

## Appendix D

### Environmental Overview

Ecological Overview Summary D-1

Cultural Historic Literature Review and Reconnaissance...D-21

Custom Soil Report. .D-59

Land and Water Conservation Fund Detailed Listing of Grants by County D-107

**Ecological Overview Summary  
Pembroke Corridor Planning Study  
KY 115 from U.S. 41 to I-24  
KYTC Item No.: 2-381  
Christian County, Kentucky  
Redwing Project No.: 16-107  
October 7, 2016**

This ecological overview summary is being completed in support of the Pembroke Corridor Planning Study (KY 115 from U.S. 41 to I-24) in Christian County, Kentucky. Redwing Ecological Services, Inc. (Redwing) was contracted to identify significant ecological resources potentially impacted by the project. The approved scope included an in-house review of available resources for the approximately nine-mile (4,000-acre) study area. The purpose of this submittal is to provide a summary of the in-house assessment, which is provided below in terms of methodology and results of the ecological resources within the study area. GIS shapefiles are also included in this deliverable.

## **METHODOLOGY**

Per the approved scope, the study area for the in-house review included a nine-mile (4,000-acre) study area, which extends from the business district west of Pembroke to downtown Pembroke, and then south along KY-115 (Pembroke Oak Grove Road) to the I-24 interchange. The methodology used to identify significant ecological features is presented below for agency coordination, potential streams, potential wetlands, Federal Emergency Management Agency (FEMA) floodplains, and federally-listed species habitat.

Agency Coordination: Federally-listed species occurrence databases maintained by the U.S. Fish and Wildlife Service (USFWS), the Kentucky Department of Fish and Wildlife Resources (KDFWR), and the Kentucky State Nature Preserves Commission (KSNPC) were reviewed. Data requests were also submitted to the KSNPC and KDFWR. The USFWS's Information for Planning and Conservation (IPaC) website was also used to obtain an official list of species that may occur within the study area.

Potential Streams / Floodplain: Potential stream features were identified through review of USGS 7.5-minute topographic quadrangle maps and the National Hydrography Dataset. Additionally, digital elevation model data from the Kentucky Division of Geographic Information was reviewed to identify topographic characteristics typical of headwater streams. FEMA 100-year floodplain data was reviewed to identify locations within the study area.

Potential Wetland/Open Waters: Potential wetlands and open waters were identified through review of National Wetlands Inventory maps maintained by the USFWS. Potential wetland areas were also identified through review of soil survey information available from the Natural Resources Conservation Service (NRCS). Soil survey data was used to identify hydric soils, and areas underlain by hydric soils were identified as potential wetlands.

Potential Habitat for Federally-listed Species: Federally-listed species of primary concern for this project appear to be the Indiana bat (*Myotis sodalis*), the northern long-eared bat (*Myotis septentrionalis*), and the gray bat (*Myotis grisescens*). Wooded habitats were documented through the review of the National Land Cover Database and aerial photographs to identify suitable summer habitat for Indiana and northern long-eared bats. Gray bats utilize larger streams as foraging habitat; therefore, foraging habitat for this species was identified through review of the National Hydrography Dataset.

The Indiana bat and northern long-eared bat utilize caves, mines, rockshelters, or sinkholes as roost habitat in the winter. The gray bat uses these features as roost habitat throughout the year. Known caves, mines, rockshelters, and sinkholes were identified through review of mapping from the USGS,

Kentucky Department of Natural Resources, and Kentucky Geological Survey. Additionally, the Kentucky Speleological Society (KSS) was contacted regarding the presence of known caves or karst features in the vicinity of the identified alternatives.

## RESULTS

A review of GIS mapping sources identified ecological resources within the study area that are shown on Figure 2 and summarized in the following table.

Resource	Quantity	Unit
Potential Wetland	414	acres
Potential Stream	62,437	linear feet of perennial, intermittent, and ephemeral stream
FEMA Floodplain	200	acres
Indiana bat and NLEB Summer Habitat	325	acres
Gray bat foraging habitat	51,689	linear feet of perennial and intermittent stream
Potential Indiana bat, NLEB, gray bat winter/roost habitat	68	sinkholes

Note: NLEB – northern long-eared bat

The following table presents federally-listed species identified by the resource agencies as potentially occurring in Christian County, Kentucky.

Species	Common Name	Status	Habitat Potentially Present	Listing Agency
<b>Mammals</b>				
<i>Myotis sodalis</i>	Indiana bat	E	Yes	USFWS
<i>Myotis grisescens</i>	gray bat	E	Yes	USFWS, KDFWR, KSNPC
<i>Myotis septentrionalis</i>	northern long-eared bat	T	Yes	USFWS, KDFWR
<b>Mussels</b>				
<i>Cyprogenia stegaria</i>	fanshell	E	No	USFWS, KSNPC
<i>Obovaria retusa</i>	ring pink	E	No	USFWS, KSNPC
<i>Pegias fabula</i>	littlewing pearly mussel	E	No	KSNPC
<i>Pleuronaia dolabelloides</i>	slabside pearly mussel	E	No	USFWS
<i>Ptychobranchus subtentum</i>	fluted kidneyshell	E	No	USFWS, KSNPC
<b>Birds</b>				
<i>Charadrius melodus</i>	pipin plover	E	No	KDFWR

USFWS IPaC, KDFWR, and KSNPC correspondence is provided in the Appendix. Summer habitat for the Indiana bat and the northern long-eared bat is likely located in the wooded habitats of the study area. Gray bat foraging habitat is likely located along the wooded intermittent and perennial stream corridors. Potential winter/roost habitat for all three bat species may be present in sinkholes within the study area. Coordination with the resource agencies and KSS identified 15 caves located approximately three miles east of the study area that are associated within Montgomery Creek. Although none of these caves are located within the project study area, several potential sinkholes were identified within the study area based on mapping by the Kentucky Geological Society (Figure 2). The Kentucky Mine Mapping Information System did not indicate the presence of any mine portals within the study area. The USFWS IPaC noted that no critical habitats are located in the study area.

Perennial streams within the study area are unlikely to provide suitable habitat for the five mussel species listed in the table above based on the the prevalence of agriculture throughout the study area and industrial development in the northern portion of the study area, which appears to have resulted in significantly altered stream channels and habitat within the study area. The KDFWR comment letter stated that the piping plover (*Charadrius melodus*) may be present within the study area. However, this species is known to occupy coastal sand and gravel beaches and therefore, it is not anticipated that habitat for this species is present within the study area.

The KSNPC noted in their data request response letter (Appendix) that the southern portion of the study area is located approximately 0.2 mile from Morgan Pond, a conservation area consisting of karst ponds that harbor rare aquatic plants and nesting waterbirds. In addition, the KSNPC notes that the study area is located within karst landscape characterized by sinkholes, underground conduits, and caves.

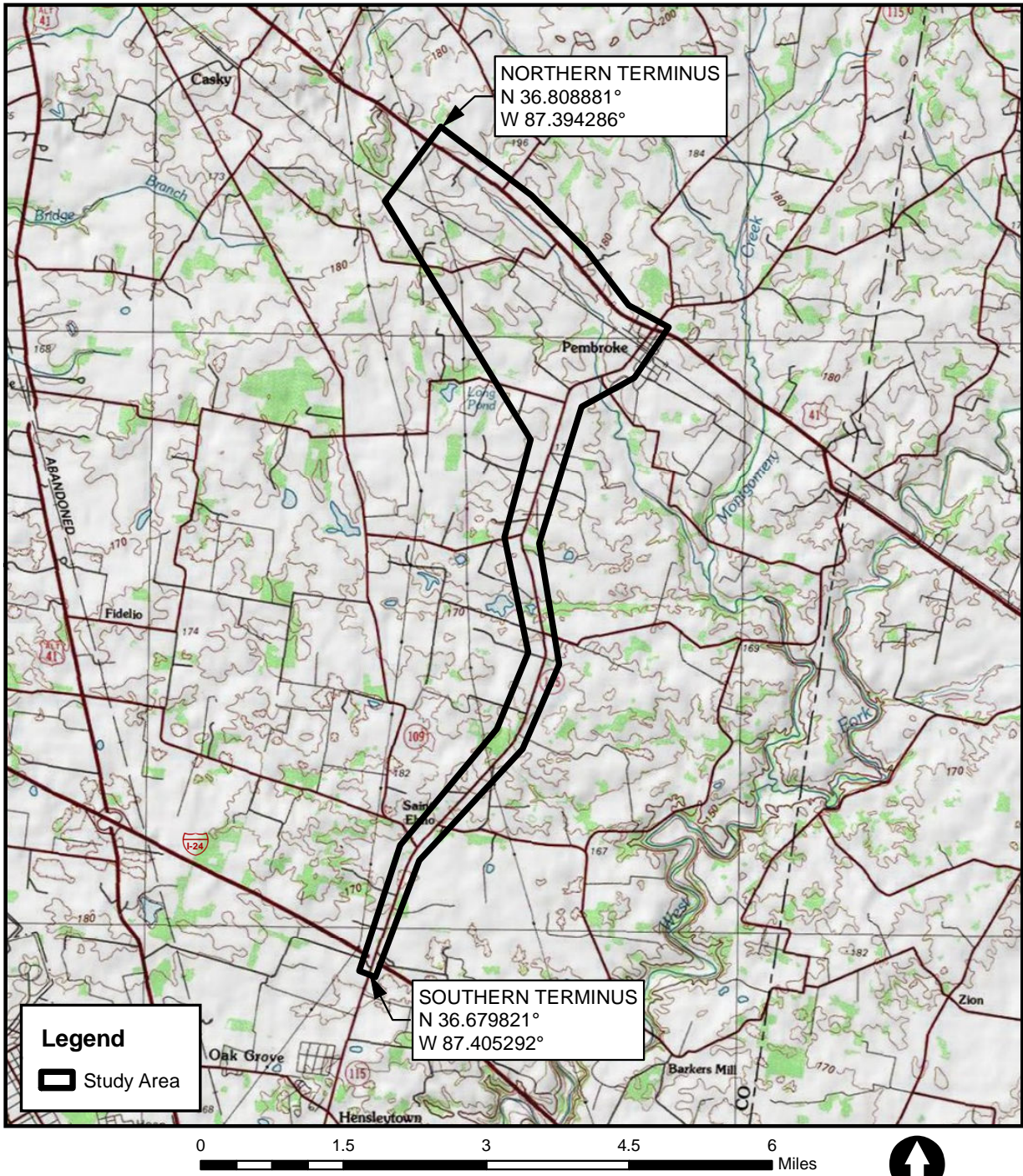
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Attachments: Figures  
Appendix: Resource Agency Coordination



## **FIGURES**

Source: USA Topo Maps, (2013) National Geographic Society, USGS 7.5-minute Topographic Map - Hopkinsville, Pembroke, Oak Grove, and Trenton, Kentucky Quadrangles.



PEMBROKE CORRIDOR  
PLANNING STUDY  
KY 115 FROM U.S. 41 TO I-24  
CHRISTIAN COUNTY, KENTUCKY  
KYTC ITEM NO.: 2-381

REVISED DATE: 10-06-16 | DRAWN BY: EDB/SCB



PROJECT VICINITY  
MAP

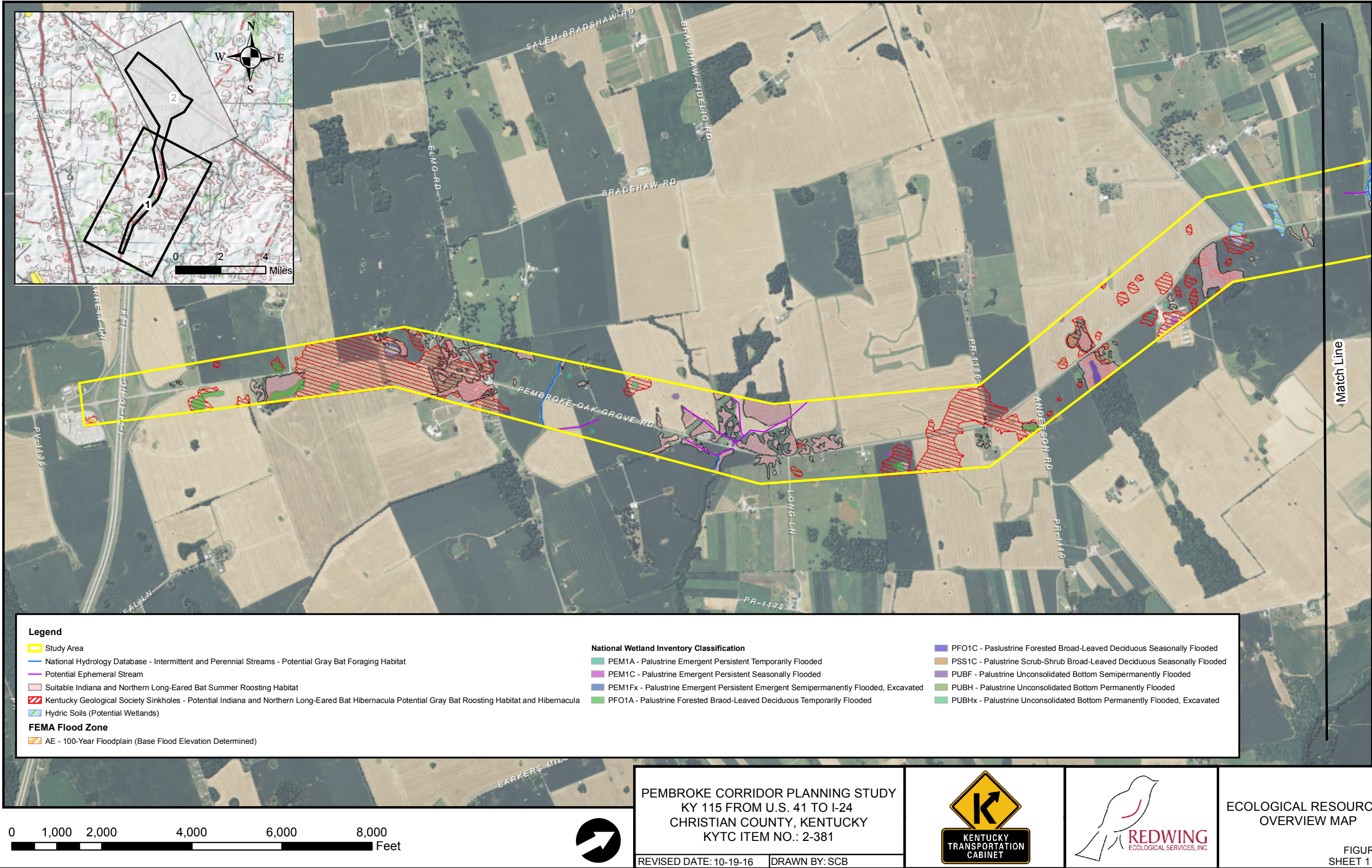
FIGURE 1

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Source: Basemap - National Agricultural Imagery Program (2014); National Hydrography Dataset, US Geological Society (2009); Kentucky Sinkhole Outlines, Kentucky Geological Society, <http://kgs.uky.edu/arcgis/services> (2003); National Wetland Inventory by the US Fish and Wildlife Service (2016); FEMA DFIRM Flood Data, Kentucky (2010); Soil Survey Geographic (SSURGO) database for Christian County, Kentucky (2012);

