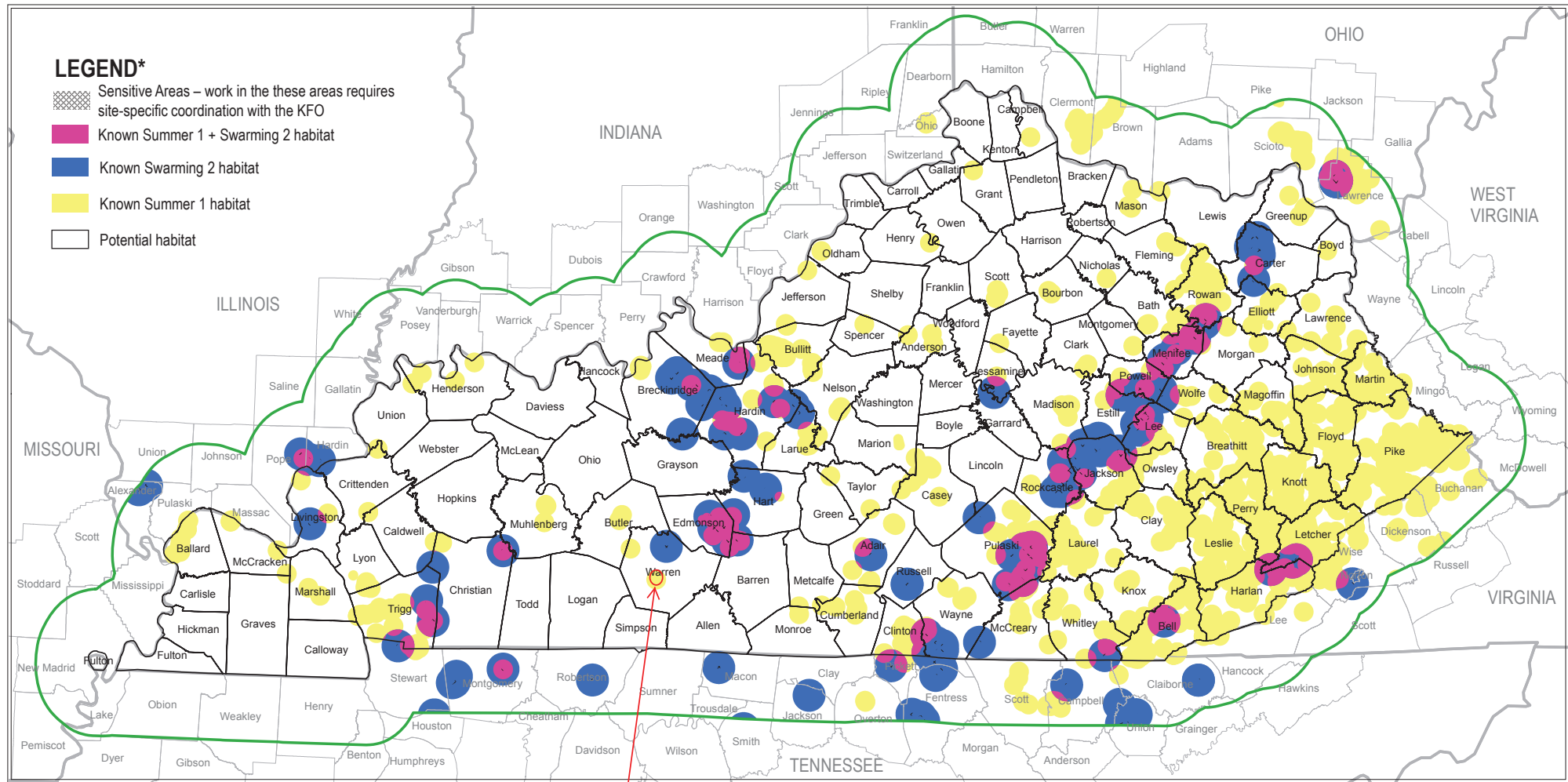
The USFWS makes no warranty for use of this map and cannot be held liable for actions or decisions based on map content. This map was produced as an appendix to the Conservation Strategy for Forest-Dwelling Bats in the Commonwealth of Kentucky and should only be used in the context of this Strategy.





U.S. Fish & Wildlife Service

Known northern long-eared bat habitat in Kentucky and within 20 miles (November 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.

Project Location
(approximate)

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.

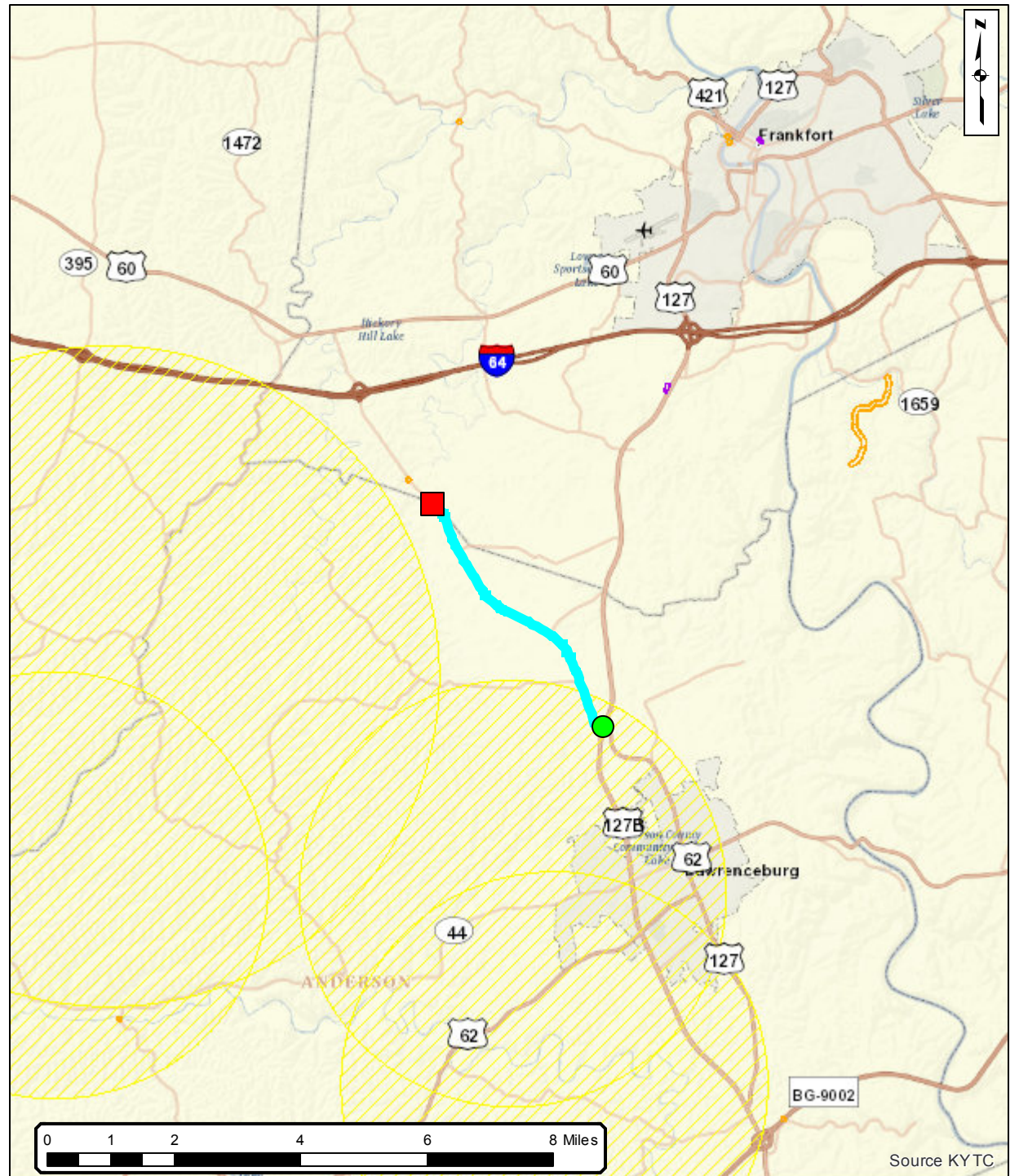
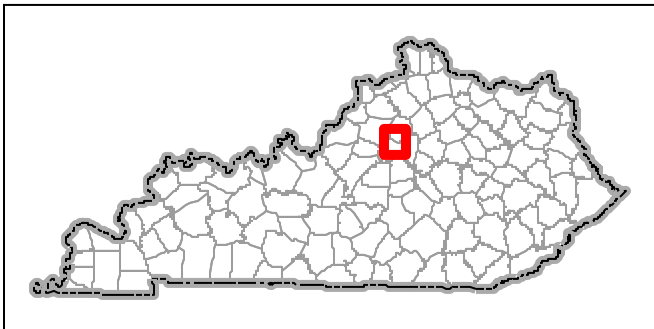


KY 151 Corridor

Date: 12/15/2017



Kentucky Transportation Cabinet
200 Mero St, Suite W-5
Frankfort, KY 40601
Phone: (502) 564-4890





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: Anderson, Franklin.

