U.S. Department of Housing and Urban Development
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Environmental Assessment
Determinations and Compliance Findings for HUD-assisted Projects
24 CFR Part 58

This is a suggested format that may be used by Responsible Entities to document completion of an Environmental Assessment.

Project Information

Project Name: Thrive CDBG-RHP Transitional Housing Project

Responsible Entity: Department of Local Government (DLG)

Grant Recipient (if different than Responsible Entity): Thrive Community Coalition

State/Local Identifier: 24R-003

Preparer: Jennifer Peters, Branch Manager, DLG

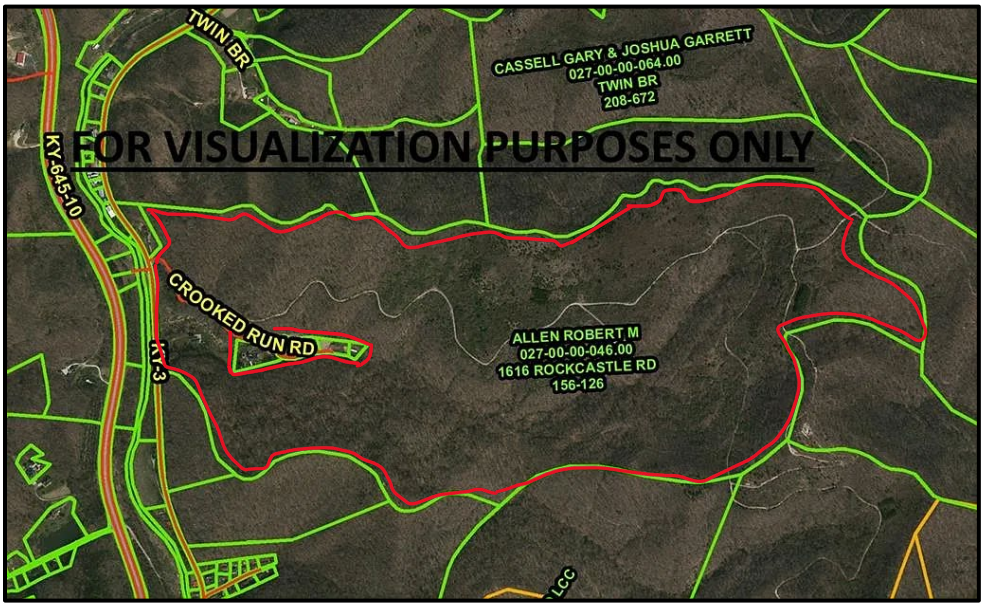
Certifying Officer Name and Title: Matt Sawyers, Commissioner, DLG

Grant Recipient (if different than Responsible Entity): Thrive Community Coalition

Consultant (if applicable): Fahe

Direct Comments to: Jennifer Peters
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CC: Jerri Dyer, jdyer@fahe.org

Project Location: 1616 Rockcastle Road, Inez, Kentucky 41224 (37.884028, -82.552500)



Description of the Proposed Project [24 CFR 50.21 & 58.32]**:**

Thrive Community Coalition (Thrive) received $850,000 of CDBG-RHP funds for the acquisition and rehabilitation of a single-family property and the construction of up to two additional single-family housing units of approximately 1,000 sq. feet. The project site is located at 1616 Rockcastle Road, Inez, Kentucky (37.884028, -82.552500). The existing residence is a 2,348 square-foot, three-bedroom, two-and-a-half-bathroom home with a two-car garage, situated on 253.89 acres. The proposed new construction will add up to two 1,000-square-foot, two- to three-bedroom homes. Project activities for new construction include land clearing, driveway construction, and water line connection. Together, these homes will comprise the Thrive Recover Well Housing Community and will provide safe, affordable housing for up to 14 individuals with unrelated individuals sharing double-occupied bedrooms in a single-family dwelling or with a single family occupying one unit if family reunification is appropriate and possible. Following rehabilitation, the existing structure will be able to house up to six individuals and each of the additional single-family housing units provides housing for up to four individuals or up to four-person families for a maximum of two years. With these additions to Martin County's housing stock, Thrive will be assisting individuals in recovery who are working toward independent, sober living with the option for family reunification.

Statement of Purpose and Need for the Proposal:

According to US Census Bureau QuickFacts statistics for 2023, Martin County, Kentucky has a median household income of $46,185, lower than the Kentucky ($62,417) and United States ($80,610) median household income. This results in 48.1% of residents living in poverty. Overall, 73.7% of Martin County residents 25 and older hold a high school diploma or higher, while only 10.7% hold a bachelor's degree or higher, leaving many Martin County residents without the skills needed to competitively participate in today's job market. Only 32.6% of the Martin County population aged 16 and above participate in the civilian labor force, compared to

59.2% in the state and 63% nationwide. A key contributor to the persistently high poverty rates in the entire Appalachian region is the loss of workforce due to Substance Use Disorder (SUD). According to the U.S. Department of Labor, substance use is highly correlated with absenteeism, decreased productivity, and high employee turnover.

Eastern Kentucky counties are seeing disproportionately high opioid overdose rates than Kentucky as a whole and a higher rate than the overall United States. According to the NORC Opioid Misuse Mapping Tool, between 2019-2021 Martin County experienced 63.6 drug overdose deaths per 100,000 residents, a higher rate than both the state (59.4) and nation (36.8). In 2023, Gov. Andy Beshear released the 2022 Overdose Fatality Report which reported that 90% of overdose deaths were from opioids, with fentanyl as the most prevalent drug contributing to those deaths.

To meaningfully support individuals in recovery towards continued sobriety and reintegration into the workforce and community, appropriate recovery-centered, family-centric housing models are needed. Traditional recovery housing models typically prolong family disconnectedness – especially for recovering individuals with children. With a family-based housing model, parents advanced in their recovery will be able to live together with their children following the successful completion of intensive in-patient and outpatient treatment, providing the opportunity for reunification – a key factor in successful recovery. A study published in Psychiatric Services demonstrates that parents in treatment for SUD are more likely to resume their parental roles and cites reunification as a factor contributing to the desire to complete treatment.

The next step in combating the effects of SUD in Eastern Kentucky is to provide transitional housing with an emphasis on family reunification in supportive environments where individuals in recovery will increase their chances for continued sobriety. Thrive's housing units will provide this opportunity –both for housing and for wraparound services, including peer coaching, education, life skills development, family reunification, and other important aspects of the process of returning to full community reintegration.

The acquisition of this property and the development of up to three housing units will allow Thrive to meet the need in Martin County for an increased stock of transitional housing by providing a long-term, sustainable, and stable center for transitional housing, while offering the opportunity for family reunification to support long-term recovery.

Existing Conditions and Trends [24 CFR 58.40(a)]:

This 253.89-acre project is located off of Rockcastle Road in Martin County, Kentucky. The project area in which ground disturbing activities are to take place remains outside of the floodplain. The entire property does not exist in a wetland area. A small portion of the property has been developed for residential use. The single-family home is a 2,348 square-foot, three-bedroom, two-and-a-half-bathroom home with a two-car garage. The proposed project will provide housing to accommodate up to 14 individuals. Many of the existing homes in Martin County are aging, in flood prone areas and unaffordable to residents of Martin County. Additionally, due to the recent flooding events in the county, the available housing stock has

been further diminished. Without the addition of new affordable housing units, these existing conditions and trends are likely to continue.

Funding Information

Grant Number	HUD Program	Funding Amount
24R-003	CDBG-RHP	$850,000

Estimated Total HUD Funded Amount: $850,000

Estimated Total Project Cost (HUD and non-HUD funds) [24 CFR 58.32(d)]**:**

Grant Number	HUD Program	Funding Amount
24R-003	CDBG-RHP	$850,000

Compliance with 24 CFR 50.4, 58.5, and 58.6 Laws and Authorities

Record below the compliance or conformance determinations for each statute, executive order, or regulation. Provide credible, traceable, and supportive source documentation for each authority. Where applicable, complete the necessary reviews or consultations and obtain or note applicable permits of approvals. Clearly note citations, dates/names/titles of contacts, and page references. Attach additional documentation as appropriate.

Compliance Factors: Statutes, Executive Orders, and Regulations listed at 24 CFR §58.5 and §58.6	Are formal compliance steps or mitigation required?	Compliance determinations
STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 and 58.6		
Airport Hazards 24 CFR Part 51 Subpart D	Yes ☐ No ☒	The project site is not within 15,000 feet of a military airport or 2,500 feet of a civilian airport. The closest airport, the Big Sandy Regional Airport, is approximately 12.92 miles (68,217 ft) from the proposed site. The project is in compliance with Airport Hazards requirements. No further mitigation required. See Appendix A, Exhibit A for the Airport Hazards Worksheet.

Coastal Barrier Resources Coastal Barrier Resources Act, as amended by the Coastal Barrier Improvement Act of 1990 [16 USC 3501]	Yes ☐ No ☒	This project is located in a state that does not contain CBRS units. Therefore, this project is in compliance with the Coastal Barrier Resources Act. See Appendix A, Exhibit B for the Coastal Barrier Resources Worksheet.
Flood Insurance Flood Disaster Protection Act of 1973 and National Flood Insurance Reform Act of 1994 [42 USC 4001-4128 and 42 USC 5154a]	Yes ☐ No ☒	The proposed property intersects with the FEMA-designated 100-year floodplain (Special Flood Hazard Area); however, all insurable property will be constructed outside of the Special Flood Hazard Area. While flood insurance may not be mandatory in this instance, HUD recommends that all insurable structures maintain flood insurance under the National Flood Insurance Program (NFIP). The attached FIRMette Map (Panel #21159C0043F eff. 09/16/2015) shows the project's proximity to the 100-year floodplain. The attached site diagram shows that all residential lots will be outside of the 100-year floodplain. The project is in compliance with flood insurance requirements. No further action or mitigation required. See Appendix A, Exhibit C for the Flood Insurance Worksheet.
STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 & 58.5		
Clean Air Clean Air Act, as amended, particularly section 176(c) & (d); 40 CFR Parts 6, 51, 93	Yes ☐ No ☒	Martin County is in attainment status for all criteria pollutants. The project is in compliance with the Clean Air Act. No further action or mitigation is required. See Appendix A, Exhibit D for the Clean Air Worksheet.
Coastal Zone Management Coastal Zone Management Act, sections 307(c) & (d)	Yes ☐ No ☒	Kentucky is a state that does not participate in the Coastal Zone Management Program. No further action or mitigation is required. See Appendix A, Exhibit E for the Coastal Zone Management Worksheet.
Contamination and Toxic Substances 24 CFR Part 50.3(i) & 58.5(i)(2)	Yes ☒ No ☐	No on-site or nearby toxic, hazardous, or radioactive substances that could affect the health and safety of project occupants or conflict with the intended use of the property

		were found. Radon testing indicated radon levels below 4.0 pCi/L. The University of Kentucky Geologically Based Indoor Radon Potential map shows that the project site is in the 2.71-4.0 picocuries per liter (pCi/L) zone, therefore post-construction radon testing is required for the two single-family units and radon testing of the existing property is required prior to rehabilitation. For the existing rehabilitation property, radon testing was conducted by Thrive's Alice Southers and processed by Alpha Energy Laboratories. Radon testing was conducted by using a short-term activated charcoal device manufactured by Eurofins Environment Testing Radon, LLC (NRPP ID: 101132 AL, Model: RD-1. NRPP Approved Device: AC-8202. NRSB Approved Device: 10325. Device Performance Standard: ANSIAARST MS-PC 2022. Quality Assurance Standard: ANSI-AARST MS-QA 2023. Lab Methodology: EPA-402-R-92-004. Test instructions designed in accordance with ANSI-AARST MAH-2023). Two short-term radon testing devices were placed by Alice Southers from 11:30 AM on 11/17/2025 until 11:30 AM on 11/19/2025. Following HUD Guidance on Testing for Radon in Single-Family and Multifamily Housing, tests were placed in the living room on the lowest occupied floor. The location was within the general breathing area at least three feet away from any windows or doors. Two tests were placed near each other, and an average of the two readings was taken. The Protect Environmental Radon Data Report dated 12/2/2025 stated for Device AA656161 a Radon level of 1.6 pCi/L. Device AA656160

		measured <1.4 pCi/L. An average of 1.5 pCi/L was calculated. The radon report determined the following: "For results below 2 pCi/L you do not need to take further action at this time." The project is in compliance with contamination and toxic substances requirements. The University of Kentucky Geologically Based Indoor Radon Potential Map for the project site documents that it is in the 2.71 to 4.0 picocuries per liter (pCi/L) zone. Therefore, testing will be required for the two new construction projects upon completion of construction to determine if radon levels exceed 4.0 picocuries per liter (pCi/L). Radon testing must occur post construction but before occupancy. If post construction radon testing shows 4.0 pCi/L or more, then mitigation measures shall be completed according to the most current version of ANSI/AARST CCAH (American National Standards Institute/American Association of Radon Scientists and Technologists CCAH Reducing Radon in New Construction of 1 & 2 Family Dwellings and Townhouses). If radon levels exceed 4.0 pCi/L, mitigation measures will be installed by a National Radon Proficiency Program (NRPP) certified professional. If testing shows levels below 4.0 pCi/L mitigation is not required. The project is in compliance with contamination and toxic substances requirements. Appendix A, Exhibit F for the Toxic Substances Worksheet.
Endangered Species Endangered Species Act of 1973, particularly section 7; 50 CFR Part 402	Yes ☐ No ☒	US Fish and Wildlife's Information and Planning Consultation (IPaC) provided an endangered species list for the proposed project area, provided as an attachment. This list identified that the following species may occur within the project vicinity: - The Gray Bat (Endangered)

		- The Indiana Bat (Endangered) - The Tricolored Bat (Proposed Endangered) - The Monarch Butterfly (Proposed Threatened) Following consultation with USFWS's Joshua Lillpop, acting Field Supervisor at USFWS, KFO concurs that the proposed action "may affect, is not likely to adversely affect" the Gray bat, Indiana bat, and Tricolored bat. **<u>Monarch Butterfly</u>** The project will have "No Effect" on the Monarch Butterfly as the project site is a *proposed* critical habitat. The actual site location does not overlap the *critical* habitat. **<u>Tricolored Bat</u>** On September 16th, 2025, the IPaC determination key for the Tricolored bat generated a "Not Likely to Adversely Affect" determination. Following the "Not Likely to Adversely Affect" determination, the Tricolored bat was excluded from further analysis in the environmental review based on the following considerations: 1. The action area does not intersect Zone 1 of the year-round active area for Tricolored bats. 2. The action does not involve leasing, construction, or operation of wind turbines. 3. The action area is not located within 0.5 miles of a known bat hibernaculum or winter roost/the project area does not contain any winter roosts or caves. 4. Thrive's Eric Mills completed an on-site inspection of the existing structure on December 3rd, 2025. Mr. Mills concluded that no evidence of

		bat roosting, including guano deposits, was found. **<u>Gray Bat</u>** On September 9th, 2025, the IPaC determination key for the Gray bat generated a "Not Likely to Adversely Affect" determination. Following the "Not Likely to Adversely Affect" determination, the Gray bat was excluded from further analysis in the environmental review based on the following considerations: 1. The action area does not intersect with Gray bat critical habitat. 2. The proposed project does not involve construction or operation of wind turbines. 3. The proposed project will not involve discharge of sediment into a stream, a new point source discharge, or create a new water-borne contaminant. 4. The project does not include the removal, replacement, or repair of an existing bridge/culvert. **5.** Thrive's Eric Mills completed an on-site inspection of the existing structure on December 3rd, 2025. Mr. Mills concluded that no evidence of bat roosting, including guano deposits, was found. **<u>Indiana Bat</u>** On September 16th, 2025, the IPaC determination key for the Indiana bat generated a "May Affect" determination and USFWS was consulted. Following a review of the project description, Determination Keys, letters, maps, and a justification for the "Not Likely to Adversely Affect" determination, USFWS concurred with a "Not Likely to Adversely

		Affect" determination for the Indiana bat due to the following considerations: 1. No caves, abandoned mine portals, sinkholes, or other underground features are present in the project area. 2. No blasting or other activities will take place that could result in impacts beyond the action area. 3. No bridges and/or culverts were identified on the project area. 4. The forested habitat in the action area was identified as suitable for roosting, foraging, and commuting. This 1-acre habitat will be removed during the unoccupied period for forested habitat. 5. No Primary Maternity Roost Trees (PMRTs) are present within the action area. 6. Thrive's Eric Mills completed an on-site inspection of the existing structure on December 3rd. Mr. Mills concluded that no evidence of bat roosting, including guano deposits, was found. In a letter provided by USFWS's Joshua Lillpop, acting Field Supervisor, KFO concurs that the proposed action "May Affect, Not Likely to Adversely Affect" the Gray bat, Indiana bat and Tricolored bat. Therefore, this project is in compliance with the Endangered Species Act. No formal compliance steps or mitigation required. See Appendix A, Exhibit G for the Endangered Species Worksheet.
Explosive and Flammable Hazards 24 CFR Part 51 Subpart C	Yes ☐ No ☒	A gas line and gas well with associated tank were identified on the property. The gas line is located underground over 3,000 feet from the proposed project site. A ridge line blocks both the gas line and gas well/tank from the proposed property. The gas well and tank are maintained and leased by Diversified

		Energy. Joshua Cochran at Diversified Energy provided the necessary information about the tank located at the gas well to facilitate an Acceptable Separation Distance measurement. Utilizing the HUD Acceptable Separation Distance Electronic Assessment Tool, the Acceptable Separation Distance for Thermal Radiation for People (ASDPNPD) was determined to be 120.50 feet, and the ASD for Thermal Radiation for Buildings (ASDBNPD) is 20.15 feet. The nearest point of the project site in which people, or buildings, will be situated is 3202.98 feet from the gas well and associated tank. This distance is well beyond the required separation distance recommended by HUD. This project is in compliance with Explosive and Flammable Facilities requirements. No further action or mitigation is required. See Appendix A, Exhibit H for the Explosive and Flammable Hazards Worksheet.
Farmlands Protection Farmland Protection Policy Act of 1981, particularly sections 1504(b) and 1541; 7 CFR Part 658	Yes ☐ No ☒	On behalf of DLG, Fahe completed a USDA Web Soil Survey and determined that a portion of the site was classified as "prime farmland if protected from flooding or not frequently flooded during the growing season." The total property site is 253.89 acres and the prime farmland (Gr) accounts for 1.5 acres of the AOI. On September 9, 2025, Fahe initiated consultation with the USDA's Natural Resources Conservation Service (NRCS), providing USDA's Perri Brown with a partially completed AD-1006 form and the site's Web Soil Survey results. On September 12, 2025, Brown provided Fahe with a completed AD-1006 and confirmed the presence of important farmland. The AD-1006 indicated that the total site assessment score was Total Site Assessment points are 57 (Part V Relative Value of Farmland = 1, completed by NRCS's Perri Brown, and Part VI Total Site Assessment points = 56, completed by Fahe), well below the 160-point threshold that would require mitigation. Based on

		these findings, the project is in compliance with the Farmland Protection Policy Act. No further action or mitigation is required. See Appendix A, Exhibit I for the Farmlands Protection Worksheet.
Floodplain Management Executive Order 11988, particularly section 2(a); 24 CFR Part 55	Yes ☒ No ☐	According to the FEMA Flood Hazard Boundary Map, approximately 4.61 acres of the project area will intersect with the 1% Annual Chance Flood Hazard Floodplain, Panel 21159C0043F, effective 09/16/2015 for Martin County Unincorporated Areas (210166). The 8-Step Process is required. The Floodplain and Wetlands Early Public Notice is attached and was published on the Department of Local Government's (DLG) website here: https://dlg.ky.gov/grants/federal/rhp/Pages/default.aspx. The Early Public Notice was published on December 23rd, 2025. The required 15 calendar days were allowed for public comment. As required by regulation, the notice included the project name, location, activity description, total floodplain acreage, responsible entity contact information, and the availability of more detailed project information. No public comments were received. DLG proceeded with steps 3 through 6 of the 8-Step Process. Following the 8-Step Process, DLG has determined that there are no practical alternatives and is committed to minimizing any adverse effects from the floodplain. The following mitigations will be implemented: *Preserving Lives:* To preserve lives, Martin County utilizes an emergency broadcast system and early warning system in case of extreme weather events. In addition to the warning system, an evacuation plan will be developed for evacuating residents. Residents will be briefed on the location of the flood hazard area adjacent to the site as well as emergency shelter locations that are available in the project area.

		Preserving Property: All homes are planned to be built outside of the floodplain. *Preserving Natural Values and Minimizing Impacts*: The site plans have been modified so that none of the homes will be located in the floodplain. A portion of resident parking spaces are proposed to intersect with the 100-year floodplain. Best Management Practices will be used to minimize erosion and will include the use of silt fences, reseeding and ground stabilization, as well as weekly site inspections to ensure effective sediment control during any activities in the floodplain. Therefore, based on all these mitigating measures, the proposed new construction project will have minimal effects on the FEMA floodplain and adjacent water resources DLG will publish the Floodplain and Wetlands Notice of Explanation on the Department of Local Government website here: https://dlg.ky.gov/grants/federal/rhp/Pages/default.aspx. This notice will explain this action following submission of the Environmental Review Record. The 8-Step Process memo is attached. With the completion of the 8-Step Process and consultation with the appropriate parties, the project will be in compliance with Executive Orders 11988 and 13690. See Appendix A, Exhibit L for the Floodplain Management Worksheet.
Historic Preservation National Historic Preservation Act of 1966, particularly sections 106 and 110; 36 CFR Part 800	Yes ☐ No ☒	Utilizing the HUD Tribal Directory Assessment Tool, the Cherokee Nation and Eastern Band of Cherokee Indians were identified as two tribal consulting bodies that may have an interest in the area. The Cherokee Nation and the Eastern Band of Cherokee Indians were invited to be consulting parties on 09-09-2025. The Eastern Band of Cherokee Indians did not

		provide a response within the 30-day window. The Cherokee Nation replied on September 30th, 2025, with a No Effect concurrence letter. A Section 106 Consultation was initiated with the Kentucky Heritage Council (SHPO) on 07-21-2025. On 07-24-2025, SHPO provided a determination of No Historic Properties Affected and that an archaeological survey is warranted. In response to State Historic Preservation Office consultation, Avanti Archeology completed a Phase I archeological survey on the project site. Following a surface survey, structural remains assumed to be a spring house, well, or possible chimney, were identified. Additionally, subsurface testing was conducted and produced a deposit of artifacts dated to the early 20th century. Avanti Archaeology advised that if the identified archaeological site, 15Mt38 cannot be avoided, it may be eligible for listing on the National Register of Historic Places (NRHP). In a letter dated January 7th, 2026, the State Historic Preservation office concurred with Avanti's determination that the project would receive an "Adverse Effect" determination if the archaeological site could not be avoided. However, with the revised site plans, Thrive will be able to complete all ground-disturbing activities and new construction outside of site 15Mt38, thereby preserving the integrity of the identified area. Additional site plans were provided to SHPO on 02/03/2026. On 02/19/2026, SHPO concurred with a "No Adverse Effect" determination if all ground-disturbing activities and new construction can be completed outside of site 15Mt38.

		This project is in compliance with Historic Preservation requirements. No further action or mitigation is required. See Appendix A, Exhibit K for the Historic Preservation Worksheet.
Noise Abatement and Control Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978; 24 CFR Part 51 Subpart B	Yes ☐ No ☒	There are no active railroads within 3,000ft of the proposed site. There were two roads with KYTC data within 1,000ft of the proposed site, 080-KY-0003 -000 (KY-3) and 080-KY-0645 -000 (Highway 645). The 10-year projected DNL for 080-KY-0003 -000 (KY-3) was 57 and the 10-year projected DNL for 080-KY-0645 -000 (Highway 645) was 54. According to HUD's DNL Calculator, the 10-year projected combined DNL is 59dB, which is below the 65dB threshold established by HUD. The Big Sandy Regional Airport is located approximately 12.94 miles from the project site. A Small Airport Noise Worksheet was completed for the airport; however, operations data was not available in the Big Sandy AMR report. To address this, Airport Manager Gary Cox was consulted and provided the necessary operations information. Based on the worksheet, the low number of annual air carrier operations ensures that airplane-related noise does not extend beyond the airport boundaries. No further action or mitigation is required, and the project is in compliance with HUD's noise regulations.
Sole Source Aquifers Safe Drinking Water Act of 1974, as amended, particularly section 1424(e); 40 CFR Part 149	Yes ☐ No ☒	There are no sole source aquifers in Kentucky. The project is in compliance with Sole Source Aquifer requirements. No further action or mitigation required. See Appendix A, Exhibit M for the Sole Source Aquifers Worksheet.
Wetlands Protection Executive Order 11990, particularly sections 2 and 5	Yes ☐ No ☒	Per the USFWS Wetlands map, there are no wetlands on the project site. The project is in compliance with Executive Order 11990. No further action or mitigation is required. See

		Appendix A, Exhibit N for the Wetlands Protection Worksheet.
Wild and Scenic Rivers Wild and Scenic Rivers Act of 1968, particularly section 7(b) and (c)	Yes ☐ No ☒	This project is not within proximity of a NWSRS river. The project is in compliance with the Wild and Scenic Rivers Act. Red River, the nearest NWSRS, is 51 miles from the site. Russell Fork, the nearest NWI, is 30.21 miles from the site, and there are no study rivers in Kentucky. This project is in compliance with the Wild and Scenic Rivers Act of 1968. No further action or mitigation is required. See Appendix A, Exhibit O for the Wild and Scenic Rivers Worksheet.

Environmental Assessment Factors [24 CFR 58.40] Recorded below is the qualitative and quantitative significance of the effects of the proposal on the character, features and resources of the project area. Each factor has been evaluated and documented, as appropriate and in proportion to its relevance to the proposed action. Verifiable source documentation has been provided and described in support of each determination, as appropriate. Credible, traceable and supportive source documentation for each authority has been provided. Where applicable, the necessary reviews or consultations have been completed and applicable permits of approvals have been obtained or noted. Citations, dates/names/titles of contacts, and page references are clear. Additional documentation is attached, as appropriate. **All conditions, attenuation or mitigation measures have been clearly identified.**

Impact Codes: Use an impact code from the following list to make the determination of impact for each factor.
(1) Minor beneficial impact
(2) No impact anticipated
(3) Minor Adverse Impact – May require mitigation
(4) Significant or potentially significant impact requiring avoidance or modification which may require an Environmental Impact Statement

Environmental Assessment Factor	Impact Code	Impact Evaluation
LAND DEVELOPMENT		
Conformance with Plans / Compatible Land Use and Zoning / Scale and Urban Design	1	This project is the rehabilitation of a pre-existing structure and new construction of up to two new single-family homes. The development will not negatively impact the existing urban design or compatible land use. The availability of new homes increases the diversity of

		housing options in Martin County and will serve as an overall benefit to the community.
Soil Suitability/ Slope/ Erosion/ Drainage/ Storm Water Runoff	2	The property does not contain any prime farmland or other known land features that would compromise the safety and durability of the homes and infrastructure. 4.61 acres of the 253.89-acre property are located in the FEMA floodplain's 100- year floodplain as determined using the 1-Percent-Annual-Floodplain Approach. To mitigate potential soil, erosion, drainage, or storm water runoff concerns, the site plans have been modified so that none of the homes will be located in the floodplain. Only resident parking will be placed in the floodplain. Best Management Practices will be used to minimize erosion and will include the use of silt fences, reseeding and ground stabilization, as well as weekly site inspections to ensure effective sediment control during any activities in the floodplain. A project engineer will be consulted to address any drainage and storm-water concerns.
Hazards and Nuisances including Site Safety and Noise	2	There are no anticipated hazards or nuisances that will be generated by the development of the project.
Energy Consumption	2	Infrastructure and homes will be built to code without significant impact on the county's energy consumption

Environmental Assessment Factor	Impact Code	Impact Evaluation
SOCIOECONOMIC		
Employment and Income Patterns	1	The project will provide additional housing opportunities in Martin County, which can lead to increased employments rates and growth of the local economy.
Demographic Character Changes, Displacement	1	With increased housing options, the population of Martin County may increase and result in greater demographic diversity in age, income level, and educational background.
Environmental Justice	2	This project supports environmental justice principles and aligns with local, state, and federal policies for equitable development.

Environmental Assessment Factor	Impact Code	Impact Evaluation
COMMUNITY FACILITIES AND SERVICES		
Educational and Cultural Facilities	1	Due to Thrive's optional wraparound services for residents, this project is likely to increase access to education for individuals leaving Substance Use Disorder (SUD) treatment specifically focusing on the provision of job placement and training services.
Commercial Facilities	2	The scope of this project is not anticipated to cause a significant impact to commercial facilities in Martin County. Commercial facilities will be available within close proximity to residents.
Health Care and Social Services	1	Due to Thrive's optional wraparound services for residents, residents will live within 1-mile of the Martin County Health department, the Cabinet for Health and Family Services, and the Collier Center which provides weekly AA meetings. Thrive will also provide optional transportation to wraparound health care and social services provisions therefore increasing the access to health care and social service access to individuals in SUD recovery.
Solid Waste Disposal / Recycling	2	The scope of this project is not anticipated to have a significant impact to solid waste or recycling systems in Martin County. Waste disposal can sufficiently be accommodated by current county services.
Waste Water / Sanitary Sewers	2	The scope of this project is not anticipated to cause a significant impact to wastewater or sanitary sewer systems in Martin County. A project engineer will continue to be consulted throughout the project for the design and construction of appropriate wastewater and sewer infrastructure.
Water Supply	2	The scope of this project is not anticipated to cause a significant impact to water supply systems in Martin County. A project engineer will continue to be consulted throughout the project for the design and construction of appropriate water infrastructure.
Public Safety - Police, Fire and Emergency Medical	2	The scope of this project is not anticipated to cause a significant impact to emergency response systems in Martin County. The project site will be sufficiently served by pre-existing services. An evacuation plan will be developed for evacuating residents in the case of an emergency. Residents will be briefed on the location of the flood hazard area adjacent to the site as well as emergency shelter locations that are available in the project area.
Parks, Open Space and Recreation	2	The scope of the project is not anticipated to cause a significant impact to parks and recreation spaces in Martin County.

Transportation and Accessibility	2	The scope of this project is not anticipated to cause a significant impact to transportation and accessibility systems in Martin County.

Environmental Assessment Factor	Impact Code	Impact Evaluation
NATURAL FEATURES		
Unique Natural Features, Water Resources	2	This project is not anticipated to cause a significant impact to any unique natural features or water resources in Martin County.
Vegetation, Wildlife		The scope of this project is not anticipated to cause a significant impact to vegetation or wildlife in Martin County. IPaC, the KY USFW Field Office, and the KY Biological Assessment Tool were consulted to identify potential adverse effects to flora and fauna in the project area. No adverse effects were identified. Some vegetation will be removed for development on site, but the project area does not contain unique or protected species.
Other Factors	2	No other significant impacts identified.

Environmental Assessment Factor	Impact Code	Impact Evaluation
ENERGY		
Climate Change Impacts	2	The scope of this project is not anticipated to cause significant impact to climate change.
Energy Efficiency	2	Residential housing units will be built to resilient green building standards with little impact on the city's energy consumption levels.

Additional Studies Performed:
Avanti Archaeology - Phase I Archaeological Assessment
Alice Southers - Radon testing

Field Inspection (Date and completed by)**:**
Eric Mills, Thrive Community Coalition CEO, 12/03/2025

List of Sources, Agencies and Persons Consulted:

1. Airport Hazards: NEPAssist Tool – https://nepassisttool.epa.gov/nepassist/nepamap.aspx

2. Coastal Barriers: U.S. Fish & Wildlife Services Costal Barrier Resources System Mapper - https://fwsprimary.wim.usgs.gov/CBRSMapper-v2/
3. Floodplain management: FEMA Flood Map Service Center Mapping Tool - https://msc.fema.gov/portal/home
4. Clean Air: Current Nonattainment Counties for All Criteria Pollutants - https://www3.epa.gov/airquality/greenbook/ancl.html#KY
5. Coastal Zone Management: Office for Coastal Management – Coastal Zone Management Programs – https://coast.noaa.gov
6. Contamination and Toxic Substances: Geologically Based Indoor Radon Potential Map : https://kygs.maps.arcgis.com/apps/View/index.html?appid=eac52b77783d4f2a92403740aaf8de76
7. Contamination and Toxic Substances: NEPAssist - https://www.epa.gov/nepa/nepassist
8. Contamination and Toxic Substances: Alpha Energy Laboratories Radon Testing
9. Endangered Species Act: Information for Planning and Consulting (IPaC) - https://ipac.ecosphere.fws.gov/
10. Endangered Species Act: Joshua Lillpop, Acting Field Supervisor
11. Endangered Species Act: Karah Jaffe, Biologist U.S. Fish and Wildlife Service
12. Explosive and Flammable Hazards: Google Earth Pro – https://google.com/earth
13. Explosive and Flammable Hazards: Joshua Cocran, Diversified Energy
14. Explosive and Flammable Hazards: Acceptable Separation Distance Calculator - https://www.hudexchange.info/programs/environmental-review/asd-calculator/
15. Farmland Protections: Perri Brown, USDA Natural Resources Conservation Service
16. Farmland Protections: USDA Web Soil Survey - https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx
17. Floodplain Management: FEMA Flood Map Service Center Mapping Tool - https://msc.fema.gov/portal/home
18. Historic Preservation: Tribal Directory Assessment Tool (TDAT) - https://egis.hud.gov/tdat/
19. Historic Preservation: Kentucky Heritage Council – Kentucky Cultural Resources Interactive Map - https://kyshpo.maps.arcgis.com/apps/instant/basic/index.html?appid=f0e5df189a9b4e89bfe93bc0666a02a3
20. Historic Preservation: KHC Section 106, Kentucky Heritage Council/State Historic Preservation Office
21. Historic Preservation: Jon C. Endonino Ph.D, RPA
22. Historic Preservation: Elizabeth Tombs, Cherokee Nation
23. Historic Preservation: Russell Townsend, Eastern Band of Cherokee Indians
24. Noise Abatement and Control: National Transportation Noise Map - https://maps.dot.gov/BTS/NationalTransportationNoiseMap/
25. Noise Abatement and Control: Kentucky Transportation Cabinet (KYTC) Traffic Counts Interactive Map - https://maps.kytc.ky.gov/functionalclass/
26. Noise Abatement and Control: National Transportation Noise Map – https://maps.dot.gov/BTS/NationalTransportationNoiseMap/
27. Noise Abatement and Control: Google Earth https://google.com/earth
28. Noise Abatement and Control: Traffic Counts https://maps.kytc.ky.gov/trafficcounts/

29. Noise Abatement and Control: National Transportation Noise Map: KY Gov Maps Open Data Portal
30. Noise Abatement and Control: Google Maps https://google.com/maps
31. Noise Abatement and Control: NEPAssist Tool https://nepassisttool.epa.gov/nepassist/nepamap.aspx
32. Noise Abatement and Control: HUD's DNL Calculator - https://www.hudexchange.info/environmental-review/dnl-calculator/
33. Noise Abatement and Control: Federal Railroad Administration's Crossing Viewer - https://fragis.fra.dot.gov/FRA-PopupViewer/index.html
34. Noise Abatement and Control: NEPAssist Tool: Big Sandy Regional Airport, AMR Report
35. Noise Abatement and Control: Gary Cox, Big Sandy Regional Airport, Airport Manager
36. Sole Source Aquifers: EPA Maps – Sole Source Aquifers Interactive Mapping Tool - https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b
37. Wetlands Protections: National Wetlands Inventory Surface Waters and Wetlands - https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/
38. Wild and Scenic Rivers: Rivers.Gov Interactive Mapping Tool - https://www.rivers.gov/map?river=red
39. Wild and Scenic Rivers: National Park Service Nationwide River Inventory Interactive Mapping Tool - https://www.nps.gov/planyourvisit/maps.htm
40. Wild and Scenic Rivers: Google Earth https://google.com/earth

List of Permits Obtained:
No permits were obtained before or during the environmental review process.

Public Outreach [24 CFR 50.23 & 58.43]**:**

Prior to applying for CDBG-RHP funds, Thrive Community Coalition held a public hearing to disclose their intention to utilize federal disaster recovery funds for the development of housing opportunities in the community. Upon completion of the Environmental Assessment and evidentiary information, Thrive will publish the FONSI and the NOI/RROF concurrently and will record and respond in writing to any comments received.

Cumulative Impact Analysis [24 CFR 58.32]**:**

The cumulative impact of activities included in this Environmental Assessment will have minimal to no impact on the environment.

Alternatives [24 CFR 58.40(e)]

No unresolved conflicts were discovered during the course of this Environmental Assessment; therefore, no alternative action was considered. The limited availability of land and housing necessitates the outcome of this project.

No Action Alternative [24 CFR 58.40(e)]:
Individuals in SUD recovery who currently are or who in the future may be living without housing or in substandard, damaged, and/or aging housing stock would be adversely affected by a No Action Alternative because of the current situation of available housing in Martin County and the city of Inez.