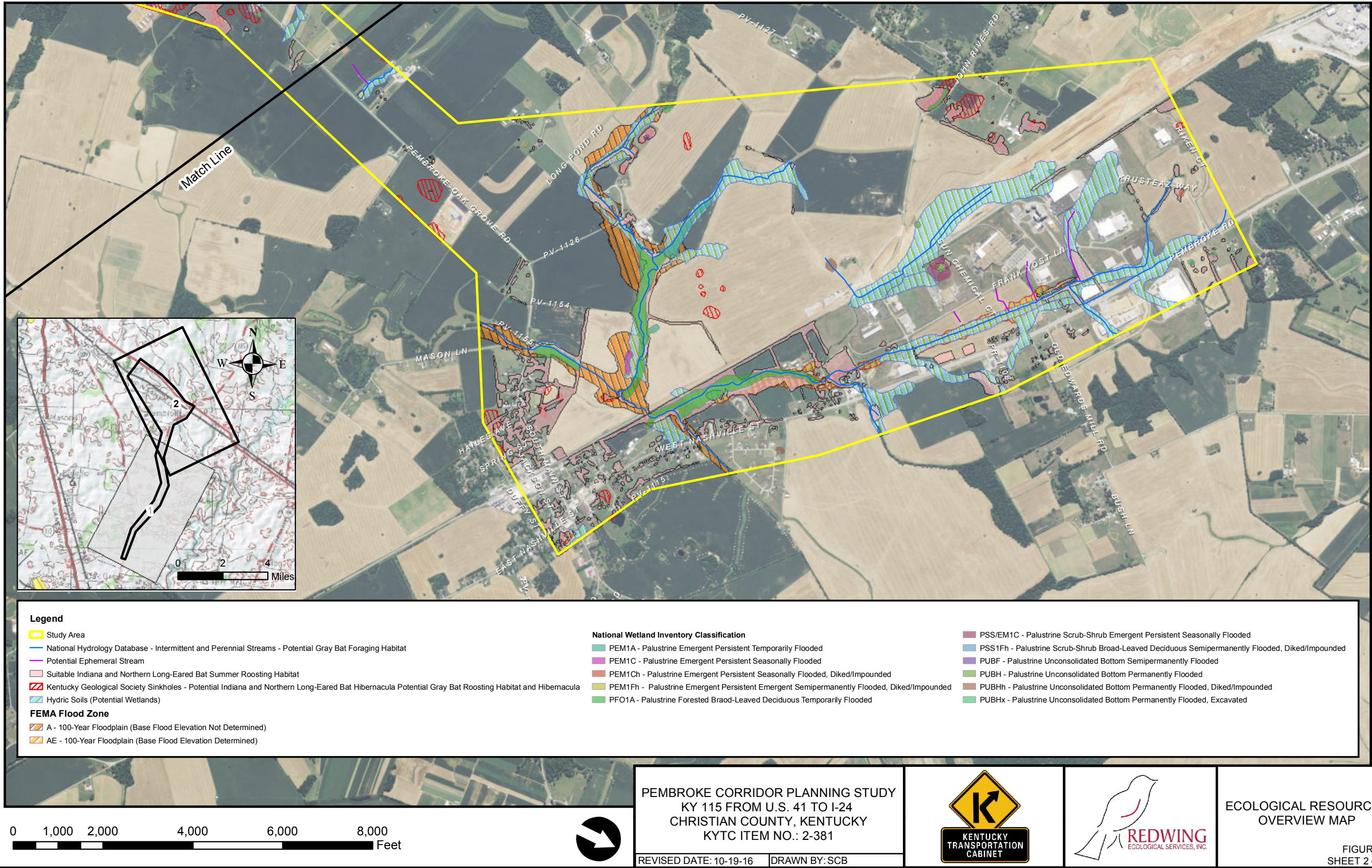
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Source: Basemap - National Agricultural Imagery Program (2014); National Hydrography Dataset, US Geological Society (2009); Kentucky Sinkhole Outlines, Kentucky Geological Society, <http://kgs.uky.edu/arcgis/services> (2003); National Wetland Inventory by the US Fish and Wildlife Service (2016); FEMA DFIRM Flood Data, Kentucky (2010); Soil Survey Geographic (SSURGO) database for Christian County, Kentucky (2012);

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## **APPENDIX**

### **RESOURCE AGENCY COORDINATION**



# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

Kentucky Ecological Services Field Office

J C WATTS FEDERAL BUILDING, ROOM 265, 330 WEST

BROADWAY

FRANKFORT, KY 40601

PHONE: (502)695-0468 FAX: (502)695-1024

URL: [www.fws.gov/frankfort/](http://www.fws.gov/frankfort/)

Consultation Code: 04EK1000-2017-SLI-0004

October 04, 2016

Event Code: 04EK1000-2017-E-00009

Project Name: Pembroke Corridor Planning Study

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

### To Whom It May Concern:

The enclosed species list identifies federal trust species that may occur within the boundary that you provided in the IPaC application. For this list to most accurately represent the species that may potentially be affected by the proposed project, the boundary that you input into IPaC should represent the entire “action area” of the proposed project by considering all the potential “effects of the action,” including potential direct, indirect, and cumulative effects, to federally-listed species or their critical habitat as defined in 50 CFR 402.02. This includes effects of any “interrelated actions” that are part of a larger action and depend on the larger action for their justification and “interdependent actions” that have no independent utility apart from the action under consideration (e.g.; utilities, access roads, etc.) and future actions that are reasonably certain to occur as a result of the proposed project (e.g.; development in response to a new road).

The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.) to provide information as to whether any proposed or listed species may be present in the area of a proposed action. This is not a concurrence letter; additional consultation with the Service may be required.

We must advise you that our database is a compilation of collection records made available by various individuals and resource agencies available to the Service and may not be all-inclusive. This information is seldom based on comprehensive surveys of all potential habitats and, thus, does not necessarily provide conclusive evidence that species are present or absent at a specific locality. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please contact the

Kentucky Field Office if you need assistance regarding potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and associated information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the ESA is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the ESA and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12. We recommend that Biological Assessments and biological evaluations be submitted to the Kentucky Field Office following the guidance at: <http://www.fws.gov/frankfort/PreDevelopment.html>.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Proposed projects that do not have a federal nexus (non-federal projects) are not subject to the obligations under section 7 of the ESA. However, section 9 of the ESA prohibits certain activities that directly or indirectly affect federally-listed species. These prohibitions apply to all the individuals subject to the jurisdiction of the United States. Non-federal project proponents can request technical assistance from the Service regarding recommendations on how to avoid and/or minimize impacts to listed species. The project proponent can choose to implement these recommendations in the proposed project design to avoid an ESA violation.

In addition to species covered under the Endangered Species Act (ESA), birds covered under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) should be considered during project reviews. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish & Wildlife Service (50 C.F.R. 10.12 and 16 U.S.C.

668(a)). For more information regarding these acts go to:  
<http://www.fws.gov/migratorybirds/RegulationsandPolicies.html>.

The MBTA currently has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within a NEPA document (if there is a federal nexus) or a Bird- or Eagle-specific Conservation Plan, or both. Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds to the project-related stressors; proponents should also implement a rigorous plan to monitor the effectiveness of conservation measure. For more information on avian stressors and recommended conservation measures go to: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/BirdHazards.html>.

In addition to MBTA and BGEPA, Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <http://www.fws.gov/migratorybirds/AboutUS.html>.

We appreciate your concern for federal trust species and encourage Federal agencies to include conservation of these species into their project planning. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment





United States Department of Interior  
Fish and Wildlife Service

Project name: Pembroke Corridor Planning Study

## Official Species List

### Provided by:

Kentucky Ecological Services Field Office  
J C WATTS FEDERAL BUILDING, ROOM 265  
330 WEST BROADWAY  
FRANKFORT, KY 40601  
(502) 695-0468  
<http://www.fws.gov/frankfort/>

**Consultation Code:** 04EK1000-2017-SLI-0004

**Event Code:** 04EK1000-2017-E-00009

**Project Type:** TRANSPORTATION

**Project Name:** Pembroke Corridor Planning Study

**Project Description:** Planning Study along KY 115 from U.S. 41 to I-24.

**Please Note:** The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

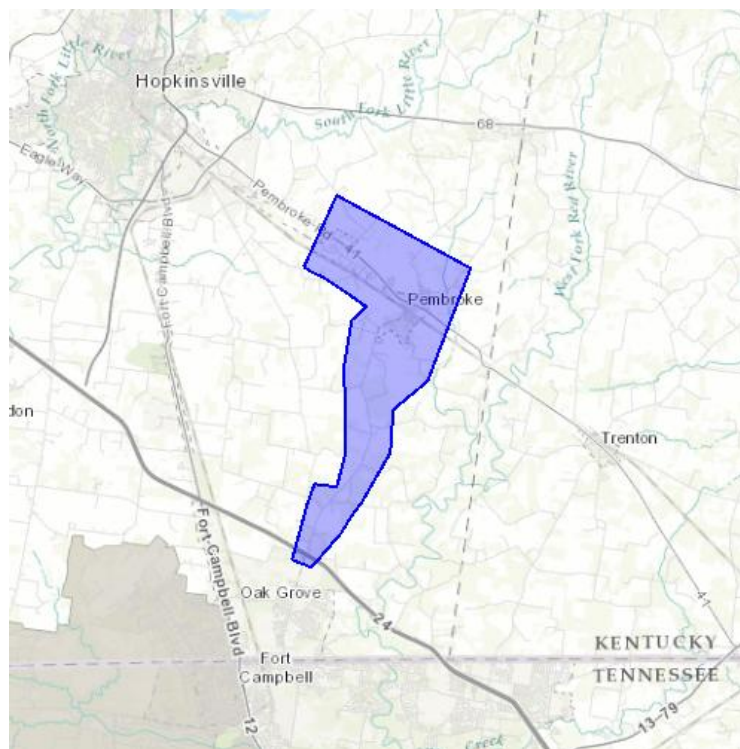
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United States Department of Interior  
Fish and Wildlife Service

Project name: Pembroke Corridor Planning Study

### Project Location Map:



**Project Coordinates:** MULTIPOLYGON (((-87.38954544067383 36.820278951308744, -87.32551574707031 36.79196555769979, -87.34594345092773 36.74865056520353, -87.36276626586914 36.73792116855757, -87.36431121826172 36.72099868793134, -87.37752914428711 36.702145681344014, -87.38336563110352 36.6959520787169, -87.38731384277344 36.69003328107983, -87.40156173706055 36.677230602346214, -87.41134643554688 36.68012171607383, -87.40430831909178 36.7011822648224, -87.40036010742186 36.709302111740975, -87.38988876342773 36.70806354647625, -87.38508224487305 36.72141147573209, -87.38645553588867 36.75470238360517, -87.38250732421875 36.772304959085325, -87.37564086914062 36.77697996403403, -87.38525390624999 36.78275457651999, -87.396240234375 36.78866622903138, -87.40121841430664 36.79045338303009, -87.40516662597656 36.792652899955556, -87.38954544067383 36.820278951308744)))

**Project Counties:** Christian, KY

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United States Department of Interior  
Fish and Wildlife Service

Project name: Pembroke Corridor Planning Study

## Endangered Species Act Species List

There are a total of 7 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Clams	Status	Has Critical Habitat	Condition(s)
fanshell ( <i>Cyprogenia stegaria</i> ) Population: Wherever found	Endangered		
Fluted kidneyshell ( <i>Ptychobranchus subtentum</i> ) Population: Wherever found	Endangered	Final designated	
ring pink ( <i>Obovaria retusa</i> ) Population: Wherever found	Endangered		
Slabside Pearlymussel ( <i>Pleuroaia dolabelloides</i> ) Population: Wherever found	Endangered	Final designated	
<b>Mammals</b>			
Gray bat ( <i>Myotis grisescens</i> ) Population: Wherever found	Endangered		
Indiana bat ( <i>Myotis sodalis</i> ) Population: Wherever found	Endangered		
Northern long-eared Bat ( <i>Myotis septentrionalis</i> ) Population: Wherever found	Threatened		This project would result in take other than incidental take.

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United States Department of Interior  
Fish and Wildlife Service

Project name: Pembroke Corridor Planning Study

## **Critical habitats that lie within your project area**

There are no critical habitats within your project area.

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**TOURISM, ARTS AND HERITAGE CABINET  
KENTUCKY DEPARTMENT OF FISH & WILDLIFE RESOURCES**

**Matthew G. Bevin**  
Governor

**Don Parkinson**  
Secretary

#1 Sportsman's Lane  
Frankfort, Kentucky 40601  
Phone (502) 564-3400  
1-800-858-1549  
Fax (502) 564-0506  
[fw.ky.gov](http://fw.ky.gov)

**Regina Stivers**  
Deputy Secretary

**Gregory K. Johnson**  
Commissioner

23 September 2016

Redwing Ecological Services, Inc.  
Attn: Sarah C. Brower  
1139 South Fourth Street  
Louisville, Kentucky 40203

RE: Request for Information  
Kentucky Highway 115 Alternatives Study  
Christian County, Kentucky  
KYTC Item No.: 2-381  
Redwing Project No.: 16-107

Dear Ms. Brower:

The Kentucky Department of Fish and Wildlife Resources (KDFWR) has received your request for information pertaining to the subject project. The Kentucky Fish and Wildlife Information System indicates the Piping Plover (*Charadrius melodus*), Grey bat (*Myotis grisescens*) and Northern Long-eared bat (*Myotis septentrionalis*) are known to occur within 10 miles of the project area. No additional state-listed species, caves, mine portals, or special natural areas are known to occur within one mile of the project area. Known locations of listed species do not occur within the outlined project area. Please be aware that our database system is a dynamic one that only represents our current knowledge of various species distributions.

To minimize impacts to the aquatic environment, the KDFWR recommends erosion control measures be developed and implemented prior to construction to reduce siltation into waterways and/or karst features located within the project area. Such erosion control measures may include, but are not limited to silt fences, staked straw bales, brush barriers, sediment basins, and diversion ditches. Erosion control measures will need to be installed prior to construction and should be inspected and repaired regularly as needed.

I hope this information is helpful to you, and if you have questions or require additional information, please call me at (502) 564-7109 extension 4453.

Sincerely,

Dan Stoelb  
Environmental Scientist

October 6, 2016

Sarah C. Brower  
Redwing Ecological Services  
1139 S. Fourth Street  
Louisville, KY 40203

Data Request 17-026

Dear Ms. Brower,

This letter is in response to your data request of September 21, 2016 for the KY-115 Corridor Study project US 41 to I-24 in Christian County, KY. We have reviewed our Natural Heritage Program Database to determine if any of the endangered, threatened, or special concern plants and animals or exemplary natural communities monitored by the Kentucky State Nature Preserves Commission occur within the general area of the project on the Hopkinsville, Pembroke, Oak Grove and Trenton USGS Quadrangles. Please see the attached reports for more information.

1-mile for all records – 1 records  
5-mile for aquatic records – 15 records  
5-mile for federally listed species – 4 records  
10-mile for mammals and birds – 12 records

The southern portion of the study area is approximately 0.2 miles from the Conservation Site known as Morgan Pond, consisting of at least nine karst ponds that lie on either side of US 41A and between I-24 on the north and Oak Grove, Kentucky to the south. Some of these ponds harbor rare aquatic plants in addition to nesting waterbirds. Some of the birds known from this area include *Anas clypeata* (Northern Shoveler, KSNPC Endangered); *Anas dicors* (Blue-winged Teal, KSNPC threatened); and *Podilymbus podiceps* (Pied-billed Grebe, KSNPC Endangered). Impacts to breeding habitat should be avoided to ensure compliance with Migratory Bird Treaty Act.

The site is located within a karst landscape characterized by numerous sinkholes, underground conduits, or caves. Construction disturbance or release of pollutants within the specified area could easily cause contamination of groundwater. Caves are often associated with sensitive ecosystems and may provide habitat for a number of rare or endangered species. Cave organisms are heavily dependent on water quality, and steps should be taken to avoid introducing

contaminants into the water system.

*Villosa vanuxemensis* (Mountain Creekshell, KSNPC threatened) is mussel species known to occur within five miles of the project, in the Rock Bridge Branch and West Fork of Red River, which has supported several additional monitored mussel species. *Cryptobranchus alleganiensis alleganiensis* (Eastern Hellbender, KSNPC endangered, federal species of management concern) is a species that is found in running waters of fairly large streams and rivers. Best management practices should be implemented to avoid indirect and cumulative effects to aquatic species.

*Myotis grisescens* (Gray myotis, federally listed endangered, KSNPC threatened) occurs between five and 10 miles of the project area. Impacts to caves or riparian corridors should be avoided or minimized.