Scientific Name and Life History	Common Name and Pictures	Class	County	US Status	KY Status	WAP	Reference
<i>Accipiter striatus</i>	Sharp-shinned Hawk	Aves	Anderson	N	S	Yes	Reference
<i>Accipiter striatus</i>	Sharp-shinned Hawk	Aves	Franklin	N	S	Yes	Reference
<i>Actitis macularius</i>	Spotted Sandpiper	Aves	Franklin	N	E	Yes	Reference
<i>Alasmidonta marginata</i>	Elktoe	Bivalvia	Franklin	N	T	Yes	Reference
<i>Ammodramus henslowii</i>	Henslow's Sparrow	Aves	Anderson	N	S	Yes	Reference
<i>Anas clypeata</i>	Northern Shoveler	Aves	Anderson	N	E		Reference
<i>Anas clypeata</i>	Northern Shoveler	Aves	Franklin	N	E		Reference
<i>Anas discors</i>	Blue-winged Teal	Aves	Franklin	N	T		Reference
<i>Anas discors</i>	Blue-winged Teal	Aves	Anderson	N	T		Reference
<i>Ardea alba</i>	Great Egret	Aves	Anderson	N	T	Yes	Reference
<i>Asio otus</i>	Long-eared Owl	Aves	Franklin	N	E	Yes	Reference
<i>Cambarus callainus</i>	Big Sandy Crayfish	Malacostraca	Anderson	T	S	Yes	Reference
<i>Certhia americana</i>	Brown Creeper	Aves	Franklin	N	E	Yes	Reference
<i>Circus cyaneus</i>	Northern Harrier	Aves	Franklin	N	T	Yes	Reference
<i>Clonophis kirtlandii</i>	Kirtland's Snake	Reptilia	Franklin	N	T	Yes	Reference
<i>Cryptobranchus alleganiensis alleganiensis</i>	Eastern Hellbender	Amphibia	Franklin	N	E	Yes	Reference
<i>Cryptobranchus alleganiensis alleganiensis</i>	Eastern Hellbender	Amphibia	Anderson	N	E	Yes	Reference
<i>Dryobius sexnotatus</i>	Sixbanded Longhorn Beetle	Insecta	Franklin	N	T		Reference
<i>Egretta caerulea</i>	Little Blue Heron	Aves	Anderson	N	E	Yes	Reference
<i>Empidonax minimus</i>	Least Flycatcher	Aves	Franklin	N	E	Yes	Reference
<i>Epioblasma torulosa rangiana</i>	Northern Riffleshell	Bivalvia	Franklin	E	E	Yes	Reference
<i>Falco peregrinus</i>	Peregrine Falcon	Aves	Franklin	N	E	Yes	Reference
<i>Fulica americana</i>	American Coot	Aves	Anderson	N	E		Reference
<i>Fulica americana</i>	American Coot	Aves	Franklin	N	E		Reference
<i>Gallinula galeata</i>	Common Gallinule	Aves	Franklin	N	T	Yes	Reference
<i>Haliaeetus leucocephalus</i>	Bald Eagle	Aves	Franklin	N	T	Yes	Reference
<i>Haliaeetus leucocephalus</i>	Bald Eagle	Aves	Anderson	N	T	Yes	Reference
<i>Junco hyemalis</i>	Dark-eyed Junco	Aves	Anderson	N	S		Reference
<i>Junco hyemalis</i>	Dark-eyed Junco	Aves	Franklin	N	S		Reference
<i>Leptoxis praerosa</i>	Onyx Rocksnailed	Gastropoda	Franklin	N	S		Reference
<i>Leptoxis praerosa</i>	Onyx Rocksnailed	Gastropoda	Anderson	N	S		Reference

<i>Lophodytes cucullatus</i>	Hooded Merganser	Aves	Franklin	N	T	Yes	Reference
<i>Mustela nivalis</i>	Least Weasel	Mammalia	Anderson	N	S		Reference
<i>Mustela nivalis</i>	Least Weasel	Mammalia	Franklin	N	S		Reference
<i>Myotis grisescens</i>	Gray Myotis	Mammalia	Franklin	E	T	Yes	Reference
<i>Myotis grisescens</i>	Gray Myotis	Mammalia	Anderson	E	T	Yes	Reference
<i>Myotis septentrionalis</i>	Northern Myotis	Mammalia	Anderson	T	E		Reference
<i>Myotis septentrionalis</i>	Northern Myotis	Mammalia	Franklin	T	E		Reference
<i>Myotis sodalis</i>	Indiana Bat	Mammalia	Franklin	E	E	Yes	Reference
<i>Myotis sodalis</i>	Indiana Bat	Mammalia	Anderson	E	E	Yes	Reference
<i>Nocomis biguttatus</i>	Hornyhead Chub	Actinopterygii	Franklin	N	S		Reference
<i>Nycticeius humeralis</i>	Evening Bat	Mammalia	Anderson	N	S	Yes	Reference
<i>Nycticorax nycticorax</i>	Black-crowned Night-heron	Aves	Franklin	N	T	Yes	Reference
<i>Pandion haliaetus</i>	Osprey	Aves	Franklin	N	S	Yes	Reference
<i>Pandion haliaetus</i>	Osprey	Aves	Anderson	N	S	Yes	Reference
<i>Passerculus sandwichensis</i>	Savannah Sparrow	Aves	Franklin	N	S	Yes	Reference
<i>Phalacrocorax auritus</i>	Double-crested Cormorant	Aves	Anderson	N	T		Reference
<i>Phalacrocorax auritus</i>	Double-crested Cormorant	Aves	Franklin	N	T		Reference
<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak	Aves	Franklin	N	S	Yes	Reference
<i>Podilymbus podiceps</i>	Pied-billed Grebe	Aves	Franklin	N	E	Yes	Reference
<i>Poocetes gramineus</i>	Vesper Sparrow	Aves	Franklin	N	E	Yes	Reference
<i>Rana pipiens</i>	Northern Leopard Frog	Amphibia	Franklin	N	S	Yes	Reference
<i>Rana pipiens</i>	Northern Leopard Frog	Amphibia	Anderson	N	S	Yes	Reference
<i>Setophaga fusca</i>	Blackburnian Warbler	Aves	Franklin	N	T	Yes	Reference
<i>Simpsonaias ambigua</i>	Salamander Mussel	Bivalvia	Franklin	N	T	Yes	Reference
<i>Sitta canadensis</i>	Red-breasted Nuthatch	Aves	Franklin	N	E	Yes	Reference
<i>Thryomanes bewickii</i>	Bewick's Wren	Aves	Franklin	N	S	Yes	Reference
<i>Thryomanes bewickii</i>	Bewick's Wren	Aves	Anderson	N	S	Yes	Reference
<i>Tyto alba</i>	Barn Owl	Aves	Franklin	N	S	Yes	Reference
<i>Vermivora chrysoptera</i>	Golden-winged Warbler	Aves	Franklin	N	T	Yes	Reference

60 species are listed

Matthew G. Bevin
Governor



Charles G. Snively
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

January 9, 2018

Bill Leopold
Stantec
11687 Lebanon Road
Cincinnati, OH 45241

Data Request 18-036

Dear Mr. Leopold,

This letter is in response to your data request of December, 2017 for the KY 151 Corridor Environmental Review Project in Anderson 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 study on the Alton Station and Frankfort West USGS Quadrangles. Please see the **attached reports** for more information.

1-mile for all records – 1 records
5-mile for aquatic records – 1 records
5-mile for federally listed species – 9 records
10-mile for mammals and birds – 13 records

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 Heritage Branch (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,

Ian Horn
Geoprocessing Specialist

Data Key for Element and Occurrence Reports (v. 9.05)

Kentucky State Nature Preserves Commission
Natural Heritage Program Data Services

Many of the data fields on the enclosed report are easily understood. Other fields, however, use abbreviations and formats that are not always self-explanatory. A key to these fields follows. Your report may contain some or all of the following data fields.

BESTSOURCE:	Best available reference to the occurrence: literature citation, collector, collection number, museum or herbarium code, etc.
COMMENTS:	Additional information about the occurrence including identification, taxonomy, or date of occurrence.
DIRECTIONS:	Directions to an occurrence. This field is masked for sensitive occurrences; contact KSNPC in these cases.
DISTANCE:	Distance from a center point to an occurrence's latitude and longitude. Units coded as M (miles), K (kilometers), and F (feet). This field is masked for sensitive occurrences; contact KSNPC in these cases. Omitted for G, U, and Q precision occurrence records.
ELCODE:	Element (species) code.
EOCODE:	Element (species) code, occurrence number (last three digits), and state.
EODATA:	Occurrence population data: date of observation, number of individuals, health, size of colony, flowering data, etc.
EORANK:	Judgement of occurrence quality: A = excellent, B = good, C = marginal, D = poor, E = verified extant but quality not judged, H = historically known from site but no known observation or collection since 1975, F = failed to find (site was revisited and none observed but still likely to use the area - further searching needed), X = extirpated from site.
FIRSTOBS:	Year of first known observation or collection.
GENDESC:	Description of an occurrence's habitat.
GRANK:	Estimate of element abundance on a global scale: G1 = extremely rare, G2 = rare, G3 = uncommon, G4 = common, G5 = very common, GH = historically known and expected to be rediscovered, GU = uncertain, GX = extinct. Subspecies and variety abundances are coded with a 'T' suffix; the 'G' portion of the rank then refers to the entire species.
HABITAT:	General description of the element's habitat across its range.
IDENT:	Whether the identification has been checked by a reliable individual and is believed to be correctly identified: Y = identification confirmed and believed correct, N = No, identification determined to be wrong despite reports to the contrary, ? = Whether identification is correct or not is confusing or disputed, blank or U = unknown whether identification correct or not, assumed correct.
KSNPC:	Kentucky State Nature Preserves Commission status: N or blank = none, E = endangered, T = threatened, S = special concern, H = historic, X = extirpated.
LASTOBS:	Year(-month-date) of most recent known observation or collection.
LAT:	Latitude in degrees minutes and seconds.
LONG:	Longitude in degrees minutes and seconds. Lat/long fields are masked for sensitive occurrences; contact KSNPC in these cases.
PREC:	See PRECISION.
PRECISION:	Precision of the latitude, longitude, directions, and plotted location: S = location accurate to within three seconds of latitude-longitude, M = location accurate to within one minute of latitude-longitude, G = precision within about 8 km or 5 miles, or to place name precision only, C = known to occur within a county but specific location unknown, W = known to occur within a watershed but specific location unknown, U

or blank = accuracy of location unknown or not specified.