Summary of Findings and Conclusions:

This review of the proposed activity finds the rehabilitation and new construction at 1616 Rockcastle Road to be in compliance with all applicable environmental requirements including the Statutes and Regulations at 24 CFR Part 58.5 and 58.6. Further, The Department for Local Government has determined that this project will not adversely impact the environment in the project area, and the project area environment is not expected to adversely impact the project; therefore, no mitigations measures are required other than those listed below. If the project changes or if any unforeseen environmental conditions are encountered during the project implementation phase, appropriate measures will be taken to notify the proper agencies, and the Environmental Review Record will be re-evaluated.

Mitigation Measures and Conditions

Summarize below all mitigation measures adopted by the Responsible Entity to reduce, avoid, or eliminate adverse environmental impacts and to avoid non-compliance or non-conformance with the above-listed authorities and factors. These measures/conditions must be incorporated into project contracts, development agreements, and other relevant documents. The staff responsible for implementing and monitoring mitigation measures should be clearly identified in the mitigation plan.

Law, Authority, or Factor	Mitigation Measure
Contamination and Toxic Substances 24 CFR Part 50.3(i) & 58.5(i)(2)	The University of Kentucky Geologically Based Indoor Radon Potential Map for the project site documents that it is in the 2.71 to 4.0 picocuries per liter (pCi/L) zone. Therefore, testing will be required for the two new construction projects upon completion of construction to determine if radon levels exceed 4.0 picocuries per liter (pCi/L). Radon testing must occur post construction but before occupancy. If post construction radon testing shows 4.0 pCi/L or more, then mitigation measures shall be completed according to the most current version of ANSI/AARST CCAH (American National Standards Institute/American Association of Radon Scientists and Technologists CCAH Reducing Radon in New Construction of 1 & 2 Family Dwellings and Townhouses). If radon levels exceed 4.0 pCi/L, mitigation measures will be installed by a National Radon Proficiency Program (NRPP) certified

	professional. If testing shows levels below 4.0 pCi/L mitigation is not required.
Floodplain Management 24 CFR Part 50.3(i) & 58.5(i)(2)	There are several measures being taken to minimize the potential impacts to and from the 100-year floodplain. The project site plan has been modified to ensure none of the homes will be built in the floodplain. Throughout the project best management practices will be used to minimize erosion. *Preserving Lives*: To preserve lives, Martin County utilizes an emergency broadcast system and early warning system in case of extreme weather events. In addition to the warning system, an evacuation plan will be developed for evacuating residents. Residents will be briefed on the location of the flood hazard area adjacent to the site as well as emergency shelter locations that are available in the project area. *Preserving Property*: All homes are planned to be built outside of the floodplain. *Preserving Natural Values and Minimizing Impacts:* The site plans have been modified so that none of the homes will be located in the floodplain. A portion of resident parking spaces are proposed to intersect with the 100-year floodplain. Best Management Practices will be used to minimize erosion and will include the use of silt fences, reseeding and ground stabilization, as well as weekly site inspections to ensure effective sediment control during any activities in the floodplain. Therefore, based on all these mitigating measures, the proposed new construction project will have minimal effects on the FEMA floodplain and adjacent water resources

Determination:

☒ **Finding of No Significant Impact** [24 CFR 58.40(g)(1)]
The project will not result in a significant impact on the quality of the human environment.

☐ **Finding of Significant Impact** [24 CFR 58.40(g)(2)]
The project may significantly affect the quality of the human environment.

Preparer Signature: _____Date:_____

Name/Title/Organization: _____

_____

Certifying Officer Signature: _____Date:_____

Name/Title: Matt Sawyers, Commissioner

This original, signed document and related supporting material must be retained on file by the Responsible Entity in an Environmental Review Record (ERR) for the activity/project (ref: 24 CFR Part 58.38) and in accordance with recordkeeping requirements for the HUD program(s).

Appendix A, Exhibit A

Airport Hazards (CEST and EA)

General policy	Legislation	Regulation
It is HUD's policy to apply standards to prevent incompatible development around civil airports and military airfields.		24 CFR Part 51 Subpart D
References		
https://www.hudexchange.info/environmental-review/airport-hazards		

1. **To ensure compatible land use development, you must determine your site's proximity to civil and military airports. Is your project within 15,000 feet of a military airport or 2,500 feet of a civilian airport?**

   ☒No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide a map showing that the site is not within the applicable distances to a military or civilian airport.*

   ☐Yes → *Continue to Question 2.*

2. **Is your project located within a Runway Potential Zone/Clear Zone (RPZ/CZ) or Accident Potential Zone (APZ)?**

   ☐Yes, project is in an APZ → *Continue to Question 3.*

   ☐Yes, project is an RPZ/CZ → *Project cannot proceed at this location.*

   ☐No, project is not within an APZ or RPZ/CZ

   → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide a map showing that the site is not within either zone.*

3. **Is the project in conformance with DOD guidelines for APZ?**

   ☐Yes, project is consistent with DOD guidelines without further action.

   Explain how you determined that the project is consistent:

   → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documentation supporting this determination.*

☐No, the project cannot be brought into conformance with DOD guidelines and has not been approved. → *Project cannot proceed at this location.*

☐Project is not consistent with DOD guidelines, but it has been approved by Certifying Officer or HUD Approving Official.

Explain approval process:

If mitigation measures have been or will be taken, explain in detail the proposed measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documentation supporting this determination.*

<u>Worksheet Summary</u>

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

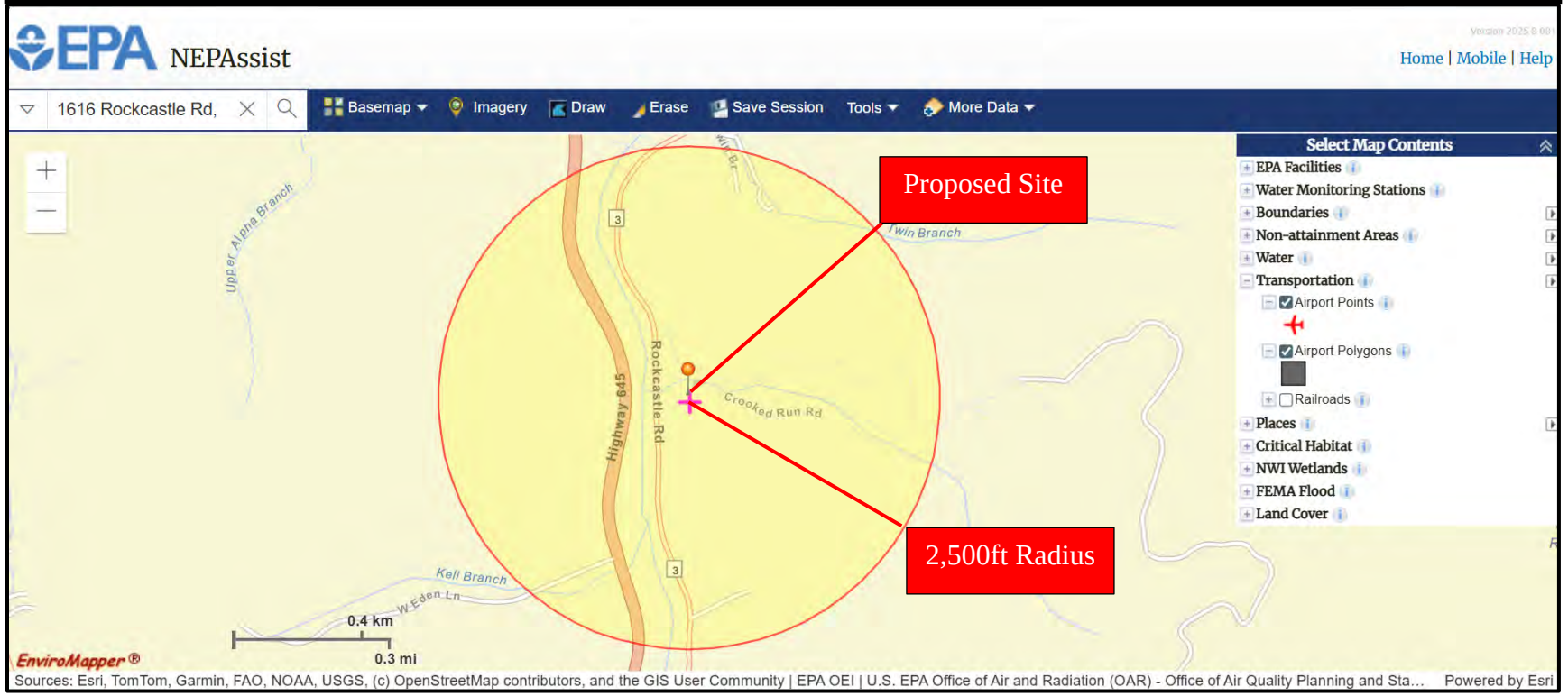
The project site is not within 15,000 feet of a military airport or 2,500 feet of a civilian airport. The closest airport, Big Sandy Regional Airport, is approximately 12.92 miles (68,217 ft) from the proposed site. The project is in compliance with Airport Hazards requirements. No further mitigation required.

Are formal compliance steps or mitigation required?

☐ Yes

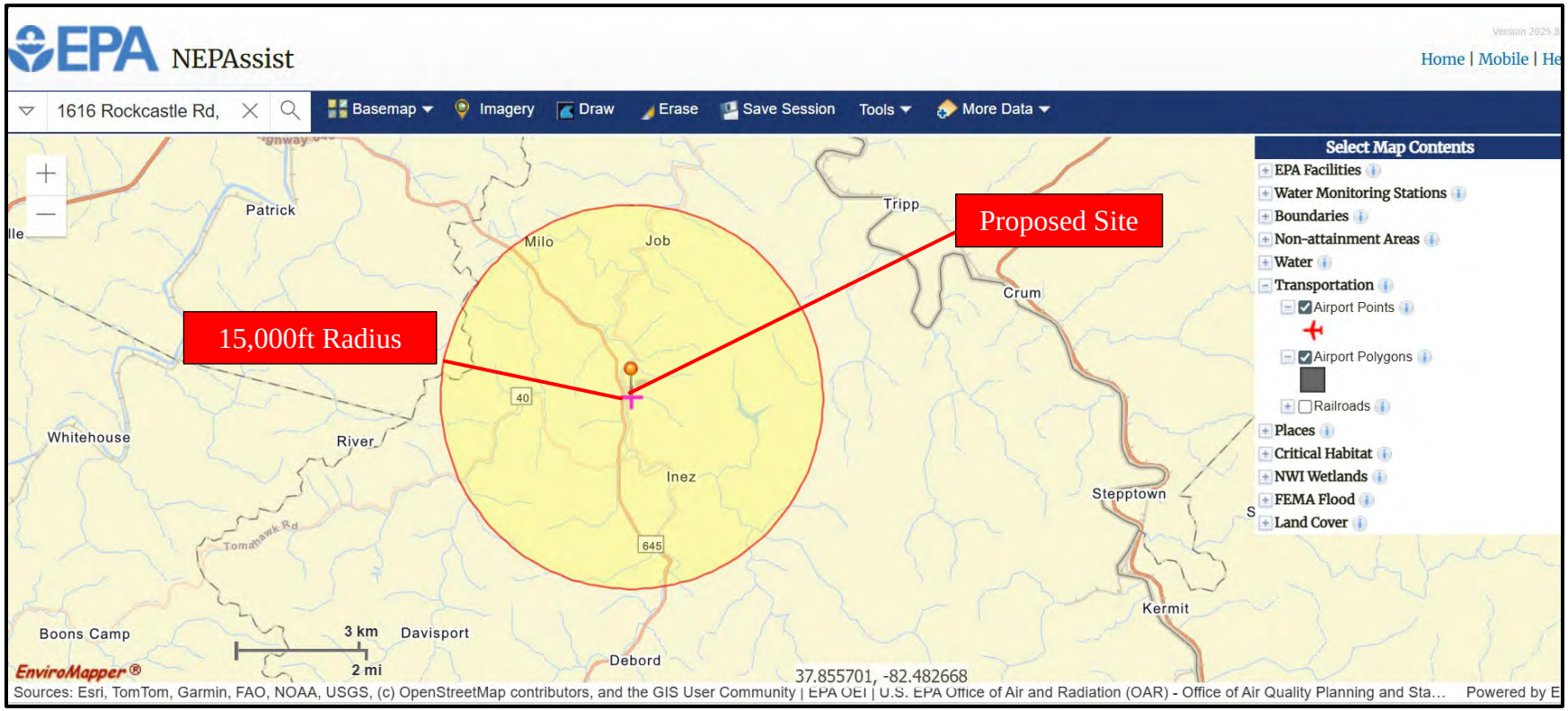
☒ No

Airport Hazards



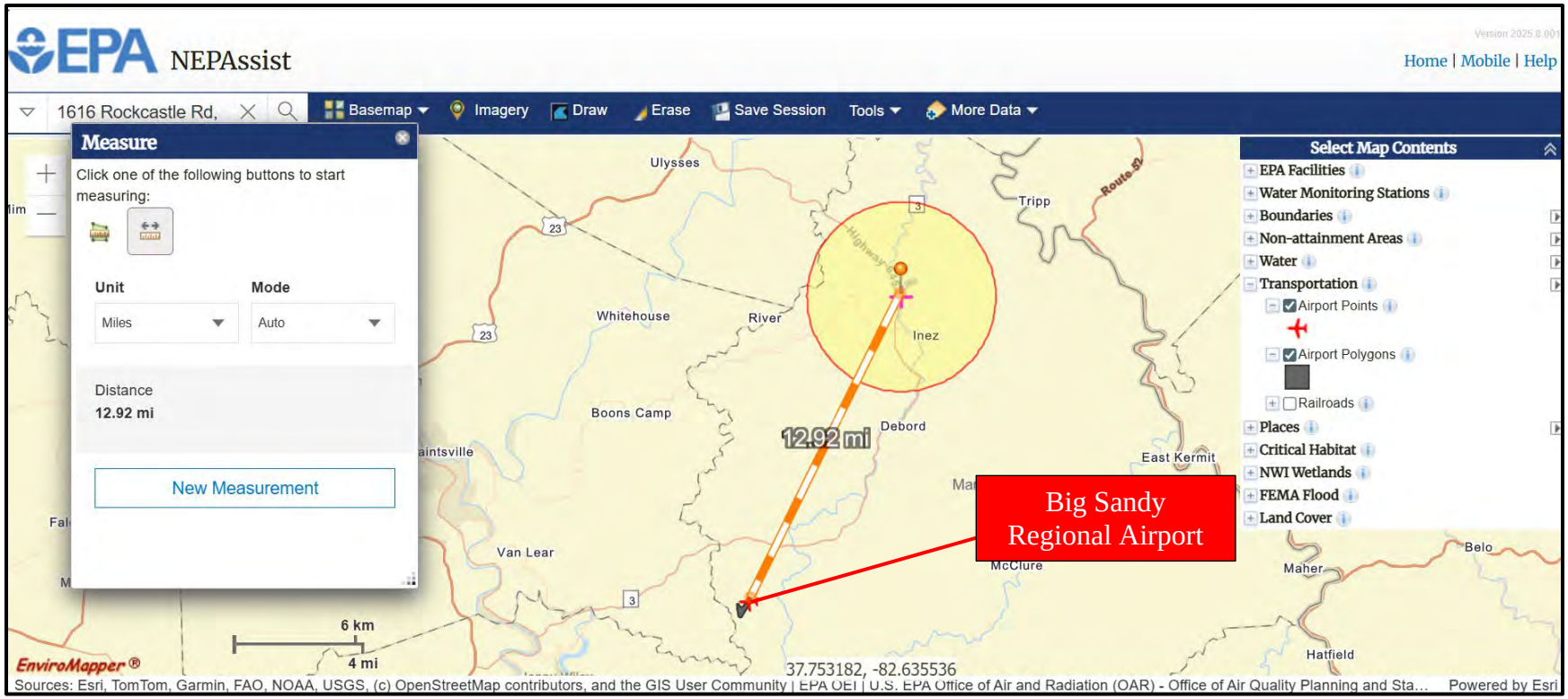
Airport Hazards – 2,500-foot radius
No airports within a 2,500-foot radius
Source: https://nepassisttool.epa.gov/nepassist/nepamap.aspx

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



Airport Hazards – 15,000-foot radius
No airports within a 15,000-foot radius
Source: https://nepassisttool.epa.gov/nepassist/nepamap.aspx

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



Airport Hazards – Closest Airport: Big Sandy Regional Airport – 12.92 miles away
Source: https://nepassisttool.epa.gov/nepassist/nepamap.aspx

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)

Appendix A, Exhibit B

Coastal Barrier Resources (CEST and EA)

General requirements	Legislation	Regulation
HUD financial assistance may not be used for most activities in units of the Coastal Barrier Resources System (CBRS). See 16 USC 3504 for limitations on federal expenditures affecting the CBRS.	Coastal Barrier Resources Act (CBRA) of 1982, as amended by the Coastal Barrier Improvement Act of 1990 (16 USC 3501)	
References		
https://www.hudexchange.info/environmental-review/coastal-barrier-resources		

Projects located in the following states must complete this form.

Alabama	Georgia	Massachusetts	New Jersey	Puerto Rico	Virgin Islands
Connecticut	Louisiana	Michigan	New York	Rhode Island	Virginia
Delaware	Maine	Minnesota	North Carolina	South Carolina	Wisconsin
Florida	Maryland	Mississippi	Ohio	Texas	

1. **Is the project located in a CBRS Unit?**

☒No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide a map showing that the site is not within a CBRS Unit.*

☐Yes → *Continue to Question 2.*

> Federal assistance for most activities may not be used at this location. You must either choose an alternate site or cancel the project. In very rare cases, federal monies can be spent within CBRS units for certain exempted activities (e.g., a nature trail), after consultation with the Fish and Wildlife Service (FWS) (see 16 USC 3505 for exceptions to limitations on expenditures).

2. **Indicate your selected course of action.**

☐ After consultation with the FWS the project was given approval to continue

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide a map and documentation of a FWS approval.*

☐ Project was not given approval

Project cannot proceed at this location.

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

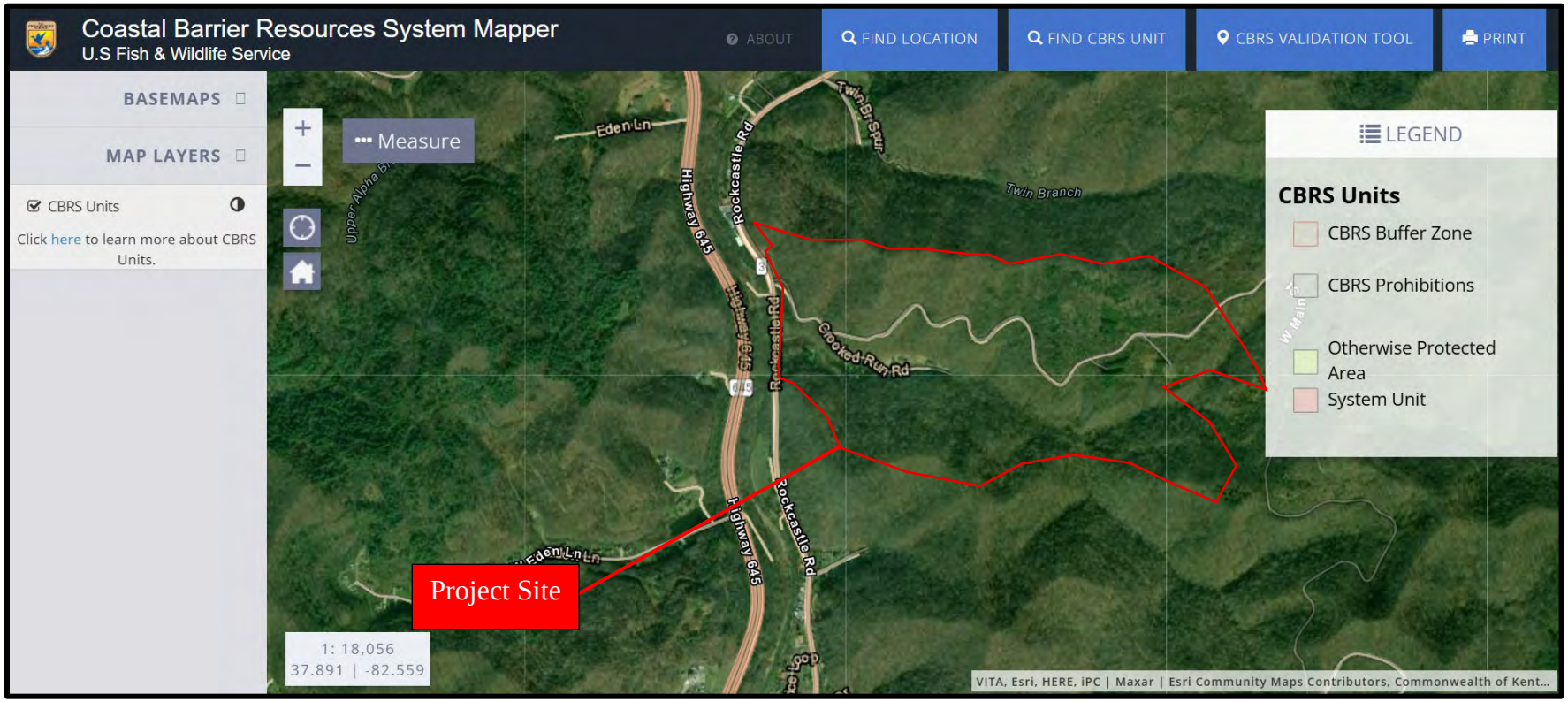
This project is located in a state that does not contain CBRS units. Therefore, this project is in compliance with the Coastal Barrier Resources Act.

Are formal compliance steps or mitigation required?

☐ Yes

☒ No

Coastal Barrier Resources

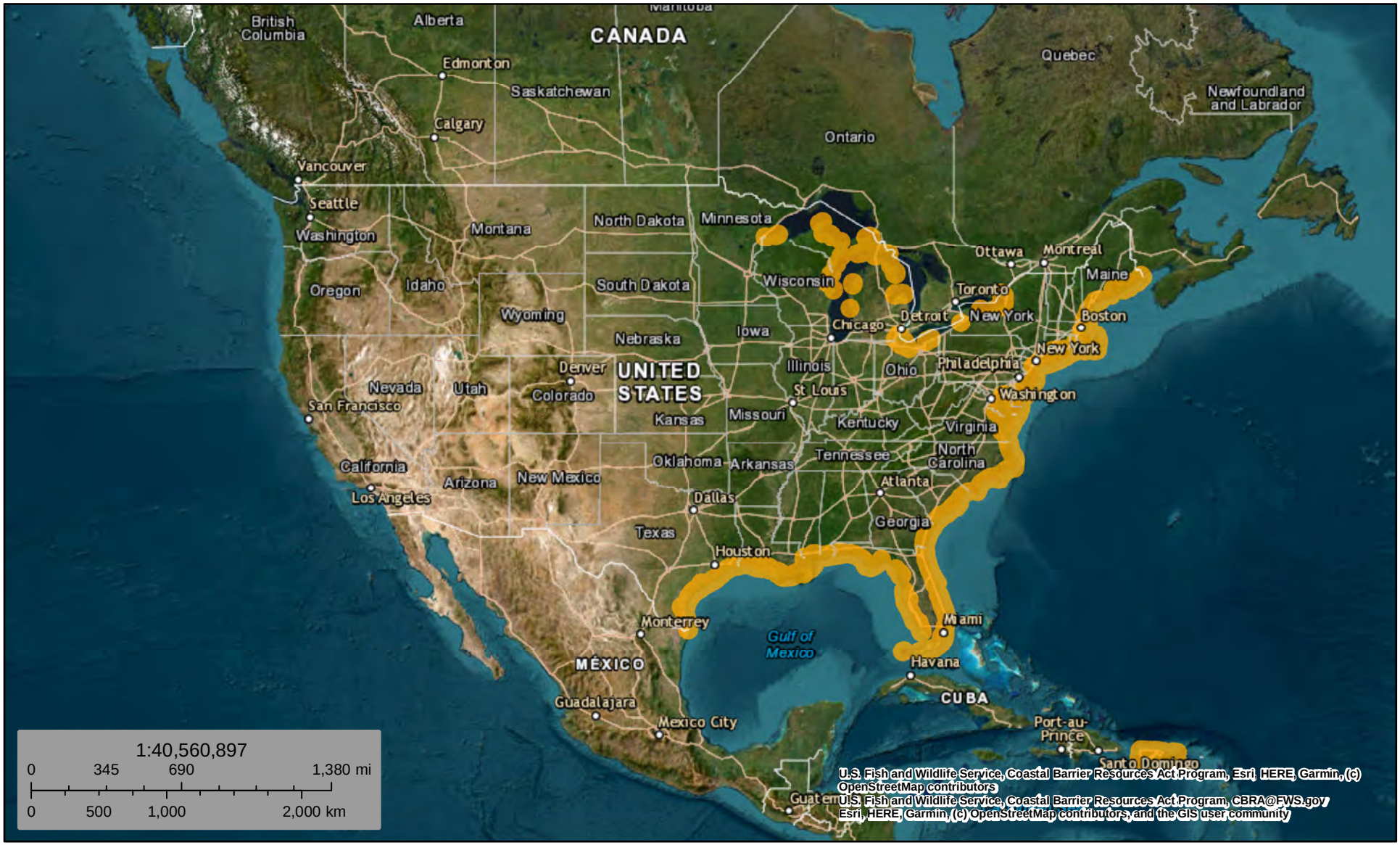


Coastal Barrier Resource
This project is located in a state that does not contain CBRS units
Source: https://fwsprimary.wim.usgs.gov/CBRSMapper-v2/

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)

U.S. Fish and Wildlife Service
Coastal Barrier Resources System

Coastal Barrier Resources Act Map



January 10, 2024

Generalized Units

This map is for general reference only. The Coastal Barrier Resources System (CBRS) boundaries depicted on this map are representations of the controlling CBRS boundaries, which are shown on the official maps, accessible at https://www.fws.gov/library/collections/official-coastal-barrier-resources-system-maps. All CBRS related data should be used in accordance with the layer metadata found on the CBRS Mapper website.

The CBRS Buffer Zone represents the area immediately adjacent to the CBRS boundary where users are advised to contact the Service for an official determination (https://www.fws.gov/service/coastal-barrier-resources-system-property-documentation) as to whether the property or project site is located "in" or "out" of the CBRS.

CBRS Units normally extend seaward out to the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward

Appendix A, Exhibit C

Flood Insurance (CEST and EA)

General requirements	Legislation	Regulation	Reference
Certain types of federal financial assistance may not be used in floodplains unless the community participates in National Flood Insurance Program and flood insurance is both obtained and maintained.	Flood Disaster Protection Act of 1973 as amended (42 USC 4001-4128)	24 CFR 50.4(b)(1) and 24 CFR 58.6(a) and (b); 24 CFR 55.5.	Flood Insurance - HUD Exchange

1. **Does this project involve mortgage insurance, refinance, acquisition, repairs, construction, or rehabilitation of a structure, mobile home, or insurable personal property?**

   ☐No. This project does not require flood insurance or is excepted from flood insurance. *Continue to the Worksheet Summary.*

   ☒Yes *Continue to Question 2.*

2. **Provide a FEMA/FIRM map showing the site.**

   The Federal Emergency Management Agency (FEMA) designates floodplains. The FEMA Map Service Center provides this information in the form of FEMA Flood Insurance Rate Maps (FIRMs). For projects in areas not mapped by FEMA, use the best available information to determine floodplain information. Include documentation, including a discussion of why this is the best available information for the site. Provide FEMA/FIRM floodplain zone designation, panel number, and date within your documentation.

   Is the structure, part of the structure, or insurable property located in a FEMA-designated Special Flood Hazard Area?

   ☒No *Continue to the Worksheet Summary.*

   ☐Yes *Continue to Question 3.*

3. **Is the community participating in the National Flood Insurance Program *or* has less than one year passed since FEMA notification of Special Flood Hazards?**

   ☐Yes, the community is participating in the National Flood Insurance Program.

   For loans, loan insurance or loan guarantees, flood insurance coverage must be continued for the term of the loan. For grants and other non-loan forms of financial assistance, flood insurance coverage must be continued for the life of the building irrespective of the transfer of ownership. The amount of coverage must equal the total project cost or the maximum coverage limit of the National Flood Insurance Program, whichever is less

   Provide a copy of the flood insurance policy declaration or a paid receipt for the current annual flood insurance premium and a copy of the application for flood insurance.

   Continue to the Worksheet Summary.

☐Yes, less than one year has passed since FEMA notification of Special Flood Hazards.
If less than one year has passed since notification of Special Flood Hazards, no flood Insurance is required.

Continue to the Worksheet Summary.

☐No. The community is not participating, or its participation has been suspended.

Federal assistance may not be used at this location. Cancel the project at this location.

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

The proposed property intersects with the FEMA-designated 100-year floodplain (Special Flood Hazard Area); however, all insurable property will be constructed outside of the Special Flood Hazard Area. While flood insurance may not be mandatory in this instance, HUD recommends that all insurable structures maintain flood insurance under the National Flood Insurance Program (NFIP). The attached FIRMette Map (Panel #21159C0043F eff. 09/16/2015) shows the project's proximity to the 100-year floodplain. The attached site diagram shows that all residential lots will be outside of the 100-year floodplain. The project is in compliance with flood insurance requirements.

National Flood Hazard Layer FIRMette

FEMA

82°33'28"W 37°53'17"N



82°32'50"W 37°52'48"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

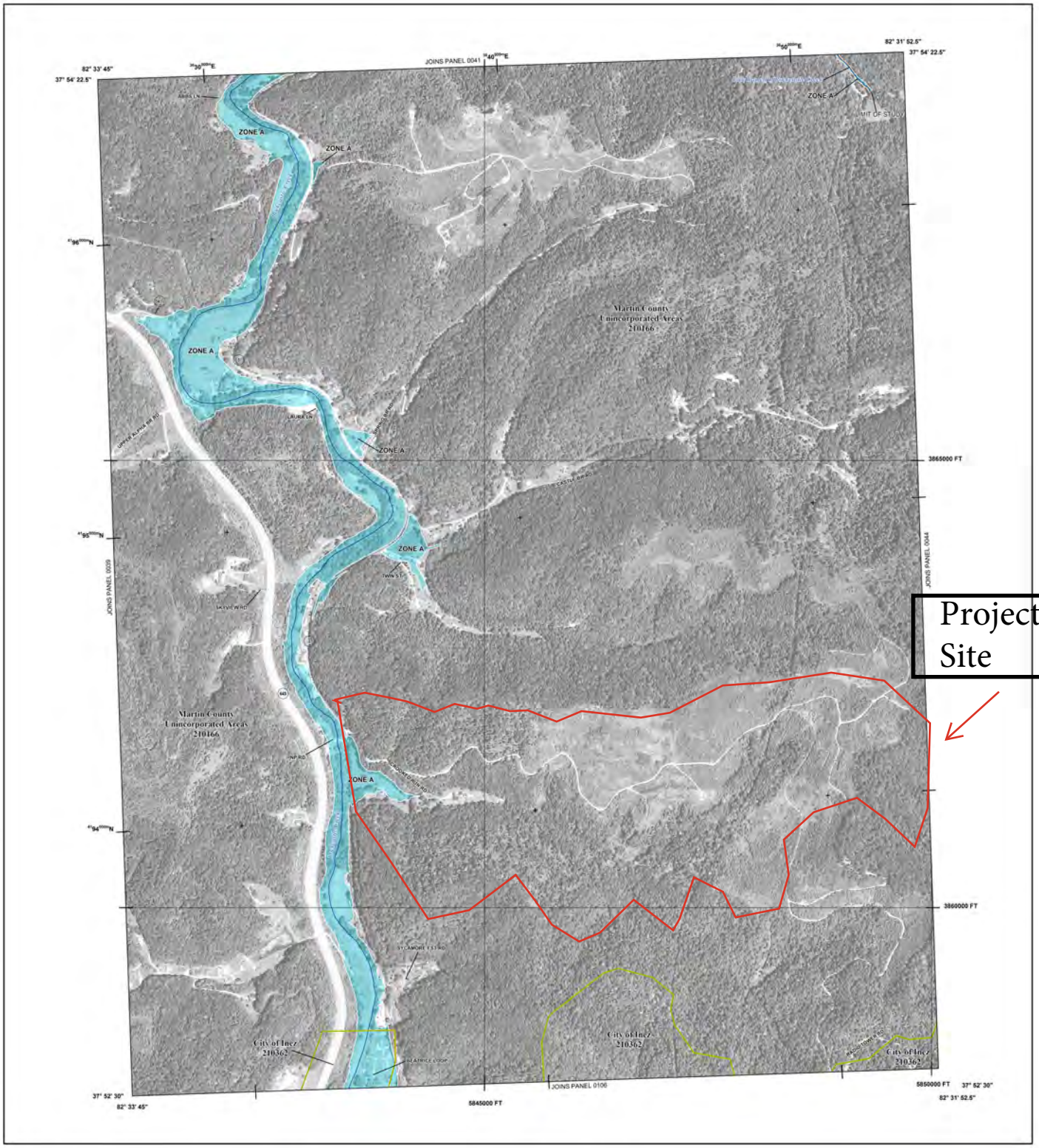
N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/21/2025 at 1:16 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTP://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee See Notes. Zone X

OTHER AREAS
- NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
- Area of Undetermined Flood Hazard Zone D

GENERAL
- Channel, Culvert, or Storm Sewer
- Accredited or Provisionally Accredited Levee, Dike, or Floodwall

NOTES TO USERS

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

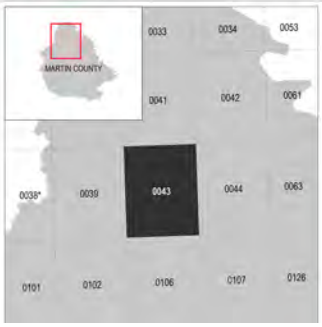
Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on this FIRM was provided in digital format by the U.S. Geological Survey, National Geodetic Survey, National Atlas, Kentucky Transportation Cabinet (KYTC), Kentucky GeoNet, U.S. Army Corps of Engineers, Federal Emergency Management Agency, and the National Agriculture Imagery Program (NAIP). Ortho Imagery was provided by NAIP in 2012, and has a 1 meter ground resolution.

PANEL LOCATOR



FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

MARTIN COUNTY, KY
and Incorporated Areas

PANEL 0043 OF 0252

FEMA

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
INEZ, CITY OF	210362	0043	F
MARTIN COUNTY	210166	0043	F

STRUCTURES

- Non-accredited Levee, Dike, or Floodwall
- Cross Sections with 1% Annual Chance
- Water Surface Elevation (BFE)
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- Base Flood Elevation (BFE)

OTHER FEATURES

- Limit of Study
- Jurisdiction Boundary

In cooperation with the Federal Emergency Management Agency (FEMA) and local communities in Kentucky, this Flood Insurance Rate Map was developed by the Kentucky Division of Water in a digital statewide format to assist communities in their efforts to minimize the loss of property and life through effectively managing development in flood-prone areas. The State of Kentucky has implemented a long term approach to floodplain management to reduce the impacts of flooding. This is demonstrated by the State's commitment to map floodplain areas at the local level. As part of this effort, the Kentucky Division of Water is working closely with FEMA as a Cooperating Technical Partner to produce and maintain this digital FIRM.

0103 0104 0108 0109 0128

*PANEL NOT PRINTED

SCALE

Map Projection:
State Plane Lambert Conformal Conic, Kentucky Zone 1600;
North American Datum 1983; Vertical Datum: NAVD 88

1 INCH = 500 FEET 1:6,000

0 500 1,000 2,000 Feet

0 125 250 500 Meters

VERSION NUMBER
2.3.2.2

MAP NUMBER
21159C0043F

MAP REVISED
SEPTEMBER 16, 2015

State of Kentucky
Federal Emergency Management Agency

Appendix A, Exhibit D

Air Quality (CEST and EA)

General Requirements	Legislation	Regulation
The Clean Air Act is administered by the U.S. Environmental Protection Agency (EPA), which sets national standards on ambient pollutants. In addition, the Clean Air Act is administered by States, which must develop State Implementation Plans (SIPs) to regulate their state air quality. Projects funded by HUD must demonstrate that they conform to the appropriate SIP.	Clean Air Act (42 USC 7401 et seq.) as amended particularly Section 176(c) and (d) (42 USC 7506(c) and (d))	40 CFR Parts 6, 51 and 93
Reference		
https://www.hudexchange.info/environmental-review/air-quality		

Scope of Work

1. **Does your project include new construction or conversion of land use facilitating the development of public, commercial, or industrial facilities OR five or more dwelling units?**

   ☒ Yes

   → *Continue to Question 2.*

   ☐ No

   Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documents used to make your determination.

Air Quality Attainment Status of Project's County or Air Quality Management District

2. **Is your project's air quality management district or county in non-attainment or maintenance status for any criteria pollutants?**
   Follow the link below to determine compliance status of project county or air quality management district:
   http://www.epa.gov/oaqps001/greenbk/

   ☒ No, project's county or air quality management district is in attainment status for all criteria pollutants

   → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documents used to make your determination.*

☐ Yes, project's management district or county is in non-attainment or maintenance status for one or more criteria pollutants.