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

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

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

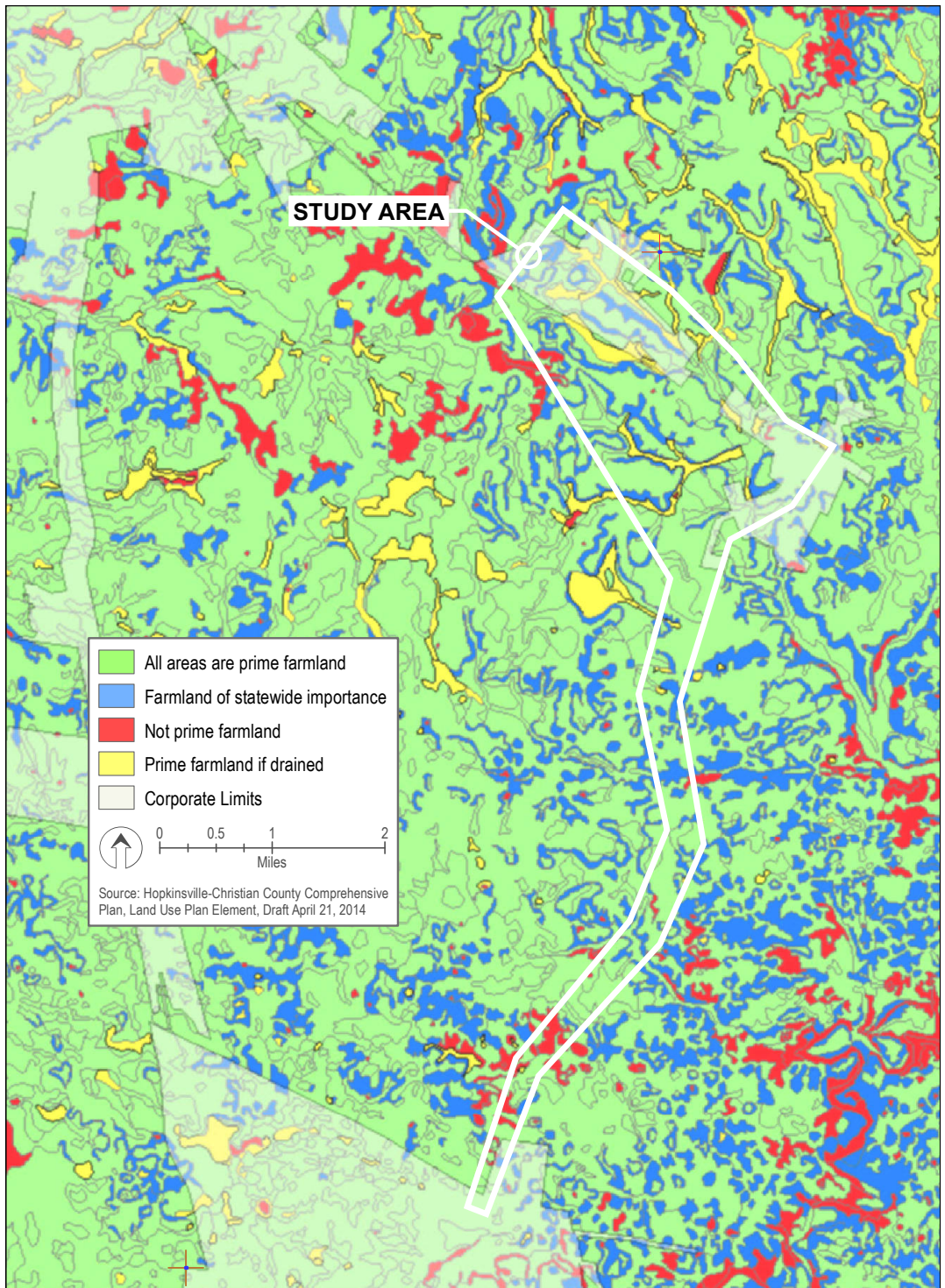
Sincerely,

Sara Hines  
Data Manager

RIH/SGH

Enclosures: Data Report and Interpretation Key





**Cultural Historic Literature Review and  
Reconnaissance for the  
KY 115/ US 41 Improvements Corridor Study  
Christian County, Kentucky**

KYTC Item No. 2-381

Prepared For:

Qk4, Inc.  
and the  
The Kentucky Transportation Cabinet

Prepared By:

Michael Reynolds  
and  
Patricia Stallings  
Senior Historians

Brockington and Associates, Inc.  
3580 Holcomb Bridge Road  
Suite 105  
Norcross, Georgia 30092  
678-638-4128

October 24, 2016

## Table of Contents

1.0	Project Summary and Introduction .....	1
2.0	Literature Review.....	4
2.1	Archival Research .....	4
2.2	Previously Recorded Resources in the Study Area and One-half Mile Buffer .....	4
3.0	Historical Summary of the Project Area.....	9
4.0	Results of the Reconnaissance .....	12
4.1	Introduction .....	12
4.2	Previously Recorded Resources .....	12
4.3	Newly Identified Resources .....	17
4.3.1	<i>Resource 1, Rosedale Cemetery (Eligibility Unknown)</i> .....	18
4.3.2	<i>Resource 2, Pembroke Historic District (Recommended Eligible)</i> .....	19
4.3.3	<i>Resource 3, Circa 1960 Ranch House (Recommended Potentially Eligible)</i> .....	29
4.3.4	<i>Resource 4, West Pembroke Ranch House Historic District (Recommended Potentially Eligible)</i> .....	30
4.3.5	<i>Resource 5, Louisville and Nashville Railroad Corridor (Recommended Potentially Eligible)</i> .....	33
5.0	Summary and Recommendations .....	34
6.0	Bibliography .....	35

## List of Figures

Figure 1.1.	Location of KY115/US41 study area. ....	3
Figure 2.1	Locations of previously recorded resources in the study area and one-half mile buffer and newly identified resources in the study area. Previously recorded resources located within the Recommended Pembroke Historic District are mapped in Figure 4.8. ....	5
Figure 3.1	Historic topographic quadrangle maps of the study area (1951 7.5' <i>Hopkinsville, Kentucky</i> ; 1951 7.5' <i>Pembroke, Kentucky</i> ; 1951 7.5' <i>Oak Grove, Kentucky-Tennessee</i> ; 1957 7.5' <i>Hammacksville, Kentucky-Tennessee</i> ).....	11
Figure 4.1	CH-102, the Saint Elmo School, southeast oblique. ....	13
Figure 4.2	Resource CH-485, The Hopkinsville-Edgoteen TVA Transmission Line, looking northwest from one-half mile buffer.....	14
Figure 4.3	Property 02400322, east front elevation.....	14
Figure 4.4	Property 02400315, north front elevation. ....	15
Figure 4.5	Property 02400340, looking northeast from cemetery access road.....	15
Figure 4.6	Resource CH-72, the Richardson House, southwest oblique. ....	16
Figure 4.7	Resource 1, the Rosedale Cemetery, looking north from the.....	18
Figure 4.8	Locations of previously recorded resources in the Recommended Eligible Pembroke Historic District.....	20
Figure 4.9	Resource CH-443, the KY 115 bridge over Montgomery Creek.....	21
Figure 4.10	Late nineteenth century house, west side of South Main Street.....	21
Figure 4.11	Late nineteenth century house, west side of South Main Street (KY 115), east front elevation.....	22
Figure 4.12	Streetscape on the west side of South Main Street (KY 115), looking south. ....	22

Figure 4.13 Late nineteenth century house, east side of South Main Street.....	23
Figure 4.14 Late nineteenth century house, east side of South Main Street (KY 115), west front elevation.....	23
Figure 4.15 Late nineteenth century house, east side of South Main Street (KY 115), west front elevation.....	24
Figure 4.16 Mid-twentieth century ranch house, west side of South Main Street (KY 115), east front elevation.....	24
Figure 4.17 Late nineteenth century to mid-twentieth century commercial buildings on South Main Street (KY 115), looking north.....	25
Figure 4.18 Early twentieth century church on the east side of South Main Street (KY 115), looking south.....	25
Figure 4.19 Early twentieth century house, south side of East Nashville Street (US 41), northeast oblique.....	26
Figure 4.20 Early twentieth century house, north side of East Nashville Street (US 41), southeast oblique.....	26
Figure 4.21 Early twentieth century church, south side of East Nashville Street (US 41), north elevation.....	27
Figure 4.22 Early twentieth century municipal building, south side of West Nashville Street (US 41), north elevation.....	27
Figure 4.23 Non-historic commercial development on West Nashville Street (US 41) at South Main Street (KY 115), looking east.....	28
Figure 4.24 Resource 3, north front elevation.....	29
Figure 4.25 Resource 4, ranch house, north side of West Nashville Street (US 41), south elevation.....	30
Figure 4.26 Resource 4, split level house, north side of West Nashville Street (US 41), south elevation.....	31
Figure 4.27 Resource 4, ranch house, north side of West Nashville Street (US 41), south elevation.....	31
Figure 4.28 Resource 4, ranch house, north side of West Nashville Street (US 41), southwest oblique.....	32
Figure 4.29 Resource 5, the Louisville and Nashville Railroad corridor, looking southwest from South Main Street (KY 115) in Pembroke.....	33

## List of Tables

Table 2.1. Previously recorded KHC Historic Resources in the study area and one-half mile buffer.....	6
Table 2.2 Previously recorded KHC Coded Historic Properties in the study area and one-half mile buffer.....	7
Table 4.1 Newly identified resource in the study area.....	17

## 1.0 Project Summary and Introduction

In September 2016 the Kentucky Transportation Cabinet (KYTC) through Qk4, Inc. contracted with Brockington and Associates, Inc. (Brockington) to conduct a Cultural Historic Analysis for roadway improvements corridor in Christian County, Kentucky. The project includes a planning-level study for roadway improvement alternatives along KY 115 between the intersection of US 41 at Pembroke and I-24 (KYTC Item No. 2-381). The overall corridor is approximately nine miles in length and also considers the potential for a southwestern bypass of Pembroke. Figure 1.1 is a study area location map.

The Cultural Historic Analysis included a literature review and reconnaissance of the project study area. At present, the Area of Potential Effects (APE) for compliance with National Historic Preservation Act (NHPA) Section 106 cultural resources studies is undefined. Therefore, for purposes of this planning-level study, the study area is a 0.1- to 0.3-mile-wide corridor that extends from I-24 north to approximately Pembroke Elementary School. The study area also includes a 4.4-square-mile area that encompasses KY 115 and US 41 in the City of Pembroke as well as US 41 extending west from Pembroke.

This summary report presents the results of the contracted scope of work for historic architecture, including a literature review of known aboveground resources identified in Kentucky Heritage Council (KHC) files, resources identified through local research, and resources identified through a windshield reconnaissance of the study area. A separate report has been provided for the archaeological results (Mills 2016).

A review of files at the KHC identified a total of 63 previously recorded architectural resources within the study area (51 are within a newly identified historic district) and 11 additional resources within the one-half mile buffer for the study area. The resources consist of both KHC Coded Historic Properties and KHC Historic Resources. While most of the previously recorded resources in the study area are houses, one is a general store, one is a bridge, and one is a cemetery. One of the KHC Historic Resources is listed on the National Register of Historic Places (NRHP) (Resource CH-72, the Richardson House). The building was listed on the NRHP in 1979 as part of multiple property nomination for resources in Christian County.

Following the archival research, Brockington conducted a windshield reconnaissance to identify other architectural resources within the study area that are potentially eligible for the NRHP. The field survey effort resulted in the identification of five resources that are at least 50 years of age and appear to be eligible or potentially eligible. These include:

- Resource 1, the Rosedale Cemetery – Unknown Eligibility (additional research required)
- Resource 2, the Pembroke Historic District – Recommended Eligible (contains 51 previously recorded properties that are considered district contributing)
- Resource 3, a circa 1960 ranch house – Recommended Potentially Eligible
- Resource 4, the West Pembroke Ranch House Historic District – Recommended Potentially Eligible
- Resource 5, the Louisville and Nashville Railroad corridor – Recommended Potentially Eligible

All NRHP eligibility assessments presented in this study are based on a reconnaissance level effort to ascertain integrity and should be considered *preliminary* until a more formal survey under Section 106 can be completed. In addition, a more intensive survey will assist in refining potential historic district boundaries, contributing/non-contributing resources in the districts, as well as NRHP boundaries for any individual properties.





**Figure 1.1. Location of KY115/US41 study area.**

## **2.0 Literature Review**

### **2.1 Archival Research**

Prior to the windshield reconnaissance, Brockington performed a literature review of available materials. The object of this research was to (1) collect information on previously recorded architectural resources that could be within the APE, (2) identify types of aboveground resources that might be encountered during the survey, and (3) develop a context in which to evaluate resources assessed during the fieldwork. Specific materials sought during this phase of work included historical maps, aerial photography, plats, newspaper articles, published documents, cultural resources management reports, and other relevant data.

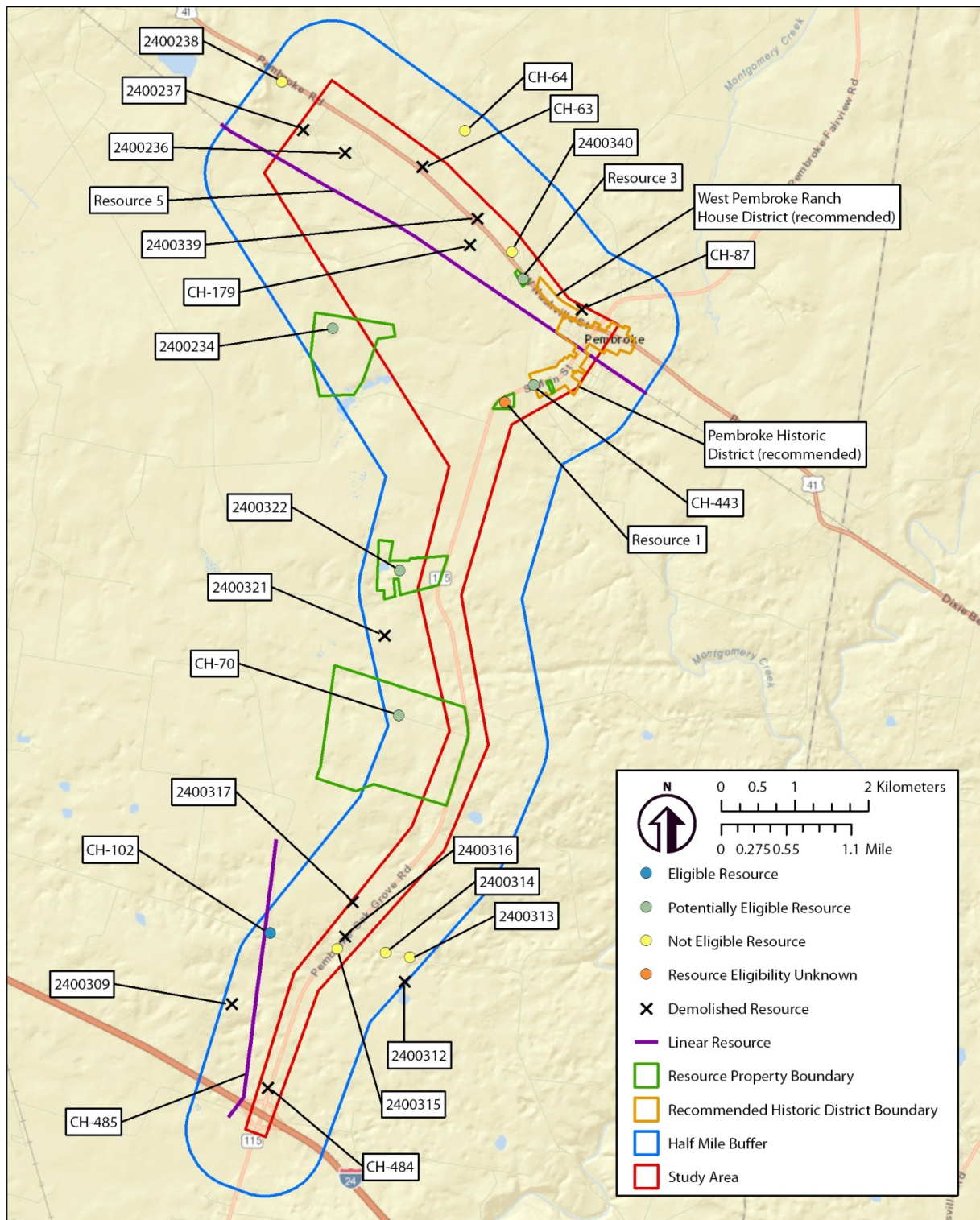
The archival research included a review of materials at several repositories. At the KHC, copies of material related to previously recorded properties in the study area and the one-half mile buffer were obtained. This included data from county-wide KHC surveys as well as NRHP nominations and the National Park Service (NPS) multiple property National Register of Historic Places (NRHP) listings *Christian County Multiple Resources Nomination* (1979). A number of historic maps, newspaper and journal articles, and city data were obtained at the Kentucky Department for Libraries and Archives. In addition, county histories were reviewed at the Christian County Public Library in Hopkinsville. All year built data for the properties in the study area was collected from the Christian County Property Valuation Administrator (PVA).

### **2.2 Previously Recorded Resources in the Study Area and One-half Mile Buffer**

A review of files at the KHC identified a total of 63 previously recorded architectural resources within the study area and 11 additional resources within the one-half mile buffer for the study area. While most of the previously recorded resources in the study area are houses, one is a general store, one is a bridge, and one is a cemetery. The resources consist of both KHC Historic Resources and KHC Coded Historic Properties. According to the KHC database, one of the KHC Historic Resources is listed on the NRHP (Resource CH-72, the Richardson House). Figure 2.1 is a map showing previously recorded architectural resources within the study area and the one-half mile buffer for the study area. Table 2.1 provides a list of the previously recorded KHC Historic Resources and Table 2.2 provides a list of the previously recorded KHC Coded Historic Properties.

In all, 51 of the KHC Historic Resources are in the City of Pembroke and are within a potential historic district. However, all of these resources were not individually assessed as part of the reconnaissance. Instead, they were treated as contributing resources to the recommended eligible Pembroke Historic District (see Section 4.3.2).





**Figure 2.1** Locations of previously recorded resources in the study area and one-half mile buffer and newly identified resources in the study area. Previously recorded resources located within the Recommended Pembroke Historic District are mapped in Figure 4.8.