The accuracy of an occurrence's location is designated by the precision code assigned to the record. Only 'S' precision occurrence records are reliably mapped at or near their precise locations. While an attempt is made to map 'M' precision occurrences as accurately as possible, the plotted locations, lat, long, directions, bearing, and distance data fields may or may not be correct. 'G', 'C', and 'W' precision occurrence locations are very unreliable and only should be used to indicate the possibility that the species is in the area.

SPROT: See KSNPC.

SRANK: Estimate of element abundance in Kentucky: S1 = extremely rare, S2 = rare, S3 = uncommon, S4 = many occurrences, S5 = very common, SA = accidental in state, SE = exotic, SH = historically known in state, SN = migratory or nonbreeding, SR = reported but without persuasive documentation, SRF = reported falsely in literature, SU = uncertain, SX = extirpated.

USESA: U.S. Fish and Wildlife Service status: N or blank = none, LT = listed as threatened, LE = listed as endangered, PE-Proposed Endangered, C= Candidate.

OTHER STATUS: SOMC = Designated by the U.S. Fish and Wildlife Service as a Species of Management Concern.

WATERBODY: Name of the 11-digit Hydrologic Unit Code EPA Waterbody in which the occurrence is plotted.

WATERSHED: See WATERBODY.

Standard Occurrence Report
KSNPC monitored species within 1 mile of the KY 151 Corridor Environmental Review in Anderson 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
Extant in Kentucky																		
Vascular Plants																		
PDBRA1N0N0*005 10460	Physaria globosa	Globe Bladderpod	G2	S1	E	LE		Y	1880-06	G	H	Franklin Anderson	Alton Station Frankfort East Tyrone Frankfort West				AT FARMDALE.	Calcareous rocks and barrens, wooded cliff edges.

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

Amphibians

AAAAC01011*016	<i>Cryptobranchus alleganiensis alleganiensis</i>	Eastern Hellbender	G3G4T3 T4	S1	E	SOMC	Y	1989-11-09	S	E	Anderson Woodford	CONTACT KSNPC	CONTACT KSNPC	051002050708 - Bailey Run-Kentucky River	SENSITIVE ELEMENT- CONTACT KSNPC	Confined to running waters of fairly large streams and rivers, especially in stretches with large flat stones.
2761																

Page 1 of 3

01/09/2018

DR# 18-036 federal

Standard Occurrence Report

KSNPC monitored federal status species within 5 miles of the KY 151 Corridor Environmental Review in Anderson 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
Extant in Kentucky																		
Vascular Plants																		
PDBRA061G0*048	Boechera perstellata	Braun's Rockcress	G2	S2	T	LE		Y	2012-04-03	S	BC	Franklin	Frankfort West				South Benson Creek,	
12966																		
Mammals																		
AMACC01040*115	Myotis grisescens	Gray Myotis	G4	S2	T	LE		Y	2005-07-25	S	E	Anderson	McBrayer				Salt River	
11971	Summer mist-net record																	
Extant in Kentucky																		
Vascular Plants																		
PDBRA061G0*004	Boechera perstellata	Braun's Rockcress	G2	S2	T	LE			1996-05-14	S	D	Franklin	Frankfort West					Rocky, wooded slopes on blackish clay loams over limestone or acid limestone cobble.
2012																		
Extant in Kentucky																		
Vascular Plants																		
PDBRA061G0*010	Boechera perstellata	Braun's Rockcress	G2	S2	T	LE		Y	2013-04-30	S	D	Franklin	Frankfort West					Rocky, wooded slopes on blackish clay loams over limestone or acid limestone cobble.
1054																		
Extant in Kentucky																		
Vascular Plants																		

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.

Provided to Stantec

01/09/2018

Standard Occurrence Report

KSNPC monitored federal status species within 5 miles of the KY 151 Corridor Environmental Review in Anderson 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
PDBRA061G0*022	Boechera perstellata	Braun's Rockcress	G2	S2	T	LE		Y	2013-05-02	S	B	Franklin	Frankfort West					Rocky, wooded slopes on blackish clay loams over limestone or acid limestone cobble.
8239																		

Extant in Kentucky

Vascular Plants

PDBRA061G0*041	Boechera perstellata	Braun's Rockcress	G2	S2	T	LE		Y	2012-04-04	S	D	Franklin	Frankfort West				Salato Wildlife Education Center.	Rocky, wooded slopes on blackish clay loams over limestone or acid limestone cobble.
5042																		

Extant in Kentucky

Vascular Plants

PDBRA1N0N0*002	Physaria globosa	Globe Bladderpod	G2	S1	E	LE		Y	1992-05-04	S	X	Franklin	Frankfort West					Calcareous rocks and barrens, wooded cliff edges.
3246																		

Extant in Kentucky

Vascular Plants

PDBRA1N0N0*004	Physaria globosa	Globe Bladderpod	G2	S1	E	LE		Y	2015-05-12	S	BC	Franklin Anderson	Alton Station					Calcareous rocks and barrens, wooded cliff edges.
3654																		

Extant in Kentucky

Vascular Plants

Standard Occurrence Report
KSNPC monitored federal status species within 5 miles of the KY 151 Corridor Environmental Review in Anderson County, Kentucky.

EOCODE EOID	SNAME EO Type	SCOMNAME	GRANK	SRANK	SPROT	USES A	OTHER STATUS	IDENT	LASTOBS	PREC	EO RANK	COUNTY	7.5 MINUTE QUADRANGLE	LAT	LONG	EPA WATERBODY	DIRECTIONS	HABITAT
PDBRA1N0N0*005 10460	<i>Physaria globosa</i>	Globe Bladderpod	G2	S1	E	LE		Y	1880-06	G	H	Franklin Anderson	Alton Station Frankfort East Tyrone Frankfort West				AT FARMDALE.	Calcareous rocks and barrens, wooded cliff edges.

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
----------------	------------------	----------	-------	-------	-------	-------	-----------------	-------	---------	------	---------	--------	--------------------------	-----	------	---------------	------------	---------

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

Mammals

AMACC01040*060	<i>Myotis grisescens</i>	Gray Myotis	G4	S2	T	LE		Y	2009-06-01	S	C	Franklin		CONTACT KSNPC	CONTACT KSNPC	051002051501 - Stony Creek-Kentucky River	SENSITIVE ELEMENT- CONTACT KSNPC	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.
5058	Maternity site																	

Extant in Kentucky

Mammals

AMAJF02020*010	<i>Mustela nivalis</i>	Least Weasel	G5	S2S3	S			Y	1997-04	M	E	Shelby	Shelbyville				Southeast side of KY 714, [REDACTED]	Prime habitat unknown. Seems to occur in farmland.
9138																		

SNAME	SCONAME	HABITAT	GROUP	SPROT	USESA	DISTANCE (miles)
<i>Cryptobranchus alleganiensis alleganiensis</i>	Eastern Hellbender	Confined to running waters of fairly large streams and rivers, especially in stretches with large flat stones.	Amphibian	E	SOMC	5
<i>Ammodramus henslowii</i>	Henslow's Sparrow	Henslow's sparrow prefers large contiguous blocks of grassland habitat, where it eats insects and seeds. They are most commonly observed in large grassland habitats.	Bird	S	SOMC	10
<i>Thryomanes bewickii</i>	Bewick's Wren	Brushy areas, thickets and scrub in open country, open and riparian woodland. Found in rural towns and farmsteads.	Bird	S	SOMC	10
<i>Actitis macularius</i>	Spotted Sandpiper	Seacoasts and shores of lakes, ponds, and streams, sometimes in marshes; prefers shores with rocks, wood, or debris; also mangrove edges in Caribbean.	Bird	E		10
<i>Poocetes gramineus</i>	Vesper Sparrow	Plains, prairie, dry shrublands, savanna, weedy pastures, fields, sagebrush, arid scrub and woodland clearings (B83COM01NA).	Bird	E		10
<i>Accipiter striatus</i>	Sharp-shinned Hawk	Forest and open woodland, coniferous, mixed, or deciduous, primarily in conif. In more northern and mountainous portion of range (B83COM01NA). Migrates through various habitats, mainly along ridges, lakeshores, & coastlines (B83NAT01NA).	Bird	S		10
<i>Dolichonyx oryzivorus</i>	Bobolink	Grassy hayfields and pastures, clover/alfalfa hayfields, wet prairies, and the grassy margins of marshes. Fallow fields composed of grasses and weeds also provides suitable nesting habitat.	Bird	S		10
<i>Lophodytes cucullatus</i>	Hooded Merganser	Winter in the inland waters of all coastal states and seldom go to salt water.	Bird	T		10
<i>Myotis grisescens</i>	Gray Myotis	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.	Mammal	T	E	5, 10
<i>Myotis septentrionalis</i>	Northern Long-Eared Bat	Hibernation sites used during the winter (caves, mines) and roosting sites for reproduction (tree cavities) during the summer; known for inhabiting forests and woodlands, particularly in upland forests.	Mammal	E	T	10
<i>Mustela nivalis</i>	Least Weasel	Prime habitat unknown. Seems to occur in farmland.	Mammal	S		10
<i>Physaria globosa</i>	Globe Bladderpod	Calcareous rocks and barrens, wooded cliff edges.	Vascular Plant	E	E	1, 5
<i>Boechera perstellata</i>	Braun's Rockcress	Rocky, wooded slopes on blackish clay loams over limestone or acid limestone cobble.	Vascular Plant	T	E	5