Describe the findings:

→ *Continue to Question 3.*

3. **Determine the <u>estimated emissions levels of your project for each of those criteria pollutants</u> that are in non-attainment or maintenance status on your project area. Will your project exceed any of the *de minimis or threshold* emissions levels of non-attainment and maintenance level pollutants or exceed the screening levels established by the state or air quality management district?**

   ☐ No, the project will not exceed *de minimis* or threshold emissions levels or screening levels

   → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Explain how you determined that the project would not exceed de minimis or threshold emissions.*

   ☐ Yes, the project exceeds *de minimis* emissions levels or screening levels.

   → *Continue to Question 4. Explain how you determined that the project would not exceed de minimis or threshold emissions in the Worksheet Summary.*

4. **For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the exact measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.**

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

Martin County is in attainment status for all criteria pollutants. The project is in compliance with the Clean Air Act.

Are formal compliance steps or mitigation required?

☐ Yes

☒ No

Current Nonattainment Counties for All Criteria Pollutants

Data is current as of July 31, 2025

The 8-hour Ozone (1997) standard was revoked on April 6, 2015 and the 1-hour Ozone (1979) standard was revoked on June 15, 2005.
The asterisk (*) indicates only a portion of the county is included in the designated nonattainment area (NA).

Download National Dataset of all designated areas (currently nonattainment, maintenance, revoked):
dbf | xls | Data dictionary (PDF)

Listed by State, County, NAAQS * Part County NA NA Area Name (Classification, if applicable)

ALASKA
Fairbanks North Star Borough
PM-2.5 (2006) *Fairbanks, AK - (Serious)
ARIZONA
Cochise County
PM-10 (1987) *Cochise County; Paul Spur/Douglas planning area, AZ - (Moderate)
Gila County
Lead (2008) *Hayden, AZ
PM-10 (1987) *Hayden, AZ - (Moderate)
PM-10 (1987) *Miami, AZ - (Moderate)
Sulfur Dioxide (2010) *Hayden, AZ
Sulfur Dioxide (2010) *Miami, AZ
8-Hour Ozone (2015) *Phoenix-Mesa, AZ - (Moderate)
Maricopa County
PM-10 (1987) *Maricopa and Pinal Counties; Phoenix planning area, AZ - (Serious)
8-Hour Ozone (2008) *Phoenix-Mesa, AZ - (Moderate)
8-Hour Ozone (2015) *Phoenix-Mesa, AZ - (Moderate)
Pima County
PM-10 (1987) *Pima County; Rillito planning area, AZ - (Moderate)
Pinal County
Lead (2008) *Hayden, AZ
PM-10 (1987) *Hayden, AZ - (Moderate)
PM-10 (1987) *Maricopa and Pinal Counties; Phoenix planning area, AZ - (Serious)
PM-10 (1987) *Miami, AZ - (Moderate)
PM-10 (1987) *Pinal County (part); West Pinal, AZ - (Serious)
PM-2.5 (2006) *West Central Pinal, AZ - (Moderate)
Sulfur Dioxide (1971) *Hayden (Pinal County), AZ
Sulfur Dioxide (2010) *Hayden, AZ
8-Hour Ozone (2008) *Phoenix-Mesa, AZ - (Moderate)

8-Hour Ozone (2015) *Phoenix-Mesa, AZ - (Moderate)
Santa Cruz County
PM-10 (1987) *Santa Cruz County; Nogales planning area, AZ - (Moderate)
Yuma County
PM-10 (1987) *Yuma, AZ - (Moderate)
8-Hour Ozone (2015) *Yuma, AZ - (Marginal)

CALIFORNIA

Alameda County
PM-2.5 (2006) San Francisco Bay Area, CA - (Moderate)
8-Hour Ozone (2008) San Francisco Bay Area, CA - (Marginal)
8-Hour Ozone (2015) San Francisco Bay Area, CA - (Marginal)
Amador County
8-Hour Ozone (2015) Amador County, CA - (Marginal)
Butte County
8-Hour Ozone (2008) Chico (Butte County), CA - (Marginal)
8-Hour Ozone (2015) Butte County, CA - (Marginal)
Calaveras County
8-Hour Ozone (2008) Calaveras County, CA - (Marginal)
8-Hour Ozone (2015) Calaveras County, CA - (Marginal)
Contra Costa County
PM-2.5 (2006) San Francisco Bay Area, CA - (Moderate)
8-Hour Ozone (2008) San Francisco Bay Area, CA - (Marginal)
8-Hour Ozone (2015) San Francisco Bay Area, CA - (Marginal)
El Dorado County
PM-2.5 (2006) *Sacramento, CA - (Moderate)
8-Hour Ozone (2008) *Sacramento Metro, CA - (Severe 15)
8-Hour Ozone (2015) *Sacramento Metro, CA - (Serious)
Fresno County
PM-2.5 (1997) San Joaquin Valley, CA - (Serious)
PM-2.5 (2006) San Joaquin Valley, CA - (Serious)
PM-2.5 (2012) San Joaquin Valley, CA - (Serious)
8-Hour Ozone (2008) San Joaquin Valley, CA - (Extreme)
8-Hour Ozone (2015) San Joaquin Valley, CA - (Extreme)
Imperial County
PM-2.5 (2006) *Imperial County, CA - (Moderate)
PM-2.5 (2012) *Imperial County, CA - (Moderate)
8-Hour Ozone (2008) Imperial County, CA - (Moderate)
8-Hour Ozone (2015) Imperial County, CA - (Marginal)
Inyo County
PM-10 (1987) *Inyo County; Owens Valley planning area, CA - (Serious)
Kern County
PM-10 (1987) *East Kern County, CA - (Serious)
PM-2.5 (1997) *San Joaquin Valley, CA - (Serious)
PM-2.5 (2006) *San Joaquin Valley, CA - (Serious)
PM-2.5 (2012) *San Joaquin Valley, CA - (Serious)
8-Hour Ozone (2008) *Kern County (Eastern Kern), CA - (Severe 15)
8-Hour Ozone (2008) *San Joaquin Valley, CA - (Extreme)
8-Hour Ozone (2015) *Kern County (Eastern Kern), CA - (Serious)
8-Hour Ozone (2015) *San Joaquin Valley, CA - (Extreme)
Kings County
PM-2.5 (1997) San Joaquin Valley, CA - (Serious)

PM-2.5 (2006) San Joaquin Valley, CA - (Serious)
PM-2.5 (2012) San Joaquin Valley, CA - (Serious)
8-Hour Ozone (2008) San Joaquin Valley, CA - (Extreme)
8-Hour Ozone (2015) San Joaquin Valley, CA - (Extreme)

Los Angeles County
Lead (2008) *Los Angeles County-South Coast Air Basin, CA
PM-2.5 (1997) *Los Angeles-South Coast Air Basin, CA - (Moderate)
PM-2.5 (2006) *Los Angeles-South Coast Air Basin, CA - (Serious)
PM-2.5 (2012) *Los Angeles-South Coast Air Basin, CA - (Serious)
8-Hour Ozone (2008) *Los Angeles-San Bernardino Counties (West Mojave Desert), CA - (Severe 15)
8-Hour Ozone (2008) *Los Angeles-South Coast Air Basin, CA - (Extreme)
8-Hour Ozone (2015) *Los Angeles-San Bernardino Counties (West Mojave Desert), CA - (Severe 15)
8-Hour Ozone (2015) *Los Angeles-South Coast Air Basin, CA - (Extreme)

Madera County
PM-2.5 (1997) San Joaquin Valley, CA - (Serious)
PM-2.5 (2006) San Joaquin Valley, CA - (Serious)
PM-2.5 (2012) San Joaquin Valley, CA - (Serious)
8-Hour Ozone (2008) San Joaquin Valley, CA - (Extreme)
8-Hour Ozone (2015) San Joaquin Valley, CA - (Extreme)

Marin County
PM-2.5 (2006) San Francisco Bay Area, CA - (Moderate)
8-Hour Ozone (2008) San Francisco Bay Area, CA - (Marginal)
8-Hour Ozone (2015) San Francisco Bay Area, CA - (Marginal)

Mariposa County
8-Hour Ozone (2008) Mariposa County, CA - (Moderate)
8-Hour Ozone (2015) Mariposa County, CA - (Moderate)

Merced County
PM-2.5 (1997) San Joaquin Valley, CA - (Serious)
PM-2.5 (2006) San Joaquin Valley, CA - (Serious)
PM-2.5 (2012) San Joaquin Valley, CA - (Serious)
8-Hour Ozone (2008) San Joaquin Valley, CA - (Extreme)
8-Hour Ozone (2015) San Joaquin Valley, CA - (Extreme)

Mono County
PM-10 (1987) *Mono Basin, CA - (Moderate)

Napa County
PM-2.5 (2006) San Francisco Bay Area, CA - (Moderate)
8-Hour Ozone (2008) San Francisco Bay Area, CA - (Marginal)
8-Hour Ozone (2015) San Francisco Bay Area, CA - (Marginal)

Nevada County
8-Hour Ozone (2008) *Nevada County (Western part), CA - (Serious)
8-Hour Ozone (2015) *Nevada County (Western part), CA - (Serious)

Orange County
PM-2.5 (1997) Los Angeles-South Coast Air Basin, CA - (Moderate)
PM-2.5 (2006) Los Angeles-South Coast Air Basin, CA - (Serious)
PM-2.5 (2012) Los Angeles-South Coast Air Basin, CA - (Serious)
8-Hour Ozone (2008) Los Angeles-South Coast Air Basin, CA - (Extreme)
8-Hour Ozone (2015) Los Angeles-South Coast Air Basin, CA - (Extreme)

Placer County
PM-2.5 (2006) *Sacramento, CA - (Moderate)
8-Hour Ozone (2008) *Sacramento Metro, CA - (Severe 15)
8-Hour Ozone (2015) *Sacramento Metro, CA - (Serious)

Plumas County
PM-2.5 (2012) *Plumas County, CA - (Serious)
Riverside County
PM-10 (1987) *Riverside County; Coachella Valley planning area, CA - (Serious)
PM-2.5 (1997) *Los Angeles-South Coast Air Basin, CA - (Moderate)
PM-2.5 (2006) *Los Angeles-South Coast Air Basin, CA - (Serious)
PM-2.5 (2012) *Los Angeles-South Coast Air Basin, CA - (Serious)
8-Hour Ozone (2008) *Los Angeles-South Coast Air Basin, CA - (Extreme)
8-Hour Ozone (2008) *Morongo Band of Mission Indians, CA - (Severe 15)
8-Hour Ozone (2008) *Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA - (Moderate)
8-Hour Ozone (2008) *Riverside County (Coachella Valley), CA - (Extreme)
8-Hour Ozone (2015) *Los Angeles-South Coast Air Basin, CA - (Extreme)
8-Hour Ozone (2015) *Morongo Band of Mission Indians, CA - (Serious)
8-Hour Ozone (2015) *Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA - (Moderate)
8-Hour Ozone (2015) *Riverside County (Coachella Valley), CA - (Severe 15)
Sacramento County
PM-2.5 (2006) Sacramento, CA - (Moderate)
8-Hour Ozone (2008) Sacramento Metro, CA - (Severe 15)
8-Hour Ozone (2015) Sacramento Metro, CA - (Serious)
San Bernardino County
PM-10 (1987) *San Bernardino County, CA - (Moderate)
PM-10 (1987) *Trona, CA - (Moderate)
PM-2.5 (1997) *Los Angeles-South Coast Air Basin, CA - (Moderate)
PM-2.5 (2006) *Los Angeles-South Coast Air Basin, CA - (Serious)
PM-2.5 (2012) *Los Angeles-South Coast Air Basin, CA - (Serious)
8-Hour Ozone (2008) *Los Angeles-San Bernardino Counties (West Mojave Desert), CA - (Severe 15)
8-Hour Ozone (2008) *Los Angeles-South Coast Air Basin, CA - (Extreme)
8-Hour Ozone (2015) *Los Angeles-San Bernardino Counties (West Mojave Desert), CA - (Severe 15)
8-Hour Ozone (2015) *Los Angeles-South Coast Air Basin, CA - (Extreme)
San Diego County
8-Hour Ozone (2008) *Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA - (Moderate)
8-Hour Ozone (2008) *San Diego County, CA - (Severe 15)
8-Hour Ozone (2015) *Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA - (Moderate)
8-Hour Ozone (2015) *San Diego County, CA - (Severe 15)
San Francisco County
PM-2.5 (2006) San Francisco Bay Area, CA - (Moderate)
8-Hour Ozone (2008) San Francisco Bay Area, CA - (Marginal)
8-Hour Ozone (2015) San Francisco Bay Area, CA - (Marginal)
San Joaquin County
PM-2.5 (1997) San Joaquin Valley, CA - (Serious)
PM-2.5 (2006) San Joaquin Valley, CA - (Serious)
PM-2.5 (2012) San Joaquin Valley, CA - (Serious)
8-Hour Ozone (2008) San Joaquin Valley, CA - (Extreme)
8-Hour Ozone (2015) San Joaquin Valley, CA - (Extreme)
San Luis Obispo County
8-Hour Ozone (2008) *San Luis Obispo (Eastern San Luis Obispo), CA - (Marginal)
8-Hour Ozone (2015) *San Luis Obispo (Eastern part), CA - (Marginal)
San Mateo County
PM-2.5 (2006) San Francisco Bay Area, CA - (Moderate)
8-Hour Ozone (2008) San Francisco Bay Area, CA - (Marginal)
8-Hour Ozone (2015) San Francisco Bay Area, CA - (Marginal)

Santa Clara County
PM-2.5 (2006) San Francisco Bay Area, CA - (Moderate)
8-Hour Ozone (2008) San Francisco Bay Area, CA - (Marginal)
8-Hour Ozone (2015) San Francisco Bay Area, CA - (Marginal)
Solano County
PM-2.5 (2006) *Sacramento, CA - (Moderate)
PM-2.5 (2006) *San Francisco Bay Area, CA - (Moderate)
8-Hour Ozone (2008) *Sacramento Metro, CA - (Severe 15)
8-Hour Ozone (2008) *San Francisco Bay Area, CA - (Marginal)
8-Hour Ozone (2015) *Sacramento Metro, CA - (Serious)
8-Hour Ozone (2015) *San Francisco Bay Area, CA - (Marginal)
Sonoma County
PM-2.5 (2006) *San Francisco Bay Area, CA - (Moderate)
8-Hour Ozone (2008) *San Francisco Bay Area, CA - (Marginal)
8-Hour Ozone (2015) *San Francisco Bay Area, CA - (Marginal)
Stanislaus County
PM-2.5 (1997) San Joaquin Valley, CA - (Serious)
PM-2.5 (2006) San Joaquin Valley, CA - (Serious)
PM-2.5 (2012) San Joaquin Valley, CA - (Serious)
8-Hour Ozone (2008) San Joaquin Valley, CA - (Extreme)
8-Hour Ozone (2015) San Joaquin Valley, CA - (Extreme)
Sutter County
8-Hour Ozone (2008) *Sacramento Metro, CA - (Severe 15)
8-Hour Ozone (2015) *Sacramento Metro, CA - (Serious)
8-Hour Ozone (2015) *Sutter Buttes, CA - (Marginal)
Tehama County
8-Hour Ozone (2008) *Tuscan Buttes, CA - (Marginal)
8-Hour Ozone (2015) *Tuscan Buttes, CA - (Marginal (Rural Transport))
Tulare County
PM-2.5 (1997) San Joaquin Valley, CA - (Serious)
PM-2.5 (2006) San Joaquin Valley, CA - (Serious)
PM-2.5 (2012) San Joaquin Valley, CA - (Serious)
8-Hour Ozone (2008) San Joaquin Valley, CA - (Extreme)
8-Hour Ozone (2015) San Joaquin Valley, CA - (Extreme)
Tuolumne County
8-Hour Ozone (2015) Tuolumne County, CA - (Marginal)
Ventura County
8-Hour Ozone (2008) *Ventura County, CA - (Serious)
8-Hour Ozone (2015) *Ventura County, CA - (Serious)
Yolo County
PM-2.5 (2006) *Sacramento, CA - (Moderate)
8-Hour Ozone (2008) Sacramento Metro, CA - (Severe 15)
8-Hour Ozone (2015) Sacramento Metro, CA - (Serious)

COLORADO

Adams County
8-Hour Ozone (2008) Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Severe 15)
8-Hour Ozone (2015) Denver Metro/North Front Range, CO - (Serious)
Arapahoe County
8-Hour Ozone (2008) Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Severe 15)
8-Hour Ozone (2015) Denver Metro/North Front Range, CO - (Serious)
Boulder County

8-Hour Ozone (2008) Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Severe 15)
8-Hour Ozone (2015) Denver Metro/North Front Range, CO - (Serious)

Broomfield County
8-Hour Ozone (2008) Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Severe 15)
8-Hour Ozone (2015) Denver Metro/North Front Range, CO - (Serious)

Denver County
8-Hour Ozone (2008) Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Severe 15)
8-Hour Ozone (2015) Denver Metro/North Front Range, CO - (Serious)

Douglas County
8-Hour Ozone (2008) Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Severe 15)
8-Hour Ozone (2015) Denver Metro/North Front Range, CO - (Serious)

Jefferson County
8-Hour Ozone (2008) Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Severe 15)
8-Hour Ozone (2015) Denver Metro/North Front Range, CO - (Serious)

Larimer County
8-Hour Ozone (2008) *Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Severe 15)
8-Hour Ozone (2015) *Denver Metro/North Front Range, CO - (Serious)

Weld County
8-Hour Ozone (2008) *Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Severe 15)
8-Hour Ozone (2015) Denver Metro/North Front Range, CO - (Serious)

CONNECTICUT

Fairfield County
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)

Hartford County
8-Hour Ozone (2008) Greater Connecticut, CT - (Serious)
8-Hour Ozone (2015) Greater Connecticut, CT - (Serious)

Litchfield County
8-Hour Ozone (2008) Greater Connecticut, CT - (Serious)
8-Hour Ozone (2015) Greater Connecticut, CT - (Serious)

Middlesex County
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)

New Haven County
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)

New London County
8-Hour Ozone (2008) Greater Connecticut, CT - (Serious)
8-Hour Ozone (2015) Greater Connecticut, CT - (Serious)

Tolland County
8-Hour Ozone (2008) Greater Connecticut, CT - (Serious)
8-Hour Ozone (2015) Greater Connecticut, CT - (Serious)

Windham County
8-Hour Ozone (2008) Greater Connecticut, CT - (Serious)
8-Hour Ozone (2015) Greater Connecticut, CT - (Serious)

DELAWARE

New Castle County
8-Hour Ozone (2008) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
8-Hour Ozone (2015) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Serious)

Sussex County
8-Hour Ozone (2008) Seaford, DE - (Marginal)

DISTRICT OF COLUMBIA
District of Columbia
8-Hour Ozone (2015) Washington, DC-MD-VA - (Moderate)
GUAM
Guam
*Sulfur Dioxide (1971)**Piti, GU
*Sulfur Dioxide (1971)**Tanguisson, GU
*Sulfur Dioxide (2010)**Piti-Cabras, GU
IDAHO
Bannock County
PM-10 (1987) *Power-Bannock Counties; Fort Hall Indian Reservation, ID - (Moderate)
Power County
PM-10 (1987) *Power-Bannock Counties; Fort Hall Indian Reservation, ID - (Moderate)
ILLINOIS
Cook County
8-Hour Ozone (2015) Chicago, IL-IN-WI - (Serious)
DuPage County
8-Hour Ozone (2015) Chicago, IL-IN-WI - (Serious)
Grundy County
8-Hour Ozone (2015) *Chicago, IL-IN-WI - (Serious)
Kane County
8-Hour Ozone (2015) Chicago, IL-IN-WI - (Serious)
Kendall County
8-Hour Ozone (2015) *Chicago, IL-IN-WI - (Serious)
Lake County
8-Hour Ozone (2015) Chicago, IL-IN-WI - (Serious)
Madison County
8-Hour Ozone (2015) St. Louis, MO-IL - (Serious)
McHenry County
8-Hour Ozone (2015) Chicago, IL-IN-WI - (Serious)
Monroe County
8-Hour Ozone (2015) St. Louis, MO-IL - (Serious)
St. Clair County
8-Hour Ozone (2015) St. Louis, MO-IL - (Serious)
Will County
8-Hour Ozone (2015) Chicago, IL-IN-WI - (Serious)
INDIANA
Huntington County
*Sulfur Dioxide (2010)**Huntington, IN
Lake County
8-Hour Ozone (2015) *Chicago, IL-IN-WI - (Serious)
Porter County
8-Hour Ozone (2015) *Chicago, IL-IN-WI - (Serious)
IOWA
Muscatine County
*Sulfur Dioxide (2010)**Muscatine, IA
KANSAS
Saline County
Lead (2008) *Saline County, KS
KENTUCKY
Bullitt County

8-Hour Ozone (2015) Louisville, KY-IN - (Moderate)
Henderson County
*Sulfur Dioxide (2010)** Henderson-Webster Counties, KY
Jefferson County
8-Hour Ozone (2015) Louisville, KY-IN - (Moderate)
Oldham County
8-Hour Ozone (2015) Louisville, KY-IN - (Moderate)
Webster County
*Sulfur Dioxide (2010)** Henderson-Webster Counties, KY

LOUISIANA

Evangeline Parish
*Sulfur Dioxide (2010)** Evangeline Parish (Partial), LA
St. Bernard Parish
Sulfur Dioxide (2010) St. Bernard Parish, LA

MARYLAND

Anne Arundel County
*Sulfur Dioxide (2010)** Anne Arundel County and Baltimore County, MD
8-Hour Ozone (2008) Baltimore, MD - (Moderate)
8-Hour Ozone (2015) Baltimore, MD - (Serious)
Baltimore County
*Sulfur Dioxide (2010)** Anne Arundel County and Baltimore County, MD
8-Hour Ozone (2008) Baltimore, MD - (Moderate)
8-Hour Ozone (2015) Baltimore, MD - (Serious)
Baltimore city
8-Hour Ozone (2008) Baltimore, MD - (Moderate)
8-Hour Ozone (2015) Baltimore, MD - (Serious)
Calvert County
8-Hour Ozone (2015) Washington, DC-MD-VA - (Moderate)
Carroll County
8-Hour Ozone (2008) Baltimore, MD - (Moderate)
8-Hour Ozone (2015) Baltimore, MD - (Serious)
Cecil County
8-Hour Ozone (2008) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
8-Hour Ozone (2015) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Serious)
Charles County
8-Hour Ozone (2015) Washington, DC-MD-VA - (Moderate)
Frederick County
8-Hour Ozone (2015) Washington, DC-MD-VA - (Moderate)
Harford County
8-Hour Ozone (2008) Baltimore, MD - (Moderate)
8-Hour Ozone (2015) Baltimore, MD - (Serious)
Howard County
8-Hour Ozone (2008) Baltimore, MD - (Moderate)
8-Hour Ozone (2015) Baltimore, MD - (Serious)
Montgomery County
8-Hour Ozone (2015) Washington, DC-MD-VA - (Moderate)
Prince George's County
8-Hour Ozone (2015) Washington, DC-MD-VA - (Moderate)

MASSACHUSETTS

Dukes County
8-Hour Ozone (2008) Dukes County, MA - (Marginal)

MICHIGAN
Allegan County
8-Hour Ozone (2015) *Allegan County, MI - (Serious)
Berrien County
8-Hour Ozone (2015) Berrien County, MI - (Serious)
Muskegon County
8-Hour Ozone (2015) *Muskegon County, MI - (Serious)
St. Clair County
Sulfur Dioxide (2010) *St. Clair, MI
Wayne County
Sulfur Dioxide (2010) *Detroit, MI
MINNESOTA
Dakota County
Lead (2008) *Eagan, MN
MISSOURI
Dent County
Lead (2008) *Iron, Dent, and Reynolds Counties, MO
Franklin County
8-Hour Ozone (2015) *St. Louis, MO-IL - (Serious)
Iron County
Lead (2008) *Iron, Dent, and Reynolds Counties, MO
Jefferson County
Lead (1978) *Jefferson County (part); Herculaneum, MO
Lead (2008) *Jefferson County, MO
8-Hour Ozone (2015) St. Louis, MO-IL - (Serious)
New Madrid County
Sulfur Dioxide (2010) *New Madrid County, MO
Reynolds County
Lead (2008) *Iron, Dent, and Reynolds Counties, MO
St. Charles County
8-Hour Ozone (2015) St. Louis, MO-IL - (Serious)
St. Louis County
8-Hour Ozone (2015) St. Louis, MO-IL - (Serious)
St. Louis city
8-Hour Ozone (2015) St. Louis, MO-IL - (Serious)
MONTANA
Lake County
PM-10 (1987) *Lake County; Polson, MT - (Moderate)
PM-10 (1987) *Lake County; Ronan, MT - (Moderate)
Rosebud County
PM-10 (1987) *Rosebud County; Lame Deer, MT - (Moderate)
Yellowstone County
Sulfur Dioxide (1971) *Laurel Area (Yellowstone County), MT
NEVADA
Clark County
8-Hour Ozone (2015) *Las Vegas, NV - (Serious)
NEW JERSEY
Atlantic County
8-Hour Ozone (2008) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
8-Hour Ozone (2015) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Serious)
Bergen County

8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)
Burlington County
8-Hour Ozone (2008) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
8-Hour Ozone (2015) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Serious)
Camden County
8-Hour Ozone (2008) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
8-Hour Ozone (2015) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Serious)
Cape May County
8-Hour Ozone (2008) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
8-Hour Ozone (2015) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Serious)
Cumberland County
8-Hour Ozone (2008) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
8-Hour Ozone (2015) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Serious)
Essex County
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)
Gloucester County
8-Hour Ozone (2008) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
8-Hour Ozone (2015) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Serious)
Hudson County
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)
Hunterdon County
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)
Mercer County
8-Hour Ozone (2008) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
8-Hour Ozone (2015) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Serious)
Middlesex County
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)
Monmouth County
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)
Morris County
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)
Ocean County
8-Hour Ozone (2008) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
8-Hour Ozone (2015) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Serious)
Passaic County
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)
Salem County
8-Hour Ozone (2008) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
8-Hour Ozone (2015) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Serious)
Somerset County
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)
Sussex County

8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)

Union County
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)

Warren County
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)

NEW MEXICO

Dona Ana County
PM-10 (1987) *Dona Ana County; Anthony, NM - (Moderate)
8-Hour Ozone (2015) *El Paso-Las Cruces, TX-NM - (Marginal)

NEW YORK

Bronx County
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)

Chautauqua County
8-Hour Ozone (2008) Jamestown, NY - (Marginal)

Kings County
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)

Nassau County
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)

New York County
PM-10 (1987) New York County, NY - (Moderate)
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)

Queens County
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)

Richmond County
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)

Rockland County
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)

St. Lawrence County
Sulfur Dioxide (2010) *St. Lawrence County, NY

Suffolk County
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)

Westchester County
8-Hour Ozone (2008) New York-N. New Jersey-Long Island, NY-NJ-CT - (Severe 15)
8-Hour Ozone (2015) New York-Northern New Jersey-Long Island, NY-NJ-CT - (Serious)

OHIO

Cuyahoga County
8-Hour Ozone (2015) Cleveland, OH - (Serious)

Geauga County
8-Hour Ozone (2015) Cleveland, OH - (Serious)

Lake County

8-Hour Ozone (2015) Cleveland, OH - (Serious)
Lorain County
8-Hour Ozone (2015) Cleveland, OH - (Serious)
Medina County
8-Hour Ozone (2015) Cleveland, OH - (Serious)
Morgan County
Sulfur Dioxide (2010) *Muskingum River, OH
Portage County
8-Hour Ozone (2015) Cleveland, OH - (Serious)
Stark County
Lead (2008) *Canton-Stark County, OH
Summit County
8-Hour Ozone (2015) Cleveland, OH - (Serious)
Washington County
Sulfur Dioxide (2010) *Muskingum River, OH

OREGON

Klamath County
PM-2.5 (2006) *Klamath Falls, OR - (Moderate)

PENNSYLVANIA

Allegheny County
PM-2.5 (1997) *Liberty-Clairton, PA - (Moderate)
PM-2.5 (2006) *Liberty-Clairton, PA - (Moderate)
PM-2.5 (2012) Allegheny County, PA - (Moderate)
8-Hour Ozone (2008) Pittsburgh-Beaver Valley, PA - (Marginal)
Armstrong County
Sulfur Dioxide (1971) *Armstrong County: Madison, Mahoning, Boggs, Washington, Pine, PA
Sulfur Dioxide (2010) *Indiana, PA
8-Hour Ozone (2008) Pittsburgh-Beaver Valley, PA - (Marginal)
Beaver County
Lead (2008) *Lower Beaver Valley, PA
Sulfur Dioxide (2010) *Beaver, PA
8-Hour Ozone (2008) Pittsburgh-Beaver Valley, PA - (Marginal)
Berks County
Lead (2008) *Lyons, PA
Lead (2008) *North Reading, PA
8-Hour Ozone (2008) Reading, PA - (Marginal)
Bucks County
8-Hour Ozone (2008) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
8-Hour Ozone (2015) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Serious)
Butler County
8-Hour Ozone (2008) Pittsburgh-Beaver Valley, PA - (Marginal)
Cambria County
Sulfur Dioxide (2010) *Cambria-Westmoreland Area, PA
Carbon County
8-Hour Ozone (2008) Allentown-Bethlehem-Easton, PA - (Marginal)
Chester County
8-Hour Ozone (2008) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
8-Hour Ozone (2015) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Serious)
Delaware County
8-Hour Ozone (2008) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
8-Hour Ozone (2015) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Serious)

Fayette County
8-Hour Ozone (2008) Pittsburgh-Beaver Valley, PA - (Marginal)
Indiana County
Sulfur Dioxide (2010) Indiana, PA
Lancaster County
8-Hour Ozone (2008) Lancaster, PA - (Marginal)
Lehigh County
8-Hour Ozone (2008) Allentown-Bethlehem-Easton, PA - (Marginal)
Montgomery County
8-Hour Ozone (2008) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
8-Hour Ozone (2015) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Serious)
Northampton County
8-Hour Ozone (2008) Allentown-Bethlehem-Easton, PA - (Marginal)
Philadelphia County
8-Hour Ozone (2008) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
8-Hour Ozone (2015) Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Serious)
Warren County
Sulfur Dioxide (2010) *Warren, PA
Washington County
8-Hour Ozone (2008) Pittsburgh-Beaver Valley, PA - (Marginal)
Westmoreland County
Sulfur Dioxide (2010) *Cambria-Westmoreland Area, PA
8-Hour Ozone (2008) Pittsburgh-Beaver Valley, PA - (Marginal)

PUERTO RICO
Arecibo Municipio
Lead (2008) *Arecibo, PR
Bayamon Municipio
Sulfur Dioxide (2010) *San Juan, PR
Catano Municipio
Sulfur Dioxide (2010) San Juan, PR
Guaynabo Municipio
Sulfur Dioxide (2010) *San Juan, PR
Salinas Municipio
Sulfur Dioxide (2010) *Guayama-Salinas, PR
San Juan Municipio
Sulfur Dioxide (2010) *San Juan, PR
Toa Baja Municipio
Sulfur Dioxide (2010) *San Juan, PR

TENNESSEE
Sullivan County
Sulfur Dioxide (2010) *Sullivan County, TN

TEXAS
Anderson County
Sulfur Dioxide (2010) *Freestone and Anderson Counties, TX
Bexar County
8-Hour Ozone (2015) San Antonio, TX - (Serious)
Brazoria County
8-Hour Ozone (2008) Houston-Galveston-Brazoria, TX - (Severe 15)
8-Hour Ozone (2015) Houston-Galveston-Brazoria, TX - (Serious)
Chambers County
8-Hour Ozone (2008) Houston-Galveston-Brazoria, TX - (Severe 15)

8-Hour Ozone (2015) Houston-Galveston-Brazoria, TX - (Serious)
Collin County
8-Hour Ozone (2008) Dallas-Fort Worth, TX - (Severe 15)
8-Hour Ozone (2015) Dallas-Fort Worth, TX - (Serious)
Dallas County
8-Hour Ozone (2008) Dallas-Fort Worth, TX - (Severe 15)
8-Hour Ozone (2015) Dallas-Fort Worth, TX - (Serious)
Denton County
8-Hour Ozone (2008) Dallas-Fort Worth, TX - (Severe 15)
8-Hour Ozone (2015) Dallas-Fort Worth, TX - (Serious)
El Paso County
PM-10 (1987) *El Paso County, TX - (Moderate)
8-Hour Ozone (2015) El Paso-Las Cruces, TX-NM - (Marginal)
Ellis County
8-Hour Ozone (2008) Dallas-Fort Worth, TX - (Severe 15)
8-Hour Ozone (2015) Dallas-Fort Worth, TX - (Serious)
Fort Bend County
8-Hour Ozone (2008) Houston-Galveston-Brazoria, TX - (Severe 15)
8-Hour Ozone (2015) Houston-Galveston-Brazoria, TX - (Serious)
Freestone County
Sulfur Dioxide (2010) *Freestone and Anderson Counties, TX
Galveston County
8-Hour Ozone (2008) Houston-Galveston-Brazoria, TX - (Severe 15)
8-Hour Ozone (2015) Houston-Galveston-Brazoria, TX - (Serious)
Harris County
8-Hour Ozone (2008) Houston-Galveston-Brazoria, TX - (Severe 15)
8-Hour Ozone (2015) Houston-Galveston-Brazoria, TX - (Serious)
Howard County
Sulfur Dioxide (2010) *Howard County, TX
Hutchinson County
Sulfur Dioxide (2010) *Hutchinson County, TX
Johnson County
8-Hour Ozone (2008) Dallas-Fort Worth, TX - (Severe 15)
8-Hour Ozone (2015) Dallas-Fort Worth, TX - (Serious)
Kaufman County
8-Hour Ozone (2008) Dallas-Fort Worth, TX - (Severe 15)
8-Hour Ozone (2015) Dallas-Fort Worth, TX - (Serious)
Liberty County
8-Hour Ozone (2008) Houston-Galveston-Brazoria, TX - (Severe 15)
Montgomery County
8-Hour Ozone (2008) Houston-Galveston-Brazoria, TX - (Severe 15)
8-Hour Ozone (2015) Houston-Galveston-Brazoria, TX - (Serious)
Navarro County
Sulfur Dioxide (2010) *Navarro County, TX
Panola County
Sulfur Dioxide (2010) *Rusk and Panola Counties, TX
Parker County
8-Hour Ozone (2008) Dallas-Fort Worth, TX - (Severe 15)
8-Hour Ozone (2015) Dallas-Fort Worth, TX - (Serious)
Rockwall County
8-Hour Ozone (2008) Dallas-Fort Worth, TX - (Severe 15)

Rusk County
Sulfur Dioxide (2010) *Rusk and Panola Counties, TX
Tarrant County
8-Hour Ozone (2008) Dallas-Fort Worth, TX - (Severe 15)
8-Hour Ozone (2015) Dallas-Fort Worth, TX - (Serious)
Titus County
Sulfur Dioxide (2010) *Titus County, TX
Waller County
8-Hour Ozone (2008) Houston-Galveston-Brazoria, TX - (Severe 15)
Wise County
8-Hour Ozone (2008) Dallas-Fort Worth, TX - (Severe 15)
8-Hour Ozone (2015) Dallas-Fort Worth, TX - (Serious)

UTAH

Box Elder County
PM-2.5 (2006) *Salt Lake City, UT - (Serious)
Davis County
PM-2.5 (2006) Salt Lake City, UT - (Serious)
8-Hour Ozone (2015) Northern Wasatch Front, UT - (Serious)
Duchesne County
8-Hour Ozone (2015) *Uinta Basin, UT - (Moderate)
Salt Lake County
PM-2.5 (2006) Salt Lake City, UT - (Serious)
Sulfur Dioxide (1971) Salt Lake County, UT
8-Hour Ozone (2015) Northern Wasatch Front, UT - (Serious)
Tooele County
PM-2.5 (2006) *Salt Lake City, UT - (Serious)
Sulfur Dioxide (1971) *Tooele County, UT
8-Hour Ozone (2015) *Northern Wasatch Front, UT - (Serious)
Uintah County
8-Hour Ozone (2015) *Uinta Basin, UT - (Moderate)
Utah County
PM-2.5 (2006) *Provo, UT - (Serious)
8-Hour Ozone (2015) *Southern Wasatch Front, UT - (Marginal)
Weber County
PM-2.5 (2006) *Salt Lake City, UT - (Serious)
8-Hour Ozone (2015) *Northern Wasatch Front, UT - (Serious)

VIRGINIA

Alexandria city
8-Hour Ozone (2015) Washington, DC-MD-VA - (Moderate)
Arlington County
8-Hour Ozone (2015) Washington, DC-MD-VA - (Moderate)
Fairfax County
8-Hour Ozone (2015) Washington, DC-MD-VA - (Moderate)
Fairfax city
8-Hour Ozone (2015) Washington, DC-MD-VA - (Moderate)
Falls Church city
8-Hour Ozone (2015) Washington, DC-MD-VA - (Moderate)
Giles County
Sulfur Dioxide (2010) *Giles County, VA
Loudoun County
8-Hour Ozone (2015) Washington, DC-MD-VA - (Moderate)

Manassas Park city
8-Hour Ozone (2015) Washington, DC-MD-VA - (Moderate)
Manassas city
8-Hour Ozone (2015) Washington, DC-MD-VA - (Moderate)
Prince William County
8-Hour Ozone (2015) Washington, DC-MD-VA - (Moderate)

WISCONSIN

Kenosha County
8-Hour Ozone (2015) *Chicago, IL-IN-WI - (Serious)
Milwaukee County
8-Hour Ozone (2015) Milwaukee, WI - (Serious)
Ozaukee County
8-Hour Ozone (2015) Milwaukee, WI - (Serious)
Racine County
8-Hour Ozone (2015) *Milwaukee, WI - (Serious)
Sheboygan County
8-Hour Ozone (2015) *Sheboygan County, WI - (Serious)
Washington County
8-Hour Ozone (2015) *Milwaukee, WI - (Serious)
Waukesha County
8-Hour Ozone (2015) *Milwaukee, WI - (Serious)

WYOMING

Lincoln County
8-Hour Ozone (2008) *Upper Green River Basin Area, WY - (Marginal)
Sublette County
8-Hour Ozone (2008) Upper Green River Basin Area, WY - (Marginal)
Sweetwater County
8-Hour Ozone (2008) *Upper Green River Basin Area, WY - (Marginal)

Appendix A, Exhibit E

Coastal Zone Management Act (CEST and EA)

General requirements	Legislation	Regulation
Federal assistance to applicant agencies for activities affecting any coastal use or resource is granted only when such activities are consistent with federally approved State Coastal Zone Management Act Plans.	Coastal Zone Management Act (16 USC 1451-1464), particularly section 307(c) and (d) (16 USC 1456(c) and (d))	15 CFR Part 930
References		
https://www.onecpd.info/environmental-review/coastal-zone-management		

Projects located in the following states must complete this form.