**Table 2.1. Previously recorded KHC Historic Resources in the study area and one-half mile buffer.**

<b>KHC Historic Resource #</b>	<b>Name/Type</b>	<b>Location</b>	<b>Location Relative to Project</b>	<b>NRHP Status (Per KHC)</b>	<b>Consultant Recommendation</b>
CH-63	Log House- <b>Demolished</b>	North side of US 41 330 feet southeast of Old Edwards Mill Road	In Study Area	N/A	N/A
CH-64	House, undetermined type-altered, and Barn	East side of Old Edwards Mill Road	In Half-Mile Buffer	Undetermined	Not Eligible
CH-70	Old Major House and Farm Complex (no access)	West Side of SR 115	Buildings in Half-Mile Buffer	Undetermined	<b>Potentially Eligible</b>
CH-87	Pendleton House- <b>Demolished</b>	228 West Nashville Street (US 41)	In Study Area	N/A	N/A
CH-102	Saint Elmo School	Elmo Road at Bradshaw Road	In Half-Mile Buffer	<b>Eligible</b>	<b>Eligible</b>
CH-179	County Benevolent Home- <b>Demolished</b>	Salubria Springs Road	In Study Area	<b>N/a</b>	<b>N/A</b>
CH-484	House- <b>Demolished</b>	West Side of SR 115 Near US 24	In Study Area	N/A	N/A
CH-485	TVA HOPKINSVILLE-EDGOTEN 69-KV Transmission Line	West of SR 115	In Half-Mile Buffer	<b>Eligible</b>	<b>Eligible</b>
CH-72	Richardson House	South Main Street Pembroke (In Pembroke recommended NRHP District)	In Study Area	<b>Listed</b>	<b>Retains Integrity</b>
CH-443	SR 115 Bridge	SR 115 at Montgomery Creek, Pembroke (In Pembroke recommended NRHP District)	In Study Area	Potentially Eligible	<b>Potentially Eligible</b>

**Table 2.2 Previously recorded KHC Coded Historic Properties in the study area and one-half mile buffer.**

<b>KHC Coded Historic Property #</b>	<b>Name/Type</b>	<b>Location</b>	<b>Location Relative to Project</b>	<b>NRHP Status</b>	<b>Consultant Recommendation</b>
02400234	Farm (no access)	On the North Side of Long Pond Road	Complex in Half-Mile Buffer. Some fields in Study Area	Undetermined	<b>Potentially Eligible</b>
02400236	House- <b>Demolished</b>	0.2 mile south of Pembroke Road (US 41) near Krustearz Way	In Study Area	N/A	N/A
02400237	House- <b>Demolished</b>	0.27 mile south of Pembroke Road (US 41) near Riken Court	In Study Area	N/A	N/A
02400238	Early-to-mid-twentieth century house	5522 Pembroke Road (US 41)	In Study Area	Undetermined	Not Eligible
02400309	House- <b>Demolished</b>	0.4 Mile West of SR 115 and 0.6 Mile South of Elmo Road	In Half- Mile Buffer	N/A	N/A
02400312	<b>Barn-Demolished</b>	0.5 Mile East of SR 115 and 0.2- mile South of Barkers Mill Road	In Half- Mile Buffer	N/A	N/A
02400313	Lester Memorial Presbyterian Church	715 Barkers Mill Rd	In Half- Mile Buffer	Undetermined	<b>Not Eligible</b>
02400314	Circa 1910 Hall-Parlor	505 Barkers Mill Road	In Half- Mile Buffer	Undetermined	<b>Not Eligible</b>
02400315	Circa 1930 Store, Gates Grocery	6310 Pembroke Oak Grove Road (SR 115) at Barkers Mill Road	In Study Area	Undetermined	<b>Not Eligible</b>

02400316	House- <b>Demolished</b>	West Side of Pembroke Oak Grove Road (SR 115) 0.9 Mile North of Barkers Mill Road	In Study Area	N/A	N/A
02400317	House- <b>Demolished</b>	0.2 Mile West of Pembroke Oak Grove Road (SR 115) 0.4 Mile North of Barkers Mill Road	In Study Area	N/A	N/A
02400321	House- <b>Demolished</b>	0.4 Mile West Side of Pembroke Oak Grove Road (SR 115) 0.2 Mile south of Pruitt Road	In Half- Mile Buffer	N/A	N/A
02400322	Early twentieth Century Farm: Main House, Barn, outbuildings	West side of Pembroke Oak Grove Road (SR 115) and North Side of Pruitt Road	Complex in Half- Mile Buffer. Some fields in Study Area	Undetermined	<b>Potentially Eligible</b>
02400339	House- <b>Demolished</b>	North side of Pembroke Road (US 41) at Salubria Springs Road	In Study Area	N/A	N/A
02400340	Rawlins Cemetery (active) Early twentieth century to present	North side of Pembroke Road (US 41) 0.2 Mile northwest of Westbrooke Circle	In Study Area	Undetermined	Not Eligible

### 3.0 Historical Summary of the Project Area

Christian County is located in an area known as the Pennyroyal Region (also known as the Mississippi Plateau or Pennyrile). The Pennyroyal Region makes up the south-central portion of the state, and is characterized by a geological makeup of limestone bedrock capped by limestone. Christian County is the “unofficial capital” of the western Pennyrile, also called the Black Patch region, which includes the western fifth of the Pennyrile (KHC 1977). The earliest documented settlers arrived in the project region in the 1780s when pioneers navigated the Ohio, Cumberland, and Green Rivers into what is now southern Kentucky, but at that time was still part of a vast territory belonging to Virginia (Meacham 1930:22-23). In 1784, James Davis and John Montgomery established the first settlement southeast of present-day Pembroke and constructed a log blockhouse.

In 1792, the new state of Kentucky was established, and four years later the legislature carved Christian County from Logan County. The county seat was founded in 1797 on lands of Bartholomew T. Wood bordering the Little River. Initially named Elizabeth after Wood’s daughter, the town was re-named Hopkinsville in 1806.

The population increased during the early nineteenth century, as new settlers were attracted by the flat, fertile lands, particularly those in the southern parts of Christian County. Many of the communities emerged along water sources, such as the Red River and its tributaries, the Tradewater, Little and Pond Rivers. Settlers in north Christian County emigrated from the Carolinas and Georgia while those in the south came from Virginia. By 1830, the population exceeded 12,000 residents. Farm communities emerged, and agricultural products included corn, wheat and, most especially, tobacco. Much of the produce was shipped down the Cumberland and Tennessee Rivers towards markets in New Orleans (Turner 1992a:188). As the population and prosperity of the county’s larger farms grew, the region’s architecture took shape with stone, brick, or frame dwellings, a trend that would continue throughout the mid- to late-nineteenth century (KHC 1977). These type of buildings were more prevalent in the south, whereas log construction remained prominent in the northern section of the county (KHC 1977).

While much of the county’s commerce centered around the growing seat at Hopkinsville, smaller communities also took shape around stores, schools, or post offices. One such community was Pembroke, established in 1836 for purposes of providing a more convenient post office for planters in the southern section of the county. The town took on a more formal shape during the 1850s, when a store building was re-located near the intersection of the “Nashville and Tobacco Roads.” The town developed on portions of four farms, owned by R.C. Jameson, A.G. Slaughter, James Richardson, and E.B. Garnett, though development slowed during the Civil War. The arrival of the Louisville and Nashville Railroad in 1869 heralded a new era with more businesses and a new mode of transportation for the regions bumper crop, tobacco. Pembroke incorporated as a city in 1869 (Meacham 1930).

Christian County had divided loyalties during the Civil War. Many slaveholding planters in the southern, farming region supported the Confederacy, while the northern portions of the county remained loyal to the Union. Most regional military activity centered around Clarksville, Tennessee, located on the Cumberland River some thirty miles southwest. Christian County’s proximity to the key port occasioned troop movements across its road system. The only military activity of note occurred in 1864 when federal troops occupied Hopkinsville in an attempt to rid

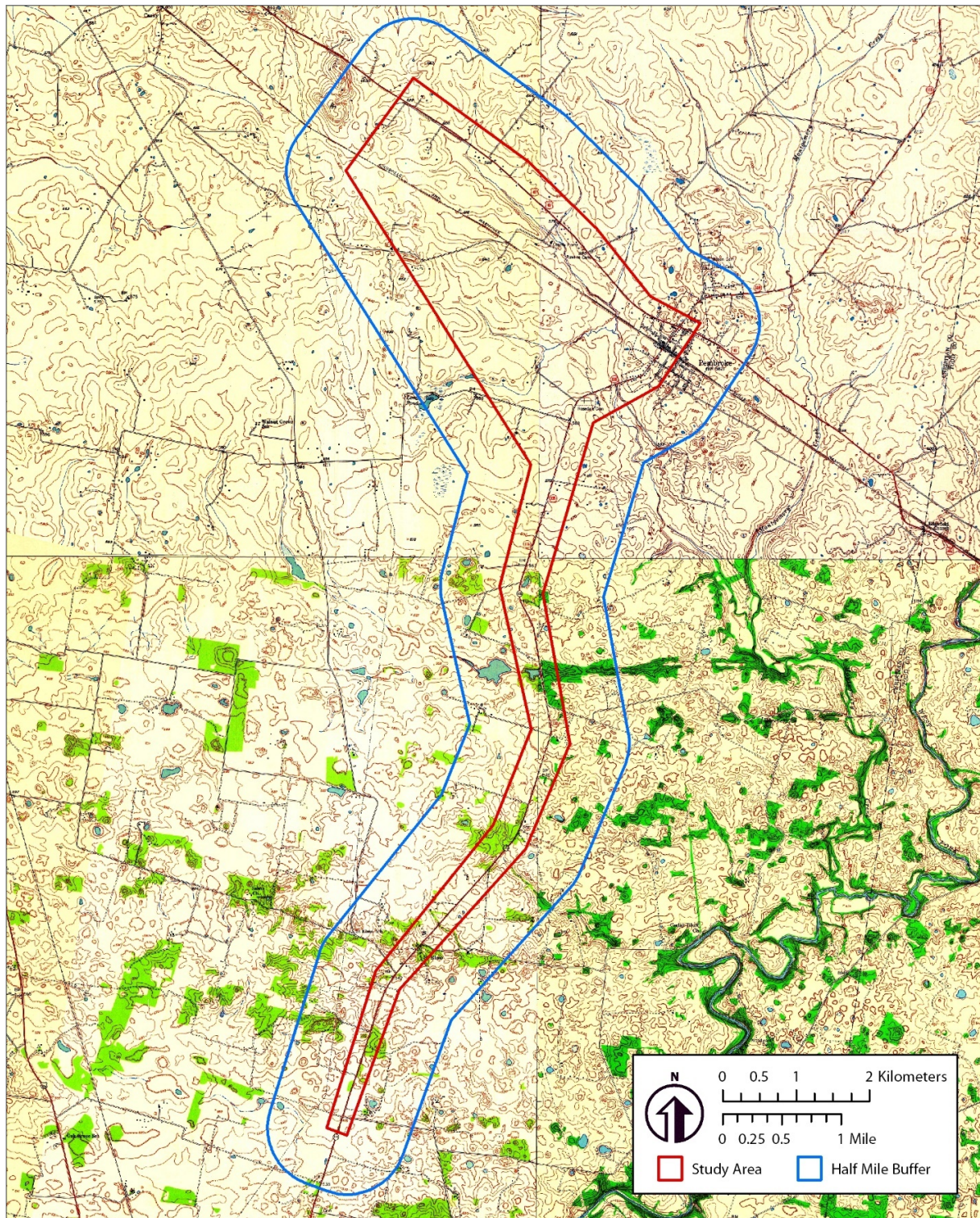
the county of Confederate cavalry detachments commanded by General Nathan B. Forrest, who had made local recruiting expeditions (Meacham 1930).

As with the south in general, Christian County's economy was disrupted by war; however, it made a "remarkably quick" postbellum recovery. The Louisville and Nashville Railroad, which profited from the Ohio River Valley industrial boom, led to the formation of towns along its length in southern Kentucky. In addition to Pembroke, other railroad stops were established at Gracey, Fidelio, and Masonville. Roads, too, played a significant role. Turnpike construction increased during the 1870s and by the turn of the century, all county roads were free of tolls. By the 1920s and 1930s, the new federal highway system improved the county's major roadways, including what are now US 41 and US 68 (Turner 1992a:188).

Agriculture also played a significant role in postbellum economic renewal and continues to contribute to the county's economy today. During the late nineteenth century, many local farmers joined the Grange movement, which "promoted fraternal cooperation" between farmers. In fact, by 1930 Christian County was one of the county's largest producers of "burley" tobacco, a dark fired version of the crop developed during the early 1900s (Meacham 1930). By the mid-twentieth century, however, mechanization transformed agricultural production and tobacco was soon replaced by soybeans as the new cash crop. In 1962, Christian County farmer Harry Young planted the first field of no-till corn on a commercial farm in the United States. No tilling, considered revolutionary at the time, is now used throughout the world to combat soil erosion. Today in Christian County, wheat is the primary crop, followed by tobacco, corn (for grain), and soybeans (Christian County 2016). Figure 3.1 presents mid-twentieth century topographic quadrangle maps of the study area.

During the late twentieth century, the arrival of two major thoroughfares, the Pennyrile Parkway and I-24, increased accessibility through Christian County (Turner 1992b). Hopkinsville in particular has numerous industrial parks, including those that support automotive parts, ink, plastic packaging, and pancake mix (Christian County 2016). The project area, around Pembroke, remains relatively rural, although the US 41 corridor extending northwest toward Hopkinsville features industrial and commercial development. The county and its communities also benefit from their proximity to Fort Campbell Military Installation and supports military personnel and their families.





**Figure 3.1** Historic topographic quadrangle maps of the study area (1951 7.5' *Hopkinsville, Kentucky*; 1951 7.5' *Pembroke, Kentucky*; 1951 7.5' *Oak Grove, Kentucky-Tennessee*; 1957 7.5' *Hammacksville, Kentucky-Tennessee*).



## **4.0 Results of the Reconnaissance**

### **4.1 Introduction**

During the week of September 25, 2016, the project historian from Brockington conducted a reconnaissance of the study area and the one-half mile buffer. As outlined in National Register Bulletin #24, a windshield reconnaissance-level survey is useful in ascertaining “a general picture of the distribution of different types and styles [of architectural resources], and of the character of different neighborhoods” (Parker 1985:35-36). Reconnaissance surveys are also useful for making preliminary assessments of eligibility based on the architectural integrity of properties, but not in conducting a complete evaluation. For this Cultural Historic Analysis, the reconnaissance survey included a windshield and pedestrian walk-by/inspection of individual properties and one or more photographs of each aboveground potentially eligible resource, where access was possible. Because many resources were located in the City of Pembroke, the historian also conducted a windshield survey along the neighborhood streets to glean further information in regard to district integrity and design, architectural composition, the presence and type of any infill development, and the general landscape aesthetic of roads, sidewalks, or other defining features.

The southern two-thirds of the study area is rural and consists of farmland, farm complexes, individual houses located along KY 115, a non-historic school, and a cemetery. The northern one-third of the study area consists of the City of Pembroke, which includes residential and commercial development as well as institutional buildings along South Main Street (KY 115), East Nashville Street, and West Nashville Street (US 41). Northwest of Pembroke, the study area consists of commercial and residential development along US 41, as well as a cemetery. South of US 41, the study area consists of recent industrial development and small areas of agricultural land.

### **4.2 Previously Recorded Resources**

During the field reconnaissance, the previously recorded architectural resources in the study area and the one-half mile buffer were visited. The project historian found that 12 were demolished, eight of which had been in the study area. Two of the extant resources that are in the one-half mile buffer were previously recommended eligible for the NRHP. These are Resource CH-102, the Saint Elmo School, and Resource CH-485, The Hopkinsville-Edgote TVA Transmission Line. Both resources appear to retain sufficient integrity to remain eligible for the NRHP (see Figure 2.1 and Table 2.1; Figures 4.1 and 4.2).

It should also be noted that there are three previously recorded farm complexes that are located within the one-half-mile buffer, Resource CH-70 (the Old Major House and Farm), Property 02400234, and Property 02400322. These resources had an undetermined NRHP eligibility. While the complexes are in the one half-mile buffer, small areas of associated agricultural fields fall within in the study area. Access to the building complexes at Resource CH-70 and Property 02400234 was not possible; however, the two resources should be considered potentially eligible for the NRHP (see Figure 2.1 and Tables 2.1 and 2.2). Further, Property 02400322 (Figure 4.3) should also be considered potentially eligible for the NRHP. Figure 2.1 provides property parcel boundaries for all three resources; additional research would be required to refine the boundaries based on NRHP guidelines.



There are two extant previously recorded resources within the study area that had an undetermined NRHP eligibility (see Figure 2.2 and Table 2.2; Figures 4.4 and 4.5). Property 02400315, a circa 1930 general store, is a cross-gabled concrete block store building; it has non-historic vinyl siding in the front-gable and a non-historic front door. Property 02400340 is the Rawlins Cemetery. After the field review and archival research, neither appears to qualify for NRHP listing.

Within the study area and the City of Pembroke, Resource CH-72, the Richardson House (circa 1830 Federal style house; Figure 4.6) was listed on the NRHP in 1979 as part of the Christian County multiple property resources nomination. It retains sufficient integrity to be listed on the NRHP (see Figure 4.8 for location). In addition, 51 of the previously recorded resources are located in the study area along or near South Main Street (KY 115), East Nashville Street, and West Nashville Street (US 41) in the City of Pembroke and are recommended as contributing resources to the newly identified Pembroke Historic District (see Section 4.3.2).