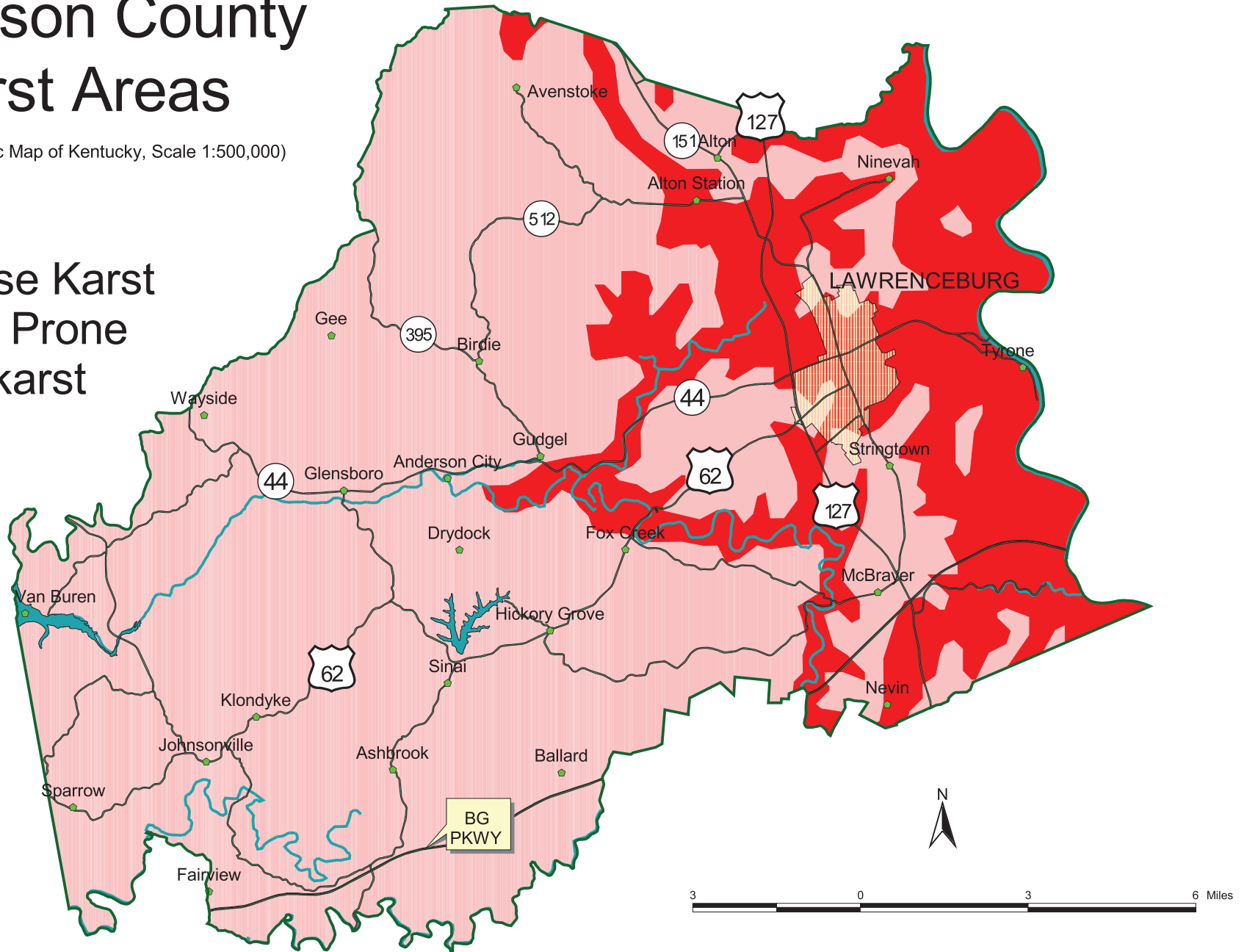
ATTACHMENT 2

KARST

- Anderson County Karst Areas Map
- Franklin County Karst Areas Map
- KSS Cave Data Request Response

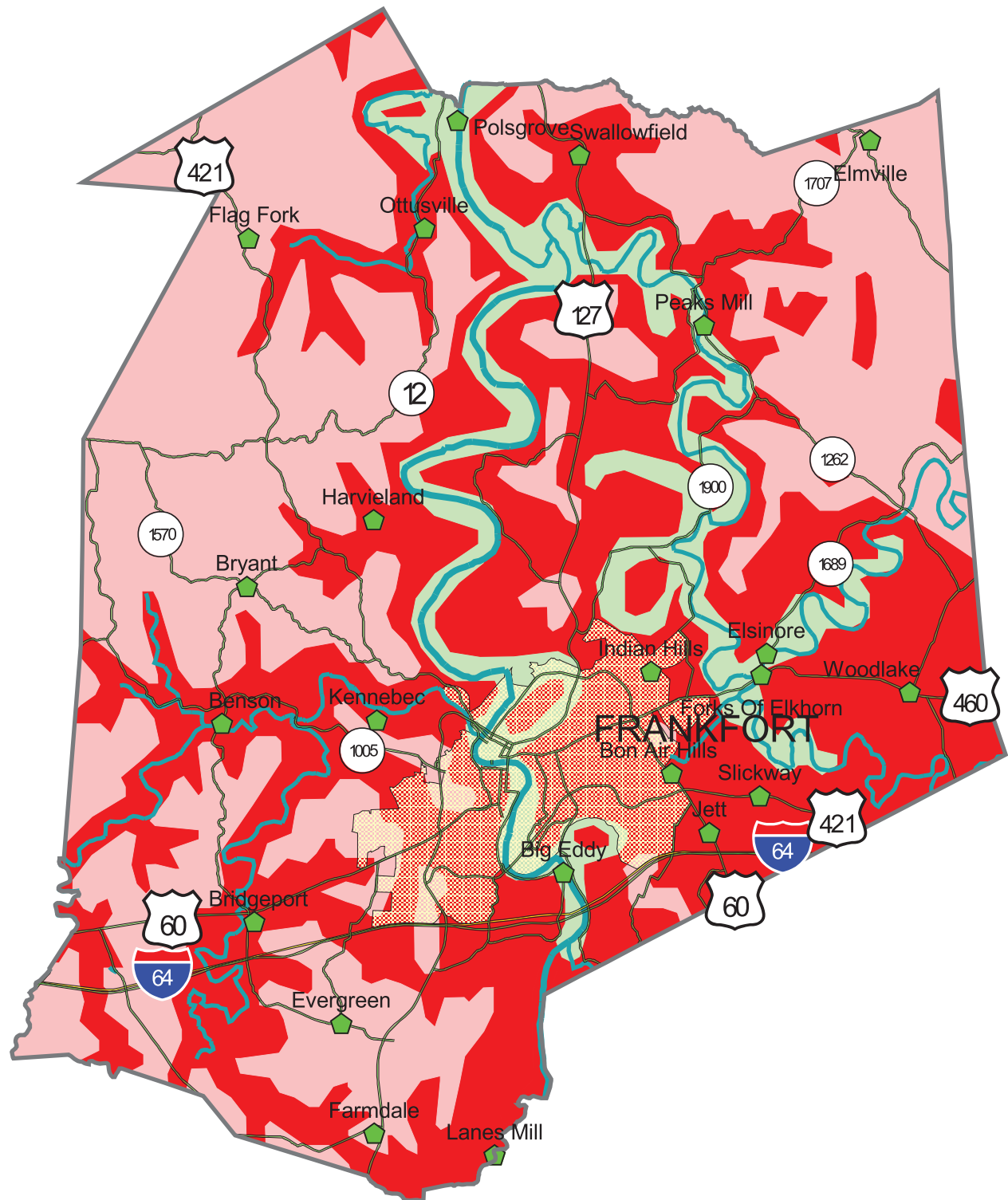
Anderson County Karst Areas

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



Franklin County Karst Areas

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



Leopold, Bill

From: Howard <hkalnitz@fuse.net>
Sent: Tuesday, January 23, 2018 7:37 PM
To: Leopold, Bill
Subject: FW: KSS Data Request by Bill Leopold

Hi Bill

One of the strange twists in our system, is the mail originates from the website, instead of the original sender. If we are not carefule, we simply reply, instead of getting it to the right person. Apparently I took care of this immediately, and never got it to you.

I apologize, and I will talk to our webmaster about seeing if there are ways to correct this self inflicted issue

Howard Kalnitz

From: Howard [mailto:hkalnitz@fuse.net]
Sent: Monday, December 18, 2017 9:30 PM
To: 'Kentucky Speleological Survey' <christopherdmorris@gmail.com>
Cc: 'caverjoshbrewer23@gmail.com' <caverjoshbrewer23@gmail.com>; 'currens@email.uky.edu' <currens@email.uky.edu>; 'vanders33@yahoo.com' <vanders33@yahoo.com>; 'sarahmariecaver@gmail.com' <sarahmariecaver@gmail.com>; jcassidy17@yahoo.com
Subject: RE: KSS Data Request by Bill Leopold

Hi Bill

Our search shows no known caves in your search area....



The closest cave is approx. 2miles from the border of your search area

There is a 50\$ charge for this search..