Alabama	Florida	Louisiana	Mississippi	Ohio	Texas
Alaska	Georgia	Maine	New Hampshire	Oregon	Virgin Islands
American Samona	Guam	Maryland	New Jersey	Pennsylvania	Virginia
California	Hawaii	Massachusetts	New York	Puerto Rico	Washington
Connecticut	Illinois	Michigan	North Carolina	Rhode Island	Wisconsin
Delaware	Indiana	Minnesota	Northern Mariana Islands	South Carolina	

1. **Is the project located in, or does it affect, a Coastal Zone as defined in your state Coastal Management Plan?**

   ☐Yes → *Continue to Question 2.*

   ☒No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide a map showing that the site is not within a Coastal Zone.*

2. **Does this project include activities that are subject to state review**?

   ☐Yes → *Continue to Question 3.*

   ☐No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide documentation used to make your determination.*

3. **Has this project been determined to be consistent with the State Coastal Management Program**?

   ☐Yes, with mitigation. → *Continue to Question 4.*

   ☐Yes, without mitigation. → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide documentation used to make your determination.*

☐No, project must be canceled.

Project cannot proceed at this location.

4. Explain in detail the proposed measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.

→ *Continue to the Worksheet Summary below. Provide documentation of the consultation (including the State Coastal Management Program letter of consistency) and any other documentation used to make your determination.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

Kentucky is a state that does not participate in the Coastal Zone Management Program. No action is necessary in this section.

Are formal compliance steps or mitigation required?

☐ Yes

☒ No

OFFICE FOR COASTAL MANAGEMENT
coast.noaa.gov

Coastal Zone Management Programs

Alabama [#alabama]
Alaska (*) [#alaska]
American Samoa [#samoa]
California [#california]
Connecticut [#connecticut]
Delaware [#delaware]
Florida [#florida]
Georgia [#georgia]
Guam [#guam]
Hawaii [#hawaii]
Illinois [#illinois]
Indiana [#indiana]
Louisiana [#louisiana]
Maine [#maine]
Maryland [#maryland]
Massachusetts [#massachusetts]
Michigan [#michigan]
Minnesota [#minnesota]
Mississippi [#mississippi]
New Hampshire [#newhampshire]
New Jersey [#newjersey]
New York [#newyork]
North Carolina [#northcarolina]
Northern Mariana Islands [#mariana]
Ohio [#ohio]
Oregon [#oregon]
Pennsylvania [#pennsylvania]
Puerto Rico [#puertorico]
Rhode Island [#rhodeisland]
South Carolina [#southcarolina]
Texas [#texas]
Virgin Islands [#virginislands]
Virginia [#virginia]
Washington [#washington]
Wisconsin [#wisconsin]

** All 35 coastal and Great Lakes states and territories (with the exception of Alaska) participate in the National Coastal Zone Management Program.*

ALABAMA
The Alabama Coastal Area Management Program [http://adem.alabama.gov/programs/coastal/default.cnt] , approved by NOAA in 1979, is administered by two state agencies:

- The Alabama Department of Conservation and Natural Resources [https://www.outdooralabama.com/coastal-programs/alabama-coastal-area-management-program] is responsible for planning, fiscal management, public education, and research management; and the
- Alabama Department of Environmental Management [http://adem.alabama.gov/programs/coastal/default.cnt] carries out permitting, regulatory, and enforcement functions.

The primary authority for the coastal management program is the Alabama Coastal Area Act of 1976 (Act 534). The Alabama coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] extends inland to the continuous 10-foot contour in Mobile and Baldwin Counties.

ALASKA
Alaska withdrew from the voluntary National Coastal Zone Management Program [/czm/about/] on July 1, 2011. Contact NOAA's Office for Coastal Management for additional information.

AMERICAN SAMOA

The American Samoa Coastal Management Program [https://www.doc.as.gov/our-divisions] , approved by NOAA in 1980, is led by the American Samoa Department of Commerce. The coastal program has developed a unique approach that incorporates both western and traditional systems of management. The American Samoa Coastal Management Act provides the primary authority for the program. American Samoa's coastal zone boundary [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] consists of seven islands, totaling roughly 77 square miles, with a coastline of 126 miles.

CALIFORNIA

The California Coastal Management Program, approved by NOAA in 1978, is administered by three state agencies:

- The California Coastal Commission [https://www.coastal.ca.gov/] manages development along the California coast except San Francisco Bay, where the
- San Francisco Bay Conservation and Development Commission [https://www.bcdc.ca.gov/] oversees development.
- The California Coastal Conservancy [https://scc.ca.gov/] purchases, protects, restores, and enhances coastal resources, and provides access to the shore.

The primary authorities for the California Coastal Management Program are the California Coastal Act, McAteer-Petris Act, and Suisan Marsh Preservation Act. The California coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] generally extends 1,000 yards inland from the mean high tide line. The coastal zone for the San Francisco Bay Conservation and Development Commission includes the open water, marshes, and mudflats of greater San Francisco Bay, and areas 100 feet inland from the line of highest tidal action.

CONNECTICUT

The Connecticut Coastal Management Program [https://portal.ct.gov/DEEP] , approved in 1980, is administered by the Office of Long Island Sound Programs within the Department of Energy and Environmental Protection. The primary authority for the coastal management program is the Connecticut Coastal Management Act of 1980. Connecticut has a two-tiered coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] . The first tier, the "coastal boundary," generally extends inland 1,000 feet from the shore. The second tier, the "coastal area," includes all of the state's 36 coastal municipalities.

DELAWARE

The Delaware Coastal Management Program [https://dnrec.alpha.delaware.gov/coastal-programs/coastal-management/] was approved by NOAA in 1979. The coastal management program's lead agency is the Division of Climate, Coastal, and Energy, Department of Natural Resources and Environmental Control. The program coordinates across nearly every state agency to ensure the effective implementation of policies, state laws, regulations and executive orders that affect coastal resources. Because the goals of the coastal management program are to balance the use, preservation, and development of coastal resources, these policies cover a surprising range of coastal issues.

The whole state of Delaware is designated as a coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] due to its small size and is divided into two tiers: the "coastal strip" and the rest of the state. The coastal strip, averaging four miles in width, receives special zoning protection from industrial development, while the second tier only falls under general program provisions.

FLORIDA

The Florida Coastal Management Program [https://floridadep.gov/fcmp] was approved by NOAA in 1981, with the Florida Department of Environmental Protection serving as the lead agency. A network of nine state agencies and five water management districts together enforce 23 separate statutes.
The Florida coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] is the entire state but is divided into two tiers. Only coastal cities and counties that include or are contiguous to state water bodies are eligible to receive coastal management funds.

GEORGIA

The Georgia Coastal Management Program [https://coastalgadnr.org/CoastalManagement] was approved by NOAA in 1998, with Georgia's Department of Natural Resources, Coastal Resources Division, serving as the lead agency. The Georgia Coastal Management Act authorized the creation of the Georgia Coastal Management Program. The Georgia coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] includes the state's six coastal counties and five "inland tier" counties, which include Chatham, Effingham, Bryan, Liberty, McIntosh, Long, Glynn, Wayne, Brantley, Camden, and Charlton counties.

GUAM

The Guam Coastal Management Program [http://bsp.guam.gov/guam-coastal-management-program/] was approved in 1979, and is overseen by the Bureau of Statistics and Plans. The coastal management program guides the use, protection, and development of land and ocean resources within Guam's coastal zone.

Guam's comprehensive planning enabling legislation, Seashore Protection Act, and several executive orders are among the key legislation for the coastal management program. Because Guam is a small island, the entire land area is included within its coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] .

HAWAII

The Hawaii Coastal Management Program [http://planning.hawaii.gov/czm/] , approved by NOAA in 1978, is led by the Hawaii Office of Planning. The coastal management program is a network of authorities and partnerships collectively implementing the objectives and policies of Hawaii's Coastal Zone Management Statutes (Chapter 205A, HRS). The entire state of Hawaii falls within Hawaii's coastal zone boundary [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] .

ILLINOIS

The Illinois Coastal Management Program [https://dnr.illinois.gov/cmp.html] is the newest state partner in the National Coastal Zone Management Program, gaining approval in 2012. Illinois' program, under the direction of the Illinois Department of Natural Resources, Office of Coastal Management, focuses on several priority issues in the Illinois coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] , a 63-mile stretch along Lake Michigan. The program manages impacts to its Lake Michigan shoreline through the Rivers, Lakes, and Streams Act, Lake Michigan Shore Line Act, and a network of other authorities.

INDIANA

The Indiana Coastal Management Program [https://www.in.gov/dnr/lake-michigan-coastal-program/] , approved by NOAA in 2002, is led by the Indiana Department of Natural Resources. The coastal management program is a networked program built upon a framework of state laws and authorities addressing key coastal priorities. The Coastal Advisory Board, which represents various stakeholder groups, determines the priorities for each grant funding cycle and provides a forum for public input on regional issues affecting Lake Michigan coastal resources. The Indiana coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] is based on watershed boundaries and varies from a little less than two miles to 17 miles from the shore.

LOUISIANA

The Louisiana Coastal Management Program [http://www.dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=85&ngid=5] , approved by NOAA in 1980, is administered by the Department of Natural Resources through the Office of Coastal Management. The primary authority for the coastal

management program is the State and Local Coastal Resources Management Act of 1978. The Louisiana coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] , which varies from 16 to 32 miles inland from the Gulf coast, is a 10 million-acre area that includes 40 percent of the nation's coastal wetlands.

MAINE

The Maine Coastal Management Program [https://www.maine.gov/dmr/mcp/index.htm] , approved in 1978, is led by the Maine Department of Agriculture, Conservation, and Forestry. The coastal management program consists of a network of 19 state laws with four state agencies working in cooperation with local governments, nonprofit organizations, private businesses, and the public to improve management of coastal resources. Maine's coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] extends to the inland boundary of all towns bordering tidal waters and includes all coastal islands.

MARYLAND

The Maryland Coastal Management Program [https://dnr.maryland.gov/ccs/Pages/funding/czma.aspx] was approved by NOAA in 1978, with the Department of Natural Resources acting as the lead agency. The coastal management program is a networked program composed of several state planning and regulatory programs implementing a suite of enforceable policies to protect coastal resources and manage coastal uses, including the Chesapeake Bays Critical Areas Protection Program. Maryland's coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] follows the inland boundary of the counties (and Baltimore City) bordering the Atlantic Ocean, Chesapeake Bay, and the Potomac River (as far as the municipal limits of Washington, D.C.).

MASSACHUSETTS

The Massachusetts Coastal Management Program [https://www.mass.gov/orgs/massachusetts-office-of-coastal-zone-management] , approved by NOAA in 1978, is administered by the Office of Coastal Zone Management within the Executive Office of Environmental Affairs and serves as the lead for coastal policy and technical assistance in the state.

The Executive Office of Environmental Affairs enforces 20 program policies and nine management principles governing activities within the coastal zone. The Massachusetts coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] roughly includes all land within a half-mile of coastal waters and salt marshes, as well as all islands.

MICHIGAN

The Michigan Coastal Management Program [https://www.michigan.gov/egle/about/organization/water-resources/coastal-management] was approved by NOAA in 1978, and is administered by the Department of Environmental Quality. Key management authorities of the coastal management program include several parts of the Natural Resources and Environmental Protection Act pertaining to Shorelands Protection and Management (Part 323), Great Lakes Submerged Lands (Part 325), and Sand Dunes Protection and Management (Part 353).

Boasting the world's largest freshwater coastline, Michigan's coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] generally extends a minimum of 1,000 feet inland from the ordinary high water mark, with the boundary extending further inland in some locations to encompass important coastal features.

MINNESOTA

The Minnesota Coastal Management Program [http://www.dnr.state.mn.us/waters/lakesuperior/index.html] was approved by NOAA in 1999 and consists of a network of agencies and programs led by the Department of Natural Resources.

Key legislation includes the Shoreland Management Act and the North Shore Management Plan. Minnesota's coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] includes the area approximately six miles inland from Lake Superior, following the nearest township boundaries along the shore.

MISSISSIPPI

The Mississippi Coastal Management Program [https://dmr.ms.gov/coastal-resources-management-2/] , approved by NOAA in 1980, consists of a network of agencies with authority in the coastal zone. The Department of Marine Resources, through the Office of Coastal Ecology, serves as the lead agency.

The primary authority guiding the coastal management program is the Coastal Wetlands Protection Act. The Mississippi coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] includes the three coastal counties, as well as all adjacent coastal waters and the barrier islands of the coast.

NEW HAMPSHIRE

The New Hampshire Department of Environmental Services leads the implementation of the state's coastal program. The New Hampshire Coastal Management Program [https://www.des.nh.gov/water/coastal-waters] , approved by NOAA in 1982, is a networked program where several state agencies help enforce the coastal management program's 16 coastal policies. The New Hampshire coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] covers areas next to the Atlantic Ocean and the lower Piscataqua River, along with areas bordering the Great Bay and tidal rivers, and all 17 municipalities along tidal waters.

NEW JERSEY

The New Jersey Coastal Management Program [https://www.state.nj.us/dep/cmp/] was approved by NOAA in 1978 and is directly administered by its lead agency, the New Jersey Department of Environmental Protection, in partnership with the New Jersey Meadowlands Commission, as the lead planning agency for the Hackensack Meadowlands District.

The coastal management program is based on three major laws: the Coastal Area Facility Review Act, the Wetlands Act of 1970, and the Waterfront Development Law. New Jersey's coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] encompasses approximately 1,800 miles of tidal coastline and ranges in width from 100 feet to 24 miles inland.

NEW YORK

The New York Coastal Management Program was approved by NOAA in 1982, with the New York Department of State serving as the lead agency. The Executive Law Article 42, Waterfront Revitalization of Coastal Areas and Inland Waterways, provides the state with the authority to establish a coastal program, develop coastal policies, define the coastal boundaries, and establish state consistency requirements.

The inland New York coastal zone boundary [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] is variable but generally is 1,000 feet from the shoreline in non-urbanized areas. In urbanized areas and other developed locations along the coastline, the inland boundary is usually 500 feet or less from the shoreline, with the boundary possibly extending inland up to 10,000 feet to encompass significant coastal resources.

NORTH CAROLINA

The North Carolina Coastal Management Program [https://deq.nc.gov/about/divisions/coastal-management] , approved by NOAA in 1978, is administered by the Division of Coastal Management within the Department of Environment and Natural Resources. The primary authority for the coastal management program is the Coastal Area Management Act.

North Carolina's coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] includes 20 coastal counties that in whole or in part are adjacent to, adjoining, intersected, or bounded by the Atlantic Ocean or any coastal sound.

NORTHERN MARIANA ISLANDS

The Commonwealth of the Northern Mariana Islands is made up of 14 islands that span 440 miles of the western Pacific Ocean, with the Division of Coastal Resources Management [https://dcrm.gov.mp/] serving as the lead agency for the Northern Mariana Islands Coastal Management Program. NOAA approved the commonwealth's coastal management program in 1980. Since the islands are small, the entire land and water area of the commonwealth is included within the coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] .

OHIO

The Ohio Coastal Management Program [https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/safety-conservation/about-odnr/coastal-management] was approved by NOAA in 1997, with the Ohio Department of Natural Resources serving as the lead agency for the networked program. The coastal management program incorporates state laws, regulations, and programs within 41 management policies that are organized around nine issue areas [https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/safety-conservation/about-odnr/coastal-managementocmp] . Ohio's coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] is quite varied and runs through the nine counties bordering Lake Erie and its tributaries. The boundary width ranges from about one-eighth of a mile to 15 miles depending on features, such as coastal wetlands and bluffs.

OREGON

The Oregon Coastal Management Program [https://www.oregon.gov/LCD/OCMP/pages/index.aspx] , approved by NOAA in 1977, consists of a network of agencies with authority in the coastal zone. The Oregon Department of Land Conservation and Development serves as the lead agency. The primary authority for the coastal management program is the Oregon Land Use Planning Act and the 19 statewide planning goals. The Oregon coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] includes the state's coastal watersheds and extends inland to the crest of the coast range, with a few minor exceptions.

PENNSYLVANIA

The Pennsylvania Coastal Management Program [https://www.dep.pa.gov/Business/Water/Compacts%20and%20Commissions/Coastal%20Resources%20Management%20Program/Pages/default.aspx] , approved in 1980, is administered by the Department of Environmental Protection. The coastal management program comprises two widely separated coastal areas: the 63-mile Lake Erie shoreline and the 57-mile stretch of coastline along the Delaware Estuary.

The program relies on a network of state authorities. The Pennsylvania coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] along Lake Erie varies from 900 feet in urban areas to over three miles in rural areas, and the Delaware River Estuary boundary extends inland from 660 feet in urbanized areas to 3.5 miles in rural areas.

PUERTO RICO

Puerto Rico's Coastal Management Program [https://www.drna.pr.gov/tag/zona-costanera/] was approved by NOAA in 1978 and comprises a network of state agencies led by the Department of Natural and Environmental Resources. The program encompasses 40 statutes.

Puerto Rico's coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] generally extends 1,000 meters (one kilometer) inland, but extends further inland in places to include important coastal resources.

RHODE ISLAND

The Rhode Island Coastal Management Program [http://www.crmc.ri.gov/] , approved by NOAA in 1978, is administered by the Rhode Island Coastal Resources Management Council. The primary authority for the coastal management program is the Coastal Resources Management Act of 1971. Rhode Island's coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] encompasses the entire state, although the inland extent of the coastal management program's regulatory authority is generally 200 feet inland from any coastal feature.

SOUTH CAROLINA

The South Carolina Coastal Management Program [https://scdhec.gov/environment/your-water-coast/ocean-coastal-resource-management/coastal-zone-management/south] was approved by NOAA in 1979, and the lead agency is the Department of Health and Environmental Control. The primary authority for the coastal management program is the 1977 Coastal Tidelands and Wetlands Act. The South Carolina coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] includes all lands and waters in the counties of the state that contain any one or more "critical areas," which are defined as coastal waters, tidelands, beaches, and beach/dune system.

TEXAS

The Texas Coastal Management Program [https://www.glo.texas.gov/coast/grant-projects/cmp/index.html] , approved by NOAA in 1996, is administered by the Texas General Land Office in conjunction with the Coastal Coordination Advisory Committee. The Coastal Coordination Act is the primary authority for the Texas Coastal Management Program. The Texas coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] is generally the area seaward of the Texas coastal facility designation line, up to three marine leagues into the Gulf of Mexico.

VIRGIN ISLANDS

The U.S. Virgin Islands Coastal Management Program was approved by NOAA in 1979. The lead agency is the Department of Planning and Natural Resources. The primary authority for the coastal management program is the U.S. Virgin Islands Coastal Zone Management Act, and the coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] includes the entire territory.

VIRGINIA

The Virginia Coastal Management Program [https://www.deq.virginia.gov/our-programs/coastal-zone-management] was approved by NOAA in 1986, and the Department of Environmental Quality serves as the lead agency. Authorized by a commonwealth executive order, the coastal management program is structured as a network of agencies that have authority for implementing nine core policies and a set of advisory policies covering wetlands, fisheries, water quality, dunes and beaches, subaqueous lands, and other coastal resources in the Virginia coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] . The coastal zone includes the state's 29 coastal counties, 17 cities, and 42 incorporated towns.

WASHINGTON

The Washington Coastal Management Program [https://ecology.wa.gov/Water-Shorelines/Shoreline-coastal-management/Coastal-zone-management] , approved by NOAA in 1976, was the first approved program in the nation. The Department of Ecology serves as the lead coastal management agency. The primary authority for the coastal management program is the Shoreline Management Act of 1971. The Washington coastal zone [https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf] includes the state's 15 coastal counties that front saltwater.

WISCONSIN

The Wisconsin Coastal Management Program [https://doa.wi.gov/Pages/LocalGovtsGrants/CoastalManagement.aspx] , approved by NOAA in 1978, is administered by the Department of Administration, Bureau of Intergovernmental Relations. The coastal management program is a networked program

Appendix A, Exhibit F

Contamination and Toxic Substances (Single Family Properties)

General requirements	Legislation	Regulations
It is HUD policy that all properties that are being proposed for use in HUD programs be free of hazardous materials, contamination, toxic chemicals and gases, and radioactive substances, where a hazard could affect the health and safety of the occupants or conflict with the intended utilization of the property.		24 CFR 58.5(i)(2) 24 CFR 50.3(i)
Reference		
https://www.hudexchange.info/programs/environmental-review/site-contamination		

1. **Were any on-site or nearby toxic, hazardous, or radioactive substances[1] (excluding radon) found that could affect the health and safety of project occupants or conflict with the intended use of the property? (Were any recognized environmental conditions or RECs identified in a Phase I ESA and confirmed in a Phase II ESA?)**
   Provide a map or other documentation of absence or presence of contamination[2] and explain evaluation of site contamination in the Worksheet below.

   ☒ No

   Explain:

   The ECHO facility search report for the project site shows that there are no EPA-regulated facilities within a 3,000-foot radius of the project site. The University of Kentucky Geologically Based Indoor Radon Potential map shows that the project site is in the 2.71-4.0 picocuries per liter (pCi/L) zone. Given the levels proved by the Geological Based Indoor Radon Potential Map, radon testing was required for the existing property prior to rehabilitation and will be required for the new construction sites following completion. For the existing property, radon testing was completed and found radon levels to be at 1.5 pCi/L, demonstrably lower than the 4.0 pCi/L threshold to require mitigation.

   → *Continue to the next question.*

   ☐ Yes

[1] This question covers the presence of radioactive substances excluding radon. Radon is addressed in question 2.
[2] Utilize EPA's Enviromapper and state/tribal databases to identify nearby dumps, junk yards, landfills, hazardous waste sites, and industrial sites, including EPA National Priorities List Sites (Superfund sites), CERCLA or state-equivalent sites, RCRA Corrective Action sites with release(s) or suspected release(s) requiring clean-up action and/or further investigation. Additional supporting documentation may include other inspections and reports.

→ *Describe the findings, including any recognized environmental conditions (RECs), in Worksheet Summary below. Continue to the next question.*

☐ Check here if an ASTM Phase I Environmental Site Assessment (ESA) report was utilized. [Note: HUD regulations does not require an ASTM Phase I ESA report for single family homes]

2. **Evaluate the building(s) for radon. Do all buildings meet any of the exemptions[3] from having to consider radon in the contamination analysis listed in CPD Notice CPD-23-103?**

☐ Yes

Explain:

→ *If **no** non-radon contamination was found, the review is in compliance with this section. Continue to the Worksheet Summary below. If non-radon contamination **was** found, continue to the Mitigation question.*

☒ No

→ *Continue to the following question.*

3

- Buildings with no enclosed areas having ground contact.
- Buildings containing crawlspaces, utility tunnels, or parking garages would not be exempt, however buildings built on piers would be exempt, provided that there is open air between the lowest floor of the building and the ground.
- Buildings that are not residential and will not be occupied for more than 4 hours per day.
- Buildings with existing radon mitigation systems: document radon levels are below 4.0 pCi/L with test results dated within two years of submitting the application for HUD assistance and document the system includes an ongoing maintenance plan that includes periodic testing to ensure the system continues to meet the current EPA recommended levels. If the project does not require an application, document test results dated within two years of the date the environmental review is certified. Refer to program office guidance to ensure compliance with program requirements.
- Buildings tested within five years of the submission of application for HUD assistance:
    - test results document indoor radon levels are below current the EPA's recommended action levels of 4.0 pCi/L. For buildings with test data older than five years, any new environmental review must include a consideration of radon using one of the methods in Section A below.

3. **Is the proposed project new construction or substantial rehabilitation where testing will be conducted but cannot yet occur because building construction has not been completed?**

☒ Yes

→ *Compliance with this section is conditioned on post-construction testing being conducted, followed by mitigation, if needed. Radon test results, along with any needed mitigation plan, must be included in the Environmental Review Record.*

☐ No

→ *Continue to the next question.*

4. **Was radon testing or a scientific data review conducted that provided a radon concentration level in pCi/L?**

☒ Yes

→ *Continue to the next question.*

☐ No

If no testing was conducted and a review of science-based data offered a lack of science-based data for the project site, then document and include the steps taken to look for documented test results and science-based data as well as the basis for the conclusion that testing would be infeasible or impracticable.

Explain:

→ *If **no** non-radon contamination was found, the review is in compliance with this section. Continue to the Worksheet Summary below. If non-radon contamination **was** found, continue to the Mitigation question below.*

5. **How was radon data collected?**

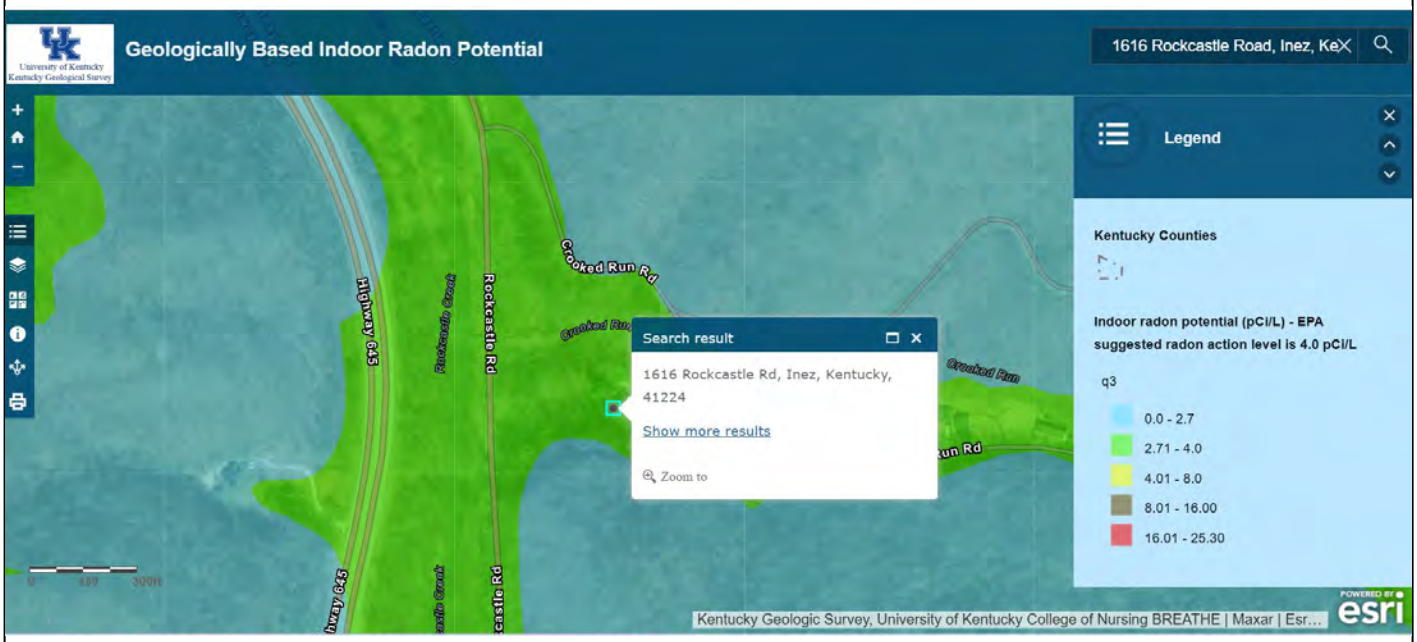
☒ All buildings involved were tested for radon

→ *Continue to question six below.*

☒ A review of science-based data was conducted

Enter the Radon concentration value, in pCi/L, derived from the review of science-based data: 2.71-4.0

Provide the documentation[4] used to derive this value:



→ *If Radon concentration value above is **less than** 4.0 pCi/L AND no non-radon contamination was found then based on the response, the review is in compliance with this section. Continue to the Screen Summary at the bottom of this screen.*

*If Radon concentration value above is 4.0 pCi/L **or greater** radon mitigation is required. Continue to the Mitigation question.*

6. Were the radon test results for any dwelling unit tested at or above 4.0 pCi/L?

☐ Yes

Radon mitigation is required. Continue with the prompts directly below.

Enter the total number of dwelling units tested:

[4] For example, if you conducted radon testing then provide a testing report (such as an ANSI/AARST report or DIY test) if applicable (note: DIY tests are not eligible for use in multifamily buildings), or documentation of the test results. If you conducted a scientific data review, then describe and cite the maps and data used and include copies of all supporting documentation. Ensure that the best available data is utilized, if conducting a scientific data review.

How many dwelling units tested at or above 4.0 pCi/L:

Enter the highest radon test result value:

Document the test results for all dwelling units tested with a copy of the test results for all dwelling units or testing report(s) covering all units.

☒ No

Provide a copy of the test results for all dwelling units tested or testing report(s) covering all units tested.

→ *If **no** non-radon contamination was found, the review is in compliance with this section. Continue to the Screen Summary at the bottom of this screen.*

*If non-radon contamination **was** found, continue to the Mitigation question.*

7. Mitigation

Document the mitigation needed according to the requirements of the appropriate federal, state, tribal, or local oversight agency. If the adverse environmental impacts cannot be mitigated, then HUD assistance may not be used for the project at this site.

For instances where radon mitigation is required (i.e. where test results demonstrated radon levels at 4.0 pCi/L and above), then you must include a radon mitigation plan.[5]

Can all adverse environmental impacts be mitigated?

☐ All adverse environmental impacts cannot feasibly be mitigated
→ Project cannot proceed at this location.

☒ Yes, all adverse environmental impacts can be eliminated through mitigation, and/or consideration of radon and radon mitigation, if needed, will occur following construction.

[5] Refer to CPD Notice CPD-23-103 (with link to it at https://www.hud.gov/sites/dfiles/CPD/documents/CPD_Notice_on_Addressing_Radon_in_the_Environmental_Review_Process.pdf) for additional information on radon mitigation plans.

→ Provide all **mitigation requirements**[6] and documents in the Screen Summary at the bottom of this screen.

The University of Kentucky Geologically Based Indoor Radon Potential Map for the project site documents that it is in the 2.71 to 4.0 picocuries per liter (pCi/L) zone. Therefore, testing will be required for the two new construction projects upon completion of construction to determine if radon levels exceed 4.0 picocuries per liter (pCi/L). Radon testing must occur post construction but before occupancy. If post construction radon testing shows 4.0 pCi/L or more, then mitigation measures shall be completed according to the most current version of ANSI/AARST CCAH (American National Standards Institute/American Association of Radon Scientists and Technologists CCAH Reducing Radon in New Construction of 1 & 2 Family Dwellings and Townhouses). If radon levels exceed 4.0 pCi/L, mitigation measures will be installed by a National Radon Proficiency Program (NRPP) certified professional. If testing shows levels below 4.0 pCi/L mitigation is not required.

8. Describe how compliance was achieved. Include any of the following that apply: State Voluntary Clean-up Program, a No Further Action letter, use of engineering controls[7], or use of institutional controls[8].

If a remediation plan or clean-up program was necessary, which standard does it follow?

☐ Complete removal
☐ Risk-based corrective action (RBCA)
☒ Other

→ *Continue to the Worksheet Summary.*

[6] Mitigation requirements include all clean-up requirements required by applicable federal, state, tribal, or local law. Additionally, please upload, as applicable, the long-term operations and maintenance plan, Remedial Action Work Plan, and other equivalent documents.

[7] Engineering controls are any physical mechanism used to contain or stabilize contamination or ensure the effectiveness of a remedial action. Engineering controls may include, caps, covers, dikes, trenches, leachate collection systems, radon mitigation systems, signs, fences, physical access controls, ground water monitoring systems and ground water containment systems including, slurry walls and ground water pumping systems.

[8] Institutional controls are mechanisms used to limit human activities at or near a contaminated site, or to ensure the effectiveness of the remedial action over time, when contaminants remain at a site at levels above the applicable remediation standard which would allow for unrestricted use of the property. Institutional controls may include structure, land, and natural resource use restrictions, well restriction areas, classification exception areas, deed notices, and declarations of environmental restrictions.

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

No on-site or nearby toxic, hazardous, or radioactive substances that could affect the health and safety of project occupants or conflict with the intended use of the property were found. Radon testing indicated radon levels below 4.0 pCi/L.

The University of Kentucky Geologically Based Indoor Radon Potential map shows that the project site is in the 2.71-4.0 picocuries per liter (pCi/L) zone, therefore post-construction radon testing is required for the two single-family units and radon testing of the existing property is required prior to rehabilitation.

For the existing rehabilitation property, radon testing was conducted by Thrive's Alice Southers and processed by Alpha Energy Laboratories. Radon testing was conducted by using a short-term activated charcoal device manufactured by Eurofins Environment Testing Radon, LLC (NRPP ID: 101132 AL, Model: RD-1. NRPP Approved Device: AC-8202. NRSB Approved Device: 10325. Device Performance Standard: ANSIAARST MS-PC 2022. Quality Assurance Standard: ANSI-AARST MS-QA 2023. Lab Methodology: EPA-402-R-92-004. Test instructions designed in accordance with ANSI-AARST MAH-2023).

Two short-term radon testing devices were placed by Alice Southers from 11:30 AM on 11/17/2025 until 11:30 AM on 11/19/2025. Following HUD Guidance on Testing for Radon in Single-Family and Multifamily Housing, tests were placed in the living room on the lowest occupied floor. The location was within the general breathing area at least three feet away from any windows or doors. Two tests were placed near each other, and an average of the two readings was taken. The Protect Environmental Radon Data Report dated 12/2/2025 stated for Device AA656161 a Radon level of 1.6 pCi/L. Device AA656160 measured <1.4 pCi/L. An average of 1.5 pCi/L was calculated. The radon report determined the following: "For results **below 2 pCi/L** you do not need to take further action at this time."

The project is in compliance with contamination and toxic substances requirements. The University of Kentucky Geologically Based Indoor Radon Potential Map for the project site documents that it is in the 2.71 to 4.0 picocuries per liter (pCi/L) zone. Therefore, testing will be required for the two new construction projects upon completion of construction to determine if radon levels exceed 4.0 picocuries per liter (pCi/L). Radon testing must occur post construction but before occupancy. If post construction radon testing shows 4.0 pCi/L or more, then mitigation measures shall be completed according to the most current version of ANSI/AARST CCAH (American National Standards Institute/American Association of Radon Scientists and Technologists CCAH Reducing Radon in New Construction of 1 & 2 Family Dwellings and Townhouses). If radon levels exceed 4.0 pCi/L, mitigation measures will be installed by a National Radon Proficiency Program (NRPP) certified professional. If testing shows levels below 4.0 pCi/L mitigation is not required.