**Figure 4.1 CH-102, the Saint Elmo School, southeast oblique.**



**Figure 4.2 Resource CH-485, The Hopkinsville-Edgoteen TVA Transmission Line, looking northwest from the one-half mile buffer.**



**Figure 4.3 Property 02400322, east front elevation.**





**Figure 4.4 Property 02400315, north front elevation.**



**Figure 4.5 Property 02400340, looking northeast from cemetery access road.**



**Figure 4.6 Resource CH-72, the Richardson House, southwest oblique. It is located within the recommended eligible Pembroke Historic District.**

### 4.3 Newly Identified Resources

The field reconnaissance effort resulted in the identification of five previously unrecorded resources that are at least 50 years of age and appear to be eligible, potentially eligible or, in the case of Resource 1, a cemetery of unknown eligibility (see Figures 2.1 and 4.8 for locations). These include the following:

- Resource 1, the Rosedale Cemetery – Unknown Eligibility (additional research required)
- Resource 2, the Pembroke Historic District – Recommended Eligible
- Resource 3, a circa 1960 ranch house – Recommended Potentially Eligible
- Resource 4, the West Pembroke Ranch House Historic District – Recommended Potentially Eligible
- Resource 5, the Louisville and Nashville Railroad corridor – Recommended Potentially Eligible

**Table 4.1 Newly identified resources in the study area.**

<b>Resource #</b>	<b>Name/Type</b>	<b>Location</b>	<b>Location Relative to Project</b>	<b>Consultant Recommendation</b>
1	Rosedale Cemetery (active cemetery) Mid-nineteenth Century to present	East side of Pembroke Oak Grove Road (SR 115) at Spring Street	In Study Area	Undetermined – additional research required
2	Pembroke Historic District (Mid-Nineteenth Century to mid-twentieth century)	South Main Street (SR 115) from Montgomery Creek to Nashville Street and from Tensley Drive to Walnut Street	In Study Area	<b>Eligible</b>
3	Ranch House, circa 1960	539 West Nashville Street (US 41), south side	In Study Area	<b>Potentially Eligible</b>
4	West Pembroke Ranch House District (mid-twentieth century)	North Side of West Nashville Street (US 41) from Walnut Street to Montgomery Creek	In Study Area	<b>Potentially Eligible</b>
5	Louisville and Nashville Railroad Corridor	South of US 41, crosses SR 115 in Pembroke	In Study Area	<b>Potentially Eligible</b>



#### ***4.3.1 Resource 1, Rosedale Cemetery (Eligibility Unknown)***

Resource 1, the Rosedale Cemetery, also known as the Pembroke Cemetery, is an active cemetery located in the study area on the east side of KY 115, south of Pembroke (see Figure 2.1). The earliest grave dates to the early nineteenth century; however, most graves date to the early twentieth century to present. The setting consists of grassed lawn, oak trees, marble and granite headstones, and several individual box crypts. Additional research would have to be conducted to determine NRHP eligibility (Figure 4.7).



**Figure 4.7 Resource 1, the Rosedale Cemetery, looking north from the south access road.**

#### ***4.3.2 Resource 2, Pembroke Historic District (Recommended Eligible)***

Resource 2, the Pembroke Historic District, is located in the study area along South Main Street (KY 115), East Nashville Street, and West Nashville Street (US 41) (see Figure 2.1). A total of 51 previously recorded KHC resources are located in the district and are considered contributing district resources (Figure 4.8). The Pembroke Historic District consists of residential and commercial buildings, as well as institutional buildings. The buildings range in age from the 1830s to the 1950s. One of the earliest houses in the district is Resource CH-72, the Richardson House (NRHP listed), which was built circa 1830 and predates the incorporation of Pembroke (see Figure 4.6). Based on KHC data, it appears to have been listed as part of the Christian County Multiple Resources Nomination in 1979 and the form does not include a boundary beyond the house. For planning purposes, its recommended boundary corresponds to its legal property boundary shown on Figure 4.8. Also of note in the district is Resource CH-443, the KY 115 bridge over Montgomery Creek. The bridge would be considered a district contributing resource (see Figures 4.8 and 4.9).

The setting of the district on South Main Street (KY 115) consists of large houses built in the late nineteenth century to early twentieth century with only a few infill houses from the mid-twentieth century. The houses have large grassed lawns, mature deciduous trees, ornamental shrubs, sidewalks, and stone retaining walls (Figures 4.10-4.16). The Louisville and Nashville Railroad corridor crosses South Main Street north of the residential area. North of the railroad tracks, the setting consists of commercial buildings dating from the late nineteenth century to the mid-twentieth century, as well as an early twentieth century church and sidewalks (Figures 4.17-4.18). The setting of the district on East and West Nashville Streets consists of a mix of early twentieth century houses, an early twentieth century church, early twentieth century municipal buildings, and non-historic commercial buildings. Sidewalks are also present in some areas. The side streets have no sidewalks and are mainly lined with small early twentieth century houses with grassed lawns and mature deciduous trees (Figures 4.19-4.23). While some of the buildings over 50 years old have undergone non-historic alterations and additions, most have retained good to excellent integrity. Therefore, Resource 2, the Pembroke Historic District, is recommended eligible for the NRHP.

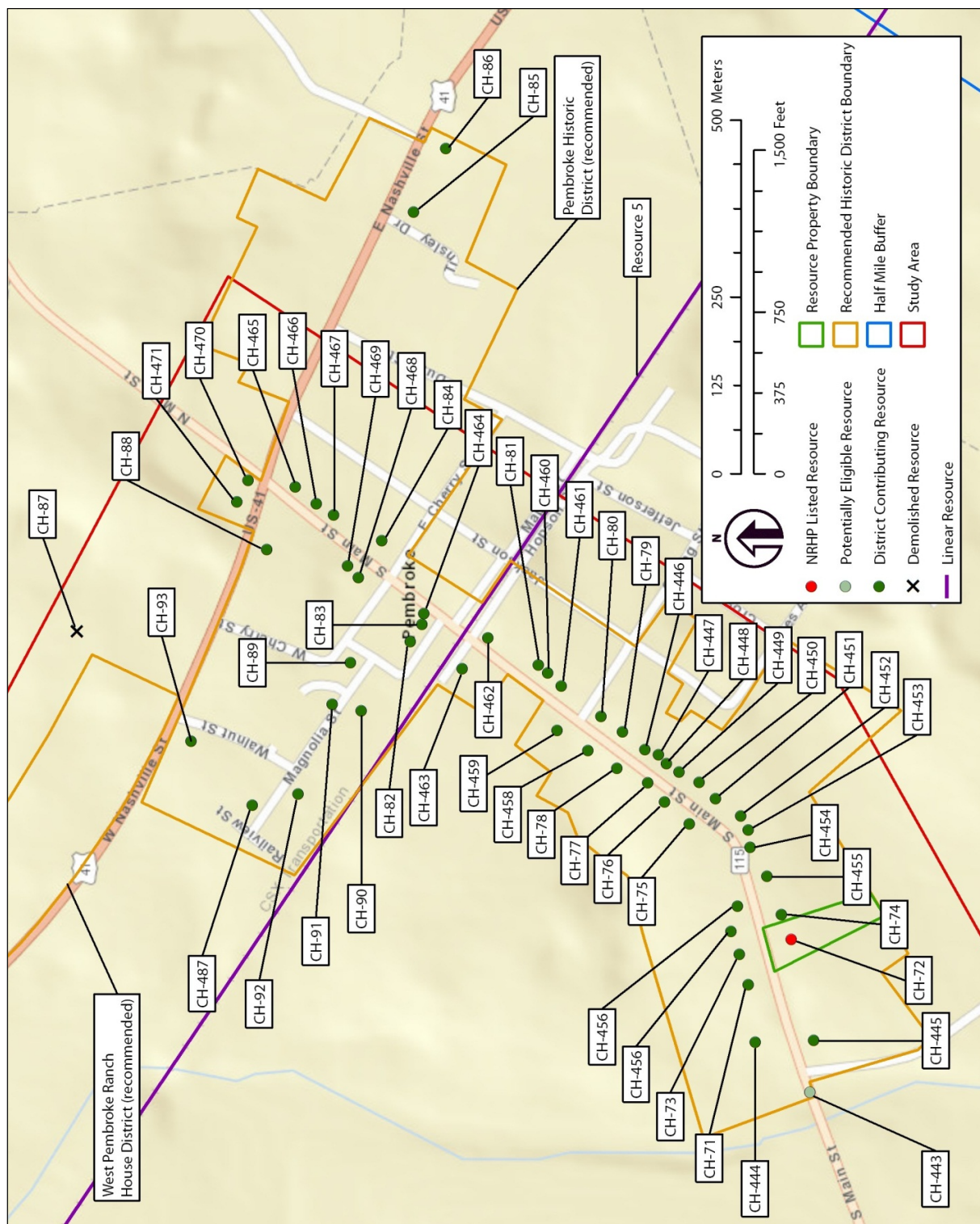


Figure 4.8 Locations of previously recorded resources in the Recommended Eligible Pembroke Historic District.





**Figure 4.9 Resource CH-443, the KY 115 bridge over Montgomery Creek.**



**Figure 4.10 Late nineteenth century house, west side of South Main Street.**





**Figure 4.11 Late nineteenth century house, west side of South Main Street (KY 115), east front elevation.**



**Figure 4.12 Streetscape on the west side of South Main Street (KY 115), looking south.**





**Figure 4.13** Late nineteenth century house, east side of South Main Street (KY 115), west front elevation.



**Figure 4.14** Late nineteenth century house, east side of South Main Street (KY 115), west front elevation.





**Figure 4.15 Late nineteenth century house, east side of South Main Street (KY 115), west front elevation.**



**Figure 4.16 Mid-twentieth century ranch house, west side of South Main Street (KY 115), east front elevation.**





**Figure 4.17 Late nineteenth century to mid-twentieth century commercial buildings on South Main Street (KY 115), looking north.**



**Figure 4.18 Early twentieth century church on the east side of South Main Street (KY 115), looking south.**





**Figure 4.19 Early twentieth century house, south side of East Nashville Street (US 41), northeast oblique.**



**Figure 4.20 Early twentieth century house, north side of East Nashville Street (US 41), southeast oblique.**





**Figure 4.21 Early twentieth century church, south side of East Nashville Street (US 41), north elevation.**



**Figure 4.22 Early twentieth century municipal building, south side of West Nashville Street (US 41), north elevation.**





**Figure 4.23 Non-historic commercial development on West Nashville Street (US 41) at South Main Street (KY 115), looking east.**

#### ***4.3.3 Resource 3, Circa 1960 Ranch House (Recommended Potentially Eligible)***

Resource 3 is a circa 1960 ranch house located at 539 West Nashville Street (US 41) (see Figure 2.1). It is separated from the potentially eligible West Pembroke Ranch House Historic District (see Section 4.3.4) by vacant lots and infill and, therefore, was assessed individually. It has a continuous concrete block foundation, a wood frame, an asphalt shingle side gable roof, and a brick veneer. There is a large picture window on the front elevation and a single wood front door with three fixed windows. The other windows are wood frame, flat-headed, double hung with 2/2 pane configurations. The setting consists of grassed lawn, mature deciduous trees, and ornamental shrubs. The house has no significant alterations, is a good example of a mid-twentieth century ranch house, and is recommended potentially eligible for the NRHP (Figure 4.24).



**Figure 4.24 Resource 3, north front elevation.**



#### ***4.3.4 Resource 4, West Pembroke Ranch House Historic District (Recommended Potentially Eligible)***

Resource 4, the West Pembroke Ranch House Historic District, is located on the north side of West Nashville Street (US 41) northwest of the Pembroke Historic District (see Figure 2.1 and Table 4.1). The district consists of 10 ranch houses and two split-level houses built circa 1955 to circa 1970. The setting of the district consists of grassed lawns, mature deciduous and pine trees, and ornamental shrubs. However, the street (US 41) has no sidewalks (Figure 4.25-4.28). While some of the houses have undergone non-historic alterations, most retain good to excellent integrity. It is a good intact collection of mid-twentieth century ranch homes in the region. Therefore, Resource 4, the West Pembroke Ranch House Historic District, is recommended potentially eligible for the NRHP.



**Figure 4.25 Resource 4, ranch house, north side of West Nashville Street (US 41), south elevation.**



**Figure 4.26 Resource 4, split level house, north side of West Nashville Street (US 41), south elevation.**



**Figure 4.27 Resource 4, ranch house, north side of West Nashville Street (US 41), south elevation.**





**Figure 4.28 Resource 4, ranch house, north side of West Nashville Street (US 41), southwest oblique.**

#### ***4.3.5 Resource 5, Louisville and Nashville Railroad Corridor (Recommended Potentially Eligible)***

Resource 5, the Louisville and Nashville Railroad corridor is located south of US 41 and crosses KY 115 in Pembroke. The resource is an active railroad corridor that passes through the study area and the one-half mile buffer (see Figure 2.1 and Figure 4.29). The portion of the corridor in Christian County was built in 1869 and was an important commercial corridor for regional growth and for the growth of the Pembroke community; it is recommended potentially eligible for the NRHP.



**Figure 4.29 Resource 5, the Louisville and Nashville Railroad corridor, looking southwest from South Main Street (KY 115) in Pembroke.**

## 5.0 Summary and Recommendations

A review of files at the KHC identified a total of 63 previously recorded architectural resources within the study area and 11 within one-half mile of the study area. While most of the previously recorded resources in the study area are houses, one is a general store, one is a bridge, and one is a cemetery. The resources consist of both KHC Historic Resources and KHC Coded Historic Properties (see Figure 2.1 and Tables 2.1 and 2.2).

During the field reconnaissance, the previously recorded architectural resources in the study area and the one half-mile buffer were visited. The project historian found that 12 were demolished, eight of which had been in the study area. Two of the extant resource that are in the one-half mile buffer were previously recommended eligible for the NRHP. These are Resource CH-102, the Saint Elmo School, and Resource CH-485, The Hopkinsville-Edgote TVA Transmission Line. Both resources appear to retain sufficient integrity to be NRHP eligible (see Figure 2.1 and Table 2.1).

It should also be noted that there are three previously recorded farm complexes that are located within the one-half-mile buffer, Resource CH-70 (the Old Major House and Farm), Property 02400234, and Property 02400322. These resources had an undetermined NRHP eligibility. While the complexes are in the one half-mile buffer, small areas of associated agricultural fields are in the study area. Resource CH-70 and Property 02400234 were not accessible during the reconnaissance, but both should be considered potentially eligible for the NRHP. Property 02400322 was assessed and is considered potentially eligible for the NRHP.

Within the study area and the City of Pembroke, there is one NRHP listed property, Resource CH-72, the Richardson House (circa 1830 Federal style house). The resource retains sufficient integrity to be listed on the NRHP. In addition, 51 of the previously recorded KHC resources are located in the study area along or near South Main Street (KY 115), East Nashville Street, and West Nashville Street (US 41) in the City of Pembroke. The 51 resources and Resource CH-72, the Richardson House, are recommended as contributing resources to the newly identified Pembroke Historic District (Resource 2).

The field reconnaissance effort resulted in the identification of five previously unrecorded resources that are at least 50 years of age, are recommended eligible, potentially eligible, or require additional research. These newly identified properties include the following:

- Resource 1, the Rosedale Cemetery – Unknown Eligibility (additional research required)
- Resource 2, the Pembroke Historic District – Recommended Eligible
- Resource 3, a circa 1960 ranch house – Recommended Potentially Eligible
- Resource 4, the West Pembroke Ranch House Historic District – Recommended Potentially Eligible
- Resource 5, the Louisville and Nashville Railroad corridor – Recommended Potentially Eligible



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United States  
Department of  
Agriculture

NRCS

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for **Christian County, Kentucky**



November 15, 2016

# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# Contents

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<b>Preface</b> .....	2
<b>How Soil Surveys Are Made</b> .....	5
<b>Soil Map</b> .....	7
Soil Map.....	8
Legend.....	9
Map Unit Legend.....	10
Map Unit Descriptions.....	11
Christian County, Kentucky.....	13
BaD—Baxter cherty silt loam, 12 to 20 percent slopes.....	13
CoD—Caneyville-Rock outcrop complex, 6 to 30 percent slopes.....	14
CrA—Crider silt loam, 0 to 2 percent slopes.....	15
CrB—Crider silt loam, 2 to 6 percent slopes.....	17
Du—Dunning soils.....	18
EIB—Elk silt loam, 2 to 6 percent slopes.....	20
FdC—Fredonia silt loam, very rocky, 2 to 12 percent slopes.....	21
HbB—Hammack-Baxter complex, 2 to 6 percent slopes.....	22
HbC—Hammack-Baxter complex, 6 to 12 percent slopes.....	24
HbC3—Hammack-Baxter complex, 6 to 12 percent slopes, severely eroded.....	26
La—Lawrence silt loam.....	28
Ln—Lindside silt loam.....	29
Ne—Newark silt loam.....	31
NhB—Nicholson silt loam, 2 to 6 percent slopes.....	32
NhC—Nicholson silt loam, 6 to 12 percent slopes.....	33
No—Nolin silt loam.....	34
PmA—Pembroke silt loam, 0 to 2 percent slopes.....	35
PmB—Pembroke silt loam, 2 to 6 percent slopes.....	37
PmC—Pembroke silt loam, 6 to 12 percent slopes.....	38
VeC—Vertrees silty clay loam, 6 to 12 percent slopes.....	39
W—Water.....	40
<b>Soil Information for All Uses</b> .....	41
Suitabilities and Limitations for Use.....	41
Land Classifications.....	41
Farmland Classification.....	41
<b>References</b> .....	47

# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

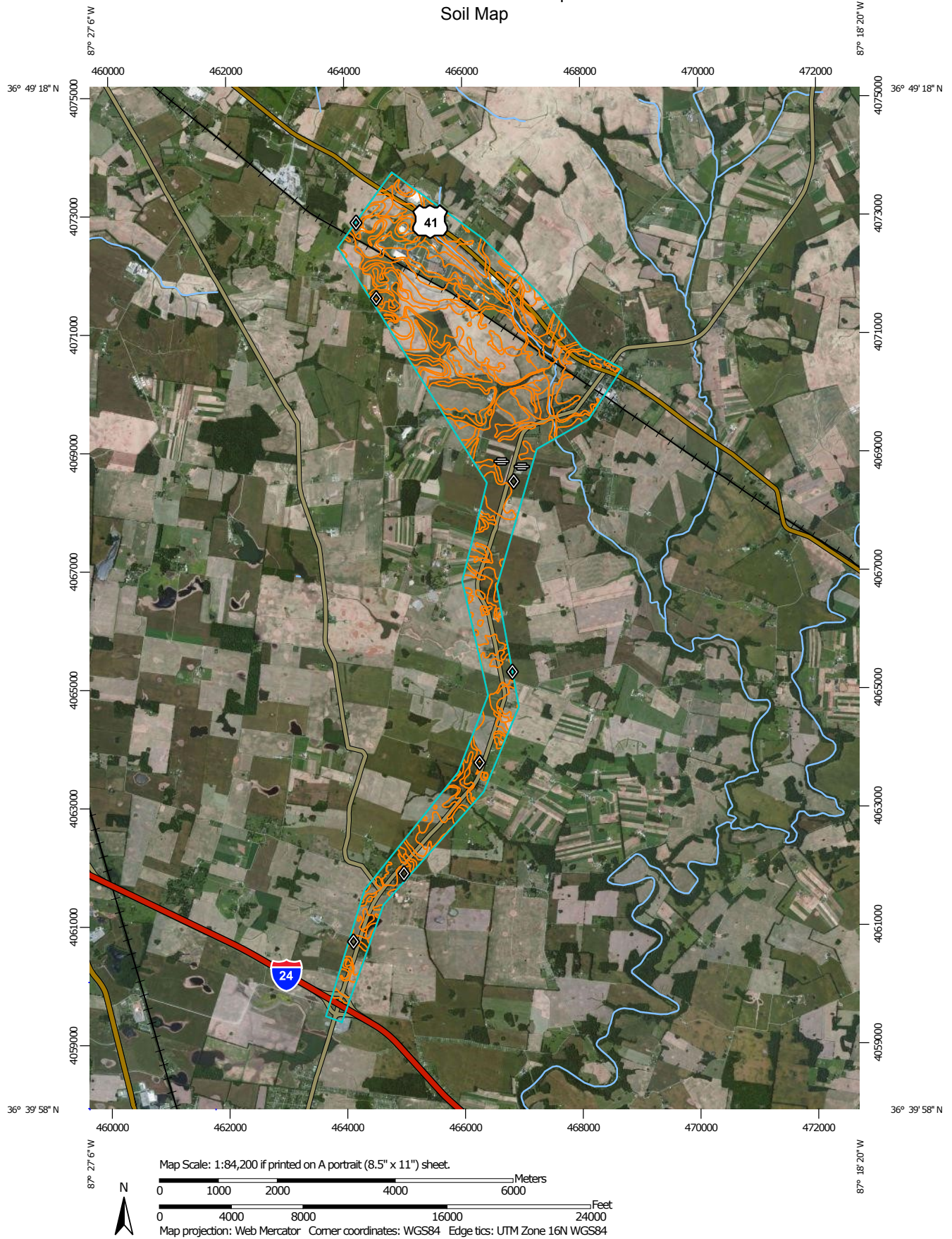
# Soil Map

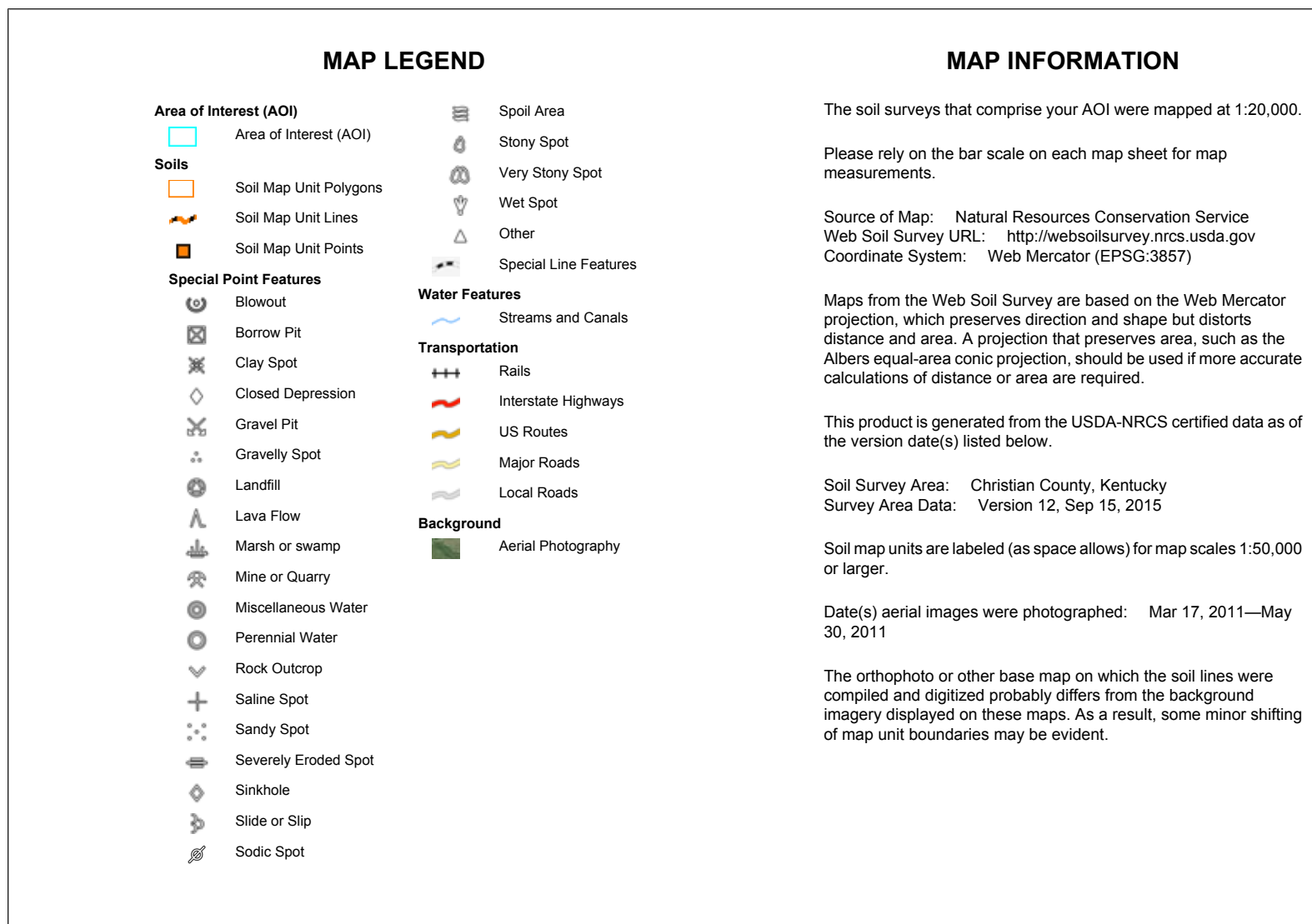
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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



# Custom Soil Resource Report Soil Map





## Map Unit Legend

Christian County, Kentucky (KY047)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BaD	Baxter cherty silt loam, 12 to 20 percent slopes	4.2	0.1%
CoD	Caneyville-Rock outcrop complex, 6 to 30 percent slopes	7.7	0.2%
CrA	Crider silt loam, 0 to 2 percent slopes	57.1	1.4%
CrB	Crider silt loam, 2 to 6 percent slopes	314.3	7.6%
Du	Dunning soils	10.1	0.2%
EIB	Elk silt loam, 2 to 6 percent slopes	18.8	0.5%
FdC	Fredonia silt loam, very rocky, 2 to 12 percent slopes	14.6	0.4%
HbB	Hammack-Baxter complex, 2 to 6 percent slopes	0.1	0.0%
HbC	Hammack-Baxter complex, 6 to 12 percent slopes	2.9	0.1%
HbC3	Hammack-Baxter complex, 6 to 12 percent slopes, severely eroded	82.7	2.0%
La	Lawrence silt loam	42.5	1.0%
Ln	Lindside silt loam	161.2	3.9%
Ne	Newark silt loam	268.8	6.5%
NhB	Nicholson silt loam, 2 to 6 percent slopes	477.6	11.6%
NhC	Nicholson silt loam, 6 to 12 percent slopes	28.3	0.7%
No	Nolin silt loam	109.3	2.6%
PmA	Pembroke silt loam, 0 to 2 percent slopes	128.4	3.1%
PmB	Pembroke silt loam, 2 to 6 percent slopes	1,830.5	44.4%
PmC	Pembroke silt loam, 6 to 12 percent slopes	219.9	5.3%
VeC	Vertrees silty clay loam, 6 to 12 percent slopes	344.1	8.3%
W	Water	4.0	0.1%
<b>Totals for Area of Interest</b>		<b>4,127.0</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly



indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Christian County, Kentucky

### BaD—Baxter cherty silt loam, 12 to 20 percent slopes

#### Map Unit Setting

*National map unit symbol:* lf9w  
*Elevation:* 410 to 630 feet  
*Mean annual precipitation:* 43 to 58 inches  
*Mean annual air temperature:* 45 to 68 degrees F  
*Frost-free period:* 164 to 194 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Baxter and similar soils:* 80 percent  
*Minor components:* 20 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Baxter

##### Setting

*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Parent material:* Clayey residuum weathered from cherty limestone

##### Typical profile

*H1 - 0 to 5 inches:* gravelly silt loam  
*H2 - 5 to 17 inches:* gravelly silt loam  
*H3 - 17 to 75 inches:* gravelly silty clay  
*H4 - 75 to 96 inches:* clay

##### Properties and qualities

*Slope:* 12 to 20 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 7.9 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4e  
*Hydrologic Soil Group:* B  
*Hydric soil rating:* No

#### Minor Components

##### Vertrees

*Percent of map unit:* 10 percent  
*Hydric soil rating:* No

**Other soils**

*Percent of map unit:* 10 percent

*Hydric soil rating:* No

**CoD—Caneyville-Rock outcrop complex, 6 to 30 percent slopes**

**Map Unit Setting**

*National map unit symbol:* lfb2

*Elevation:* 400 to 850 feet

*Mean annual precipitation:* 43 to 58 inches

*Mean annual air temperature:* 45 to 68 degrees F

*Frost-free period:* 164 to 194 days

*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Caneyville and similar soils:* 50 percent

*Rock outcrop:* 30 percent

*Minor components:* 20 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Caneyville**

**Setting**

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Parent material:* Clayey residuum weathered from cherty limestone

**Typical profile**

*H1 - 0 to 5 inches:* silt loam

*H2 - 5 to 25 inches:* clay

*H3 - 25 to 34 inches:* clay

*R - 34 to 44 inches:* unweathered bedrock

**Properties and qualities**

*Slope:* 6 to 30 percent

*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock

*Natural drainage class:* Well drained

*Runoff class:* High

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.60 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Low (about 5.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified



## Custom Soil Resource Report

*Land capability classification (nonirrigated): 7e*  
*Hydrologic Soil Group: C*  
*Hydric soil rating: No*

### Description of Rock Outcrop

#### Setting

*Landform: Hills*  
*Landform position (three-dimensional): Free face*  
*Parent material: Cherty limestone*

#### Interpretive groups

*Land capability classification (irrigated): None specified*  
*Land capability classification (nonirrigated): 8*  
*Hydric soil rating: No*

### Minor Components

#### Other soils

*Percent of map unit: 10 percent*  
*Hydric soil rating: No*

#### Vertrees

*Percent of map unit: 5 percent*  
*Hydric soil rating: No*

#### Nolin

*Percent of map unit: 5 percent*  
*Landform: Flood plains*  
*Hydric soil rating: No*

## CrA—Crider silt loam, 0 to 2 percent slopes

### Map Unit Setting

*National map unit symbol: 2v5b1*  
*Elevation: 390 to 720 feet*  
*Mean annual precipitation: 39 to 60 inches*  
*Mean annual air temperature: 44 to 69 degrees F*  
*Frost-free period: 154 to 219 days*  
*Farmland classification: All areas are prime farmland*

### Map Unit Composition

*Crider and similar soils: 92 percent*  
*Minor components: 8 percent*  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Crider

#### Setting

*Landform: Ridges*  
*Landform position (two-dimensional): Summit*

## Custom Soil Resource Report

*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Thin fine-silty noncalcareous loess over clayey residuum weathered from limestone

### Typical profile

*Ap - 0 to 8 inches:* silt loam  
*Bt1 - 8 to 38 inches:* silt loam  
*2Bt2 - 38 to 100 inches:* clay  
*2R - 100 to 110 inches:* bedrock

### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* 59 to 157 inches to lithic bedrock  
*Natural drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately high (0.00 to 0.20 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* High (about 11.3 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 1  
*Hydrologic Soil Group:* B  
*Hydric soil rating:* No

## Minor Components

### Bedford

*Percent of map unit:* 4 percent  
*Landform:* Ridges  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### Pembroke

*Percent of map unit:* 3 percent  
*Landform:* Ridges  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### Nolin, occasionally flooded

*Percent of map unit:* 1 percent  
*Landform:* Sinkholes  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* No

## **CrB—Crider silt loam, 2 to 6 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2v5b2

*Elevation:* 350 to 1,340 feet

*Mean annual precipitation:* 39 to 60 inches

*Mean annual air temperature:* 44 to 69 degrees F

*Frost-free period:* 154 to 219 days

*Farmland classification:* All areas are prime farmland

### **Map Unit Composition**

*Crider and similar soils:* 88 percent

*Minor components:* 12 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Crider**

#### **Setting**

*Landform:* Ridges

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Interfluve

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Thin fine-silty noncalcareous loess over clayey residuum weathered from limestone

#### **Typical profile**

*Ap - 0 to 8 inches:* silt loam

*Bt1 - 8 to 38 inches:* silt loam

*2Bt2 - 38 to 100 inches:* clay

*2R - 100 to 110 inches:* bedrock

#### **Properties and qualities**

*Slope:* 2 to 6 percent

*Depth to restrictive feature:* 59 to 157 inches to lithic bedrock

*Natural drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately high (0.00 to 0.20 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* High (about 11.3 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* B

*Hydric soil rating:* No



## Minor Components

### Baxter

*Percent of map unit:* 5 percent  
*Landform:* Ridges  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### Bedford

*Percent of map unit:* 4 percent  
*Landform:* Ridges  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### Pembroke

*Percent of map unit:* 3 percent  
*Landform:* Ridges  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Interfluve  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

## Du—Dunning soils

### Map Unit Setting

*National map unit symbol:* lfb9  
*Elevation:* 410 to 670 feet  
*Mean annual precipitation:* 43 to 58 inches  
*Mean annual air temperature:* 45 to 68 degrees F  
*Frost-free period:* 164 to 194 days  
*Farmland classification:* Prime farmland if drained

### Map Unit Composition

*Dunning, occasionally flooded, and similar soils:* 95 percent  
*Minor components:* 5 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Dunning, Occasionally Flooded

#### Setting

*Landform:* Closed depressions, flood plains  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear

## Custom Soil Resource Report

*Parent material:* Clayey alluvium

### Typical profile

*H1 - 0 to 7 inches:* silty clay loam

*H2 - 7 to 68 inches:* clay

### Properties and qualities

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Poorly drained

*Runoff class:* Medium

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)

*Depth to water table:* About 0 to 6 inches

*Frequency of flooding:* Occasional

*Frequency of ponding:* None

*Available water storage in profile:* High (about 9.9 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3w

*Hydrologic Soil Group:* C/D

*Hydric soil rating:* Yes

### Minor Components

#### Melvin, occasionally flooded

*Percent of map unit:* 2 percent

*Landform:* Flood plains, closed depressions

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Hydric soil rating:* Yes

#### Newark

*Percent of map unit:* 1 percent

*Landform:* Flood plains

*Hydric soil rating:* No

#### Robertsville, occasionally flooded

*Percent of map unit:* 1 percent

*Landform:* Flats, stream terraces

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Interfluvial, tread

*Down-slope shape:* Concave, linear

*Across-slope shape:* Linear

*Hydric soil rating:* Yes

#### Lawrence

*Percent of map unit:* 1 percent

*Landform:* Stream terraces

*Hydric soil rating:* No

## **EIB—Elk silt loam, 2 to 6 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* lfbc

*Elevation:* 400 to 650 feet

*Mean annual precipitation:* 43 to 58 inches

*Mean annual air temperature:* 45 to 68 degrees F

*Frost-free period:* 164 to 194 days

*Farmland classification:* All areas are prime farmland

### **Map Unit Composition**

*Elk, rarely flooded, and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Elk, Rarely Flooded**

#### **Setting**

*Landform:* Stream terraces

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Mixed fine-silty alluvium

#### **Typical profile**

*H1 - 0 to 9 inches:* silt loam

*H2 - 9 to 50 inches:* silty clay loam

*H3 - 50 to 68 inches:* silty clay loam

#### **Properties and qualities**

*Slope:* 2 to 6 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* Rare

*Frequency of ponding:* None

*Available water storage in profile:* High (about 11.8 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* B