Our treasurer will provide an invoice

Thanks, Howard

From: Kentucky Speleological Survey [<mailto:christopherdmorris@gmail.com>]

Sent: Monday, December 18, 2017 10:15 AM

To: christopherdmorris@gmail.com

Cc: caverjoshbrewer23@gmail.com; currens@email.uky.edu; vanders33@yahoo.com; sarahmariecaver@gmail.com; hkalnitz@fuse.net

Subject: KSS Data Request by Bill Leopold

Name: Bill Leopold

Address: 11687 Lebanon Road

City: Cincinnati
State: Ohio
Phone: 5136196461
Email: bill.leopold@stantec.com
Organization: Stantec
Data/Information Requested: Location data of known cave entrances within the KY 151 Corridor Scoping Study study area. See attached project location map and shapefile (zip) for study area boundary.
Intended Use of Data/Information: Information will be provided in an Environmental Overview document, part of a larger scoping study being conducted for KYTC District 5 and KYTC Central Office. Information indicating the presence of caves in the study area will be used to consider roadway improvement alternative development or avoidance activities.
Qualifications: 10+ years as an Environmental Specialist preparing base study environmental reports for KYTC and ODOT projects. Several prior KSS data requests since January 2016. Experienced with handling sensitive and confidential information and providing redaction as necessary when reports will be provided in public domain.
Attachment(s):

IP: 70.63.5.78 search off

ATTACHMENT 3

HAZARDOUS MATERIALS CONCERNS

- Table 2: KY 151 Hazardous Materials Concern Sites Identified Through Database Review and Site Visit

Table 2: Hazardous Materials Concern Sites
KY 151 Environmental Overview

USEPA-Envirofacts Records								
NAME (Current Business)	REG_ID	ADDRESS	CITY	STATE	ZIPCODE	LATITUDE	LONGITUDE	database
D & S Bulk Plant	110008370805	HWY 127S & 151	LAWRENCEBURG	KY	40342	38.06703	-84.917389	RCRA
D & S Service Center	110008371216	US 127 & 151	LAWRENCEBURG	KY	40342	38.06672	-84.918048	RCRA
Dollar General #15276	110064656965	1095 EAGLE LAKE ROAD	LAWRENCEBURG	KY	40342	38.06506	-84.92193	RCRA
Florida Tile Inc	110000378902	1247 ALTON RD.	LAWRENCEBURG	KY	40342	38.07215	-84.92352	AIR, RCRA, TRI
General Cable Co	110013842565	1381 BYPASS NORTH	LAWRENCEBURG	KY	40342-9457	38.06194	-84.92108	AIR, BR, RCRA, TRI
Hvc Inc. (KY Welding Tool & Die)	110000563275	1075 COMMERCIAL DRIVE	LAWRENCEBURG	KY	40342-9454	38.05972	-84.92012	RCRA
Imi South Llc	110006749858	1001 GENERAL CABLE	LAWRENCEBURG	KY	40342-9461	38.06023	-84.92185	AIR
Key Oil Lawrenceburg	110003249306	1144 ALTON RD	LAWRENCEBURG	KY	40342	38.07072	-84.922899	RCRA
Lawrenceburg Transfer Inc	110003253773	1133 ALTON RD	LAWRENCEBURG	KY	40342	38.07132	-84.922151	RCRA
Multani 2 Llc	110006016408	1305 HIGHWAY 151	FRANKFORT	KY	40601-9751	38.14183	-84.98927	RCRA
Past Time Bar	110008371396	SE CORNER OF KY 151 & I-64	FRANKFORT	KY	40601	38.13411	-84.983861	RCRA
Benson Valley Landfill Gen Prt	110006015702	2157 HIGHWAY 151	FRANKFORT	KY	40601-9757	38.13151	-84.986209	AIR, RCRA
KYDWM UST Records								
AI_NAME (Current Business)	AI_ID	ADDRESS_1	MAILING_AD	MAILIN	MAILING__2	LAT_DD	LONG_DD	Records
151 Marathon	1424	1305 KY 151	Frankfort	KY	40601	38.14167	-84.989444	UST x 3 (installed 1985)
	151 Marathon 1424	1305 KY 151	Frankfort	KY	40601	38.14167	-84.989444	UST x 2 (removed 1997)
4 Way Stop N Go/Marathon	96881	1000 Dewey Dr	Lawrenceburg	KY	40342	38.06729	-84.91914	UST x 3 (installed 2007)
Bulk Plant	57268	US 127 & KY 151	Lawrenceburg	KY	40342	38.06662	-84.918928	UST x 6 (removed 1996)
Clothes Center (Vacant Lot)	63174	1175 Alton Station Rd	Lawrenceburg	KY	40342	38.07818	-84.939648	UST x 3 (removed 2003)
D & S Service Center	68482	US 127 & 151	Lawrenceburg	KY	40342	38.06702	-84.918406	UST x 6 (removed 1996)
Florida Tile Inc	31	1247 Alton Rd	Lawrenceburg	KY	40342	38.07333	-84.931389	UST (removed 1986)
Francis Recycling	57273	1144 Alton Rd	Lawrenceburg	KY	40342	38.07068	-84.921395	UST x 5 (temporarily closed 2016)
	Francis Recycling 57273	1144 Alton Rd	Lawrenceburg	KY	40342	38.07068	-84.921395	UST (closed in place 2013)
	Francis Recycling 57273	1144 Alton Rd	Lawrenceburg	KY	40342	38.07068	-84.921395	UST x 5 (removed 1996)
Gerald W Davis Property (Alton Motors)	69381	1643 Alton Rd	Lawrenceburg	KY	40342	38.08903	-84.934468	UST x 4 (removed 1981)
Keiths Parts & Service (Wash's Cycle)	66153	1534 Alton Rd (Hwy 151)	Lawrenceburg	KY	40342	38.08665	-84.930755	UST x 4 (removed 1996)
Lawrenceburg Market/Valero	96981	1105 Eagle Lake Dr	Lawrenceburg	KY	40342	38.06416	-84.92176	UST x 5 (installed 2007)
Lawrenceburg Transfer Inc	57277	1133 Alton Rd	Lawrenceburg	KY	40342	38.07056	-84.921944	UST x 2 (removed 1998)
P & T Petro #3/Valero	61816	1326 Hwy 151	Frankfort	KY	40601	38.14139	-84.988889	UST x 4 (installed 1997)
Past Time Bar	69848	SE Jct of Hwy 151 & I 64	Frankfort	KY	40601	38.14172	-84.988656	UST x 2 (removed 1997)
Rally Service Station 604 (Larry's Wrecker Service)	66992	Alton Station Rd	Lawrenceburg	KY	40342	38.07877	-84.927316	UST x 3 (removed 1988, 1995)
Smiths Grocery/Ashland (Smith's Food Mart)	57243	1335 Alton Rd	Lawrenceburg	KY	40342	38.07846	-84.92668	UST x 2 (temporarily closed 2015)
	Smiths Grocery 57243	1335 Alton Rd	Lawrenceburg	KY	40342	38.07846	-84.92668	UST x 3 (removed 1999)
Two Way Stop and Go/BP	104065	2000 Fortune Dr	Lawrenceburg	KY	40352	38.07072	-84.923361	UST x 3 (installed 2008)
AI = Agency Interest								
Shaded rows are unknown/approximate locations, facility may not be located within study area								
Field Survey Identified Sites								
Name		Address		Concern				
Alton Motors		1643 Alton Road	Lawrenceburg	KY	40342	38.08893	-84.9342461	Auto Sales/Service
Eagle Lake Cars		1085 Eagle Lake Drive	Lawrenceburg	KY	40342	38.06553	-84.921056	Auto Sales/Service
Franklin Auto Repair		1060 Commercial Drive	Lawrenceburg	KY	40342	38.05819	-84.919777	Auto Sales/Service
Hadawreck Body Shop		1187 Alton Road	Lawrenceburg	KY	40342	38.06831	-84.9226531	Auto Sales/Service
Heaven Sent Auto & Farm Repair		1020 Commercial Drive	Lawrenceburg	KY	40342	38.05751	-84.9201918	Auto Sales/Service
Huntington Woods Estates WWTP	110045071989	5011 HUNTINGTON WOODS RD	GRAEFENBURG	KY	40601	38.14118	-84.9871768	NPDES/Neighborhood WWTP
Kentucky Transmissions		1445 US 127 Bypass	Lawrenceburg	KY	40342	38.0731	-84.9180275	Auto Sales/Service
Laketown Motors & Larrys Wrecker Service		1006 Alton Station Road	Lawrenceburg	KY	40342	38.07905	-84.927117	Auto Sales/Service
Marksman Equipment		1045 Commercial Drive	Lawrenceburg	KY	40342	38.05904	-84.920265	Auto Sales/Service
Skyline Motor Sales		1501 Daniel Drive	Lawrenceburg	KY	40342	38.07176	-84.9184889	Auto Sales/Service
Surefire Complete Automotive & Transmission		Daniel Drive	Lawrenceburg	KY	40342	38.06989	-84.9192941	Auto Sales/Service