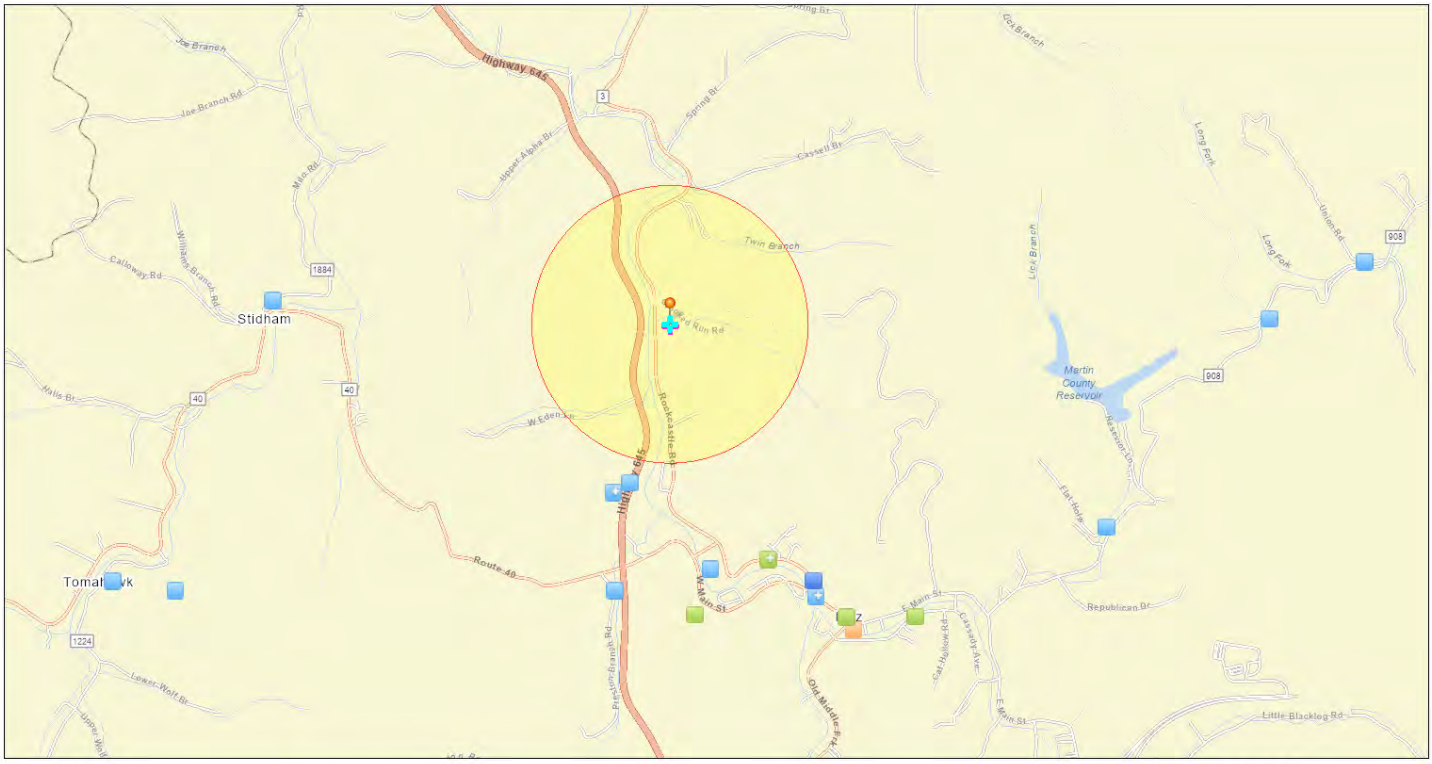
Are formal compliance steps or mitigation required?

☒ Yes

☐ No

NEPAssist Report

NEPAssist Report



August 29, 2025

1:29,787

0 0.3 0.6 1.2 mi
0 0.45 0.9 1.8 km

Air Pollution (ICIS-AIR)
Water Dischargers (NPDES)
Water Dischargers (NPDES)
Hazardous Waste (RCRAInfo)
Hazardous Waste (RCRAInfo)
Brownfields (ACRES)
Project Buffer
Project Site
Search Result (point)

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community

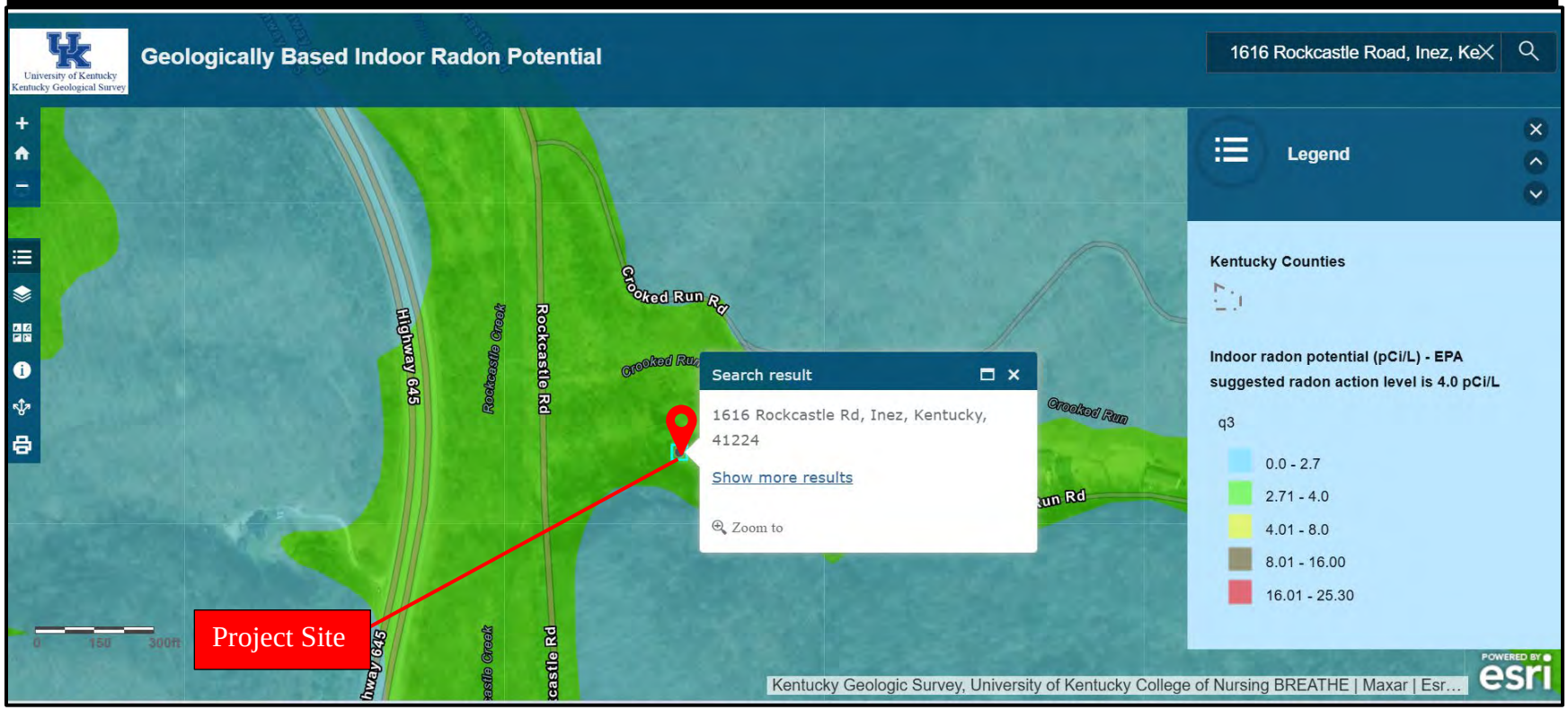
Project Location	37.884119,-82.552538
Within 3000 feet of an Ozone 1-hr (1979 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of an Ozone 8-hr (1997 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of an Ozone 8-hr (2015 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 24hr (2006 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 Annual (1997 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM2.5 Annual (2012 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a PM10 (1987 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a CO Annual (1971 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a NO2 Annual (1971 standard) Non-Attainment/Maintenance Area?	no
Within 3000 feet of a Federal Land?	no
Within 3000 feet of an impaired stream?	yes
Within 3000 feet of an impaired waterbody?	no
Within 3000 feet of a waterbody?	yes
Within 3000 feet of a stream?	yes
Within 3000 feet of an NWI wetland?	Available Online
Within 3000 feet of a Brownfields site?	no
Within 3000 feet of a Superfund site?	no
Within 3000 feet of a Toxic Release Inventory (TRI) site?	no

Within 3000 feet of a water discharger (NPDES)?	no
Within 3000 feet of a hazardous waste (RCRA) facility?	no
Within 3000 feet of an air emission facility?	no
Within 3000 feet of a school?	no
Within 3000 feet of an airport?	no
Within 3000 feet of a hospital?	no
Within 3000 feet of a designated sole source aquifer?	no
Within 3000 feet of a historic property on the National Register of Historic Places?	no
Within 3000 feet of a Chemical Data Reporting (CDR) site?	no
Within 3000 feet of a Land Cession Boundary?	no
Within 3000 feet of a tribal area (lower 48 states)?	no
Within 3000 feet of the service area of a mitigation or conservation bank?	yes
Within 3000 feet of the service area of an In-Lieu-Fee Program?	yes
Within 3000 feet of a Public Property Boundary of the Formerly Used Defense Sites?	no
Within 3000 feet of a Munitions Response Site?	no
Within 3000 feet of an Essential Fish Habitat (EFH)?	no
Within 3000 feet of a Habitat Area of Particular Concern (HAPC)?	no
Within 3000 feet of an EFH Area Protected from Fishing (EFHA)?	no
Within 3000 feet of a Bureau of Land Management Area of Critical Environmental Concern?	no
Within 3000 feet of an ESA-designated Critical Habitat Area per U.S. Fish & Wildlife Service?	no
Within 3000 feet of an ESA-designated Critical Habitat river, stream or water feature per U.S. Fish & Wildlife Service?	no

Created on: 8/29/2025 10:08:55 AM

Radon Map

Contamination and Toxic Substances



Radon Map

The Geologically Based Indoor Radon Potential Map suggests the radon action level for the proposed site to be between 2.71-4.0 pCi/L.

Source: https://kygs.maps.arcgis.com/apps/View/index.html?appid=eac52b77783d4f2a92403740aaf8de76

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)

Radon Testing Results

ALPHA ENERGY LABORATORIES
2501 Mayes Road, Suite 100 | Carrollton, TX 75006 | (972) 242-2479 | aelabs.com

Report & Sample Dates

DATE RECEIVED: 11/22/2025
REPORT DATE: 12/1/2025
REVISION DATE: 12/2/2025

RADON TEST REPORT

Revised

Laboratory Certification Info

NRPP: 101132 AL
NRSB: 25ARL003
STATE: N/A

Alice Southers
Thrive Community Coalition
2570 Rockcastle Road
Inez, KY 41224

KIT SERIAL	RADON LEVEL	PROPERTY TESTED	TEST DURATION	STRUCTURE
AA656160	<1.4 pCi/L *	1616 Rockcastle Rd	Start: 11:30 AM 11/17/2025	Type: Multi Story
ID: 3250361	**Margin of Error**	Inez, KY 41224	End: 11:30 AM 11/19/2025	Floor: 1st Floor
	+/- 0.1 pCi/L	Living Room	Duration: 48 Hours	Closed: Yes

Short Term Radon Tests have an estimated margin of error of ±5% when used according to directions.
*The measured radon level was lower than the Minimum Detectable Concentration (MDC). Visit aelabs.com/MDC for info.

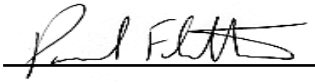
Quality Assurance (QA): Sample Type: Short Term. Technology: Activated Charcoal. Device Manufacturer: Eurofins Environment Testing Radon, LLC. Model: RD-1. NRPP Approved Device: AC-8202. NRSB Approved Device: 10325. Device Performance Standard: ANSI-AARST MS-PC 2022. Quality Assurance Standard: ANSI-AARST MS-QA 2023. Lab Methodology: EPA-402-R-92-004. Test instructions designed in accordance with ANSI-AARST MAH-2023. Radon level uncertainty is calculated using a 95% confidence level. One sampler can test up to 2,000 ft^2. Sampler Deployed by: Alice Southers. Sampler Retrieved by: Alice Southers.

Disclaimer: Results are only indicative of the sample as received in the lab. Incorrect information or improper sampling procedures will affect results. Eurofins Environment Testing Radon, LLC (EETR) did not provide sampling services unless otherwise indicated. Device deployment/retrieval is assumed to be performed by the person submitting the sample, unless otherwise specified by the client. The person (s) performing sampling are responsible for sampling QA, which may include duplicate, blank, and/or spiked detectors. Analysis, laboratory QA, and production QA performed by EETR. Measurements are not necessarily predictive or supportive of measurements conducted at different times or locations. EETR is not responsible for the consequences of any action you do or do not take based on the results. This report may only be reproduced in full, unless authorized in writing by EETR.

Radon Information: Radon is a naturally occuring radioactive gas. It is odorless, colorless, and tasteless. Radon in air is ubiquitous (existing or being everywhere at the same time) and is found in outdoor and indoor air. Radon concentration is measured in picocuries per liter of air (pCi/L). The average indoor concentration is 1.3 pCi/L. The average outdoor concentration is 0.4 pCi/L. Radon is the second leading cause of lung cancer, after smoking. Smokers and former smokers are at especially high risk. Radon exposure is a health risk over long periods of time. The more time you spend in a high radon environment, the greater the risk.

The US Environmental Protection Agency (EPA) and the Surgeon General recommend fixing the building when the radon level is 4 pCi/L or more. Because there is no known safe level of exposure to radon, EPA also recommends considering fixing radon levels between 2 pCi/L and 4 pCi/L. The World Health Organization (WHO) recommends fixing the building when the radon level is 2.7 pCi/L or more.

The process of fixing a radon problem is called mitigation. Even buildings with very high levels can be successfully mitigated. EPA recommends that you use a contractor certified by NRPP, NRSB, or your State (where applicable) to correct radon problems.

Measurement Specialist / Laboratory Director  Paul Fletcher **Date** 12/2/2025

IF YOU HAVE QUESTIONS ABOUT WHAT YOUR RESULTS MEAN:
EPA National Hotline: (800) 557-2366, ***epa.gov/radon***, or, call your State Radon Official: (502) 564-4856

IF YOU HAVE QUESTIONS ABOUT HOW TO FIX A RADON PROBLEM:
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WHAT DO MY TEST RESULTS MEAN?

Radon concentration is measured in picocuries per liter of air (pCi/L). The average indoor concentration is 1.3 pCi/L. The average outdoor concentration is 0.4 pCi/L. The US Environmental Protection Agency (EPA) action level is 4 pCi/L, meaning that EPA recommends you take further action if your radon level is 4 pCi/L or more. Because there is no known safe level of exposure to radon, EPA also recommends considering further action for radon levels between 2 pCi/L and 4 pCi/L. The World Health Organization action level is 2.7 pCi/L. If this is your first test, retesting is usually advisable. If you have tested multiple times, average the results and use the average to determine the appropriate next steps.

For results **below 2 pCi/L** you do not need to take further action at this time.

For results **between 2 pCi/L and 4 pCi/L**, consider taking further action. If this is your first test, consider testing again to confirm the initial result. If you have tested multiple times, EPA recommends that you consider fixing the building.

For results **4 pCi/L or greater,** you should take further action. If this is your first test, EPA recommends you conduct another test to confirm the initial reading. If you have tested multiple times, you should fix the building.

If the building has an active radon mitigation system, test annually to confirm the system is working properly. Because radon levels can change, all buildings should be tested at least once every 2 years and whenever the building is renovated.

HOW DANGEROUS IS MY RADON LEVEL?

RADON RISK IF YOU SMOKE

Radon Level	If 1,000 people were exposed to this level over a lifetime	The risk of radon induced lung cancer compares to	What To Do Next?
100 pCi/L	About 770 people could get lung cancer	110 times the risk of dying in a car crash	Fix your home
40 pCi/L	About 380 people could get lung cancer	95 times the risk of dying from poison	Fix your home
20 pCi/L	About 260 people could get lung cancer	250 times the risk of drowning	Fix your home
10 pCi/L	About 150 people could get lung cancer	200 times the risk of dying in a fire	Fix your home
4 pCi/L	About 62 people could get lung cancer	5 times the risk of dying in a car crash	Fix your home
2 pCi/L	About 32 people could get lung cancer	6 times the risk of dying from poison	Consider fixing between 2 & 4 pCi/L
1.3 pCi/L	About 20 people could get lung cancer	(Average indoor radon level)	(Reducing below 1 pCi/L is difficult)
0.4 pCi/L	About 3 people could get lung cancer	(Average outdoor radon level)	(Reducing below 1 pCi/L is difficult)

Note: If you are a former smoker your risk may be lower
Estimates are lifetime risk of lung cancer deaths from EPA Assessment of Risks from Radon in Homes (EPA 402-R-03-003)

RADON RISK IF YOU HAVE NEVER SMOKED

Radon Level	If 1,000 people were exposed to this level over a lifetime	The risk of radon induced lung cancer compares to	What To Do Next?
100 pCi/L	About 440 people could get lung cancer	63 times the risk of dying in a car crash	Fix your home
40 pCi/L	About 120 people could get lung cancer	30 times the risk of dying from poison	Fix your home
20 pCi/L	About 36 people could get lung cancer	35 times the risk of drowning	Fix your home
10 pCi/L	About 18 people could get lung cancer	20 times the risk of dying in a fire	Fix your home
4 pCi/L	About 7 people could get lung cancer	The risk of dying in a car crash	Fix your home
2 pCi/L	About 4 people could get lung cancer	The risk of dying from poison	Consider fixing between 2 & 4 pCi/L
1.3 pCi/L	About 2 people could get lung cancer	(Average indoor radon level)	(Reducing below 1 pCi/L is difficult)
0.4 pCi/L		(Average outdoor radon level)	(Reducing below 1 pCi/L is difficult)

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HOW CAN I FIX A RADON PROBLEM?

The process of fixing a radon problem is called mitigation. Mitigation is highly effective at lowering radon levels. If your radon level is 4 pCi/L or more, you should fix the building. If your radon level is between 2 pCi/L and 4 pCi/L, you should consider fixing the building. There is no known safe level of radon, and levels below 4 pCi/L still pose a signficant health risk. In most cases, radon levels can be lowered below 2 pCi/L.

We recommend only hiring contractors who are certified and trained in radon mitigation. To find a certified contractor:

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Go to ***aelabs.com/mitigation*** for a list of NRPP certified contractors.

WHAT SHOULD I DO NEXT?

The guide below is for buildings without a radon mitigation system. Buildings with an active mitigation system should have radon levels below 4 pCi/L. Contact the contractor who installed your system if your radon test results indicate a radon level at or above 4 pCi/L. Most mitigation systems include a warranty; refer to your contract for details.

Number of Times Tested	Type of Test	Test Result (pCi/L)	What do I do next?	What test do I use? (If retesting)
One	Short Term	Less than 2	Retest every 2 years	Short Term
One	(2-7 days)	Between 2 and 4	Consider retesting now	Long Term or Short Term
One		Between 4 and 8	Retest now	Long Term or Short Term
One		8 or more	Retest now	Short Term
Two or more	Short Term	Less than 2	Retest every 2 years	Short Term
	(2-7 days)	Between 2 and 4	Consider fixing the building	
		4 or More	Fix the building	
One or more	Long Term	Less than 2	Retest every 2 years	Short Term
	(91-365 days)	Between 2 and 4	Consider fixing the building	
		4 or more	Fix the building	

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Checks can be made to Alpha Energy Labs

Shipping: FREE

Total: _____

ALPHA ENERGY LABORATORIES

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Carrollton, TX 75006

radon@aelabs.com
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2501 Mayes Road, Suite 100 | Carrollton, TX 75006 | (972) 242-2479 | aelabs.com

Report & Sample Dates

DATE RECEIVED: 11/22/2025
REPORT DATE: 12/1/2025
REVISION DATE: 12/2/2025

RADON TEST REPORT

Revised

Laboratory Certification Info

NRPP: 101132 AL
NRSB: 25ARL003
STATE: N/A

Alice Southers
Thrive Community Coalition
2570 Rockcastle Road
Inez, KY 41224

KIT SERIAL	RADON LEVEL	PROPERTY TESTED	TEST DURATION	STRUCTURE
AA656161	1.6 pCi/L	1616 Rockcastle Rd	Start: 11:30 AM 11/17/2025	Type: Multi Story
ID: 3250362	**Margin of Error**	Inez, KY 41224	End: 11:30 AM 11/19/2025	Floor: 1st Floor
	+/- 0.1 pCi/L	Living Room	Duration: 48 Hours	Closed: Yes

Short Term Radon Tests have an estimated margin of error of ±5% when used according to directions.

Quality Assurance (QA): Sample Type: Short Term. Technology: Activated Charcoal. Device Manufacturer: Eurofins Environment Testing Radon, LLC. Model: RD-1. NRPP Approved Device: AC-8202. NRSB Approved Device: 10325. Device Performance Standard: ANSI-AARST MS-PC 2022. Quality Assurance Standard: ANSI-AARST MS-QA 2023. Lab Methodology: EPA-402-R-92-004. Test instructions designed in accordance with ANSI-AARST MAH-2023. Radon level uncertainty is calculated using a 95% confidence level. One sampler can test up to 2,000 ft^2. Sampler Deployed by: Alice Southers. Sampler Retrieved by: Alice Southers.

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Measurement Specialist / Laboratory Director Paul Fletcher **Date** 12/2/2025

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One	Short Term	Less than 2	Retest every 2 years	Short Term
One	(2-7 days)	Between 2 and 4	Consider retesting now	Long Term or Short Term
One		Between 4 and 8	Retest now	Long Term or Short Term
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	(2-7 days)	Between 2 and 4	Consider fixing the building	
		4 or More	Fix the building	
One or more	Long Term	Less than 2	Retest every 2 years	Short Term
	(91-365 days)	Between 2 and 4	Consider fixing the building	
		4 or more	Fix the building	

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Mail in form or order online: aelabs.com/buy
Checkout coupon code: RADON22

Product	Qty.	Price	Subtotal
Economy Short Term Kit (2 - 4 Days, Kit Only)		$14.36	
EZ Ship Short Term Kit (Kit + FedEx Ground Return Label)		$22.46	
Express Short Term Kit (Kit + FedEx 2Day Return Label + Rush Analysis)		$37.76	
Express Twin Pack (2 Short Term Kits + FedEx 2Day Return Label + Rush Analysis)		$53.06	
Economy Long Term Kit (90-365 days, Kit Only)		$27.86	
Economy Radon in Water Kit (Send us a sample of your water, Kit Only)		$27.86	
Mold Detection Kit (Up to 10 samples, $15 analysis fee per sample)		$8.96	

Orders subject to shipping policy and privacy policy, see aelabs.com/pp
Checks can be made to Alpha Energy Labs

Shipping: FREE

Total: _____

ALPHA ENERGY LABORATORIES

2501 Mayes Rd. Suite #100
Carrollton, TX 75006

radon@aelabs.com
Fax: (972) 242-8860

Name _____

Address _____

City **State** **ZIP Code** _____

Phone _____

Email _____

Credit Card or Check No. **Exp. Date** _____

Signature _____

Coupon Expires 3/2/2026

Appendix A, Exhibit G

Endangered Species Act (CEST and EA)

General requirements	ESA Legislation	Regulations
Section 7 of the Endangered Species Act (ESA) mandates that federal agencies ensure that actions that they authorize, fund, or carry out shall not jeopardize the continued existence of federally listed plants and animals or result in the adverse modification or destruction of designated critical habitat. Where their actions may affect resources protected by the ESA, agencies must consult with the Fish and Wildlife Service and/or the National Marine Fisheries Service ("FWS" and "NMFS" or "the Services").	The Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq*.); particularly section 7 (16 USC 1536).	50 CFR Part 402
References		
https://www.hudexchange.info/environmental-review/endangered-species		

1. **Does the project involve any activities that have the potential to affect species or habitats?**

☐No, the project will have No Effect due to the nature of the activities involved in the project.

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documents used to make your determination.*

☐No, the project will have No Effect based on a letter of understanding, memorandum of agreement, programmatic agreement, or checklist provided by local HUD office.

Explain your determination:

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documents used to make your determination.*

☒Yes, the activities involved in the project have the potential to affect species and/or habitats. → *Continue to Question 2.*

2. **Are federally listed species or designated critical habitats present in the action area?**

Obtain a list of protected species from the Services. This information is available on the FWS Website or you may contact your local FWS and/or NMFS offices directly.

☐No, the project will have No Effect due to the absence of federally listed species and designated critical habitat.

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documents used to make your determination. Documentation*

may include letters from the Services, species lists from the Services' websites, surveys or other documents and analysis showing that there are no species in the action area.

☒Yes, there are federally listed species or designated critical habitats present in the action area. → *Continue to Question 3.*

3. What effects, if any, will your project have on federally listed species or designated critical habitat?

☐No Effect: Based on the specifics of both the project and any federally listed species in the action area, you have determined that the project will have absolutely no effect on listed species or critical habitat.

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documents used to make your determination. Documentation should include a species list and explanation of your conclusion, and may require maps, photographs, and surveys as appropriate.*

☒May Affect, Not Likely to Adversely Affect: Any effects that the project may have on federally listed species or critical habitats would be beneficial, discountable, or insignificant.

→ *Continue to Question 4, Informal Consultation.*

☐Likely to Adversely Affect: The project may have negative effects on one or more listed species or critical habitat.

→ *Continue to Question 5, Formal Consultation.*

4. Informal Consultation is required

Section 7 of ESA (16 USC. 1536) mandates consultation to resolve potential impacts to endangered and threatened species and critical habitats. If a HUD-assisted project may affect any federally listed endangered or threatened species or critical habitat, then compliance is required with Section 7. See 50 CFR Part 402 Subpart B Consultation Procedures.

Did the Service(s) concur with the finding that the project is Not Likely to Adversely Affect?

☒Yes, the Service(s) concurred with the finding.

→ *Based on the response, the review is in compliance with this section. Continue to Question 6 and provide the following:*

(1) A biological evaluation or equivalent document
(2) Concurrence(s) from FWS and/or NMFS
(3) Any other documentation of informal consultation

Exception: If finding was made based on procedures provided by a letter of understanding, memorandum of agreement, programmatic agreement, or checklist provided by local HUD office, provide whatever documentation is mandated by that agreement.

☐No, the Service(s) did not concur with the finding. → *Continue to Question 5.*

5. Formal consultation is required

Section 7 of ESA (16 USC 1536) mandates consultation to resolve potential impacts to federally listed endangered and threatened species and critical habitats. If a HUD assisted project may affect any endangered or threatened species or critical habitat, then compliance is required with Section 7. See 50 CFR Part 402 Subpart B Consultation Procedures.

→ *Once consultation is complete, the review is in compliance with this section. Continue to Question 6 and provide the following:*

(1) A biological assessment, evaluation, or equivalent document
(2) Biological opinion(s) issued by FWS and/or NMFS
(3) Any other documentation of formal consultation

6. For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the proposed measures that will be implemented to mitigate for the impact or effect, including the timeline for implementation.

☐Mitigation as follows will be implemented:

☒No mitigation is necessary.

Explain why mitigation will not be made here:

In a letter provided by USFWS's Joshua Lillpop, acting Field Supervisor, KFO concurs that the proposed action "may affect, is not likely to adversely affect" the Gray bat, Indiana bat, and Tricolored bat. Therefore, this project is in compliance with the Endangered Species Act. No formal compliance steps or mitigation is required.

<u>Worksheet Summary</u>

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

US Fish and Wildlife's Information and Planning Consultation (IPaC) provided an endangered species list for the proposed project area, provided as an attachment. This list identified that the following species may occur within the project vicinity:

- The Gray Bat (Endangered)
- The Indiana Bat (Endangered)
- The Tricolored Bat (Proposed Endangered)
- The Monarch Butterfly (Proposed Threatened)

Following consultation with USFWS's Joshua Lillpop, acting Field Supervisor at USFWS, KFO concurs that the proposed action "May Affect, Not Likely to Adversely Affect" the Gray bat, Indiana bat, and Tricolored bat.

Monarch Butterfly

The project will have "No Effect" on the Monarch Butterfly as the project site is a *proposed* critical habitat. The actual site location does not overlap the *critical* habitat.

Tricolored Bat

On September 16th, 2025, the IPaC determination key for the Tricolored bat generated a "Not Likely to Adversely Affect" determination.

Following the "Not Likely to Adversely Affect" determination, the Tricolored bat was excluded from further analysis in the environmental review based on the following considerations:

1. The action area does not intersect Zone 1 of the year-round active area for Tricolored bats.
2. The action does not involve leasing, construction, or operation of wind turbines.
3. The action area is not located within 0.5 miles of a known bat hibernaculum or winter roost/the project area does not contain any winter roosts or caves.
4. Thrive's Eric Mills completed an on-site inspection of the existing structure on December 3rd, 2025. Mr. Mills concluded that no evidence of bat roosting, including guano deposits, was found.

Gray Bat

On September 9th, 2025, the IPaC determination key for the Gray bat generated a "Not Likely to Adversely Affect" determination.

Following the "Not Likely to Adversely Affect" determination, the Gray bat was excluded from further analysis in the environmental review based on the following considerations:

1. The action area does not intersect with Gray bat critical habitat.
2. The proposed project does not involve construction or operation of wind turbines.
3. The proposed project will not involve discharge of sediment into a stream, a new point source discharge, or create a new water-borne contaminant.
4. The project does not include the removal, replacement, or repair of an existing bridge/culvert.
5. Thrive's Eric Mills completed an on-site inspection of the existing structure on December 3rd, 2025. Mr. Mills concluded that no evidence of bat roosting, including guano deposits, was found.

Indiana Bat

On September 16th, 2025, the IPaC determination key for the Indiana bat generated a "May Affect" determination and USFWS was consulted.

Following a review of the project description, Determination Keys letters, maps, and a justification for the "Not Likely to Adversely Affect" determination, USFWS concurred with a "Not Likely to Adversely Affect" determination for the Indiana bat due to the following considerations:

1. No caves, abandoned mine portals, sinkholes, or other underground features are present in the project area.
2. No blasting or other activities will take place that could result in impacts beyond the action area.
3. No bridges and/or culverts were identified on the project area.
4. The forested habitat in the action area was identified as suitable for roosting, foraging, and commuting. This 1-acre habitat will be removed during the unoccupied period for forested habitat.
5. No Primary Maternity Roost Trees (PMRTs) are present within the action area.
6. Thrive's Eric Mills completed an on-site inspection of the existing structure on December 3rd. Mr. Mills concluded that no evidence of bat roosting, including guano deposits, was found.

In a letter provided by USFWS's Joshua Lillpop, acting Field Supervisor, KFO concurs that the proposed action "May Affect, Not Likely to Adversely Affect" the Gray bat, Indiana bat and Tricolored bat. Therefore, this project is in compliance with the Endangered Species Act. No formal compliance steps or mitigation required.

Are formal compliance steps or mitigation required?

☐ Yes

☒ No

USFWS Concurrence Letter

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Kentucky Ecological Services Field Office
330 West Broadway, Suite 265
Frankfort, Kentucky 40601
(502) 695-0468

December 11, 2025

Ruby Smith
Fahe
319 Oak Street
Berea, KY 40403

Subject: FWS 2025-0146004; Thrive Community Coalition Housing Project; Martin County, Kentucky

Dear Ruby Smith:

The U.S. Fish and Wildlife Service's (Service) Kentucky Field Office (KFO) has reviewed the above-referenced action received by our office on September 17, 2025, and additional information received on December 1 and December 4, 2025. The Thrive Community Coalition is proposing a residential development in Martin County, Kentucky. This action will be financed through the Community Development Block Grant - Recovery Housing Program funds issued by the U.S. Department of Housing and Urban Development. The KFO offers the following comments in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Project Description
The Thrive Community Coalition is proposing a residential rehabilitation and construction action at 1616 Rockcastle Road in Inez, Kentucky (37.884028, -82.55250). The proposed development will include the rehabilitation of a single-family property and construction of two 1,000 square-foot single-family housing units. New construction, rehabilitation, and any necessary land clearing will occur on approximately 5.3 acres within the action area. The proposed action will include tree removal, grading, driveway construction, and associated utility installation. The action area consists of existing residential structures, maintained residential lawn, and forested habitat. No stream impacts are proposed. A total of 1.0 acre of tree removal will be required for the action.

Federally Listed Species
On behalf of the Thrive Community Coalition, Fahe has determined that the proposed action has the potential to affect the gray bat (*Myotis grisescens*) and Indiana bat (*Myotis sodalis*).

Gray Bat

Fahe evaluated potential effects to the gray bat from the proposed action and made a "not likely to adversely affect" determination for this species utilizing the Kentucky State-Wide Determination Key on the Service's Information for Planning and Consultation (IPaC) website. The KFO has reviewed the consistency letter generated by the determination key and has no additional comments or concerns regarding this species.

Indiana Bat

No caves, abandoned mine portals, sinkholes, or other underground features that could be used as hibernacula or non-forested roosting habitat by the Indiana bat are present in the action area based on the site visit conducted by the applicant. No blasting or other activities that could result in impacts beyond the action area will occur during construction. Additionally, no bridges or culverts that may provide suitable non-forested roosting habitat were identified in the action area.

The existing house within the action area may provide suitable non-forested roosting habitat; however, based on species records, it is unlikely that Indiana bats would utilize the structure. Therefore, any potential effects to Indiana bats from the rehabilitation work are considered discountable. The applicant has committed to halting rehabilitation activities if bats are observed and will consult with the KFO to identify the species and determine appropriate next steps. As a result, no effects to hibernating or non-tree roosting Indiana bats or their hibernacula or non-forested roosting habitat are anticipated from the proposed action.

The forested habitat in the action area was identified as suitable roosting, foraging, and commuting habitat for the Indiana bat. The proposed action will require the removal of up to 1.0 acre of this habitat. To minimize potential effects to the Indiana bat, removal of this habitat will be restricted to the unoccupied period for forested habitat (October 16 to March 31). Based on the site visit, the applicant determined that no suitable primary maternity roost trees (PMRTs) are present within the action area. As a result, potential effects to the Indiana bat from tree removal are considered insignificant.

Based on the lack of potential hibernacula in the action area, discountable effects from impacts to potential non-forested roosting habitat, insignificant effects from removal of forested roosting, foraging, and commuting habitat, and lack of PMRTs in the action area, the KFO agrees with your determination that the proposed action "may affect, is not likely to adversely affect" the Indiana bat.

Proposed Species

Fahe has determined that the proposed action has the potential to affect the tricolored bat (*Perimyotis subflavus*).

Tricolored Bat

Fahe evaluated potential effects to the tricolored bat from the proposed action and made a "not likely to adversely affect" determination for this species utilizing the Northern Long-Eared Bat and Tricolored Bat Range-Wide Determination Key on the Service's IPaC website. The KFO has reviewed the consistency letter generated by the determination key and has no additional comments or concerns regarding this species.

Summary
The KFO agrees that the proposed action "may affect, is not likely to adversely affect" the gray bat, Indiana bat, and tricolored bat. If the proposed action is subsequently modified or new information indicates that the proposed action may affect listed species or their habitat in a manner not previously considered, additional coordination with our office may be necessary.

We appreciate the opportunity to review the proposed action. If you have any questions, please contact Karah Jaffe of my staff at karah_jaffe@fws.gov.

Sincerely,

Joshua Lillpop
acting Field Supervisor

USFWS List of Threatened and Endangered Species

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 40601-8670
Phone: (502) 695-0467 Fax: (502) 695-1024
Email Address: kentuckyes@fws.gov

In Reply Refer To: 09/08/2025 15:02:52 UTC
Project Code: 2025-0146004
Project Name: Thrive CDBG-RHP Transitional Housing Project

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

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

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 feel free to contact us if you need more current information or assistance regarding the 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 Act, 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 IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act 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 Act 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.

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:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do..

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

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 https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Kentucky Ecological Services Field Office
J C Watts Federal Building, Room 265
330 West Broadway
Frankfort, KY 40601-8670
(502) 695-0467

PROJECT SUMMARY

Project Code: 2025-0146004
Project Name: Thrive CDBG-RHP Transitional Housing Project
Project Type: Residential Construction
Project Description: Thrive Community Coalition (Thrive) received $650,000 of CDBG-RHP funds for the acquisition and rehabilitation of a single-family property and the construction of up to two additional single-family housing units of approximately 1,000 sq. feet. The project site is located at 1616 Rockcastle Road, Inez, Kentucky (37.884028, -82.552500). The existing residence is a 2,348 square-foot, three-bedroom, two-and-a-half-bathroom home with a two-car garage, situated on 253.89 acres. The proposed new construction will add up to two 1,000-square-foot, two- to three-bedroom homes. Project activities for new construction include land clearing, driveway construction, and water line connection. Together, these homes will comprise the Thrive Recover Well Housing Community and will provide safe, affordable housing for up to 14 individuals with unrelated individuals sharing double-occupied bedrooms in a single-family dwelling or with a single family occupying one unit if family reunification is appropriate and possible. Following rehabilitation, the existing structure will be able to house up to six individuals and each of the additional single-family housing units provides housing for up to four individuals or up to four-person families for a maximum of two years. With these additions to Martin County's housing stock, Thrive will be assisting individuals in recovery who are working toward independent, sober living with the option for family reunification.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@37.884880249999995,-82.54445603148247,14z



Counties: Martin County, Kentucky

ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this 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 2 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Gray Bat *Myotis grisescens*	Endangered
No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ The project area includes potential gray bat habitat. Species profile: https://ecos.fws.gov/ecp/species/6329 General project design guidelines: https://ipac.ecosphere.fws.gov/project/2MUZLVJSEVHOZCBA2J725ONHWI/documents/generated/6422.pdf	
Indiana Bat *Myotis sodalis*	Endangered
There is **final** critical habitat for this species. Your location does not overlap the critical habitat. This species only needs to be considered under the following conditions: ▪ The project area includes 'potential' habitat. All activities in this location should consider possible effects to this species. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ipac.ecosphere.fws.gov/project/2MUZLVJSEVHOZCBA2J725ONHWI/documents/generated/6422.pdf	
Tricolored Bat *Perimyotis subflavus*	Proposed Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Proposed Threatened
There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: County of Madison
Name: Ruby Smith
Address: 319 Oak Street
City: Berea
State: KY
Zip: 40403
Email rsmith@fahe.org
Phone: 8592282170

LEAD AGENCY CONTACT INFORMATION

Lead Agency: County of Martin
Name: Eric Mills
Email: eric@thriveserves.com

Tricolored Bat DKey

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 40601-8670
Phone: (502) 695-0467 Fax: (502) 695-1024
Email Address: kentuckyes@fws.gov

In Reply Refer To: 09/16/2025 19:24:44 UTC
Project code: 2025-0146004
Project Name: Thrive CDBG-RHP Transitional Housing Project

Federal Nexus: yes
Federal Action Agency (if applicable): County of Martin

Subject: Technical assistance for 'Thrive CDBG-RHP Transitional Housing Project'

Dear Ruby Smith:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on September 16, 2025, for 'Thrive CDBG-RHP Transitional Housing Project' (here forward, Project). This project has been assigned Project Code 2025-0146004 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements may not be complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key (Dkey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid. Note that conservation measures for northern long-eared bat and tricolored bat may differ. If both bat species are present in the action area and the key suggests more conservative measures for one of the species for your project, the Project may need to apply the most conservative measures in order to avoid adverse effects. If unsure which conservation measures should be applied, please contact the appropriate Ecological Services Field Office***

Determination for the Northern Long-Eared Bat and Tricolored Bat

Based upon your IPaC submission and a standing analysis completed by the Service, your project has reached the following effect determination(s):

Species	Listing Status	Determination
Tricolored Bat (*Perimyotis subflavus*)	Proposed Endangered	NLAA

Federal agencies must consult with U.S. Fish and Wildlife Service under section 7(a)(2) of the Endangered Species Act (ESA) when an action *may affect* a listed species. Tricolored bat is proposed for listing as endangered under the ESA, but not yet listed. For actions that may affect a proposed species, agencies cannot consult, but they can *confer* under the authority of section 7(a)(4) of the ESA. Such conferences can follow the procedures for a consultation and be adopted as such if and when the proposed species is listed. Should the tricolored bat be listed, agencies must review projects that are not yet complete, or projects with ongoing effects within the tricolored bat range that previously received a NE or NLAA determination from the key to confirm that the determination is still accurate.