*Hydric soil rating:* No

### Minor Components

#### Crider

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### Nicholson

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### Other soils

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

## FdC—Fredonia silt loam, very rocky, 2 to 12 percent slopes

### Map Unit Setting

*National map unit symbol:* lfbf

*Elevation:* 430 to 720 feet

*Mean annual precipitation:* 43 to 58 inches

*Mean annual air temperature:* 45 to 68 degrees F

*Frost-free period:* 164 to 194 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Fredonia and similar soils:* 80 percent

*Minor components:* 20 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Fredonia

#### Setting

*Landform:* Ridges

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Parent material:* Clayey residuum weathered from limestone

#### Typical profile

*H1 - 0 to 8 inches:* silt loam

*H2 - 8 to 30 inches:* silty clay

*R - 30 to 40 inches:* bedrock

#### Properties and qualities

*Slope:* 2 to 12 percent

*Depth to restrictive feature:* 20 to 40 inches to lithic bedrock

*Natural drainage class:* Well drained

*Runoff class:* Very high

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.60 in/hr)



## Custom Soil Resource Report

*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Low (about 5.1 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6e  
*Hydrologic Soil Group:* C  
*Hydric soil rating:* No

### Minor Components

#### Vertrees

*Percent of map unit:* 4 percent  
*Hydric soil rating:* No

#### Other soils

*Percent of map unit:* 4 percent  
*Hydric soil rating:* No

#### Caneyville

*Percent of map unit:* 4 percent  
*Hydric soil rating:* No

#### Pembroke

*Percent of map unit:* 4 percent  
*Hydric soil rating:* No

#### Rock outcrop

*Percent of map unit:* 4 percent  
*Hydric soil rating:* No

## HbB—Hammack-Baxter complex, 2 to 6 percent slopes

### Map Unit Setting

*National map unit symbol:* lfbk  
*Elevation:* 430 to 620 feet  
*Mean annual precipitation:* 43 to 58 inches  
*Mean annual air temperature:* 45 to 68 degrees F  
*Frost-free period:* 164 to 194 days  
*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Hammack and similar soils:* 52 percent  
*Baxter and similar soils:* 30 percent  
*Minor components:* 18 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

## Description of Hammack

### Setting

*Landform:* Ridges

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Interfluve

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Thin fine-silty noncalcareous loess over clayey residuum weathered from cherty limestone

### Typical profile

*H1 - 0 to 8 inches:* silt loam

*H2 - 8 to 28 inches:* silty clay loam

*H3 - 28 to 42 inches:* very gravelly silty clay loam

*H4 - 42 to 99 inches:* gravelly clay

### Properties and qualities

*Slope:* 2 to 6 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Moderate (about 8.8 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* B

*Hydric soil rating:* No

## Description of Baxter

### Setting

*Landform:* Ridges

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Interfluve

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Clayey residuum weathered from cherty limestone

### Typical profile

*H1 - 0 to 5 inches:* gravelly silt loam

*H2 - 5 to 17 inches:* gravelly silt loam

*H3 - 17 to 75 inches:* gravelly silty clay

*H4 - 75 to 96 inches:* clay

### Properties and qualities

*Slope:* 2 to 6 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Low

## Custom Soil Resource Report

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Moderate (about 7.9 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* B

*Hydric soil rating:* No

### Minor Components

#### Vertrees

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### Baxter

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### Nolin

*Percent of map unit:* 5 percent

*Landform:* Flood plains

*Hydric soil rating:* No

#### Other soils

*Percent of map unit:* 3 percent

*Hydric soil rating:* No

## HbC—Hammack-Baxter complex, 6 to 12 percent slopes

### Map Unit Setting

*National map unit symbol:* lfbl

*Elevation:* 400 to 650 feet

*Mean annual precipitation:* 43 to 58 inches

*Mean annual air temperature:* 45 to 68 degrees F

*Frost-free period:* 164 to 194 days

*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Hammack and similar soils:* 45 percent

*Baxter and similar soils:* 42 percent

*Minor components:* 13 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

## Description of Hammack

### Setting

*Landform:* Ridges

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Parent material:* Thin fine-silty noncalcareous loess over clayey residuum weathered from cherty limestone

### Typical profile

*H1 - 0 to 8 inches:* silt loam

*H2 - 8 to 28 inches:* silty clay loam

*H3 - 28 to 42 inches:* very gravelly silty clay loam

*H4 - 42 to 99 inches:* gravelly clay

### Properties and qualities

*Slope:* 6 to 12 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Medium

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Moderate (about 8.8 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3e

*Hydrologic Soil Group:* B

*Hydric soil rating:* No

## Description of Baxter

### Setting

*Landform:* Ridges

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Parent material:* Clayey residuum weathered from cherty limestone

### Typical profile

*H1 - 0 to 5 inches:* gravelly silt loam

*H2 - 5 to 17 inches:* gravelly silt loam

*H3 - 17 to 75 inches:* gravelly silty clay

*H4 - 75 to 96 inches:* clay

### Properties and qualities

*Slope:* 6 to 12 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Medium



## Custom Soil Resource Report

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Moderate (about 7.9 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3e

*Hydrologic Soil Group:* B

*Hydric soil rating:* No

### Minor Components

#### Vertrees

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### Nolin

*Percent of map unit:* 5 percent

*Landform:* Flood plains

*Hydric soil rating:* No

#### Other soils

*Percent of map unit:* 3 percent

*Hydric soil rating:* No

## HbC3—Hammack-Baxter complex, 6 to 12 percent slopes, severely eroded

### Map Unit Setting

*National map unit symbol:* lfbrn

*Elevation:* 430 to 610 feet

*Mean annual precipitation:* 43 to 58 inches

*Mean annual air temperature:* 45 to 68 degrees F

*Frost-free period:* 164 to 194 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Hammack, severely eroded, and similar soils:* 42 percent

*Baxter, severely eroded, and similar soils:* 40 percent

*Minor components:* 18 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Hammack, Severely Eroded

#### Setting

*Landform:* Ridges

*Landform position (two-dimensional):* Backslope

## Custom Soil Resource Report

*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Parent material:* Thin fine-silty noncalcareous loess over clayey residuum weathered from cherty limestone

### Typical profile

*H1 - 0 to 7 inches:* silty clay loam  
*H2 - 7 to 24 inches:* silty clay loam  
*H3 - 24 to 38 inches:* very gravelly silty clay loam  
*H4 - 38 to 95 inches:* gravelly clay

### Properties and qualities

*Slope:* 6 to 12 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 8.3 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4e  
*Hydrologic Soil Group:* B  
*Hydric soil rating:* No

## Description of Baxter, Severely Eroded

### Setting

*Landform:* Ridges  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Parent material:* Clayey residuum weathered from cherty limestone

### Typical profile

*H1 - 0 to 10 inches:* gravelly silty clay loam  
*H2 - 10 to 68 inches:* gravelly silty clay  
*H3 - 68 to 96 inches:* clay

### Properties and qualities

*Slope:* 6 to 12 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 7.5 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4e

*Hydrologic Soil Group:* B

*Hydric soil rating:* No

**Minor Components**

**Vertrees**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

**Baxter**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

**Nolin**

*Percent of map unit:* 5 percent

*Landform:* Flood plains

*Hydric soil rating:* No

**Other soils**

*Percent of map unit:* 3 percent

*Hydric soil rating:* No

**La—Lawrence silt loam**

**Map Unit Setting**

*National map unit symbol:* lfbp

*Elevation:* 400 to 800 feet

*Mean annual precipitation:* 43 to 58 inches

*Mean annual air temperature:* 45 to 68 degrees F

*Frost-free period:* 164 to 194 days

*Farmland classification:* Prime farmland if drained

**Map Unit Composition**

*Lawrence, rarely flooded, and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Lawrence, Rarely Flooded**

**Setting**

*Landform:* Depressions, stream terraces

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Concave, linear

*Across-slope shape:* Linear

*Parent material:* Mixed fine-silty alluvium over clayey residuum weathered from limestone and siltstone

**Typical profile**

*H1 - 0 to 8 inches:* silt loam  
*H2 - 8 to 26 inches:* silty clay loam  
*H3 - 26 to 44 inches:* silty clay loam  
*H4 - 44 to 60 inches:* silty clay

**Properties and qualities**

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* 18 to 32 inches to fragipan  
*Natural drainage class:* Somewhat poorly drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)  
*Depth to water table:* About 12 to 24 inches  
*Frequency of flooding:* Rare  
*Frequency of ponding:* None  
*Available water storage in profile:* Low (about 5.3 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3w  
*Hydrologic Soil Group:* C/D  
*Hydric soil rating:* No

**Minor Components**

**Henshaw**

*Percent of map unit:* 5 percent  
*Landform:* Stream terraces  
*Hydric soil rating:* No

**Robertsville, occasionally flooded**

*Percent of map unit:* 5 percent  
*Landform:* Depressions, stream terraces  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Concave, linear  
*Across-slope shape:* Linear  
*Hydric soil rating:* Yes

**Nicholson**

*Percent of map unit:* 5 percent  
*Hydric soil rating:* No

**Ln—Lindside silt loam**

**Map Unit Setting**

*National map unit symbol:* lfbq  
*Elevation:* 390 to 680 feet  
*Mean annual precipitation:* 43 to 58 inches  
*Mean annual air temperature:* 45 to 68 degrees F  
*Frost-free period:* 164 to 194 days



## Custom Soil Resource Report

*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Lindside, occasionally flooded, and similar soils:* 90 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Lindside, Occasionally Flooded

#### Setting

*Landform:* Flood plains, closed depressions

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Parent material:* Mixed fine-silty alluvium

#### Typical profile

*H1 - 0 to 8 inches:* silt loam

*H2 - 8 to 60 inches:* silty clay loam

#### Properties and qualities

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Moderately well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.20 to 2.00 in/hr)

*Depth to water table:* About 18 to 36 inches

*Frequency of flooding:* Occasional

*Frequency of ponding:* None

*Available water storage in profile:* Very high (about 12.2 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2w

*Hydrologic Soil Group:* B/D

*Hydric soil rating:* No

### Minor Components

#### Other soils

*Percent of map unit:* 4 percent

*Hydric soil rating:* No

#### Newark

*Percent of map unit:* 3 percent

*Landform:* Flood plains

*Hydric soil rating:* No

#### Nolin

*Percent of map unit:* 3 percent

*Landform:* Flood plains

*Hydric soil rating:* No

## **Ne—Newark silt loam**

### **Map Unit Setting**

*National map unit symbol:* lfbs  
*Elevation:* 400 to 680 feet  
*Mean annual precipitation:* 43 to 58 inches  
*Mean annual air temperature:* 45 to 68 degrees F  
*Frost-free period:* 164 to 194 days  
*Farmland classification:* Prime farmland if drained

### **Map Unit Composition**

*Newark, occasionally flooded, and similar soils:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Newark, Occasionally Flooded**

#### **Setting**

*Landform:* Flood plains, closed depressions  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Parent material:* Mixed fine-silty alluvium

#### **Typical profile**

*H1 - 0 to 9 inches:* silt loam  
*H2 - 9 to 36 inches:* silt loam  
*H3 - 36 to 76 inches:* silty clay loam

#### **Properties and qualities**

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat poorly drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)  
*Depth to water table:* About 6 to 18 inches  
*Frequency of flooding:* Occasional  
*Frequency of ponding:* None  
*Available water storage in profile:* High (about 11.9 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 2w  
*Hydrologic Soil Group:* B/D  
*Hydric soil rating:* No

### **Minor Components**

#### **Other soils**

*Percent of map unit:* 4 percent

*Hydric soil rating:* No

**Lindside**

*Percent of map unit:* 3 percent

*Landform:* Flood plains

*Hydric soil rating:* No

**Melvin, occasionally flooded**

*Percent of map unit:* 3 percent

*Landform:* Closed depressions, flood plains

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Hydric soil rating:* Yes

**NhB—Nicholson silt loam, 2 to 6 percent slopes**

**Map Unit Setting**

*National map unit symbol:* lfbv

*Elevation:* 410 to 790 feet

*Mean annual precipitation:* 43 to 58 inches

*Mean annual air temperature:* 45 to 68 degrees F

*Frost-free period:* 164 to 194 days

*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

*Nicholson and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Nicholson**

**Setting**

*Landform:* Ridges

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Interfluve

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Thin fine-silty noncalcareous loess over clayey residuum  
weathered from limestone

**Typical profile**

*H1 - 0 to 8 inches:* silt loam

*H2 - 8 to 23 inches:* silty clay loam

*H3 - 23 to 42 inches:* silty clay loam

*H4 - 42 to 70 inches:* silty clay

**Properties and qualities**

*Slope:* 2 to 6 percent

*Depth to restrictive feature:* 16 to 30 inches to fragipan

*Natural drainage class:* Moderately well drained

*Runoff class:* High

## Custom Soil Resource Report

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)

*Depth to water table:* About 18 to 30 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Low (about 4.6 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* D

*Hydric soil rating:* No

### Minor Components

#### Lawrence

*Percent of map unit:* 5 percent

*Landform:* Stream terraces

*Hydric soil rating:* No

#### Other soils

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### Crider

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

## NhC—Nicholson silt loam, 6 to 12 percent slopes

### Map Unit Setting

*National map unit symbol:* lf bw

*Elevation:* 410 to 740 feet

*Mean annual precipitation:* 43 to 58 inches

*Mean annual air temperature:* 45 to 68 degrees F

*Frost-free period:* 164 to 194 days

*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Nicholson and similar soils:* 90 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Nicholson

#### Setting

*Landform:* Ridges

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear



## Custom Soil Resource Report

*Parent material:* Thin fine-silty noncalcareous loess over clayey residuum weathered from limestone

### Typical profile

*H1 - 0 to 8 inches:* silt loam  
*H2 - 8 to 23 inches:* silty clay loam  
*H3 - 23 to 42 inches:* silty clay loam  
*H4 - 42 to 70 inches:* silty clay

### Properties and qualities

*Slope:* 6 to 12 percent  
*Depth to restrictive feature:* 16 to 30 inches to fragipan  
*Natural drainage class:* Moderately well drained  
*Runoff class:* Very high  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)  
*Depth to water table:* About 18 to 30 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Low (about 4.6 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3e  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* No

### Minor Components

#### Crider

*Percent of map unit:* 5 percent  
*Hydric soil rating:* No

#### Other soils

*Percent of map unit:* 5 percent  
*Hydric soil rating:* No

## No—Nolin silt loam

### Map Unit Setting

*National map unit symbol:* lfbx  
*Elevation:* 400 to 780 feet  
*Mean annual precipitation:* 43 to 58 inches  
*Mean annual air temperature:* 45 to 68 degrees F  
*Frost-free period:* 164 to 194 days  
*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Nolin, occasionally flooded, and similar soils:* 90 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

## **Description of Nolin, Occasionally Flooded**

### **Setting**

*Landform:* Flood plains, closed depressions

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Parent material:* Mixed fine-silty alluvium

### **Typical profile**

*H1 - 0 to 9 inches:* silt loam

*H2 - 9 to 63 inches:* silt loam

### **Properties and qualities**

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)

*Depth to water table:* About 36 to 63 inches

*Frequency of flooding:* Occasional

*Frequency of ponding:* None

*Available water storage in profile:* Very high (about 12.6 inches)

### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2w

*Hydrologic Soil Group:* C

*Hydric soil rating:* No

## **Minor Components**

### **Lindside**

*Percent of map unit:* 5 percent

*Landform:* Flood plains

*Hydric soil rating:* No

### **Other soils**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

## **PmA—Pembroke silt loam, 0 to 2 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* lfby

*Elevation:* 470 to 650 feet

*Mean annual precipitation:* 43 to 58 inches

*Mean annual air temperature:* 45 to 68 degrees F

*Frost-free period:* 164 to 194 days

*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Pembroke and similar soils:* 90 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Pembroke

#### Setting

*Landform:* Ridges

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Interfluvium

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Thin fine-silty noncalcareous loess over clayey residuum weathered from limestone

#### Typical profile

*H1 - 0 to 8 inches:* silt loam

*H2 - 8 to 31 inches:* silty clay loam

*H3 - 31 to 93 inches:* silty clay

#### Properties and qualities

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* High (about 10.9 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 1

*Hydrologic Soil Group:* B

*Hydric soil rating:* No

### Minor Components

#### Crider

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### Nolin

*Percent of map unit:* 5 percent

*Landform:* Flood plains, depressions

*Hydric soil rating:* No

## **PmB—Pembroke silt loam, 2 to 6 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* lfbz

*Elevation:* 410 to 710 feet

*Mean annual precipitation:* 43 to 58 inches

*Mean annual air temperature:* 45 to 68 degrees F

*Frost-free period:* 164 to 194 days

*Farmland classification:* All areas are prime farmland

### **Map Unit Composition**

*Pembroke and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Pembroke**

#### **Setting**

*Landform:* Ridges

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Interfluve

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Thin fine-silty noncalcareous loess over clayey residuum  
weathered from limestone

#### **Typical profile**

*H1 - 0 to 8 inches:* silt loam

*H2 - 8 to 31 inches:* silty clay loam

*H3 - 31 to 93 inches:* silty clay

#### **Properties and qualities**

*Slope:* 2 to 6 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* High (about 10.9 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* B