ATTACHMENT 4

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

- LWCF List for Anderson and Franklin Counties

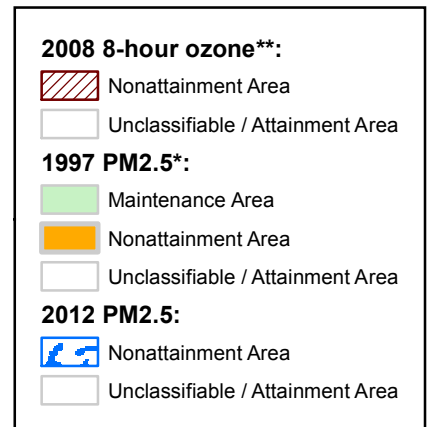
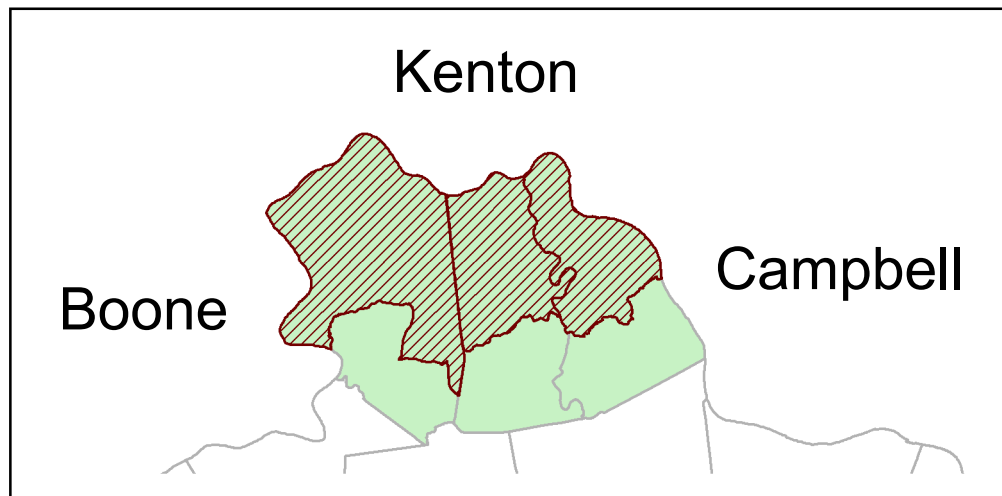
OBJECTID	State	County	Title	Sponsor	Amount	Date Approved	Exp. Date
11229	Kentucky	ANDERSON	ANDERSON COUNTY PARKS DEVELOPMENT	ANDERSON COUNTY	\$5,129.98	3/16/1976, 8:00 PM	6/29/1978, 8:00 PM
11230	Kentucky	ANDERSON	LAWRENCEBURG CITY PARK	CITY OF LAWRENCEBURG	\$5,703.69	3/14/1983, 8:00 PM	3/30/1988, 8:00 PM
11231	Kentucky	ANDERSON	LAWRENCEBURG POOL RENOVATION	CITY OF LAWRENCEBURG	\$20,415.84	8/29/1983, 8:00 PM	8/30/1988, 8:00 PM
11232	Kentucky	ANDERSON	LAWRENCEBURG LINCOLN STREET PARK	CITY OF LAWRENCEBURG & ANDERSON COUNTY	\$8,631.36	9/22/1986, 8:00 PM	10/30/1988, 8:00 PM
11233	Kentucky	ANDERSON	ANDERSON COUNTY PARK	ANDERSON COUNTY FISCAL COURT	\$136,950.00	8/27/2002, 8:00 PM	9/29/2007, 8:00 PM
11234	Kentucky	ANDERSON	ANDERSON COUNTY PARK	ANDERSON COUNTY FISCAL COURT	\$5,108.00	8/7/2007, 8:00 PM	7/29/2012, 8:00 PM
11235	Kentucky	ANDERSON	LAWRENCEBURG SKATE PARK	CITY OF LAWRENCEBURG	\$45,000.00	9/14/2009, 8:00 PM	7/29/2014, 8:00 PM
11624	Kentucky	FRANKLIN	EAST FRANKFORT PARK	CITY OF FRANKFORT	\$230,999.00	6/29/1969, 8:00 PM	6/29/1973, 8:00 PM
11625	Kentucky	FRANKLIN	LEVI JACKSON PARK DEVELOPMENT	DEPT. OF PARKS	\$2,041.87	3/10/1971, 7:00 PM	6/29/1974, 8:00 PM
11626	Kentucky	FRANKLIN	FRANKFORT BALLFIELDS IMPROVEMENTS	CITY OF FRANKFORT	\$61,970.41	9/30/1975, 8:00 PM	12/30/1979, 7:00 PM
11627	Kentucky	FRANKLIN	FRANKFORT BOAT RAMP	CITY OF FRANKFORT	\$5,350.80	4/11/1976, 8:00 PM	6/29/1978, 8:00 PM
11628	Kentucky	FRANKLIN	JUNIPER HILLS PARK	CITY OF FRANKFORT	\$60,982.83	2/6/1979, 7:00 PM	1/30/1984, 7:00 PM
11629	Kentucky	FRANKLIN	SOUTH FRANKFORT PLAYGROUND	CITY OF FRANKFORT	\$99,631.03	7/12/1979, 8:00 PM	4/29/1984, 8:00 PM
11630	Kentucky	FRANKLIN	JUNIPER HILLS COURT RENOVATION	CITY OF FRANKFORT	\$30,505.46	7/28/1983, 8:00 PM	1/14/1985, 7:00 PM
11631	Kentucky	FRANKLIN	JUNIPER HILLS RESTROOMS	CITY OF FRANKFORT	\$10,152.00	9/14/1983, 8:00 PM	9/29/1988, 8:00 PM
11632	Kentucky	FRANKLIN	CAPITOL VIEW PARK	CITY OF FRANKFORT	\$64,134.91	2/20/1984, 7:00 PM	2/27/1989, 7:00 PM
11633	Kentucky	FRANKLIN	EAST FRANKFORT PARK	CITY OF FRANKFORT	\$5,391.00	8/5/1987, 8:00 PM	8/30/1989, 8:00 PM
11634	Kentucky	FRANKLIN	SWITZER PARK	FRANKLIN COUNTY	\$4,600.00	9/5/1990, 8:00 PM	8/30/1992, 8:00 PM
11635	Kentucky	FRANKLIN	FRANKFORT BALLFIELD IMPROVEMENTS	CITY OF FRANKFORT	\$23,000.00	7/13/1995, 8:00 PM	6/29/1997, 8:00 PM
11636	Kentucky	FRANKLIN	JUNIPER HILLS PARK RENOVATION	CITY OF FRANKFORT	\$43,600.00	7/20/2000, 8:00 PM	7/30/2005, 8:00 PM
11637	Kentucky	FRANKLIN	LAKEVIEW SKATE PARK	FRANKLIN COUNTY	\$77,250.00	12/30/2001, 7:00 PM	9/29/2006, 8:00 PM
11638	Kentucky	FRANKLIN	COVE SPRING II PAVILION AND ARCHERY	CITY OF FRANKFORT	\$30,000.00	3/26/2012, 8:00 PM	7/29/2016, 8:00 PM

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 151 Environmental Overview
Environmental Justice (EJ) Write-Up**

The project area includes portions of Census Tracts 9501 and 9503 in Anderson County, and Census Tracts 710 and 711 in Franklin County.

Based on the most recent U.S. Census (2016 estimates) and American Community Survey (ACS; 2012-2016) data available, no Tracts that include the study area have a percentage minority population that exceeds their respective county average or the state average.

Tract 9501 is the only tract having a percentage of families below poverty (20.9%) greater than its county average (Anderson-10.6%) or 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 2012-2016 ACS.

Table 3. EJ Populations

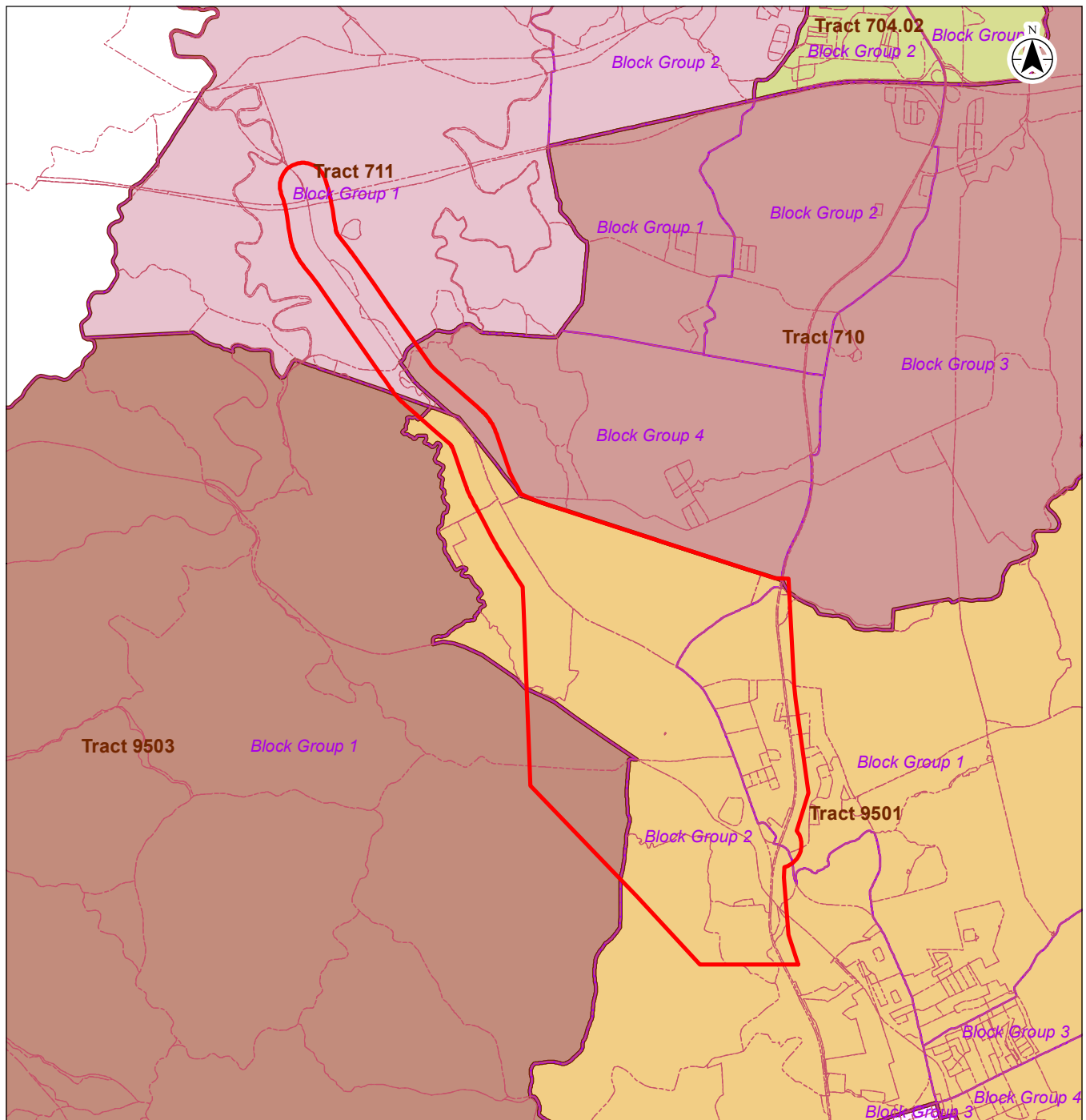
EJ Population	Kentucky	County		Census Tract			
		Anderson	Franklin	Anderson		Franklin	
				9501	9503	710	711
Minority	12.0%	4.5%	15.7%	4.5%	4.2%	11.5%	5.3%
Below Poverty	18.5%	10.6%	13.7%	20.9%	6.0%	1.6%	2.5%

Red Text = exceeds respective County average

Gray Shading = exceeds State of Kentucky average

Sources: US Census 2017, American Community Survey (ACS) 2011-2015

Prepared December 2017

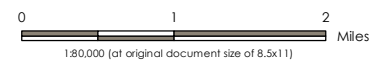


Legend

- Study Area
- Census 2010 Boundary**
- Block
- Blockgroup (labelled)
- Tract (labelled and color coded)

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 (ky005 and ky073).
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 178556010 LA#4
KY 151 Prepared by BL on 2018-01-08
Anderson and Franklin Counties, Kentucky

Client/Project
KYTC-DEA
Environmental Overview
KY 151 Scoping Study, KYTC Item # 5-806.00

Figure No.