You have indicated that you must remove a hazard tree in order to prevent imminent loss of human life. Be advised that the Act's implementing regulations (50 CFR part 17) include a take exemption pursuant to the defense of human life (for endangered species, see 50 CFR 17.21(c)(2)): ''any person may take endangered [or threatened] wildlife in defense of his own life or the lives of others.''). The regulations at 50 CFR 17.21(c)(4) require that any person taking, including killing, listed wildlife in defense of human life under this exception must notify our headquarters Office of Law Enforcement, at the address provided at 50 CFR 2.1(b), in writing, within 5 days. In addition, section 11 of the Act enumerates the penalties and enforcement of the Act. In regard to civil penalties, section 11(a)(3) of the Act states, ''Notwithstanding any other provision of this [Act], no civil penalty shall be imposed if it can be shown by a preponderance of the evidence that the defendant committed an act based on a good faith belief that he was acting to protect himself or herself, a member of his or her family, or any other individual from bodily harm, from any endangered or threatened species'' (16 U.S.C. 1540(a)(3)). Section 11(b)(3) of the Act contains similar language in regard to criminal violations (see 16 U.S.C. 1540(b)(3)). If you think incidental take of listed bats was reasonably certain to have occurred as a result of your hazard tree removal, we advise you to contact the Office of Law Enforcement as outlined above. In the future, we recommend planning ahead so that tree removal of potentially hazardous trees does not become an emergency. If you determine an emergency exists, however, and human life is in imminent danger, do not delay action. Also do not delay action if removal of the hazard tree is part of a federal response to a situation involving an act of God, disaster, casualty, national defense or security emergency, etc. - coordinate with the local USFWS field office as soon as practicable after the emergency is under control.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination key for the northern long-eared bat and tricolored bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Gray Bat *Myotis grisescens* Endangered
- Indiana Bat *Myotis sodalis* Endangered
- Monarch Butterfly *Danaus plexippus* Proposed Threatened

You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species listed above. Note that if a new species is listed that may be affected by the identified action before it is complete, additional review is recommended to ensure compliance with the Endangered Species Act.

Next Steps

Consultation with the Service is necessary. The project has a federal nexus (e.g., Federal funds, permit, etc.), but you are not the federal action agency or its designated (in writing) non-federal representative. Therefore, the ESA consultation status is incomplete and no project activities should occur until consultation between the Service and the Federal action agency (or designated non-federal representative), is completed.

As the federal agency or designated non-federal representative deems appropriate, they should submit their determination of effects to the Service by doing the following.

1. Log into IPaC using an agency email account and click on My Projects, click "Search by record locator" to find this Project using **936-169604143**. (Alternatively, the originator of the project in IPaC can add the agency representative to the project by using the Add Member button on the project home page.)
2. Review the answers to the Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key to ensure that they are accurate.
3. Click on Review/ Finalize to convert the ‘not likely to adversely affect’ technical assistance letter to a concurrence letter. Download the concurrence letter for your files if needed.

If no changes occur with the Project or there are no updates on listed species, no further consultation/coordination for this project is required for the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place before project implements any changes which are final or commits additional resources.

If you have any questions regarding this letter or need further assistance, please contact the Kentucky Ecological Services Field Office and reference Project Code 2025-0146004 associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

Thrive CDBG-RHP Transitional Housing Project

2. Description

The following description was provided for the project 'Thrive CDBG-RHP Transitional Housing Project':

> Thrive Community Coalition (Thrive) received $650,000 of CDBG-RHP funds for the acquisition and rehabilitation of a single-family property and the construction of up to two additional single-family housing units of approximately 1,000 sq. feet. The project site is located at 1616 Rockcastle Road, Inez, Kentucky (37.884028, -82.552500). The existing residence is a 2,348 square-foot, three-bedroom, two-and-a-half-bathroom home with a two-car garage, situated on 253.89 acres. The proposed new construction will add up to two 1,000-square-foot, two- to three-bedroom homes. Project activities for new construction include land clearing, driveway construction, and water line connection. Together, these homes will comprise the Thrive Recover Well Housing Community and will provide safe, affordable housing for up to 14 individuals with unrelated individuals sharing double-occupied bedrooms in a single-family dwelling or with a single family occupying one unit if family reunification is appropriate and possible. Following rehabilitation, the existing structure will be able to house up to six individuals and each of the additional single-family housing units provides housing for up to four individuals or up to four-person families for a maximum of two years. With these additions to Martin County’s housing stock, Thrive will be assisting individuals in recovery who are working toward independent, sober living with the option for family reunification.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@37.884880249999995,-82.54445603148247,14z



DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of “may affect, but not likely to adversely affect” for a least one species covered by this determination key.

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of listed bats or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. Is the action area wholly within Zone 2 of the year-round active area for northern long-eared bat and/or tricolored bat?

   Automatically answered
   No

3. Does the action area intersect Zone 1 of the year-round active area for northern long-eared bat and/or tricolored bat?

   Automatically answered
   No

4. Does any component of the action involve leasing, construction or operation of wind turbines? Answer 'yes' if the activities considered are conducted with the intention of gathering survey information to inform the leasing, construction, or operation of wind turbines.

   No

5. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   Note for projects in Pennsylvania: Projects requiring authorization under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act would be considered as having a federal nexus. Since the U.S. Army Corps of Engineers (Corps) has issued the Pennsylvania State Programmatic General Permit (PASPGP), which may be verified by the PA Department of Environmental Protection or certain Conservation Districts, the need to receive a Corps authorization to perform the work under the PASPGP serves as a federal nexus. As such, if proposing to use the PASPGP, you would answer ‘yes’ to this question.

   Yes

6. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

   No

7. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

   Note: This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

   No

8. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

   No

9. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)?

   No

10. [Semantic] Is the action area located within 0.5 miles of a known bat hibernaculum or winter roost? Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your state wildlife agency.

    Automatically answered

    No

11. Does the action area contain any winter roosts or caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating bats?

    No

12. Will the action cause effects to a bridge?

    Note: Covered bridges should be considered as bridges in this question.

    No

13. Will the action result in effects to a culvert or tunnel at any time of year?

    No

14. Are trees present within 1000 feet of the action area?

    Note: If there are trees within the action area that are of a sufficient size to be potential roosts for bats answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    Yes

15. Does the action include the intentional exclusion of bats from a building or building-like structure? **Note:** Exclusion is conducted to deny bats' entry or reentry into a building. To be effective and to avoid harming bats, it should be done according to established standards. If your action includes bat exclusion and you are unsure whether northern long-eared bats or tricolored bats are present, answer "Yes." Answer "No" if there are no signs of bat use in the building/structure. If unsure, contact your local Ecological Services Field Office to help assess whether northern long-eared bats or tricolored bats may be present. Contact a Nuisance Wildlife Control Operator (NWCO) for help in how to exclude bats from a structure safely without causing harm to the bats (to find a NWCO certified in bat standards, search the Internet using the search term "National Wildlife Control Operators Association bats"). Also see the White-Nose Syndrome Response Team's guide for bat control in structures.

    No

16. Does the action involve removal, modification, or maintenance of a human-made building-like structure (barn, house, or other building) **known or suspected to contain roosting bats?**

    No

17. Will the action cause construction of one or more new roads open to the public?

    For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    No

18. Will the action include or cause any construction or other activity that is reasonably certain to increase average night-time traffic permanently or temporarily on one or more existing roads? **Note:** For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.). .

    No

19. Will the action include or cause any construction or other activity that is reasonably certain to increase the number of travel lanes on an existing thoroughfare?

    For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    No

20. Will the proposed Action involve the creation of a new water-borne contaminant source (e.g., leachate pond, pits containing chemicals that are not NSF/ANSI 60 compliant)?

    Note: For information regarding NSF/ANSI 60 please visit https://www.nsf.org/knowledge-library/nsf-ansi-standard-60-drinking-water-treatment-chemicals-health-effects

    No

21. Will the proposed action involve the creation of a new point source discharge from a facility other than a water treatment plant or storm water system?

    No

22. Will the proposed action involve blasting or drilling?

    No

23. Will the action involve military training (e.g., smoke operations, obscurant operations, exploding munitions, artillery fire, range use, helicopter or fixed wing aircraft use at night)?

    No

24. Will the proposed action involve the use of herbicides or pesticides (e.g., fungicides, insecticides, or rodenticides)?

    No

25. Will the action include or cause activities that are reasonably certain to cause chronic or intense nighttime noise (above current levels of ambient noise in the area) in suitable summer habitat for the northern long-eared bat or tricolored bat during the active season?

    Chronic noise is noise that is continuous or occurs repeatedly again and again for a long time. Sources of chronic or intense noise that could cause adverse effects to bats may include, but are not limited to: road traffic; trains; aircraft; industrial activities; gas compressor stations; loud music; crowds; oil and gas extraction; construction; and mining.

    Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    No

26. Does the action include, or is it reasonably certain to cause, the use of permanent or temporary artificial lighting within 1000 feet of suitable northern long-eared bat or tricolored bat roosting habitat?

    Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    No

27. Will the action include tree cutting or other means of knocking down or bringing down trees, tree topping, or tree trimming?

    Yes

28. Is the project related to the production of coal, including projects that support the mining of coal, as well as the production and/or distribution of energy produced from coal?

    No

29. Will the proposed action occur exclusively in an already established and currently maintained utility right-of-way?

    No

30. Does the action include emergency cutting or trimming of hazard trees in order to remove an imminent threat to human safety or property? See hazard tree note at the bottom of the key for text that will be added to response letters

    Note: A "hazard tree" is a tree that is an immediate threat to lives, public health and safety, or improved property.

    Yes

31. Does the project intersect with the 0- 9.9% forest density category?

    Automatically answered
    No

32. Does the project intersect with the 10.0- 19.9% forest density category map?

    Automatically answered
    No

33. Does the project intersect with the 20.0- 29.9% forest density category map?

    Automatically answered
    No

34. Does the project intersect with the 30.0- 100% forest density category map?

    Automatically answered
    Yes

35. Will the action cause trees to be cut, knocked down, or otherwise brought down across an area greater than 100 acres in total extent?

    No

36. Will the proposed action result in the use of prescribed fire?

    Note: If the prescribed fire action includes other activities than application of fire (e.g., tree cutting, fire line preparation) please consider impacts from those activities within the previous representative questions in the key. This set of questions only considers impacts from flame and smoke.

    No

37. Does the action area intersect the tricolored bat species list area?

    Automatically answered
    Yes

38. Is the action area located within 0.5-mile of radius of an entrance/opening to any known tricolored bat hibernacula or winter roost?

    Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your state wildlife agency.

    Automatically answered
    No

39. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats? **Note:** The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

    Automatically answered
    No

40. Is suitable summer habitat for the tricolored bat present within 1000 feet of project activities?
    (If unsure, answer ""Yes."")

    Note: If there are trees within the action area that may provide potential roosts for tricolored bats (e.g., clusters of leaves in live and dead deciduous trees, Spanish moss (Tillandsia usneoides), clusters of dead pine needles of large live pines) answer ""Yes."" For a complete definition of suitable summer habitat for the tricolored bat, please see Appendix A in the Service's Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines.

    Yes

41. Do any of the trees proposed for cutting or other means of knocking down, bringing down, topping, or trimming provide potential roosts for tricolored bats (e.g., clusters of leaves in live and dead deciduous trees, Spanish moss (*Tillandsia usneoides*), clusters of dead pine needles of large live pine trees)?

    Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    Yes

42. Will any tree cutting/trimming or other knocking or bringing down of trees be conducted during the Pup Season for tricolored bat? **Note:** Bat activity periods for your state can be found in Appendix 2 of the Service's Northern Long-eared Bat and Tricolored Bat Voluntary Environmental Review Process for Developmental Projects.

    No

43. Do you have any documents that you want to include with this submission?

    No

PROJECT QUESTIONNAIRE

Enter the extent of the action area (in acres) from which trees will be removed - round up to the nearest tenth of an acre. For this question, include the entire area where tree removal will take place, even if some live or dead trees will be left standing.

0.1

IPAC USER CONTACT INFORMATION

Agency: County of Madison
Name: Ruby Smith
Address: 319 Oak Street
City: Berea
State: KY
Zip: 40403
Email rsmith@fahe.org
Phone: 8592282170

LEAD AGENCY CONTACT INFORMATION

Lead Agency: County of Martin
Name: Eric Mills
Email: eric@thriveserves.com

Gray Bat DKey

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 40601-8670
Phone: (502) 695-0467 Fax: (502) 695-1024
Email Address: kentuckyes@fws.gov

In Reply Refer To: 09/09/2025 18:16:22 UTC
Project code: 2025-0146004
Project Name: Thrive CDBG-RHP Transitional Housing Project

Subject: Technical Assistance letter for the project named 'Thrive CDBG-RHP Transitional Housing Project' for specified threatened and endangered species that may occur in your proposed project location consistent with the Kentucky Determination Key (DKey)

Dear Ruby Smith:

The U.S. Fish and Wildlife Service (Service) received on **September 09, 2025** your effect determination(s) for the 'Thrive CDBG-RHP Transitional Housing Project' (Action) using the Kentucky (DKey) within the Information for Planning and Consultation (IPaC) system. The Service developed this system in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based on your answers and the assistance of the Service's Kentucky DKey, you made the following effect determination(s) for the proposed Action:

Species	Listing Status	Determination
Gray Bat (*Myotis grisescens*)	Endangered	NLAA

Consultation Status

Consultation with the Service is not complete. The above effect determination(s) becomes applicable when the lead federal action agency or designated non-federal representative submits them as a request to the Service to rely on the Kentucky DKey in order to satisfy the agency's consultation requirements for this project.

Please provide this technical assistance letter to the lead federal action agency or its designated non- federal representative with a request for its review, and as the agency deems appropriate, to submit for concurrence verification through the IPaC system. The lead federal action agency or

designated non-federal representative should log into IPaC using their agency email account and click "Search by record locator." They will need to enter the record locator **936-169599487**

If there is no federal action agency for this project, the information in this letter is provided to you as technical assistance in your planning. Species with NLAA determinations are consistent with the programmatic evaluation in the standing analysis of proposed Actions the Kentucky Ecological Services Field Office has identified that typically do not result in significant adverse effects to that species.

The Service recommends that your agency contact the Kentucky Ecological Services Field Office or re-evaluate the Action in IPaC if: 1) the scope, timing, duration, or location of the Action changes, 2) new information reveals the Action may affect listed species or designated critical habitat, or 3) a new species is listed or critical habitat designated. If any of the above conditions occurs, additional consultation with the Kentucky Ecological Services Field Office should take place before project changes are final or resources committed.

The following species and/or critical habitats may also occur in your project area and **are not** covered by this conclusion:

- Indiana Bat *Myotis sodalis* Endangered
- Monarch Butterfly *Danaus plexippus* Proposed Threatened
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

To address effects to other federally listed or proposed species and/or their designated critical habitat, you can request project-specific review by following the instructions in the “Next Steps” section of your species list letter, or you may use another determination key, if available.

Additional Coordination

To request additional technical assistance or consultation, please contact the Kentucky Ecological Services Field Office . When you contact the office, please provide all relevant site-specific information regarding the proposed Action. The Kentucky Ecological Services Field Office will respond within 30 to 60 days of your submittal.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

Thrive CDBG-RHP Transitional Housing Project

2. Description

The following description was provided for the project 'Thrive CDBG-RHP Transitional Housing Project':

> Thrive Community Coalition (Thrive) received $650,000 of CDBG-RHP funds for the acquisition and rehabilitation of a single-family property and the construction of up to two additional single-family housing units of approximately 1,000 sq. feet. The project site is located at 1616 Rockcastle Road, Inez, Kentucky (37.884028, -82.552500). The existing residence is a 2,348 square-foot, three-bedroom, two-and-a-half-bathroom home with a two-car garage, situated on 253.89 acres. The proposed new construction will add up to two 1,000-square-foot, two- to three-bedroom homes. Project activities for new construction include land clearing, driveway construction, and water line connection. Together, these homes will comprise the Thrive Recover Well Housing Community and will provide safe, affordable housing for up to 14 individuals with unrelated individuals sharing double-occupied bedrooms in a single-family dwelling or with a single family occupying one unit if family reunification is appropriate and possible. Following rehabilitation, the existing structure will be able to house up to six individuals and each of the additional single-family housing units provides housing for up to four individuals or up to four-person families for a maximum of two years. With these additions to Martin County’s housing stock, Thrive will be assisting individuals in recovery who are working toward independent, sober living with the option for family reunification.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@37.884880249999995,-82.54445603148247,14z



QUALIFICATION INTERVIEW

1. Will the proposed Action involve Federal funding, permitting, or authorization, or will it be carried out by a Federal Agency?

   Yes

2. Are you the lead Federal Action Agency or designated non-federal representative requesting concurrence on behalf of the lead Federal Action Agency?

   No

3. [Hidden Semantic] Does the action area intersect critical habitat?

   Automatically answered
   No

4. Will the proposed Action involve construction or operation of wind turbines?

   No

5. Will the proposed Action involve blasting (other than a fireworks display)?

   No

6. Will the proposed Action involve a new point source discharge from a facility other than a water treatment plant or storm water system?

   No

7. Will the proposed Action involve the creation of a new water-borne contaminant source (e.g. leachate pond, pits containing chemicals that are not NSF/ANSI 60 compliant)?

   No

8. Will the proposed Action include the removal, replacement, repair and/or maintenance of an existing bridge or culvert?

   No

9. Will the proposed Action involve perennial stream loss that would require an individual permit under 404 of the Clean Water Act?

   No

10. Will the proposed Action involve discharge of sediment into a stream?

    No

11. Does the Action Area contain any caves (including their associated sinkholes, fissures, or other karst features), rockshelters, underground quarries, or abandoned mine portals (including associated underground workings)?

    No

12. [Hidden Semantic] Does the Action Area intersect the Kentucky AOI of the gray bat?

    Automatically answered
    Yes

13. Will the proposed Action involve drilling or boring?

    No

14. Based on the responses you have provided, we believe that the proposed Action is consistent with the type of Actions programmatically evaluated by the Service's Kentucky Field Office under the standing analyses that support this determination key. These Actions typically conclude with "no effect" or "may affect - not likely to adversely affect" determinations for the gray bat.

    What is your effect determination for the **gray bat**?

    Note:*IPaC will not provide a concurrence for "no effect" determinations, because there is no statutory requirement to request concurrence from the Service. IPaC will provide concurrence for "May affect – not likely to adversely affect" determinations. If you choose "May affect – likely to adversely affect" or "Unsure," additional coordination with the Service is recommended.*

    2. "May affect - not likely to adversely affect"

IPAC USER CONTACT INFORMATION

Agency: County of Madison
Name: Ruby Smith
Address: 319 Oak Street
City: Berea
State: KY
Zip: 40403
Email rsmith@fahe.org
Phone: 8592282170

LEAD AGENCY CONTACT INFORMATION

Lead Agency: County of Martin
Name: Eric Mills
Email: eric@thriveserves.com

Indiana Bat DKey

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 40601-8670
Phone: (502) 695-0467 Fax: (502) 695-1024
Email Address: kentuckyes@fws.gov

In Reply Refer To: 09/16/2025 19:32:50 UTC
Project code: 2025-0146004
Project Name: Thrive CDBG-RHP Transitional Housing Project

Subject: Technical Assistance letter for the project named 'Thrive CDBG-RHP Transitional Housing Project' for the endangered Indiana bat and its critical habitat in the proposed project location, pursuant to the Indiana Bat Determination Key (DKey)

Dear Ruby Smith:

The U.S. Fish and Wildlife Service (Service) received on **September 16, 2025** your effect determination(s) for the 'Thrive CDBG-RHP Transitional Housing Project' using the Indiana Bat DKey within the Information for Planning and Consultation (IPaC) system. The Service developed this system in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Based on your answers and the assistance of the Service's Indiana Bat DKey, you made the following effect determination(s) for the proposed Action:

Species	Listing Status	Determination
Indiana Bat (*Myotis sodalis*)	Endangered	May affect

Consultation Status

May Affect Determinations: Species with May Affect determinations are those for which the DKey was unable to provide a conclusion or those for which you were either unsure about the determination or you chose to make a "may affect" determination. If the DKey was unable to provide a conclusion, this does not necessarily mean that the project is likely to adversely affect the species. If you think the project may affect the species or want additional technical assistance, please follow the instructions in the "Additional Coordination" section below. If a federal action agency chooses to make a "no effect" determination for the species, there is no statutory requirement to request concurrence with that determination; however, the federal action agency should document the supporting information for this determination in their files. This documentation would typically demonstrate a lack of suitable habitat within the action area,

show that no impacts to suitable habitat would occur, or provide information that the species is not reasonably certain to occur in the action area even though suitable habitat is present.

In addition to the Indiana bat, the following species and/or critical habitats may also occur in your project area and **are not** covered by this conclusion:

- Gray Bat *Myotis grisescens* Endangered
- Monarch Butterfly *Danaus plexippus* Proposed Threatened
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

To address effects to other federally listed or proposed species and/or their designated critical habitat, you can request project-specific review by following the instructions in the “Next Steps” section of your species list letter, or you may use another determination key, if available.

Additional Coordination

To request additional technical assistance or consultation, please contact the Kentucky Ecological Services Field Office . When you contact the office, please provide all relevant site-specific information regarding the proposed Action. The Kentucky Ecological Services Field Office will respond within 30 to 60 days of your submittal.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

Thrive CDBG-RHP Transitional Housing Project

2. Description

The following description was provided for the project 'Thrive CDBG-RHP Transitional Housing Project':

> Thrive Community Coalition (Thrive) received $650,000 of CDBG-RHP funds for the acquisition and rehabilitation of a single-family property and the construction of up to two additional single-family housing units of approximately 1,000 sq. feet. The project site is located at 1616 Rockcastle Road, Inez, Kentucky (37.884028, -82.552500). The existing residence is a 2,348 square-foot, three-bedroom, two-and-a-half-bathroom home with a two-car garage, situated on 253.89 acres. The proposed new construction will add up to two 1,000-square-foot, two- to three-bedroom homes. Project activities for new construction include land clearing, driveway construction, and water line connection. Together, these homes will comprise the Thrive Recover Well Housing Community and will provide safe, affordable housing for up to 14 individuals with unrelated individuals sharing double-occupied bedrooms in a single-family dwelling or with a single family occupying one unit if family reunification is appropriate and possible. Following rehabilitation, the existing structure will be able to house up to six individuals and each of the additional single-family housing units provides housing for up to four individuals or up to four-person families for a maximum of two years. With these additions to Martin County’s housing stock, Thrive will be assisting individuals in recovery who are working toward independent, sober living with the option for family reunification.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@37.884880249999995,-82.54445603148247,14z



QUALIFICATION INTERVIEW

1. Does the project intersect the Indiana bat species list area?

   Automatically answered
   Yes

2. Will the proposed action involve Federal funding, permitting, or authorization, or will it be carried out by a Federal Agency?

   Yes

3. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) the lead Federal Agency for this action?

   No

4. Are you the lead Federal Action Agency or designated non-federal representative requesting concurrence on behalf of the lead Federal Action Agency?

   No

5. Will the proposed Action involve construction or operation of a wind turbines?

   No

6. Will the proposed Action involve blasting, other than a fireworks display?

   No

7. Will the proposed Action involve a new point source discharge from a facility other than a water treatment plant or storm water system?

   No

8. Will the proposed Action involve the creation of a new water-borne contaminant source (e.g., leachate pond, pits containing chemicals that are not NSF/ANSI 60 compliant)?

   Note: For information regarding NSF/ANSI 60 please visit https://www.nsf.org/knowledge-library/nsf-ansi-standard-60-drinking-water-treatment-chemicals-health-effects

   No

9. Will the proposed Action include the removal, replacement, repair and/or maintenance of an existing bridge?

   No

10. Will the proposed Action involve perennial stream loss that would require an individual permit under 404 of the Clean Water Act?

    No

11. Will the proposed Action involve discharge of sediment into a stream?

    No

12. Does the Action Area contain any caves (including their associated sinkholes, fissures, or other karst features), rockshelters, underground quarries, or abandoned mine portals (including associated underground workings)?

    No

13. Will the proposed project result in the removal of trees?

    Yes

14. Did a **FWS-approved** habitat model applicable to the project site determine the project site to be of low probability for use by Indiana bats?

    Note: This question will most commonly be answered "no." If the answer to this question is "yes", you will be required to upload your **Habitat Model Report**

    No

15. Will the proposed project result in the removal of potentially suitable summer habitat for the Indiana bat?

    Suitable summer habitat for Indiana bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel. This includes forests and woodlots, linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree (live tree and/or snag ≥5 inches diameter at breast height (dbh) (12.7 centimeter) that has exfoliating bark, cracks, crevices, and/or hollows) and are located within 1,000 feet (305 meters) of other forested/wooded habitat. See the Indiana Bat and Northern Long-eared Bat Survey Guidelines for additional description (https://www.fws.gov/library/collections/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines).

    Note: If "no" upload a document with photos representative of the forested habitat to be removed.

    Yes

16. Does the action area intersect known Indiana bat habitat in Kentucky?

    Automatically answered
    No

17. Will the proposed Action remove any suitable (primary or alternate) Indiana bat roost trees? *Suitable Indiana bat roost trees are live trees and/or snags ≥5 inches diameter at breast height (dbh) (12.7 centimeter) that have exfoliating bark, cracks, crevices, and/or hollows.*

    Note: If "no" upload a document with photos representative of the forested habitat to be removed.

    Yes

18. Will the proposed Action remove any suitable primary roost trees?

    Suitable Indiana bat primary maternity roost tree refers to a dead tree or snag that is nine inches or greater in diameter at breast height and has loose or exfoliating bark, cracks, crevices, and/or hollows. A live tree may also qualify if it contains hollows or dead portions with loose or exfoliating bark, cracks, and/or crevices.

    Note: If "no" upload a document with photos representative of the forested habitat to be removed.

    Yes

19. If appropriate, would you like to conduct a voluntary emergence survey to determine if bats are using all of the suitable roost trees proposed for removal? *Emergence surveys require a surveyor to observe each suitable roost tree for the presence of bats. Surveys should follow the protocol in Appendix E in the USFWS' current Indiana Bat and Northern Long-eared Bat Survey Guidelines at https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.*

    Yes

IPAC USER CONTACT INFORMATION

Agency: County of Madison
Name: Ruby Smith
Address: 319 Oak Street
City: Berea
State: KY
Zip: 40403
Email rsmith@fahe.org
Phone: 8592282170

LEAD AGENCY CONTACT INFORMATION

Lead Agency: County of Martin
Name: Eric Mills
Email: eric@thriveserves.com

USFWS Consultation Emails

Outlook

Re: [EXTERNAL] Re: FWS 2025-0146004; Thrive Community Coalition Rehab/New Construction; Martin County, KY

From Jaffe, Karah R <karah_jaffe@fws.gov>
Date Thu 12/4/2025 10:34
To Ruby Smith <RSmith@fahe.org>
Cc Jerri Dyer <JDyer@fahe.org>; Jon Brooks <JBrooks@fahe.org>; Eric Mills <eric@thriveserves.com>

Received! I will update the project information to reflect this and will send our response letter back to you after it's finalized.

Thank you for your coordination,
Karah Jaffe
Biologist
U.S. Fish and Wildlife Service
Ecological Services | Kentucky Field Office
330 W. Broadway St., Suite 265
Frankfort, KY 40601
Phone: +1 502-653-0550

From: Ruby Smith <RSmith@fahe.org>
Sent: Thursday, December 4, 2025 10:21 AM
To: Jaffe, Karah R <karah_jaffe@fws.gov>
Cc: Jerri Dyer <JDyer@fahe.org>; Jon Brooks <JBrooks@fahe.org>; Eric Mills <eric@thriveserves.com>
Subject: Re: [EXTERNAL] Re: FWS 2025-0146004; Thrive Community Coalition Rehab/New Construction; Martin County, KY

Yes, given the additional information, Fahe would like to change our determination to "May Affect, Not Likely to Adversely Affect".

Thank you for your help!

Ruby Smith
Fahe
Project Manager
rsmith@fahe.org
(859) 228-2170



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From: Jaffe, Karah R <karah_jaffe@fws.gov>
Sent: Wednesday, December 3, 2025 12:16
To: Ruby Smith <RSmith@fahe.org>
Cc: Jerri Dyer <JDyer@fahe.org>; Jon Brooks <JBrooks@fahe.org>; Eric Mills <eric@thriveserves.com>
Subject: Re: [EXTERNAL] Re: FWS 2025-0146004; Thrive Community Coalition Rehab/New Construction; Martin County, KY

Thank you for the additional information. Based on the lack of suitable roosting habitat and the commitment to clear during the unoccupied timeframe (October 16-March 31), this project would be consistent with a "May Affect, Not Likely to Adversely Affect" (NLAA) determination for the Indiana bat.

From your initial project submission and the DKey, the current determination is “May Affect.” Would Fahe like to modify the determination for the Indiana bat given the additional information?

Feel free to give a call if you have any questions.

Thank you,
Karah Jaffe
Biologist
U.S. Fish and Wildlife Service
Ecological Services | Kentucky Field Office
330 W. Broadway St., Suite 265
Frankfort, KY 40601
Phone: +1 502-653-0550

From: Ruby Smith <RSmith@fahe.org>
Sent: Monday, December 1, 2025 9:55 AM
To: Jaffe, Karah R <karah_jaffe@fws.gov>
Cc: Jerri Dyer <JDyer@fahe.org>; Jon Brooks <JBrooks@fahe.org>; Eric Mills <eric@thriveserves.com>
Subject: [EXTERNAL] Re: FWS 2025-0146004; Thrive Community Coalition Rehab/New Construction; Martin County, KY

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Hello,

Thank you for your initial review.

I have attached below the responses to your questions:

- How many acres of tree removal are being proposed? **Approximately 1 acre or less**

- When are tree clearing operations proposed to occur? **Tree clearing operations will occur in February - March 2026**

- Of the trees being removed, are there live/dead/dying trees that are larger than or equal to 5 inches in diameter at breast height that also have exfoliating bark, cracks, crevices, and/or hollows? (suitable Indiana bat roost trees).**No**

- Of the trees being removed, are there dead/dying trees that are larger than or equal to 9 inches diameter at breast height that also have exfoliating bark, cracks, crevices, and/or hollows, or limbs that are dead/drying with these described characteristics? (suitable Indiana bat Primary Maternity Roost Trees (PMRTs). **No**

- If there are suitable Indiana bat PMRTs that are proposed for removal, it would be helpful for the next steps if measurements, photographic documentation, and a total number of PMRTs would be submitted to us. **N/A. There are no suitable Indiana bat PMRTs proposed for removal.**

Please let us know if there is any additional information we can provide to assist in your determination.

Best,

Ruby Smith
Fahe
Project Manager
rsmith@fahe.org
(859) 228-2170



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From: Jaffe, Karah R <karah_jaffe@fws.gov>
Sent: Friday, November 14, 2025 13:52
To: Ruby Smith <RSmith@fahe.org>
Cc: Jerri Dyer <JDyer@fahe.org>; Jon Brooks <JBrooks@fahe.org>
Subject: FWS 2025-0146004; Thrive Community Coalition Rehab/New Construction; Martin County, KY

Hello,

The Kentucky Field Office received the above-referenced project on September 17, 2025. Upon review of the submitted documentation and Determination Keys (DKey) through IPaC, we are requesting additional information to complete our evaluation. Below is a summary of our review and specific follow-up requests by species:

Indiana bat
A "May Affect" determination was reach utilizing the Indiana Bat DKey. Species with May Affect determinations are those for which the DKey was unable to provide a conclusion. Based on the responses in the DKey, we are requesting additional information regarding the proposed tree clearing actions. Please provide responses for the following:

- How many acres of tree removal are being proposed? When are tree clearing operations proposed to occur?

- Of the trees being removed, are there live/dead/dying trees that are larger than or equal to 5 inches diameter at breast height that also have exfoliating bark, cracks, crevices, and/or hollows? (suitable Indiana bat roost trees)
- Of the trees being removed, are there dead/dying trees that are larger than or equal to 9 inches diameter at breast height that also have exfoliating bark, cracks, crevices, and/or hollows, or limbs that are dead/drying with these described characteristics? (suitable Indiana bat Primary Maternity Roost Trees (PMRTs))
- If there are suitable Indiana bat PMRTs that are proposed for removal, it would be helpful for the next steps if measurements, photographic documentation, and a total number of PMRTs would be submitted to us.

With the additional information, I can assist the project proponent with evaluating effects and which effect determination would be consistent with the proposed actions and effects.

Gray bat

On behalf of Thrive Community Coalition, Fahe is making a "May Affect, Not Likely to Adversely Affect" determination which was reached utilizing the Kentucky Statewide Determination Key.

Tricolored bat

On behalf of Thrive Community Coalition, Fahe is making a "May Affect, Not Likely to Adversely Affect" determination which was reached utilizing the Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key.

Tricolored bat is proposed for listing as endangered under the ESA, but not yet listed. For actions that may affect a proposed species, agencies cannot consult, but they can confer under the authority of section 7(a) (4) of the ESA. Such conferences can follow the procedures for a consultation and be adopted as such if and when the proposed species is listed. Should the tricolored bat be listed, agencies must review projects that are not yet complete, or projects with ongoing effects within the tricolored bat range that previously received a NLAA determination from the key to confirm that the determination is still accurate.

Please let me know if you have any questions regarding the requested information.

Thank you,

Karah Jaffe
Biologist
U.S. Fish and Wildlife Service
Ecological Services | Kentucky Field Office
330 W. Broadway St., Suite 265
Frankfort, KY 40601
Phone: +1 502-653-0550

Thrive Bat Memo

THRIVE
COMMUNITY COALITION

P.O. Box 2041
Inez, KY 41224

December 03, 2025

RE: Endangered Species Inspection at 1616 Rockcastle Road, Inez, Kentucky 41224

To Whom It May Concern:

On 03, December, 2025, I inspected the existing property located at 1616 Rockcastle Road, Inez, Kentucky 41224. No evidence of bats was found.

For further questions, please do not hesitate to reach out by phone at (859) 312-3742 or email at eric@thriveserves.com

Sincerely,

Eric Mills
CEO
Thrive Community Coalition

Appendix A, Exhibit H

Explosive and Flammable Hazards (CEST and EA)

General requirements	Legislation	Regulation
HUD-assisted projects must meet Acceptable Separation Distance (ASD) requirements to protect them from explosive and flammable hazards.	N/A	24 CFR Part 51 Subpart C
Reference		
https://www.hudexchange.info/environmental-review/explosive-and-flammable-facilities		

1. **Is the proposed HUD-assisted project itself the development of a hazardous facility (a facility that mainly stores, handles or processes flammable or combustible chemicals such as bulk fuel storage facilities and refineries)?**

   ☒ No

   → *Continue to Question 2.*

   ☐ Yes

   Explain:

   → *Go directly to Question 5.*

2. **Does this project include any of the following activities: development, construction, rehabilitation that will increase residential densities, or conversion?**

   ☐ No

   → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

   ☒ Yes

   → *Continue to Question 3.*

3. **Within 1 mile of the project site, are there any current *or planned* stationary aboveground storage containers that are covered by 24 CFR 51C? Containers that are NOT covered under the regulation include:**
   - **Containers 100 gallons or less in capacity, containing common liquid industrial fuels OR**
   - **Containers of liquified petroleum gas (LPG) or propane with a water volume capacity of 1,000 gallons or less that meet the requirements of the 2017 version of National Fire Protection Association (NFPA) Code 58.**

   If all containers within the search area fit the above criteria, answer "no." For any other type of aboveground storage container within the search area that holds one of the

flammable or explosive materials listed in Appendix I of 24 CFR part 51 subpart C, answer "yes."