*Hydric soil rating:* No



### Minor Components

#### Fredonia

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### Crider

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### Nolin

*Percent of map unit:* 5 percent

*Landform:* Depressions, flood plains

*Hydric soil rating:* No

### PmC—Pembroke silt loam, 6 to 12 percent slopes

#### Map Unit Setting

*National map unit symbol:* lfc0

*Elevation:* 400 to 710 feet

*Mean annual precipitation:* 43 to 58 inches

*Mean annual air temperature:* 45 to 68 degrees F

*Frost-free period:* 164 to 194 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Pembroke and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Pembroke

##### Setting

*Landform:* Ridges

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Parent material:* Thin fine-silty noncalcareous loess over clayey residuum  
weathered from limestone

##### Typical profile

*H1 - 0 to 8 inches:* silt loam

*H2 - 8 to 31 inches:* silty clay loam

*H3 - 31 to 93 inches:* silty clay

##### Properties and qualities

*Slope:* 6 to 12 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Medium

## Custom Soil Resource Report

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* High (about 10.9 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3e

*Hydrologic Soil Group:* B

*Hydric soil rating:* No

### Minor Components

#### Fredonia

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### Vertrees

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### Baxter

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

## VeC—Vertrees silty clay loam, 6 to 12 percent slopes

### Map Unit Setting

*National map unit symbol:* lfcd

*Elevation:* 420 to 720 feet

*Mean annual precipitation:* 43 to 58 inches

*Mean annual air temperature:* 45 to 68 degrees F

*Frost-free period:* 164 to 194 days

*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Vertrees and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Vertrees

#### Setting

*Landform:* Ridges

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Parent material:* Clayey residuum weathered from limestone

**Typical profile**

*H1 - 0 to 8 inches: silty clay loam*

*H2 - 8 to 72 inches: clay*

**Properties and qualities**

*Slope: 6 to 12 percent*

*Depth to restrictive feature: More than 80 inches*

*Natural drainage class: Well drained*

*Runoff class: High*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)*

*Depth to water table: More than 80 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Available water storage in profile: High (about 9.7 inches)*

**Interpretive groups**

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 3e*

*Hydrologic Soil Group: C*

*Hydric soil rating: No*

**Minor Components**

**Pembroke**

*Percent of map unit: 5 percent*

*Hydric soil rating: No*

**Baxter**

*Percent of map unit: 5 percent*

*Hydric soil rating: No*

**Other soils**

*Percent of map unit: 5 percent*

*Hydric soil rating: No*

**W—Water**

**Map Unit Setting**

*National map unit symbol: lfcf*

*Mean annual precipitation: 43 to 58 inches*

*Mean annual air temperature: 45 to 68 degrees F*

*Frost-free period: 164 to 194 days*

*Farmland classification: Not prime farmland*

**Map Unit Composition**

*Water: 100 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

# **Soil Information for All Uses**

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## **Suitabilities and Limitations for Use**

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

## **Land Classifications**

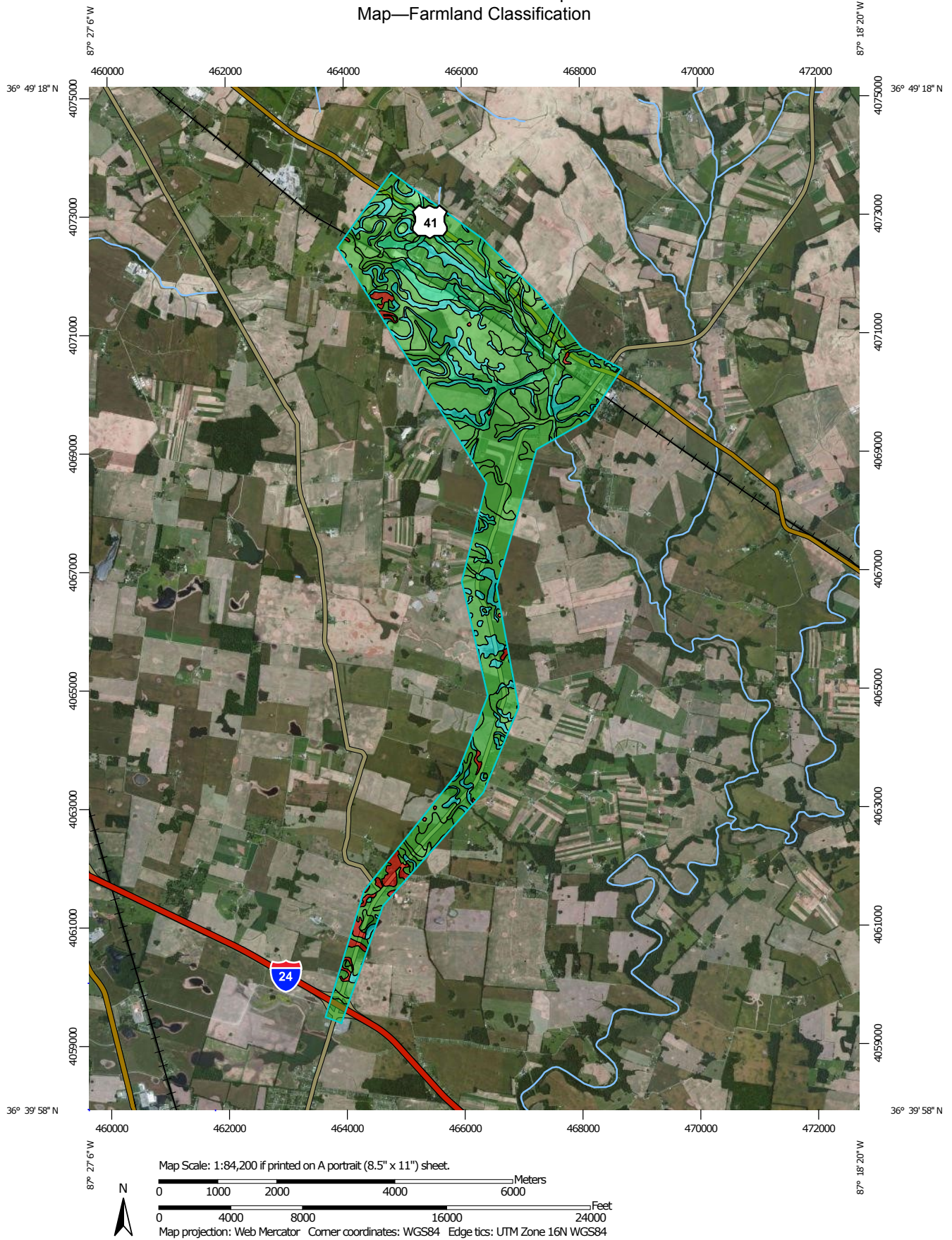
Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

## **Farmland Classification**

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.




# Custom Soil Resource Report Map—Farmland Classification



# Custom Soil Resource Report



## MAP INFORMATION

 Streams and Canals


### Transportation

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

### Background

 Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Christian County, Kentucky  
Survey Area Data: Version 12, Sep 15, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 17, 2011—May 30, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

**Table—Farmland Classification**

<b>Farmland Classification— Summary by Map Unit — Christian County, Kentucky (KY047)</b>				
<b>Map unit symbol</b>	<b>Map unit name</b>	<b>Rating</b>	<b>Acres in AOI</b>	<b>Percent of AOI</b>
BaD	Baxter cherty silt loam, 12 to 20 percent slopes	Not prime farmland	4.2	0.1%
CoD	Caneyville-Rock outcrop complex, 6 to 30 percent slopes	Not prime farmland	7.7	0.2%
CrA	Crider silt loam, 0 to 2 percent slopes	All areas are prime farmland	57.1	1.4%
CrB	Crider silt loam, 2 to 6 percent slopes	All areas are prime farmland	314.3	7.6%
Du	Dunning soils	Prime farmland if drained	10.1	0.2%
EIB	Elk silt loam, 2 to 6 percent slopes	All areas are prime farmland	18.8	0.5%
FdC	Fredonia silt loam, very rocky, 2 to 12 percent slopes	Not prime farmland	14.6	0.4%
HbB	Hammack-Baxter complex, 2 to 6 percent slopes	All areas are prime farmland	0.1	0.0%
HbC	Hammack-Baxter complex, 6 to 12 percent slopes	Farmland of statewide importance	2.9	0.1%
HbC3	Hammack-Baxter complex, 6 to 12 percent slopes, severely eroded	Not prime farmland	82.7	2.0%
La	Lawrence silt loam	Prime farmland if drained	42.5	1.0%
Ln	Lindside silt loam	All areas are prime farmland	161.2	3.9%
Ne	Newark silt loam	Prime farmland if drained	268.8	6.5%
NhB	Nicholson silt loam, 2 to 6 percent slopes	All areas are prime farmland	477.6	11.6%
NhC	Nicholson silt loam, 6 to 12 percent slopes	Farmland of statewide importance	28.3	0.7%
No	Nolin silt loam	All areas are prime farmland	109.3	2.6%
PmA	Pembroke silt loam, 0 to 2 percent slopes	All areas are prime farmland	128.4	3.1%
PmB	Pembroke silt loam, 2 to 6 percent slopes	All areas are prime farmland	1,830.5	44.4%
PmC	Pembroke silt loam, 6 to 12 percent slopes	Farmland of statewide importance	219.9	5.3%
VeC	Vertrees silty clay loam, 6 to 12 percent slopes	Farmland of statewide importance	344.1	8.3%
W	Water	Not prime farmland	4.0	0.1%
<b>Totals for Area of Interest</b>			<b>4,127.0</b>	<b>100.0%</b>

## Rating Options—Farmland Classification

*Aggregation Method:* No Aggregation Necessary

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The majority of soil attributes are associated with a component of a map unit, and such an attribute has to be aggregated to the map unit level before a thematic map can be rendered. Map units, however, also have their own attributes. An attribute of a map unit does not have to be aggregated in order to render a corresponding thematic map. Therefore, the "aggregation method" for any attribute of a map unit is referred to as "No Aggregation Necessary".

*Tie-break Rule:* Lower

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.



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## Custom Soil Resource Report

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# Land and Water Conservation Funds for Christian County

OBJECTID	State	County	Title	Sponsor	Amount	Date Approved	Exp. Date	Congressional District	RELATE
11456	Kentucky	CHRISTIAN	RUFF PARK	CHRISTIAN COUNTY	\$29,289.38	5/27/1985, 8:00 PM	8/30/1988, 8:00 PM	1	CHRISTIANKENTUCKY
11444	Kentucky	CHRISTIAN	RUFF PARK	CHRISTIAN COUNTY	\$25,296.78	1/31/1974, 7:00 PM	6/29/1976, 8:00 PM	1	CHRISTIANKENTUCKY
11468	Kentucky	CHRISTIAN	CITY OF CROFTON SPRAY PARK	CITY OF CROFTON	\$53,750.00	8/8/2007, 8:00 PM	7/29/2012, 8:00 PM	1	CHRISTIANKENTUCKY
11465	Kentucky	CHRISTIAN	RUFF PARK TENNIS COURTS	CHRISTIAN COUNTY FISCAL COURT	\$41,300.00	9/3/2002, 8:00 PM	9/29/2007, 8:00 PM	1	CHRISTIANKENTUCKY
11448	Kentucky	CHRISTIAN	NORTH CHRISTIAN CO. COMMUNITY PARK	CHRISTIAN COUNTY	\$5,279.69	1/27/1981, 7:00 PM	1/30/1986, 7:00 PM	1	CHRISTIANKENTUCKY
11461	Kentucky	CHRISTIAN	JAMES E. GORDON PARK	CITY OF CROFTON	\$30,225.76	7/12/1993, 8:00 PM	6/29/1995, 8:00 PM	1	CHRISTIANKENTUCKY
11450	Kentucky	CHRISTIAN	OAK GROVE PARK	CITY OF OAK GROVE	\$11,167.19	2/9/1982, 7:00 PM	2/27/1986, 7:00 PM	1	CHRISTIANKENTUCKY
11457	Kentucky	CHRISTIAN	PEMBROKE MUNICIPAL PARK	CITY OF PEMBROKE	\$25,164.53	1/15/1987, 7:00 PM	12/30/1988, 7:00 PM	1	CHRISTIANKENTUCKY
11467	Kentucky	CHRISTIAN	TRAIL OF TEARS PARK	CHRISTIAN COUNTY FISCAL COURT	\$40,000.00	1/22/2007, 7:00 PM	7/29/2011, 8:00 PM	1	CHRISTIANKENTUCKY
11452	Kentucky	CHRISTIAN	HOPKINSVILLE PARK RENOVATIONS	CITY OF HOPKINSVILLE	\$11,754.16	8/21/1983, 8:00 PM	1/14/1985, 7:00 PM	1	CHRISTIANKENTUCKY
11458	Kentucky	CHRISTIAN	TRAIL OF TEARS	CITY OF HOPKINSVILLE	\$25,067.25	1/9/1989, 7:00 PM	6/29/1991, 8:00 PM	1	CHRISTIANKENTUCKY
11453	Kentucky	CHRISTIAN	HOPKINSVILLE CITY PARK	CITY OF HOPKINSVILLE	\$22,428.81	9/23/1984, 8:00 PM	9/29/1986, 8:00 PM	1	CHRISTIANKENTUCKY
11443	Kentucky	CHRISTIAN	RUFF PARK	CHRISTIAN COUNTY	\$41,225.65	2/16/1970, 7:00 PM	12/30/1973, 7:00 PM	1	CHRISTIANKENTUCKY
11463	Kentucky	CHRISTIAN	GORDON PARK	CITY OF CROFTON	\$7,845.30	5/23/1995, 8:00 PM	5/29/1997, 8:00 PM	1	CHRISTIANKENTUCKY
11446	Kentucky	CHRISTIAN	HOPKINSVILLE PARK ADDITIONS	CITY OF HOPKINSVILLE	\$10,245.38	2/1/1977, 7:00 PM	6/29/1979, 8:00 PM	1	CHRISTIANKENTUCKY
11445	Kentucky	CHRISTIAN	RUFF PARK	CHRISTIAN COUNTY	\$52,293.45	4/19/1976, 8:00 PM	6/29/1979, 8:00 PM	1	CHRISTIANKENTUCKY
11447	Kentucky	CHRISTIAN	LAFAYETTE COMMUNITY PARK	CITY OF LAFAYETTE	\$28,000.32	8/20/1980, 8:00 PM	6/29/1985, 8:00 PM	1	CHRISTIANKENTUCKY
11449	Kentucky	CHRISTIAN	HOPKINSVILLE RECREATION COMPLEX	CITY OF HOPKINSVILLE	\$16,618.22	2/11/1982, 7:00 PM	2/27/1986, 7:00 PM	1	CHRISTIANKENTUCKY
11466	Kentucky	CHRISTIAN	LITTLE RIVER PARK	CITY OF HOPKINSVILLE	\$78,510.18	8/12/2003, 8:00 PM	7/30/2008, 8:00 PM	1	CHRISTIANKENTUCKY
11470	Kentucky	CHRISTIAN	PENNYRILE MOUNTAIN BIKING TRAINING AREA	CHRISTIAN COUNTY FISCAL COURT	\$60,000.00	8/30/2012, 8:00 PM	7/30/2016, 8:00 PM	1	CHRISTIANKENTUCKY
11459	Kentucky	CHRISTIAN	RUFF PARK TENNIS COURTS RENOVATION	CHRISTIAN COUNTY	\$21,942.00	7/30/1991, 8:00 PM	7/30/1993, 8:00 PM	1	CHRISTIANKENTUCKY
11469	Kentucky	CHRISTIAN	RUFF PARK	CHRISTIAN COUNTY FISCAL COURT	\$40,000.00	9/14/2009, 8:00 PM	7/29/2014, 8:00 PM	1	CHRISTIANKENTUCKY
11454	Kentucky	CHRISTIAN	WESTERN HILLS GOLF COURSE	CITY OF HOPKINSVILLE	\$50,760.00	9/25/1984, 8:00 PM	9/29/1986, 8:00 PM	1	CHRISTIANKENTUCKY
11462	Kentucky	CHRISTIAN	WALNUT STREET PARK	CITY OF HOPKINSVILLE	\$17,422.50	8/29/1994, 8:00 PM	8/30/1996, 8:00 PM	1	CHRISTIANKENTUCKY
11451	Kentucky	CHRISTIAN	PEMBROKE PARK	CITY OF PEMBROKE	\$5,732.85	10/21/1981, 8:00 PM	10/30/1986, 8:00 PM	1	CHRISTIANKENTUCKY
11460	Kentucky	CHRISTIAN	OAK GROVE PARK	CITY OF OAK GROVE	\$23,000.00	7/26/1992, 8:00 PM	6/29/1998, 8:00 PM	1	CHRISTIANKENTUCKY
11455	Kentucky	CHRISTIAN	LAFAYETTE COMMUNITY PARK	CHRISTIAN COUNTY	\$2,125.94	5/27/1985, 8:00 PM	5/30/1987, 8:00 PM	1	CHRISTIANKENTUCKY
11464	Kentucky	CHRISTIAN	TIE BREAKER PARK	CITY OF HOPKINSVILLE	\$43,600.00	7/20/2000, 8:00 PM	7/30/2005, 8:00 PM	1	CHRISTIANKENTUCKY