Attachment 6

Title

**2010 Census - Census Tract
Reference Map for Study Area
and Vicinity**

ATTACHMENT 7

CULTURAL-HISTORIC RESOURCES

- Cultural Historic Records Review and Windshield Survey for the Proposed KY 151 Corridor Study in Anderson and Franklin Counties, Kentucky (CRA Project Number: K17S003), February 12, 2018
- Archaeological Records Review and Windshield Survey for KY 151 From U.S. 127 in Anderson County to I-64 in Franklin County, Kentucky (Item No. 5-806.00) (CRA Project Number: K17s002), February 20, 2018

Cultural-Historic Resource Reports provided under separate files

ATTACHMENT 8

PHOTO LOG

- Photograph Log
- Photograph Index Maps, with labelled features

Environmental Overview

KY 151 Corridor Scoping Study, KYTC Item #5-806.00

Anderson and Franklin Counties, Kentucky



Photo 1: South Benson Creek at KY 151, with open riparian corridor and associated 100-year floodplain; facing downstream, southwest.



Photo 2: Little Benson Creek at KY 151, with narrow riparian corridor on each bank; facing downstream, northeast.



Photo 3: Unnamed tributary to Hammond Creek (USGS perennial) at KY 151, with associated 100-year floodplain; facing upstream, northeast.



Photo 4: Representative view of two NWI mapped wetlands (ponds-PUB) observed in study area; facing northeast.

Environmental Overview

KY 151 Corridor Scoping Study, KYTC Item #5-806.00

Anderson and Franklin Counties, Kentucky



Photo 5: Representative view of NWI mapped emergent (PEM) wetland in grassy field, adjacent to existing KY 512 in study area; facing northwest.



Photo 6: Representative view of a non-NWI-mapped pond observed in study area; pond located in fenced pasture/hay field; facing west.



Photo 7: Representative view of potential Indiana bat and Northern long-eared bat habitat, upland woodlot within USFWS designated Known Summer 1 habitat area for Northern long-eared bat; facing south.



Photo 8: Representative view of potential habitat for federal-listed running buffalo clover; forested habitat with open understory and periodic disturbance from residential use and stream scour; facing north.



Photo 9: Representative view of potential habitat for Braun's rock-creep; limestone-bedrock exposed hillside along unnamed tributary to Benson Creek and associated 100-year floodplain; facing downstream, northwest.



Photo 10: Representative view of evidence of karst landscape, sinkhole present in open field; facing northeast. Karst landscape presents potential habitat for Gray bat.



Photo 11: Representative view of active farmland having soils identified as Prime Farmland (foreground) and Farmland of Statewide Importance (background) within study area; facing southwest.



Photo 12: Representative view of active hay field farmland in study area; facing north.



Photo 13: Active agricultural-fenced pasture farmland present in study area; facing south.



Photo 14: 151 Marathon gas station and Multani 2 LLC convenience store; representative hazardous materials concern site having active UST and RCRA database records; facing southwest.



Photo 15: Francis Recycling and Key Oil Lawrenceburg, closed gas station and active industrial site; representative hazardous materials concern site having historic UST and active RCRA database records; facing east.



Photo 16: Florida Tile Inc; industrial facility and hazardous materials concern site having UST, AIR, RCRA and TRI database records; facing west.



Photo 17: General Cable Co, industrial facility and hazardous materials concern site having AIR, BR, RCRA and TRI database records; facing northwest.



Photo 18: Benson Valley Area Landfill, hazardous materials concern site as active contained solid waste landfill adjacent to KY 151 and RCRA database record; facing west.



Photo 19: Hazardous liquids pipeline alignment crossing US 127 adjacent to IMI South LLC industrial facility; facing southwest.



Photo 20: Representative view of field-identified potential hazardous materials sites; Heaven Sent Auto & Farm Repair and Franklin Auto Repair along Commercial Drive; facing northeast.



Photo 21: Alton Ruritan Ball Field Recreation Center, potential Section 4(f) resource in study area; facing southeast.



Photo 22: The Monohan Farm, property protected by a conservation easement as a permanent Open Space-Farm; facing east.



Photo 23: Alton Christian Church, representative house of worship and noise sensitive receptor along KY 512/Old Frankfort Road in study area; facing southeast.



Photo 24: Kindom Hall of Jehovah's Witnesses, representative house of worship and noise sensitive receptor along US 127 in study area; facing east.



Photo 25: Bluegrass Community & Technical College, the single educational facility located in the study area; facing east.



Photo 26: Alton Cemetery along KY 512/Old Frankfort Road; facing southeast.



Photo 27: Lowens Cemetery (USGS-mapped unnamed), partially overgrown family cemetery along old KY 151; facing north.



Photo 28: Hancock family cemetery (unmapped) observed in recently cleared woodlot along KY 151; facing northwest.



Photo 29: Eagle Lake Convention Center, public service facility located at KY 151 and US 127; facing west.



Photo 30: Anderson County Fire Station 2, public service facility located at KY 151 and KY 512/Alton Station Road; facing east.



Photo 31: Cellular tower utility located at US 127 and KY 512/Old Frankfort Road; facing southeast.



Photo 32: Norfolk Southern Railway at-grade crossing of KY 512/Alton Station Road; facing west.



Photo 33: US 127 southbound bridge over Norfolk Southern Railway; facing northeast.



Photo 34: View of Sycamore Estates, single family residential subdivision with expanding development; facing southeast.



Photo 35: The Cottages of Alton Station, single family residential development; facing west.



Photo 36: Woodlawn Park, multi-family residential development; facing northeast.

Environmental Overview

KY 151 Corridor Scoping Study, KYTC Item #5-806.00

Anderson and Franklin Counties, Kentucky



Photo 37: View of the general commercial nature of the study area around the KY 151 / US 127 intersection; facing southwest.



Photo 38: View of industrial property near the KY 151 / US 127 intersection; facing northwest.



Photo 39: View of KY 151 north of I-64 interchange, north project terminus; facing southwest.



Photo 40: View of KY 151 at Franklin County/Anderson County line, representative view of typical rural residential/undeveloped land use along existing KY 151; facing northwest.

Environmental Overview

KY 151 Corridor Scoping Study, KYTC Item #5-806.00

Anderson and Franklin Counties, Kentucky



Photo 41: View of KY 151 at KY 2820/Green Wilson Road, representative view of rural residential land use; facing southeast.



Photo 42: KY 151 at KY 512/Old Frankfort Road; facing northwest.