☐ No

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide all documents used to make your determination.*

☒ Yes

→ *Continue to Question 4.*

4. **Visit HUD's website to identify the appropriate tank or tanks to assess and to calculate the required separation distance using the electronic assessment tool. To document this step in the analysis, please attach the following supporting documents to this screen:**
   - **Map identifying the tank selected for assessment, and showing the distance from the tank to the proposed HUD-assisted project site; and**
   - **Electronic assessment tool calculation of the required separation distance.**

   Based on the analysis, is the proposed HUD-assisted project site located at or beyond the required separation distance from all covered tanks?

   ☒ Yes

   → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

   ☐ No

   → *Go directly to Question 6.*

5. **Is the hazardous facility located at an acceptable separation distance from residences and any other facility or area where people may congregate or be present?**

   Please visit HUD's website for information on calculating Acceptable Separation Distance.

   ☐ Yes

   → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide map(s) showing the location of the project site relative to residences and any other facility or area where people congregate or are present and your separation distance calculations.*

   ☐ No

   → *Provide map(s) showing the location of the project site relative to residences and any other facility or area where people congregate or are present and your separation distance calculations.*
   Continue to Question 6.

6. **For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Mitigation measures may include both natural and manmade barriers, modification of the project design, burial or removal of the hazard, or other engineered solutions. Describe selected mitigation measures, including the timeline for implementation, and attach an implementation plan. If negative effects cannot be mitigated, cancel the project at this location.**
   Note that only licensed professional engineers should design and implement blast barriers. If a barrier will be used or the project will be modified to compensate for an unacceptable separation distance, provide approval from a licensed professional engineer.

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

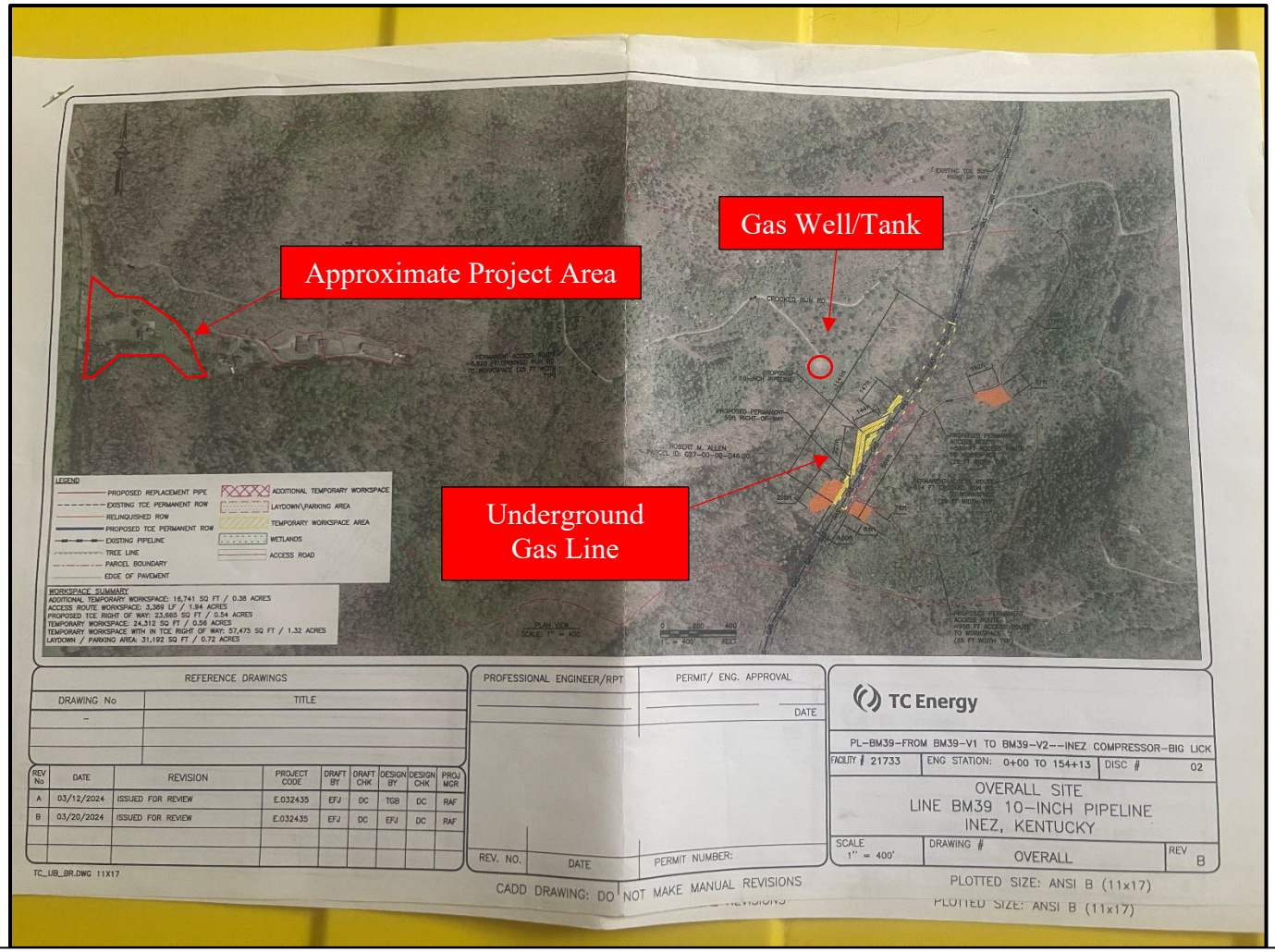
A gas line and gas well with associated tank were identified on the property. The gas line is located underground over 3,000 feet from the proposed project site. A ridge line blocks both the gas line and gas well/tank from the proposed property. The gas well and tank are maintained and leased by Diversified Energy. Joshua Cochran at Diversified Energy provided the necessary information about the tank located at the gas well to facilitate an Acceptable Separation Distance measurement. Utilizing the HUD Acceptable Separation Distance Electronic Assessment Tool, the Acceptable Separation Distance for Thermal Radiation for People (ASDPNPD) was determined to be 120.50 feet, and the ASD for Thermal Radiation for Buildings (ASDBNPD) is 20.15 feet. The nearest point of the project site in which people, or buildings, will be situated is 3202.98 feet from the gas well and associated tank. This distance is well beyond the required separation distance recommended by HUD. This project is in compliance with Explosive and Flammable Facilities requirements. No further action or mitigation is required.

Are formal compliance steps or mitigation required?

☐ Yes

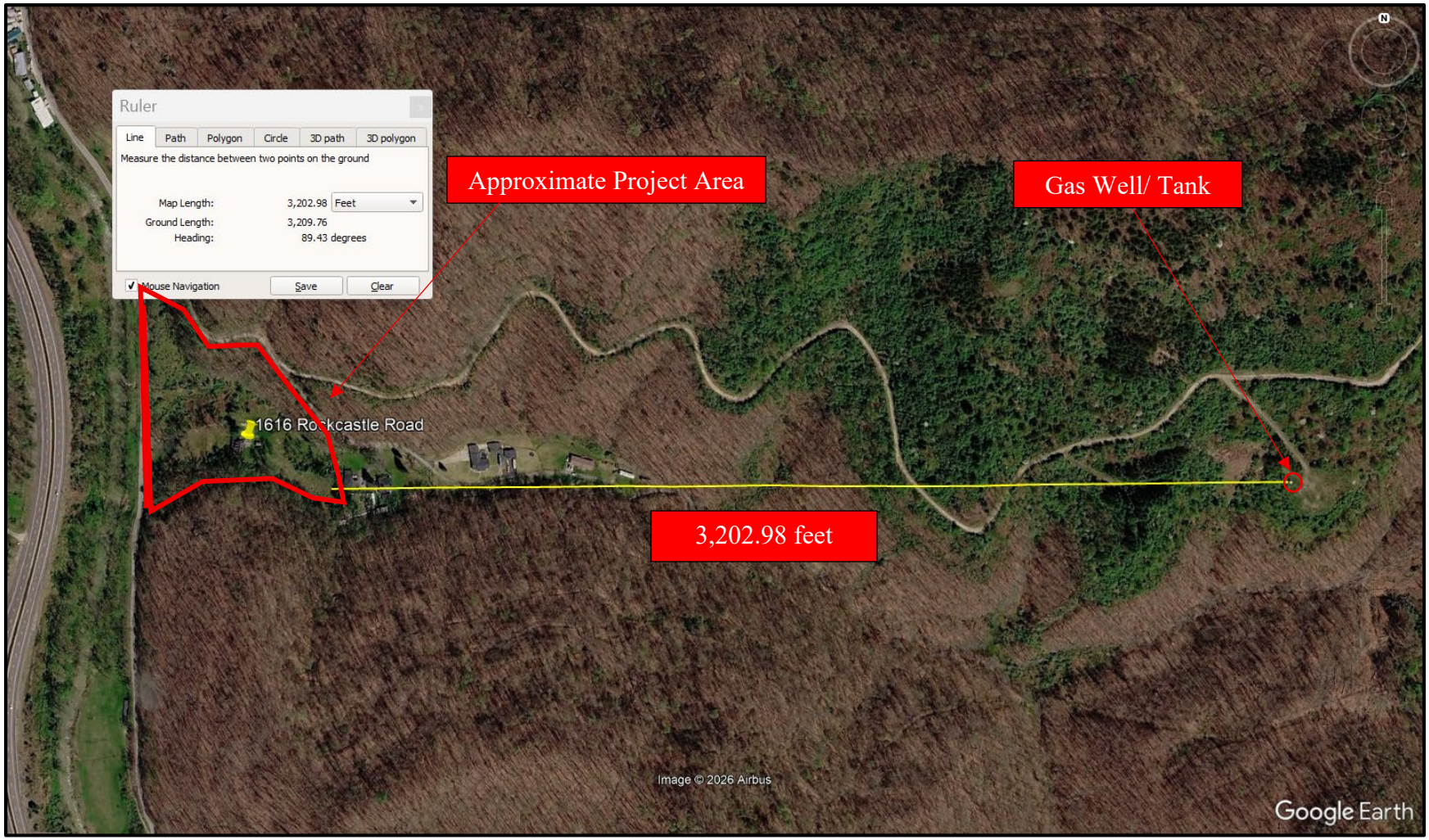
☒ No

Explosive and Flammable Hazards



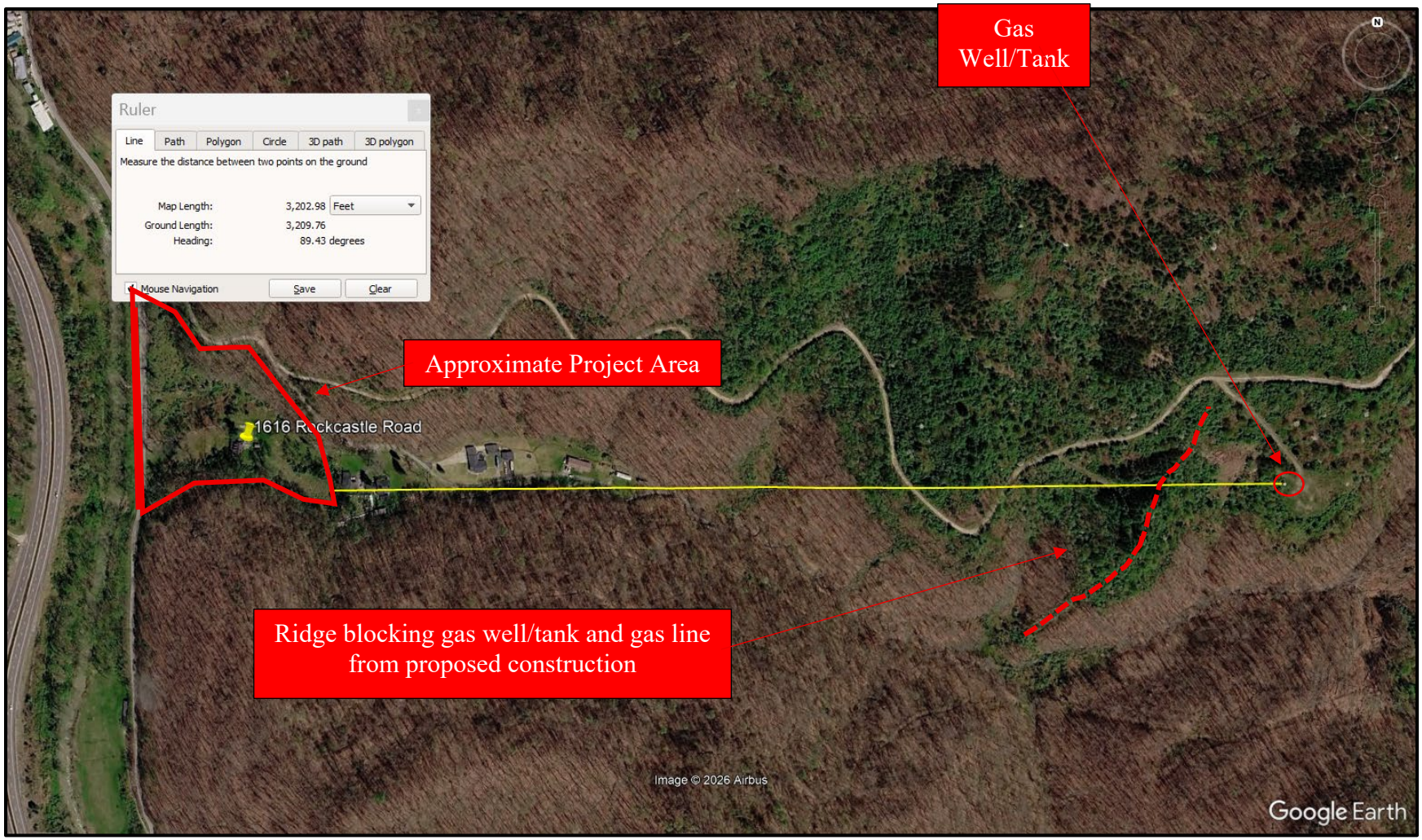
Explosive and Flammable Hazards – A gas well/tank and underground gas line are situated on the property.
Source: Proposed Project Property Owner

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



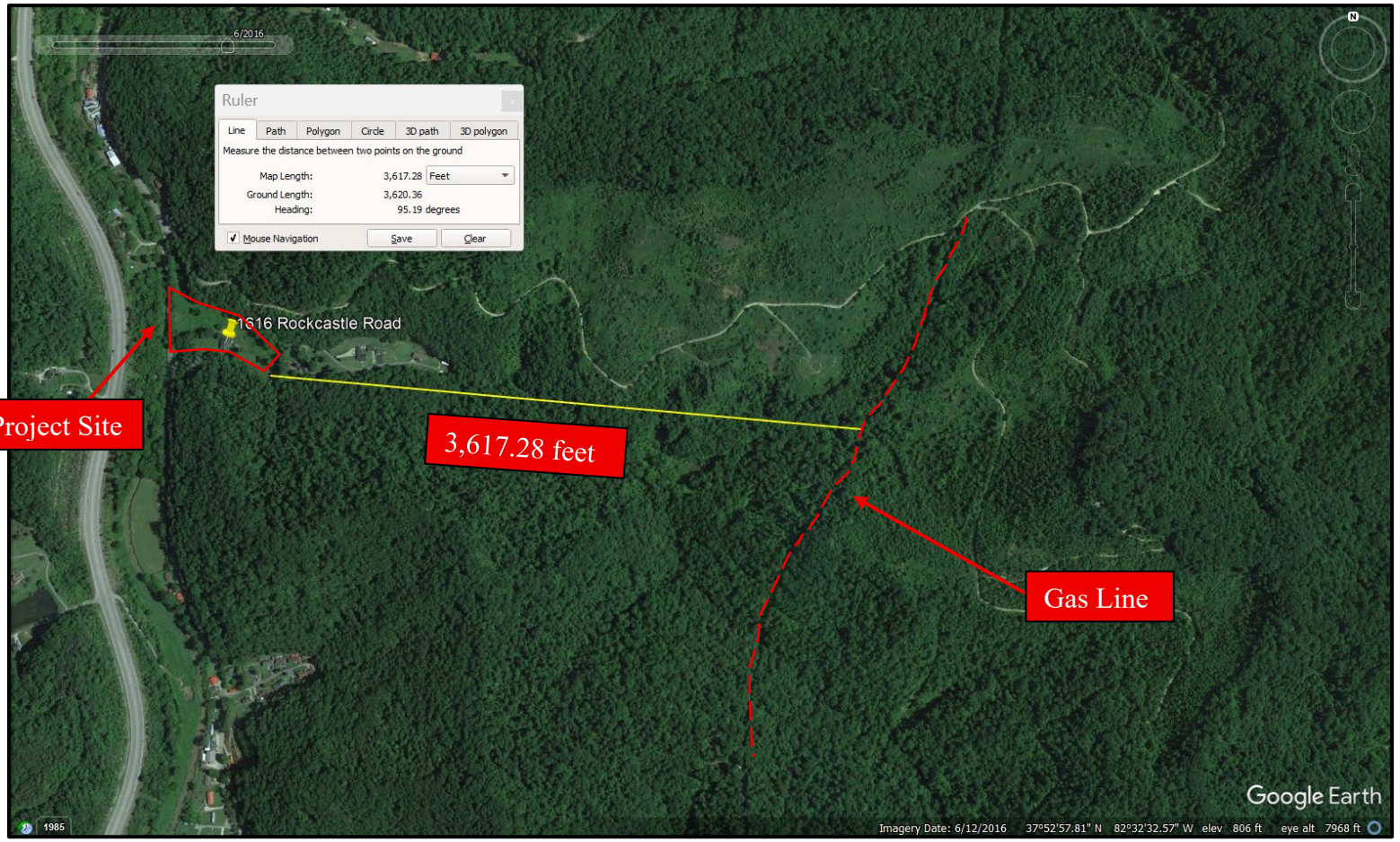
Explosive and Flammable Hazards – The gas well/tank is located 3,202.98 feet from the closest area of proposed ground disturbances. *Source:* Google.com/earth

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



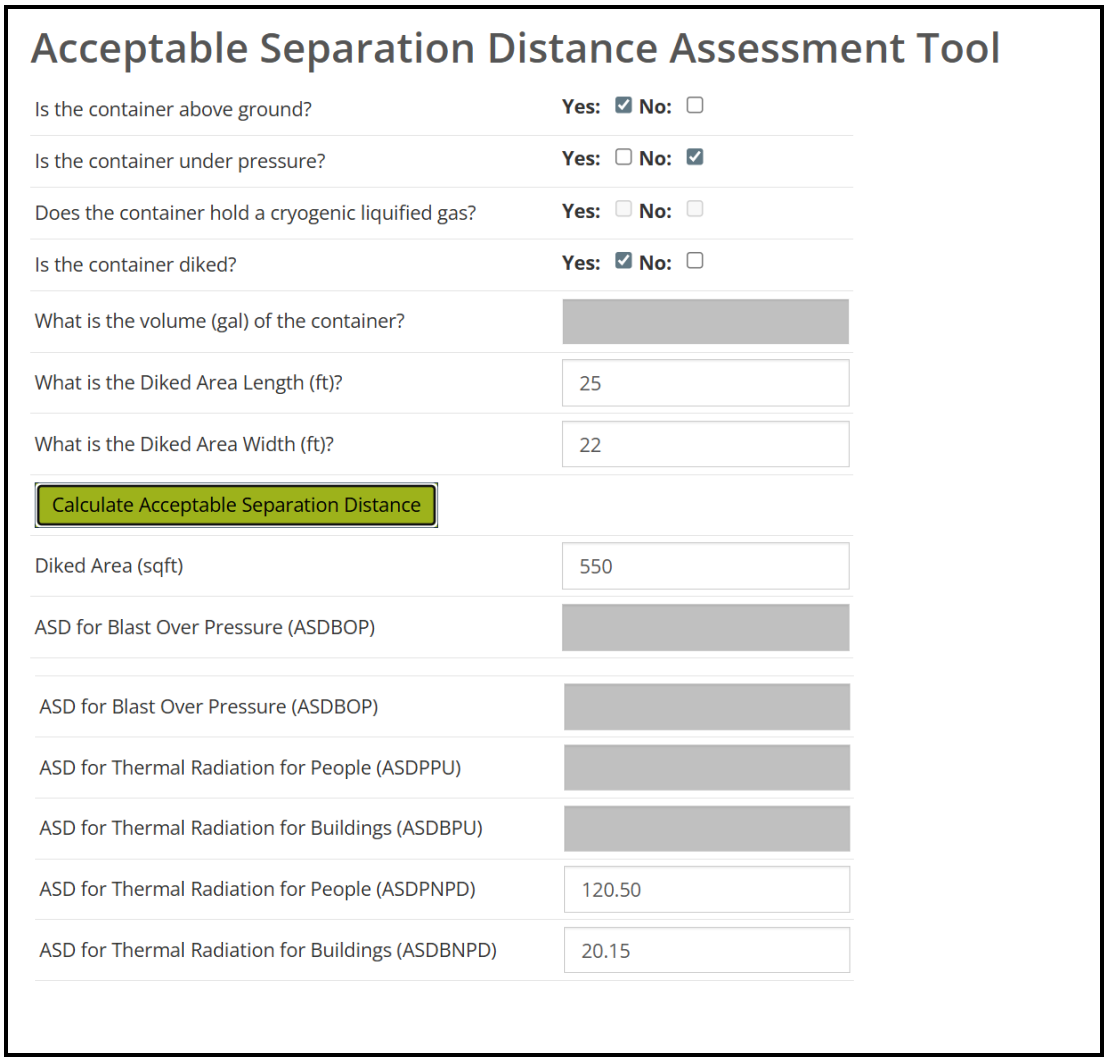
Explosive and Flammable Hazards – A ridge line is blocking the gas line and gas well/tank from the proposed project area.
Source: Google.com/earth

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



Explosive and Flammable Hazards – Distance from closest point of the project site to the gas line, 3,617.28 feet.
Source: Google.com/earth

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



Explosive and Flammable Hazards – Acceptable Separation Distance Measurement
Source: https://www.hudexchange.info/programs/environmental-review/asd-calculator/

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)

Acceptable Separation Distance Calculation

Acceptable Separation Distance (ASD) Electronic Assessment Tool

The Environmental Planning Division (EPD) has developed an electronic-based assessment tool that calculates the Acceptable Separation Distance (ASD) from stationary hazards. The ASD is the distance from above ground stationary containerized hazards of an explosive or fire prone nature, to where a HUD assisted project can be located. The ASD is consistent with the Department's standards of blast overpressure (0.5 psi-buildings) and thermal radiation (450 BTU/ft^2 - hr - people and 10,000 BTU/ft^2 - hr - buildings). Calculation of the ASD is the first step to assess site suitability for proposed HUD-assisted projects near stationary hazards. Additional guidance on ASDs is available in the Department's guidebook "Siting of HUD-Assisted Projects Near Hazardous Facilities" and the regulation 24 CFR Part 51, Subpart C, Sitting of HUD-Assisted Projects Near Hazardous Operations Handling Conventional Fuels or Chemicals of an Explosive or Flammable Nature.

Note: Tool tips, containing field specific information, have been added in this tool and may be accessed by hovering over the ASD result fields with the mouse.

Acceptable Separation Distance Assessment Tool

Is the container above ground?	**Yes:** ☑ **No:** ☐
Is the container under pressure?	**Yes:** ☐ **No:** ☑
Does the container hold a cryogenic liquified gas?	**Yes:** ☐ **No:** ☐
Is the container diked?	**Yes:** ☑ **No:** ☐
What is the volume (gal) of the container?	
What is the Diked Area Length (ft)?	25

Providing Feedback & Corrections

After using the ASD Assessment Tool following the directions in this User Guide, users are encouraged to provide feedback on how the ASD Assessment Tool may be improved. Users are also encouraged to send comments or corrections for the improvement of the tool.

Please send comments or other input using the **Contact Us (https://www.hudexchange.info/contact-us/)** form.

Related Information

- **ASD User Guide (/resource/3839/acceptable-separation-distance-asd-assessment-tool-user-guide/)**
- **ASD Flow Chart (/resource/3840/acceptable-separation-distance-asd-flowchart/)**

What is the Diked Area Width (ft)?	22
Calculate Acceptable Separation Distance	
Diked Area (sqft)	550
ASD for Blast Over Pressure (ASDBOP)	
ASD for Thermal Radiation for People (ASDPPU)	
ASD for Thermal Radiation for Buildings (ASDBPU)	
ASD for Thermal Radiation for People (ASDPNPD)	120.50
ASD for Thermal Radiation for Buildings (ASDBNPD)	20.15

For mitigation options, please click on the following link: Mitigation Options (/resource/3846/acceptable-separation-distance-asd-hazard-mitigation-options/)

Gas Well Correspondence

Outlook

RE: RESPONSE REQUESTED: Gas Well Information in Inez, KY

From Joshua Cochran <jcochran@dgoc.com>
Date Fri 12/5/2025 12:09
To Ruby Smith <RSmith@fahe.org>
Cc Jerri Dyer <JDyer@fahe.org>

25'L X 22'W X 2' Deep

From: Ruby Smith <RSmith@fahe.org>
Sent: Friday, November 21, 2025 8:37 AM
To: Joshua Cochran <jcochran@dgoc.com>
Cc: Jerri Dyer <JDyer@fahe.org>
Subject: Re: RESPONSE REQUESTED: Gas Well Information in Inez, KY

Hello!

Thank you for the information. For the **Diked Area Length/Width**, could you please provide us those numbers in **feet**?

I have attached a photo of the above ground gas well from Google Maps. We are looking to find the measurement of the length and width as shown by the red arrows.

Thank you!

Ruby Smith
Fahe
Project Manager
rsmith@fahe.org
(859) 228-2170

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From: Joshua Cochran <jcochran@dgoc.com>
Sent: Wednesday, November 19, 2025 13:13
To: Ruby Smith <RSmith@fahe.org>
Cc: Jerri Dyer <JDyer@fahe.org>
Subject: RE: RESPONSE REQUESTED: Gas Well Information in Inez, KY

Ruby,

See below:

1. Is the container more than 100 gallons? **Yes**
2. Is the container above ground? **Yes**
3. Is the container under pressure? **No**
4. Does the container hold a cryogenic liquefied gas? **No**
5. Is the container diked**? Yes**
6. What is the volume in gallons of the container? **4200 gallons or 100 bbl**
7. What is the Diked Area Length (ft)? **Diked area is at least 110%+ capacity**
8. What is the Diked Area Width (ft)? **Diked area is at least 110%+ capacity**

Thanks,
Josh C.

From: Ruby Smith <RSmith@fahe.org>
Sent: Wednesday, November 19, 2025 12:22 PM
To: Joshua Cochran <jcochran@dgoc.com>
Cc: Jerri Dyer <JDyer@fahe.org>
Subject: Re: RESPONSE REQUESTED: Gas Well Information in Inez, KY

Hello!

I wanted to check in on the progress of receiving more information about the gas well located at 1616 Rockcastle Road, Inez, Kentucky 41224.

I have reattached my questions below:

1. Is the container more than 100 gallons?
2. Is the container above ground?
3. Is the container under pressure?
4. Does the container hold a cryogenic liquefied gas?
5. Is the container diked?
6. What is the volume in gallons of the container?
7. What is the Diked Area Length (ft)?
8. What is the Diked Area Width (ft)?

Please let me know if there is any further information I can provide.

Thank you!

Best,

Ruby Smith
Fahe
Project Manager
rsmith@fahe.org

(859) 228-2170

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From: Ruby Smith <RSmith@fahe.org>
Sent: Monday, November 10, 2025 9:52
To: jcochran@dgoc.com <jcochran@dgoc.com>
Cc: Jerri Dyer <JDyer@fahe.org>
Subject: Fw: RESPONSE REQUESTED: Gas Well Information in Inez, KY

Hello!

Thank you for giving me a call back. Please find attached the email with the image of the gas well location and our questions about the gas well.

Please let me know if there is any further information I can provide.

Best,

Ruby Smith
Fahe
Project Manager
rsmith@fahe.org
(859) 228-2170

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From: Ruby Smith
Sent: Monday, November 3, 2025 8:58
To: ownerrelations@dgoc.com <ownerrelations@dgoc.com>
Cc: Jerri Dyer <JDyer@fahe.org>
Subject: RESPONSE REQUESTED: Gas Well Information in Inez, KY

Good morning,

I am completing an environmental review for a site located at **1616 Rockcastle Road, Inez, Kentucky 41224.** The property owner informed us that there is a gas well maintained and leased by Diversified Energy. To complete the environmental review, we need to collect the following information about the gas well:

1. Is the container more than 100 gallons?
2. Is the container above ground?
3. Is the container under pressure?
4. Does the container hold a cryogenic liquefied gas?
5. Is the container diked?
6. What is the volume in gallons of the container?
7. What is the Diked Area Length (ft)?
8. What is the Diked Area Width (ft)?

Please find attached a map of the gas well to assist in your response.

Thank you and please let me know if there is any further information I can provide.

Best,

Ruby Smith
Fahe
Project Manager
rsmith@fahe.org
(859) 228-2170



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Appendix A, Exhibit I

Farmlands Protection (CEST and EA)

General requirements	Legislation	Regulation
The Farmland Protection Policy Act (FPPA) discourages federal activities that would convert farmland to nonagricultural purposes.	Farmland Protection Policy Act of 1981 (7 U.S.C. 4201 et seq.)	7 CFR Part 658
Reference		
https://www.hudexchange.info/environmental-review/farmlands-protection		

1. **Does your project include any activities, including new construction, acquisition of undeveloped land or conversion, that could convert agricultural land to a non-agricultural use?**

   ☒Yes → *Continue to Question 2.*

   ☐No

   Explain how you determined that agricultural land would not be converted:

   → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documentation supporting your determination.*

2. **Does "important farmland," including prime farmland, unique farmland, or farmland of statewide or local importance regulated under the Farmland Protection Policy Act, occur on the project site?**

   You may use the links below to determine important farmland occurs on the project site:

   - Utilize USDA Natural Resources Conservation Service's (NRCS) Web Soil Survey http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm
   - Check with your city or county's planning department and ask them to document if the project is on land regulated by the FPPA (zoning important farmland as non-agricultural does not exempt it from FPPA requirements)
   - Contact NRCS at the local USDA service center http://offices.sc.egov.usda.gov/locator/app?agency=nrcs or your NRCS state soil scientist http://soils.usda.gov/contact/state_offices/ for assistance

   ☐No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide any documents used to make your determination.*

   ☒Yes → *Continue to Question 3.*

3. **Consider alternatives to completing the project on important farmland and means of avoiding impacts to important farmland.**
   - Complete form **AD-1006**, "Farmland Conversion Impact Rating" http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1045394.pdf and contact the state soil scientist before sending it to the local NRCS District Conservationist.
     (NOTE: for corridor type projects, use instead form **NRCS-CPA-106**, "Farmland Conversion Impact Rating for Corridor Type Projects: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1045395.pdf.)
   - Work with NRCS to minimize the impact of the project on the protected farmland. When you have finished with your analysis, return a copy of form AD-1006 (or form NRCS-CPA-106 if applicable) to the USDA-NRCS State Soil Scientist or his/her designee informing them of your determination.

Document your conclusion:

☐Project will proceed with mitigation.

Explain in detail the proposed measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide form AD-1006 and all other documents used to make your determination.*

☒Project will proceed without mitigation.

Explain why mitigation will not be made here:

Following consultation with NRCS and the completion of the AD-1006, it was determined that the site does not meet the threshold to require mitigation. As seen on the completed AD-1006, attached below, Total Site Assessment points are 57 (Part V Relative Value of Farmland = 1, completed by NRCS's Perri Brown, and Part VI Total Site Assessment points = 56, completed by Fahe), which does not exceed the 160-point threshold

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide form AD-1006 and all other documents used to make your determination.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

On behalf of DLG, Fahe completed a USDA Web Soil Survey and determined that a portion of the site was classified as "prime farmland if protected from flooding or not frequently flooded during the growing season." The total property site is 253.89 acres and the prime farmland (Gr) accounts for 1.5 acres of the AOI. On September 9, 2025, Fahe initiated consultation with the USDA's Natural Resources Conservation Service (NRCS), providing USDA's Perri Brown with a partially completed AD-1006 form and the site's Web Soil Survey results. On September 12, 2025, Brown provided Fahe with a completed AD-1006 and confirmed the presence of important farmland. The AD-1006 indicated that the total site assessment score was Total Site Assessment points are 57 (Part V Relative Value of Farmland = 1, completed by NRCS's Perri Brown, and Part VI Total Site Assessment points = 56, completed by Fahe), well below the 160-point threshold that would require mitigation. Based on these findings, the project is in compliance with the Farmland Protection Policy Act and no mitigation measures are required.

Are formal compliance steps or mitigation required?

☐ Yes

☒ No

USDA Correspondence
&
Complete AD-1006

USDA Natural Resources Conservation Service
U.S. DEPARTMENT OF AGRICULTURE

Owensboro Service Center
3100 Alvey Park Drive W
Owensboro, KY 42303
PHONE: 270-684-9286

Ruby Smith
Fahe

September 12, 2025

RE: Thrive Community Coalition

Dear Ruby,

Enclosed is the Farmland Protection Policy Act (FPPA) site assessment for the proposed project in Martin County, Kentucky. The Natural Resources Conservation Service (NRCS) is mandated to provide information on the soils and/or impact to farmland according to the Farmland Protection Policy Act (P.L. 97-98) for projects that will be utilizing federal monies. Based on the information contained in your request, it was determined that the proposed project has the potential to impact Prime and/or Statewide Important Farmland.

The proposed project site has a relative LESA value of 1, as based on a scale of 0 to 100 points (see AD-1006). The percentage of farmland in Martin County having the same or higher value is 0.94%. The percentage of Martin County farmland to be converted as a result of the proposed action is 0.11%.

Please do not hesitate to contact me if I may be of additional assistance.

Perri P. Brown

Perri P. Brown
Resource Soil Scientist
Perri.Brown@usda.gov

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U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 09/08/2025
Name of Project Thrive CDBG-RHP Transitional Housing I	Federal Agency Involved HUD
Proposed Land Use Multi-Family Development	County and State Martin County, Kentucky
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 9/12/2025 / Person Completing Form: Perri P. Brown

Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑	NO ☐	Acres Irrigated	Average Farm Size
			--	30 acres

Major Crop(s)	Farmable Land In Govt. Jurisdiction	Amount of Farmland As Defined in FPPA
Corn	Acres: 1.31 % 1,854 acres	Acres: 0.94 % 1,323 acres

Name of Land Evaluation System Used	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS
Martin Co. LESA		9/9/2025

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	1.5			
B. Total Acres To Be Converted Indirectly	0			
C. Total Acres In Site	253.89			
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	1.50			
B. Total Acres Statewide Important or Local Important Farmland	0.00			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.11			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	0.94			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	1			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	15			
2. Perimeter In Non-urban Use	(10)	10			
3. Percent Of Site Being Farmed	(20)	0			
4. Protection Provided By State and Local Government	(20)	0			
5. Distance From Urban Built-up Area	(15)	8			
6. Distance To Urban Support Services	(15)	10			
7. Size Of Present Farm Unit Compared To Average	(10)	0			
8. Creation Of Non-farmable Farmland	(10)	10			
9. Availability Of Farm Support Services	(5)	3			
10. On-Farm Investments	(20)	0			
11. Effects Of Conversion On Farm Support Services	(10)	0			
12. Compatibility With Existing Agricultural Use	(10)	0			
TOTAL SITE ASSESSMENT POINTS	160	56	0	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	1	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	56	0	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	57	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☐

Reason For Selection:

Name of Federal agency representative completing this form:	Date:

(See Instructions on reverse side) **Form AD-1006 (03-02)**

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.

Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)

Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.

Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.

Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.

Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \text{ X } 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

Outlook

RE: USDA Consultation - Thrive Community Coalition

From Brown, Perri - FPAC-NRCS, KY <Perri.Brown@usda.gov>
Date Fri 9/12/2025 16:17
To Ruby Smith <RSmith@fahe.org>
Cc Jerri Dyer <JDyer@fahe.org>; Jon Brooks <JBrooks@fahe.org>

2 attachments (395 KB)
Thrive Community Coalition.pdf; Thrive Transitional Housing - Farmlands - AD1006.pdf;

Ruby,

Please find the attached documents in response to your request.