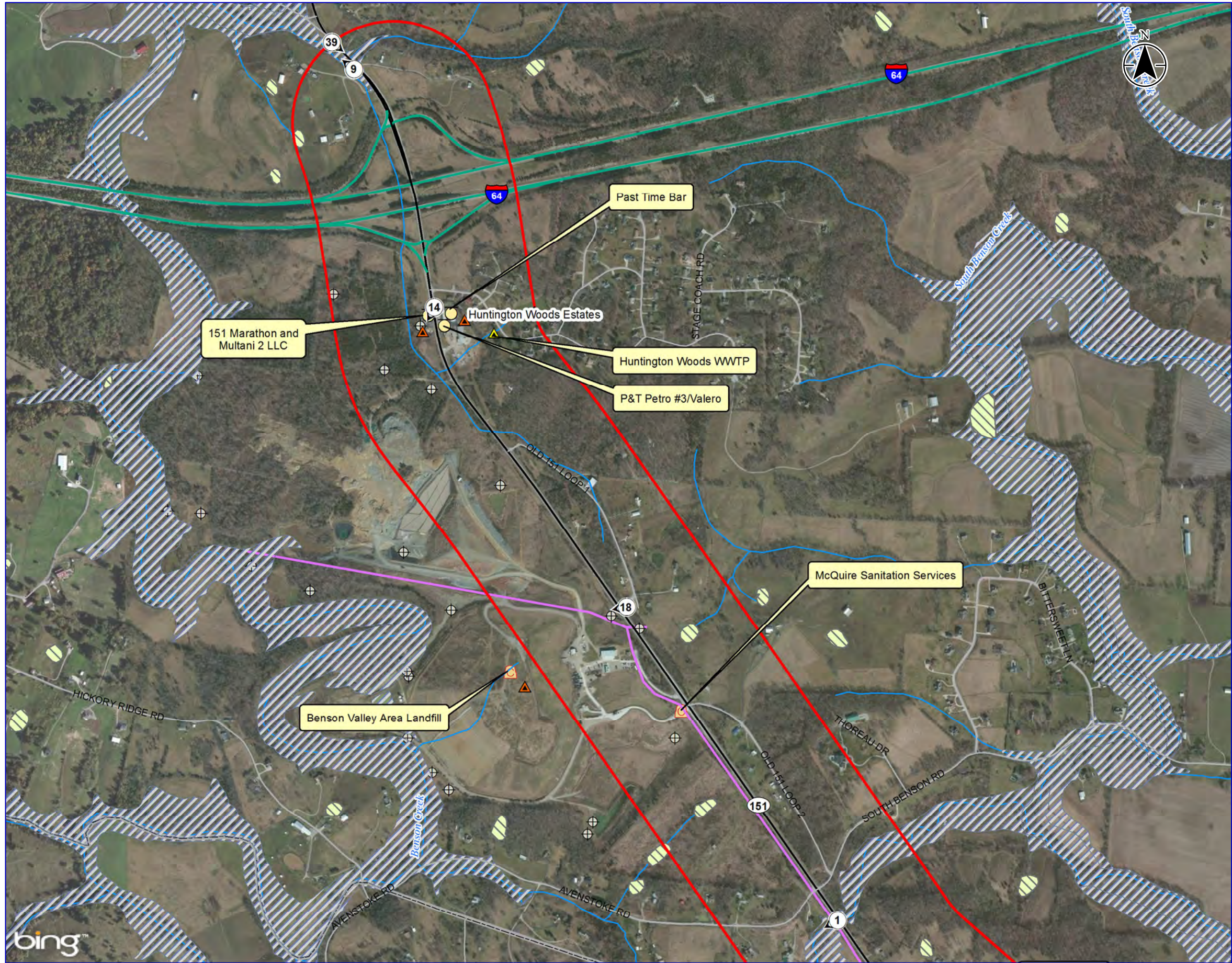


Photo 43: KY 151 at US 127 intersection near Lawrenceburg; facing west.



Photo 44: US 127 at KY 512/Old Frankfort Road, northeast terminus of study area; facing south.

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Legend

- Study Area
- Photograph Number, Location and Direction
- Stream (NHD)
- NWI Wetland (USFWS)
- 100-Year Floodplain (FEMA)
- Sinkhole (KGS)
- Water Well (KDOW)
 - Domestic
 - Remediation
 - Other
 - HazMat Record (USEPA)
 - Potential HazMat Site (field survey)
 - UST Record (KDWM)
 - Solid Waste Landfill (KDWM)
- Pipeline (NPMS)
- Cemetery
- House of Worship
- Park
- School
- Utility
- Fire Departments
- Conservation Easement (NCED)
- County Boundary

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- Notes
- Coordinate System: NAD 1983 StatePlane Kentucky FIPS 1600 Feet
 - Base features: see Sources and References
 - Base Imagery: BING map services (c) Microsoft corporation, 2018.



Project Location 178556010 LA#4
KY 151 from US 127 in Anderson County to I-64 in Franklin County
Anderson and Franklin Counties, Kentucky Prepared by BL on 2018-01-19

Client/Project
KYTC-DEA, KYTC District 5 and District 7
Environmental Overview
KY 151 Corridor Scoping Study, KYTC Item #5-806.00

Figure No.
Attachment 8

Title
Photograph Index
Sheet 1

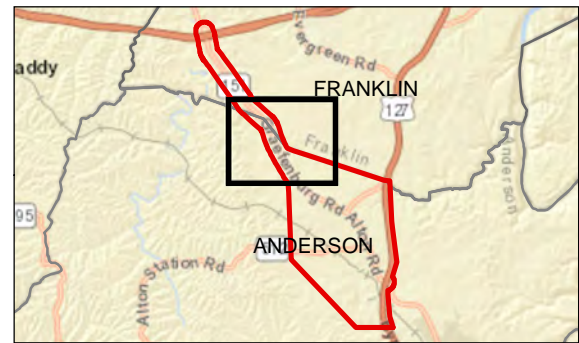
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to I-64 in Franklin County
Anderson and Franklin Counties, Kentucky Prepared by BL on 2018-01-19

Client/Project
KYTC-DEA, KYTC District 5 and District 7
Environmental Overview
KY 151 Corridor Scoping Study, KYTC Item #5-806.00

Figure No.
Attachment 8

Title
Photograph Index
Sheet 2

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Project Location
KY 151 from US 127 in Anderson County
to I-64 in Franklin County
Anderson and Franklin Counties, Kentucky

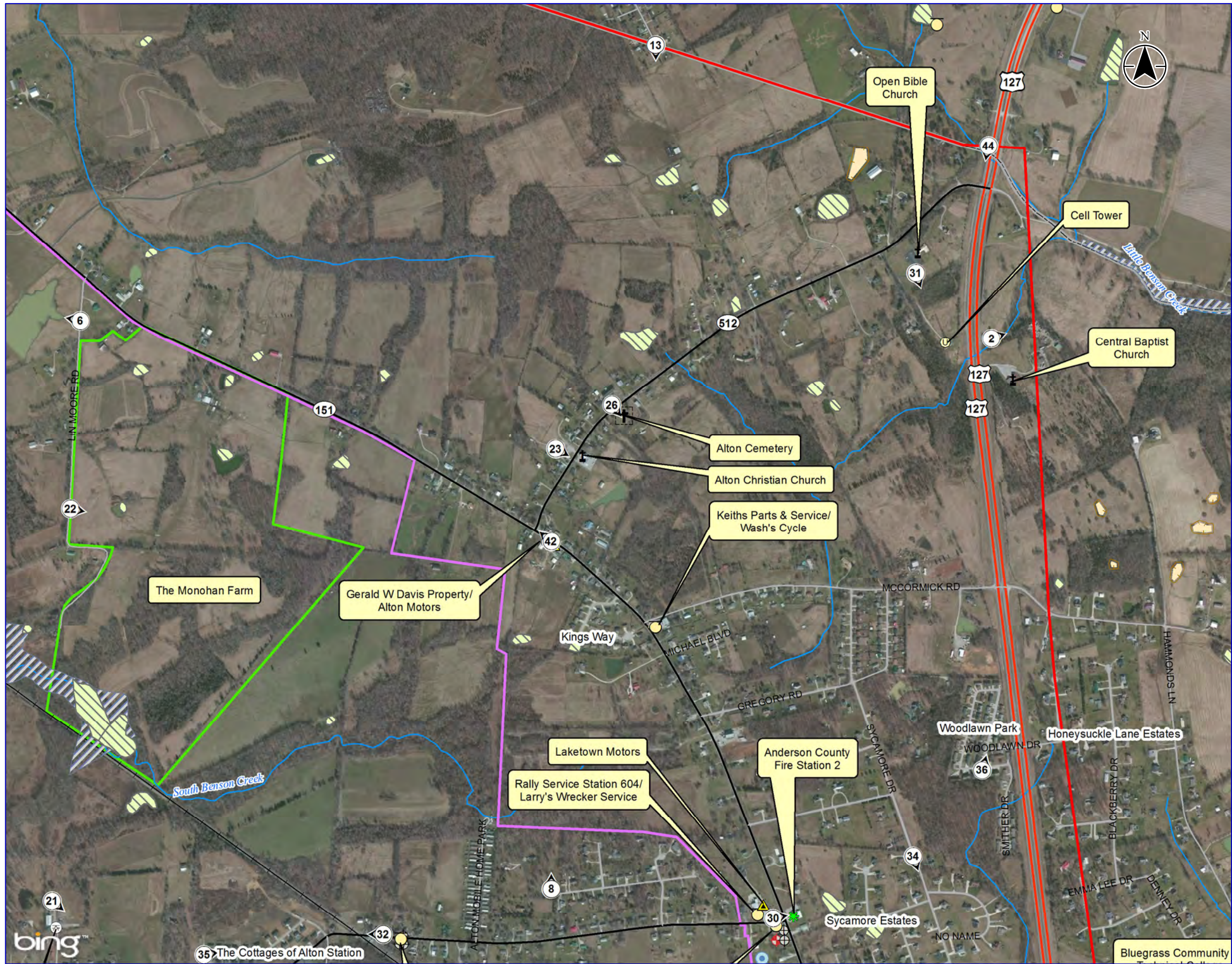
178556010 LA#4
Prepared by BL on 2018-01-19

Client/Project
KYTC-DEA, KYTC District 5 and District 7
Environmental Overview
KY 151 Corridor Scoping Study, KYTC Item #5-806.00

Figure No.
Attachment 8

Title
Photograph Index
Sheet 3

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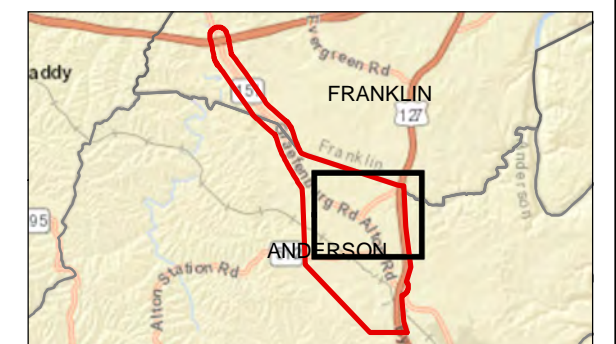


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Project Location 178556010 LA#4
KY 151 from US 127 in Anderson County
to I-64 in Franklin County
Anderson and Franklin Counties, Kentucky Prepared by BL on 2018-01-19

Client/Project
KYTC-DEA, KYTC District 5 and District 7
Environmental Overview
KY 151 Corridor Scoping Study, KYTC Item #5-806.00

Figure No.
Attachment 8

Title
Photograph Index
Sheet 4