Thanks,

Perri P. Brown
Resource Soil Scientist
FPAC-NRCS | Soils

USDA U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service
3100 Alvey Park Drive West, Owensboro, KY, 42303
p: (270) 685-1707 ext. 131 | c: (270) 889-3304

From: Ruby Smith <RSmith@fahe.org>
Sent: Tuesday, September 9, 2025 7:38 AM
To: Brown, Perri - FPAC-NRCS, KY <Perri.Brown@usda.gov>
Cc: Jerri Dyer <JDyer@fahe.org>; Jon Brooks <JBrooks@fahe.org>
Subject: USDA Consultation - Thrive Community Coalition

Good morning,

On behalf of Thrive Community Coalition, Fahe is preparing and Environmental Assessment for a CDBG-RHP Rehabilitaion/New Construction project located in Martin County, KY.

After completing a Web Soil Survey, it was determined that a portion of the site was classified as "prime farmland if protected from flooding or not frequently flooded during the growing season." The total property site is 253.89 acres and the prime farmland (Gr) accounts for 1.5 acres of the AOI.

Please find attached the Web Soil Survey, AD-1006, and the project description is below.

> **Project Description**

> Thrive Community Coalition (Thrive) received $650,000 of CDBG-RHP funds for the acquisition and rehabilitation of a single-family property and the construction of up to two additional single-family housing units of approximately 1,000 sq. feet. The project site is located at 1616 Rockcastle Road, Inez, Kentucky (37.884028, -82.552500). The existing residence is a 2,348 square-foot, three-bedroom, two-and-a-half-bathroom home with a two-car garage, situated on 253.89 acres. The proposed new construction will add up to two 1,000-square-foot, two- to three-bedroom homes. Project activities for new construction include land clearing, driveway construction, and water line connection. Together, these homes will comprise the Thrive Recover Well Housing Community and will provide safe, affordable housing for up to 14 individuals with unrelated individuals sharing double-occupied bedrooms in a single-family dwelling or with a single family occupying one unit if family reunification is appropriate and possible. Following rehabilitation, the existing structure will be able to house up to six individuals and each of the additional single-family housing units provides housing for up to four individuals or up to four-person families for a maximum of two years. With these additions to Martin County's housing stock, Thrive will be assisting individuals in recovery who are working toward independent, sober living with the option for family reunification.

Please let us know what is needed to proceed and/or if the land is able to be converted.

Thank you!

Best,

Ruby Smith
Fahe
Project Manager
rsmith@fahe.org
(859) 228-2170



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USDA Web Soil Survey

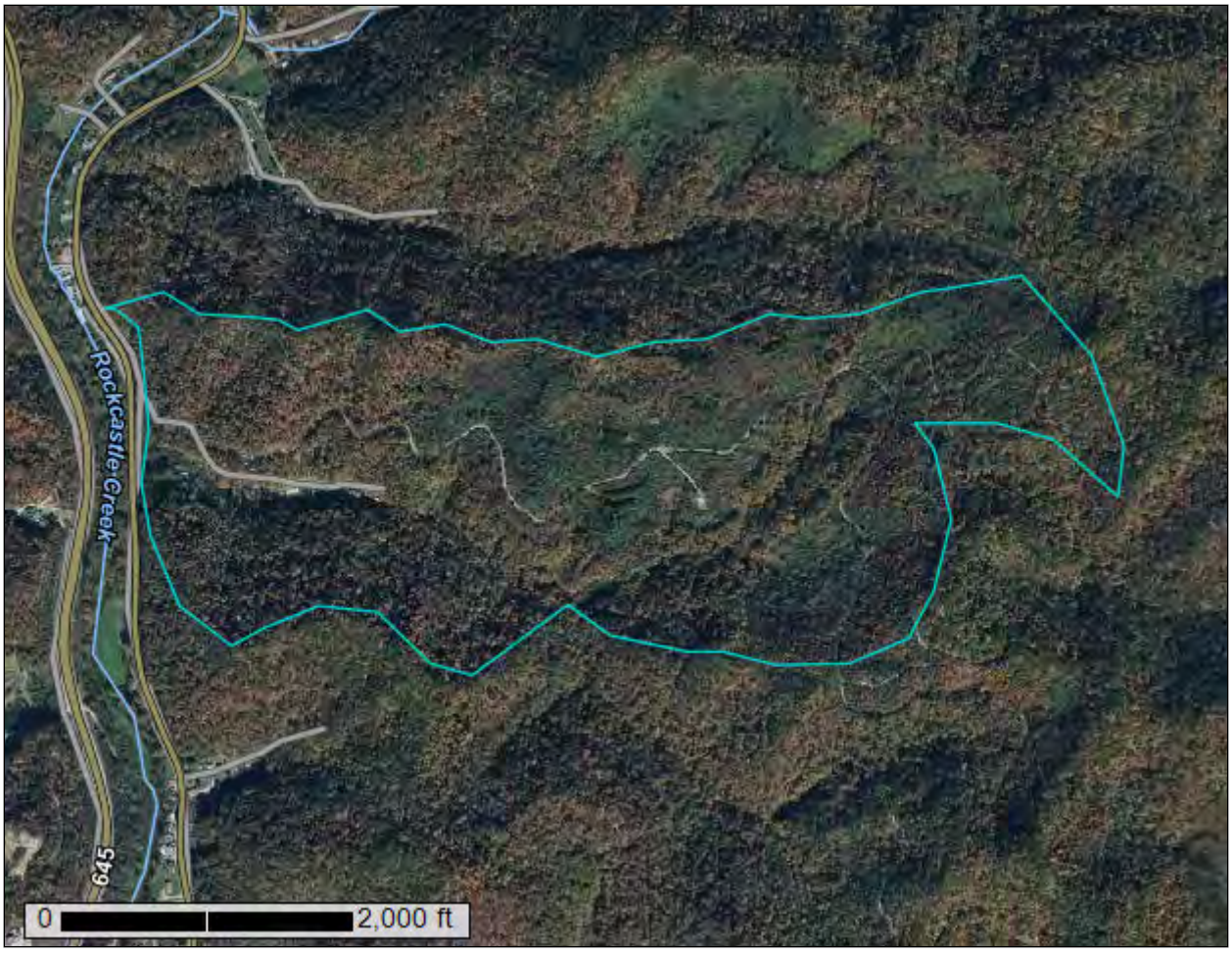
United States Department of Agriculture

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 Lawrence and Martin Counties, Kentucky



September 2, 2025

Preface

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 (https://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).

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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alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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How Soil Surveys Are Made

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.

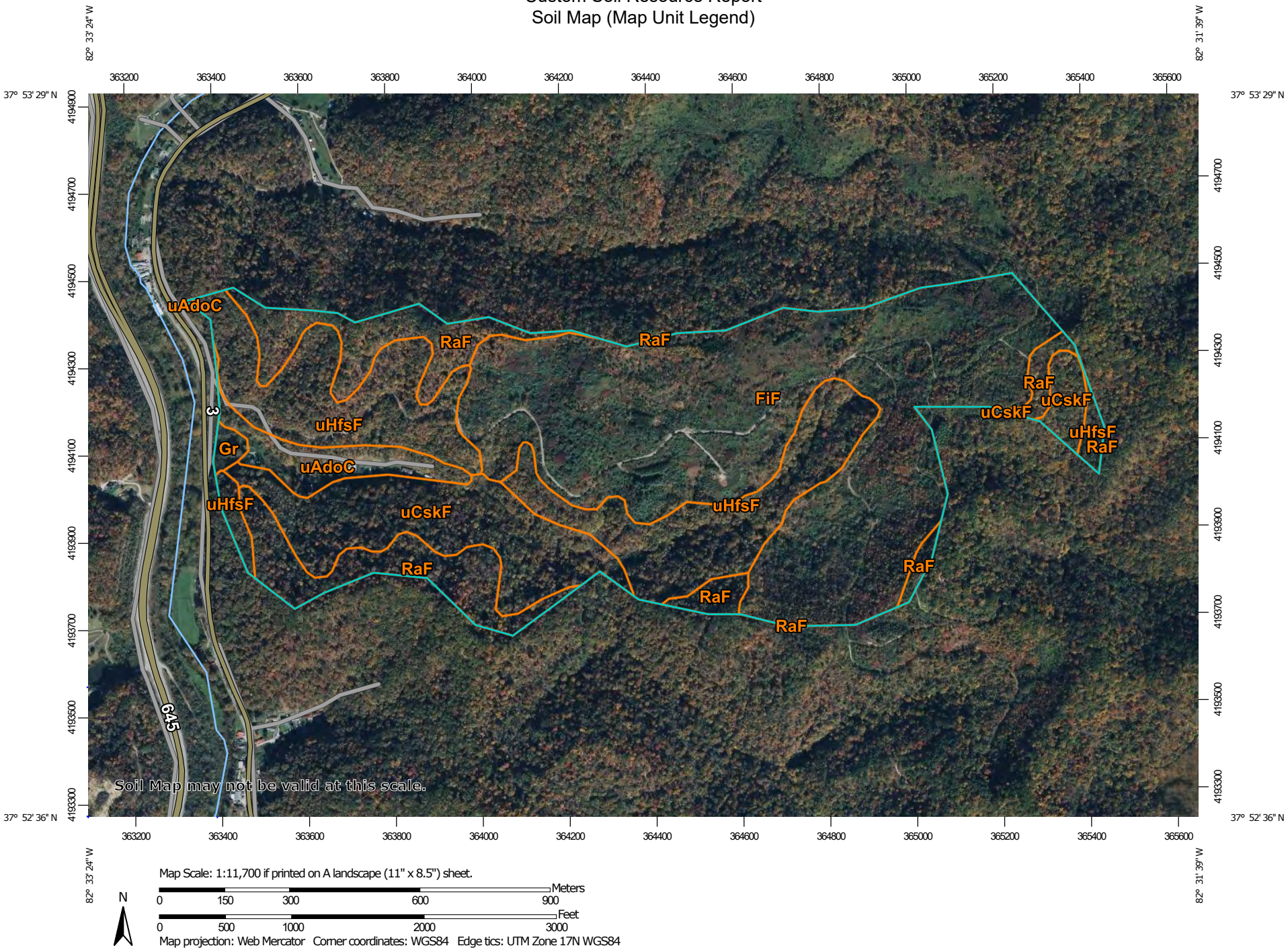
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree 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

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.


82° 33' 24" W
82° 31' 39" W
37° 53' 29" N
37° 52' 36" N
363200
363400
363600
363800
364000
364200
364400
364600
364800
365000
365200
365400
365600
4194900
4194700
4194500
4194300
4194100
4193900
4193700
4193500
4193300
uAdoC
RaF
RaF
FiF
RaF
uCskF
uCskF
uHfsF
RaF
uHfsF
Gr
uAdoC
uHfsF
uCskF
uHfsF
RaF
RaF
RaF
RaF
3
645
Soil Map may not be valid at this scale.
Map Scale: 1:11,700 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 150 300 600 900
Feet
0 500 1000 2000 3000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
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: Lawrence and Martin Counties, Kentucky
Survey Area Data: Version 20, Aug 30, 2024

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

Date(s) aerial images were photographed: Oct 14, 2020—Dec 10, 2020

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.

Map Unit Legend (Map Unit Legend)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
FiF	Fiveblock, Fairpoint, and Kaymine soils, 30 to 80 percent slopes, stony	138.7	47.4%
Gr	Grigsby fine sandy loam, 0 to 3 percent slopes, frequently flooded	1.5	0.5%
RaF	Rayne-Marrowbone-Dekalb complex, 20 to 80 percent slopes, very rocky	39.6	13.5%
uAdoC	Anthroportic Udorthents-Urban land complex, 0 to 15 percent slopes	10.7	3.6%
uCskF	Cloverlick-Shelocta-Kimper complex, 20 to 80 percent slopes, very stony	37.6	12.8%
uHfsF	Handshoe-Fedscreek-Shelocta complex, 30 to 80 percent slopes, very stony	64.7	22.1%
Totals for Area of Interest		**292.7**	**100.0%**

Map Unit Descriptions (Map Unit Legend)

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.

Lawrence and Martin Counties, Kentucky

FiF—Fiveblock, Fairpoint, and Kaymine soils, 30 to 80 percent slopes, stony

Map Unit Setting

National map unit symbol: lh82
Elevation: 560 to 1,580 feet
Mean annual precipitation: 37 to 48 inches
Mean annual air temperature: 39 to 67 degrees F
Frost-free period: 135 to 169 days
Farmland classification: Not prime farmland

Map Unit Composition

Fiveblock, unstable fill, and similar soils: 32 percent
Fairpoint, unstable fill, and similar soils: 30 percent
Kaymine, unstable fill, and similar soils: 28 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fiveblock, Unstable Fill

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy-skeletal mine spoil or earthy fill derived from sedimentary rock

Typical profile

H1 - 0 to 4 inches: channery sandy loam
H2 - 4 to 80 inches: extremely flaggy sandy loam

Properties and qualities

Slope: 30 to 80 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Fairpoint, Unstable Fill

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy-skeletal mine spoil or earthy fill derived from sedimentary rock

Typical profile

H1 - 0 to 7 inches: channery silt loam
H2 - 7 to 80 inches: extremely flaggy silt loam

Properties and qualities

Slope: 30 to 80 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Kaymine, Unstable Fill

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy-skeletal mine spoil or earthy fill derived from sedimentary rock

Typical profile

H1 - 0 to 6 inches: very channery loam
H2 - 6 to 80 inches: extremely flaggy loam

Properties and qualities

Slope: 30 to 80 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Blairton

Percent of map unit: 1 percent
Hydric soil rating: No

Cloverlick

Percent of map unit: 1 percent
Hydric soil rating: No

Cruze

Percent of map unit: 1 percent
Hydric soil rating: No

Dekalb

Percent of map unit: 1 percent
Hydric soil rating: No

Fedscreek

Percent of map unit: 1 percent
Hydric soil rating: No

Hazleton

Percent of map unit: 1 percent
Hydric soil rating: No

Marrowbone

Percent of map unit: 1 percent
Hydric soil rating: No

Other soils

Percent of map unit: 1 percent
Hydric soil rating: No

Shelocta

Percent of map unit: 1 percent
Hydric soil rating: No

Rayne

Percent of map unit: 1 percent
Hydric soil rating: No

Gr—Grigsby fine sandy loam, 0 to 3 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 2tqhr
Elevation: 600 to 1,800 feet
Mean annual precipitation: 28 to 55 inches
Mean annual air temperature: 39 to 68 degrees F
Frost-free period: 128 to 220 days
Farmland classification: Prime farmland if protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Grigsby, frequently flooded, and similar soils: 70 percent
Minor components: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grigsby, Frequently Flooded

Setting

Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-loamy alluvium derived from sedimentary rock

Typical profile

Ap - 0 to 10 inches: fine sandy loam
Bw1 - 10 to 23 inches: fine sandy loam
Bw2 - 23 to 38 inches: fine sandy loam
Bw3 - 38 to 58 inches: fine sandy loam
C - 58 to 80 inches: loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 42 to 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: A
Ecological site: F125XY004WV - Floodplain Alluvium
Hydric soil rating: No

Minor Components

Yeager, frequently flooded
Percent of map unit: 9 percent
Landform: Flood plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Craigsville, frequently flooded
Percent of map unit: 8 percent
Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Rowdy, occasionally flooded
Percent of map unit: 7 percent
Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Combs, occasionally flooded
Percent of map unit: 3 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Holly, frequently flooded
Percent of map unit: 2 percent
Landform: Flood plains
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Udorthents, unstable fill
Percent of map unit: 1 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

RaF—Rayne-Marrowbone-Dekalb complex, 20 to 80 percent slopes, very rocky

Map Unit Setting

National map unit symbol: lh8b
Elevation: 570 to 1,620 feet
Mean annual precipitation: 37 to 48 inches
Mean annual air temperature: 39 to 67 degrees F
Frost-free period: 135 to 169 days
Farmland classification: Not prime farmland

Map Unit Composition

Rayne and similar soils: 36 percent
Marrowbone and similar soils: 34 percent
Dekalb and similar soils: 20 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rayne

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Fine-silty residuum weathered from shale and siltstone

Typical profile

H1 - 0 to 3 inches: loam
H2 - 3 to 37 inches: silty clay loam
H3 - 37 to 49 inches: very channery silty clay loam
Cr - 49 to 59 inches: weathered bedrock

Properties and qualities

Slope: 20 to 65 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C

Ecological site: F125XY003WV - Interbedded Sedimentary Uplands
Hydric soil rating: No

Description of Marrowbone

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy residuum weathered from sandstone and siltstone

Typical profile

H1 - 0 to 4 inches: sandy loam
H2 - 4 to 35 inches: channery sandy loam
Cr - 35 to 40 inches: weathered bedrock
R - 40 to 50 inches: unweathered bedrock

Properties and qualities

Slope: 20 to 80 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: F125XY001WV - Sandstone Residuum
Hydric soil rating: No

Description of Dekalb

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy-skeletal residuum weathered from sandstone and shale

Typical profile

H1 - 0 to 4 inches: very channery sandy loam
H2 - 4 to 24 inches: extremely channery sandy loam
R - 24 to 34 inches: unweathered bedrock

Properties and qualities

Slope: 20 to 80 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained

Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.2 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: F125XY001WV - Sandstone Residuum
Hydric soil rating: No

Minor Components

Rock outcrop
Percent of map unit: 5 percent
Hydric soil rating: No

Blairton
Percent of map unit: 1 percent
Hydric soil rating: No

Cruze
Percent of map unit: 1 percent
Hydric soil rating: No

Other soils
Percent of map unit: 1 percent
Hydric soil rating: No

Rarden
Percent of map unit: 1 percent
Hydric soil rating: No

Upshur
Percent of map unit: 1 percent
Hydric soil rating: No

uAdoC—Anthroportic Udorthents-Urban land complex, 0 to 15 percent slopes

Map Unit Setting
National map unit symbol: 2x5hs
Elevation: 550 to 1,360 feet
Mean annual precipitation: 28 to 54 inches
Mean annual air temperature: 42 to 68 degrees F
Frost-free period: 140 to 222 days

Farmland classification: Not prime farmland

Map Unit Composition

Anthroportic udorthents, unstable fill, and similar soils: 55 percent
Urban land: 20 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Anthroportic Udorthents, Unstable Fill

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy-skeletal mine spoil or earthy fill derived from interbedded sedimentary rock

Typical profile

^Ap - 0 to 5 inches: very channery silt loam
^C1 - 5 to 15 inches: very channery silt loam
^C2 - 15 to 24 inches: very channery silt loam
^C3 - 24 to 38 inches: extremely parachannery silt loam
^C4 - 38 to 55 inches: extremely parachannery silt loam
Cr - 55 to 65 inches: bedrock

Properties and qualities

Slope: 0 to 15 percent
Depth to restrictive feature: 45 to 60 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

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

Description of Urban Land

Setting

Landform: Hillslopes
Landform position (three-dimensional): Base slope

Interpretive groups

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

Minor Components

Shelocta

Percent of map unit: 9 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Clifftop

Percent of map unit: 8 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Nose slope, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Handshoe

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Kimper

Percent of map unit: 3 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

uCskF—Cloverlick-Shelocta-Kimper complex, 20 to 80 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2x5jg
Elevation: 700 to 2,000 feet
Mean annual precipitation: 28 to 52 inches
Mean annual air temperature: 46 to 70 degrees F
Frost-free period: 135 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition

Cloverlick, very stony, and similar soils: 30 percent
Shelocta, very stony, and similar soils: 25 percent
Kimper, very stony, and similar soils: 20 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cloverlick, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loamy-skeletal colluvium derived from sandstone and shale

Typical profile

Oi - 0 to 2 inches: channery slightly decomposed plant material
A - 2 to 8 inches: channery loam
Bw1 - 8 to 24 inches: channery loam
Bw2 - 24 to 43 inches: very channery loam
BC - 43 to 80 inches: very flaggy loam

Properties and qualities

Slope: 20 to 80 percent
Surface area covered with cobbles, stones or boulders: 1.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium
Hydric soil rating: No

Description of Shelocta, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Fine-loamy colluvium derived from sandstone and shale

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 3 inches: silt loam

BA - 3 to 7 inches: loam
Bt1 - 7 to 23 inches: channery silt loam
2Bt2 - 23 to 34 inches: channery silt loam
2Bt3 - 34 to 45 inches: very channery silt loam
2C - 45 to 59 inches: very parachannery silt loam
2Cr - 59 to 69 inches: bedrock

Properties and qualities

Slope: 20 to 80 percent
Surface area covered with cobbles, stones or boulders: 1.0 percent
Depth to restrictive feature: 48 to 65 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium
Hydric soil rating: No

Description of Kimper, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Fine-loamy colluvium derived from sandstone and shale

Typical profile

Oi - 0 to 2 inches: very channery slightly decomposed plant material
A - 2 to 8 inches: very channery loam
BA - 8 to 13 inches: channery loam
Bw1 - 13 to 27 inches: channery loam
Bw2 - 27 to 41 inches: channery loam
Bw3 - 41 to 52 inches: very channery loam
C1 - 52 to 64 inches: very channery fine sandy loam
C2 - 64 to 75 inches: very channery loam
R - 75 to 85 inches: bedrock

Properties and qualities

Slope: 20 to 80 percent
Surface area covered with cobbles, stones or boulders: 1.0 percent
Depth to restrictive feature: 65 to 80 inches to lithic bedrock
Drainage class: Well 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: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium
Hydric soil rating: No

Minor Components

Fedscreek, very stony

Percent of map unit: 10 percent
Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium
Hydric soil rating: No

Handshoe, very stony

Percent of map unit: 7 percent
Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium
Hydric soil rating: No

Clifftop, very stony

Percent of map unit: 6 percent
Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F125XY003WV - Interbedded Sedimentary Uplands
Hydric soil rating: No

Marrowbone, very stony

Percent of map unit: 2 percent
Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F125XY003WV - Interbedded Sedimentary Uplands
Hydric soil rating: No

uHfsF—Handshoe-Fedscreek-Shelocta complex, 30 to 80 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2x5j1
Elevation: 550 to 1,850 feet
Mean annual precipitation: 28 to 58 inches
Mean annual air temperature: 39 to 67 degrees F
Frost-free period: 140 to 222 days
Farmland classification: Not prime farmland

Map Unit Composition

Handshoe, very stony, and similar soils: 30 percent
Fedscreek, very stony, and similar soils: 26 percent
Shelocta, very stony, and similar soils: 20 percent
Minor components: 24 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Handshoe, Very Stony

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy-skeletal colluvium derived from sandstone and shale

Typical profile

Oi - 0 to 2 inches: very channery slightly decomposed plant material
A - 2 to 9 inches: very channery loam
E - 9 to 16 inches: very channery loam
Bw1 - 16 to 34 inches: very channery sandy loam
Bw2 - 34 to 50 inches: very channery loam
Bw3 - 50 to 61 inches: channery loam
BC - 61 to 80 inches: very channery sandy loam

Properties and qualities

Slope: 30 to 80 percent
Surface area covered with cobbles, stones or boulders: 2.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
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: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium
Hydric soil rating: No

Description of Fedscreek, Very Stony

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Coarse-loamy colluvium derived from sandstone and shale

Typical profile

Oi - 0 to 1 inches: channery slightly decomposed plant material
A - 1 to 4 inches: channery loam
BA - 4 to 8 inches: channery silt loam
Bw1 - 8 to 17 inches: channery loam
Bw2 - 17 to 30 inches: channery loam
Bw3 - 30 to 39 inches: channery loam
Bw4 - 39 to 48 inches: channery loam
C1 - 48 to 60 inches: very channery loam
C2 - 60 to 65 inches: channery silt loam
R - 65 to 75 inches: bedrock

Properties and qualities

Slope: 30 to 80 percent
Surface area covered with cobbles, stones or boulders: 2.0 percent
Depth to restrictive feature: 62 to 70 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium
Hydric soil rating: No

Description of Shelocta, Very Stony

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Fine-loamy colluvium derived from sandstone and shale

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 3 inches: silt loam
BA - 3 to 7 inches: loam
Bt1 - 7 to 23 inches: channery silt loam
2Bt2 - 23 to 34 inches: channery silt loam
2Bt3 - 34 to 45 inches: very channery silt loam
2C - 45 to 59 inches: very parachannery silt loam
2Cr - 59 to 69 inches: bedrock

Properties and qualities

Slope: 30 to 80 percent
Surface area covered with cobbles, stones or boulders: 2.0 percent
Depth to restrictive feature: 48 to 65 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium
Hydric soil rating: No

Minor Components

Marrowbone, very stony

Percent of map unit: 11 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Matewan, very stony

Percent of map unit: 6 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Clifftop, very stony

Percent of map unit: 5 percent

Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Blairton, very stony

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Soil Information for All Uses

Suitabilities and Limitations for Use

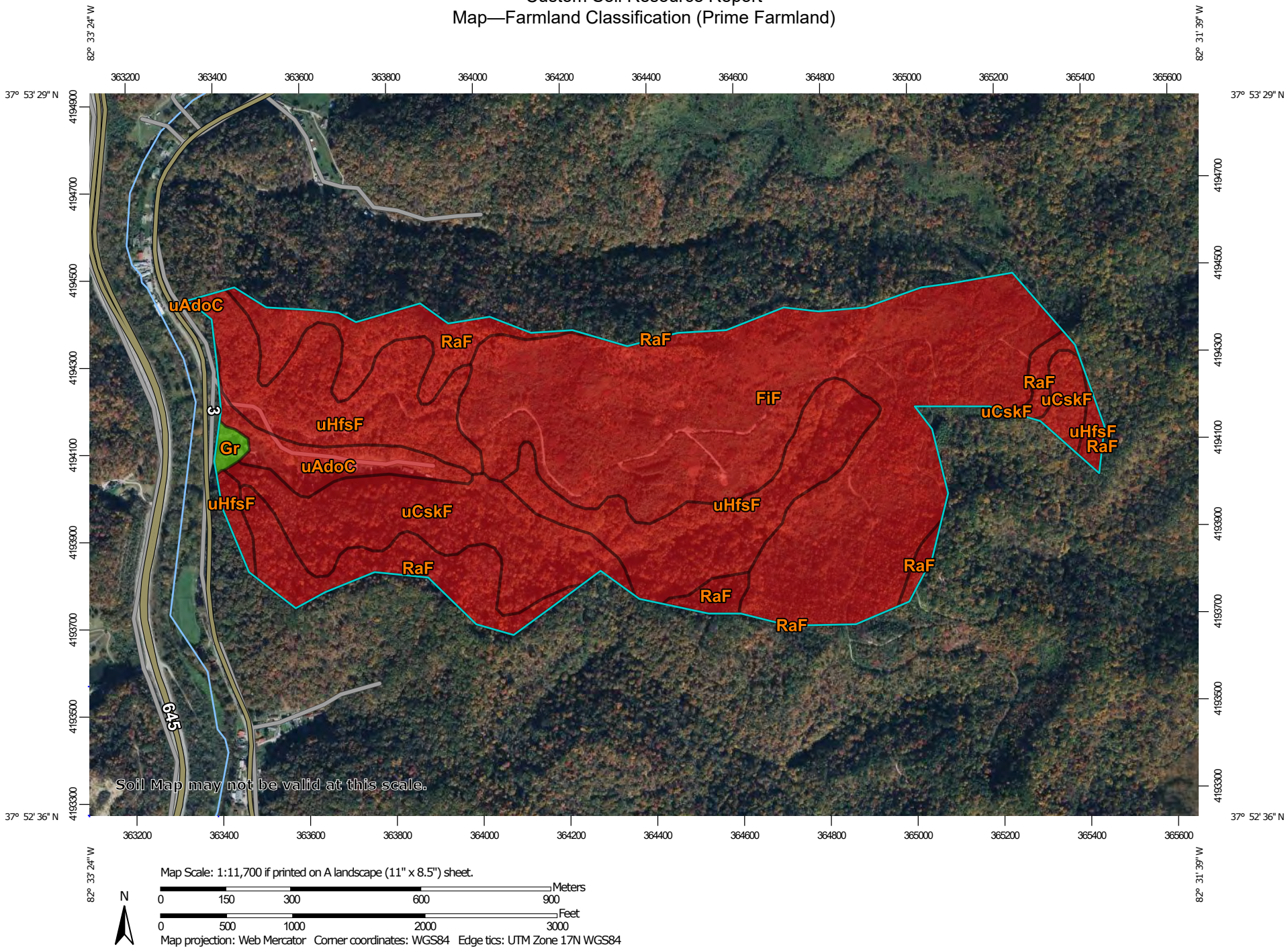
The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual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

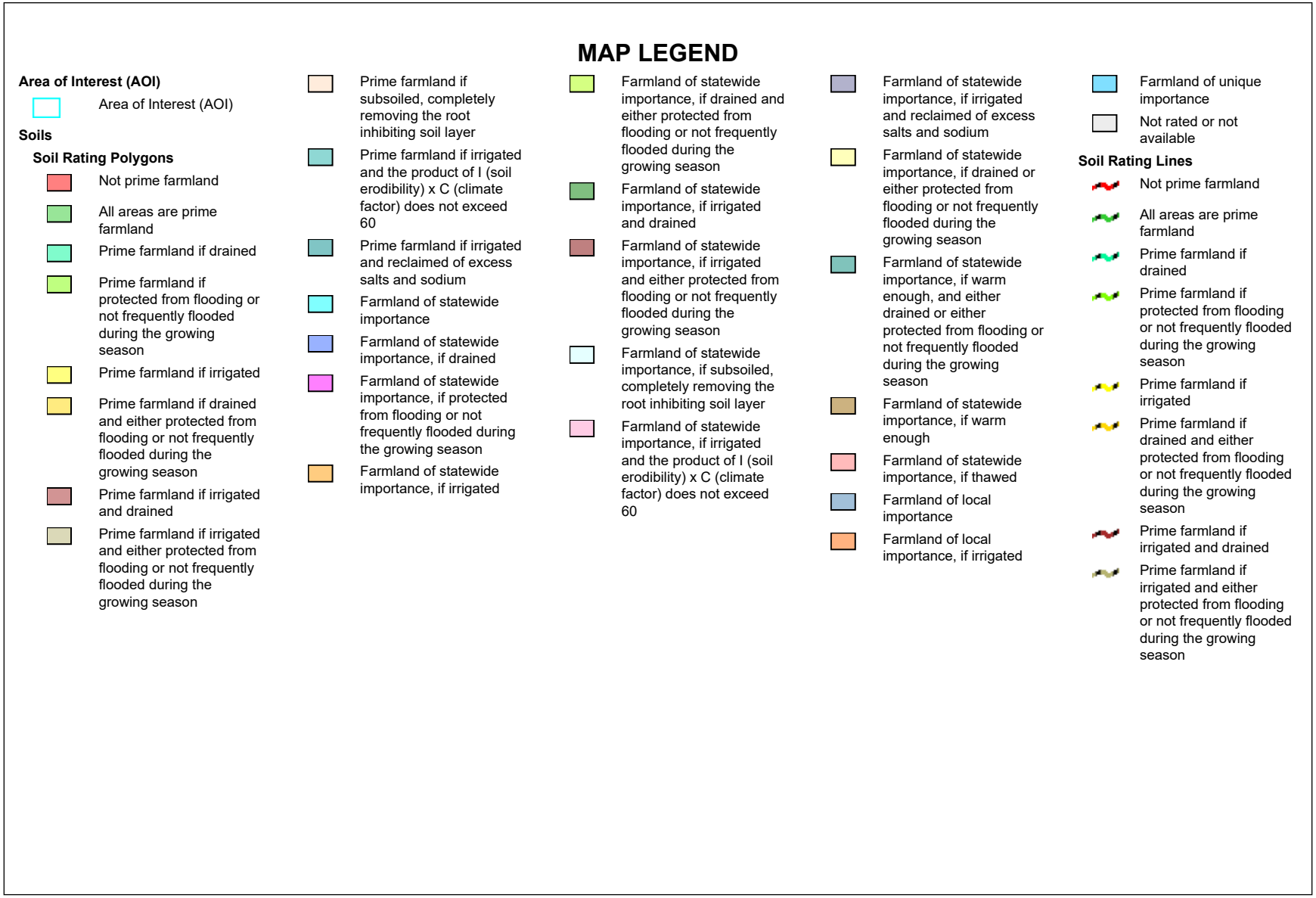
Land Classifications

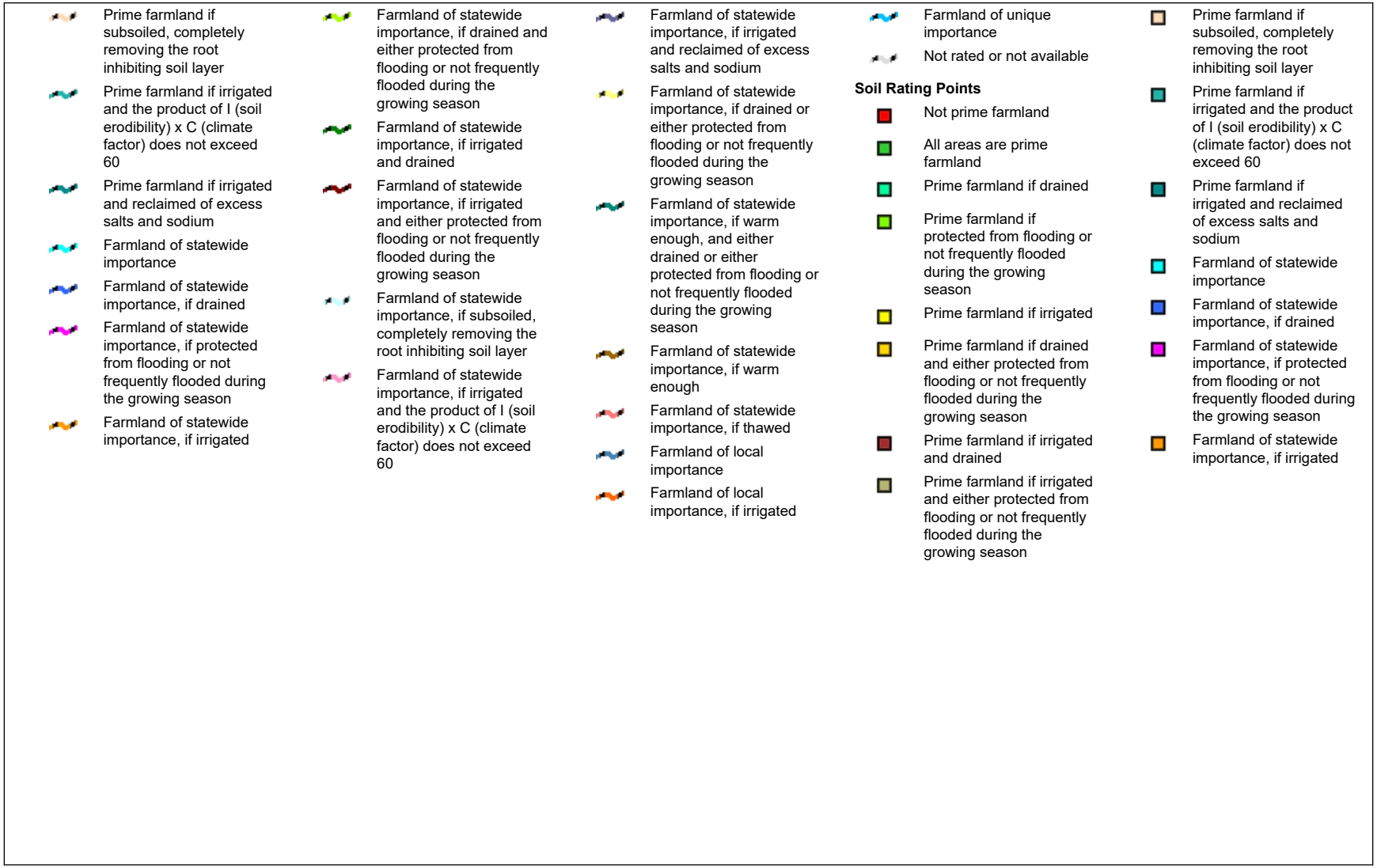
Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications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

Farmland Classification (Prime Farmland)

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.


82° 33' 24" W
82° 31' 39" W
37° 53' 29" N
37° 52' 36" N
363200
363400
363600
363800
364000
364200
364400
364600
364800
365000
365200
365400
365600
4194900
4194700
4194500
4194300
4194100
4193900
4193700
4193500
4193300
uAdoC
RaF
RaF
FiF
RaF
uCskF
uCskF
uHfsF
RaF
3
uHfsF
Gr
uAdoC
uHfsF
uCskF
uHfsF
RaF
RaF
RaF
RaF
645
Soil Map may not be valid at this scale.
Map Scale: 1:11,700 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 150 300 600 900
Feet
0 500 1000 2000 3000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84


MAP LEGEND
Area of Interest (AOI)
Area of Interest (AOI)
Soils
Soil Rating Polygons
Not prime farmland
All areas are prime farmland
Prime farmland if drained
Prime farmland if protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated
Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated and drained
Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated
Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated and drained
Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough
Farmland of statewide importance, if thawed
Farmland of local importance
Farmland of local importance, if irrigated
Farmland of unique importance
Not rated or not available
Soil Rating Lines
Not prime farmland
All areas are prime farmland
Prime farmland if drained
Prime farmland if protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated
Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated and drained
Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season


Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated
Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated and drained
Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if warm enough
Farmland of statewide importance, if thawed
Farmland of local importance
Farmland of local importance, if irrigated
Farmland of unique importance
Not rated or not available
Soil Rating Points
Not prime farmland
All areas are prime farmland
Prime farmland if drained
Prime farmland if protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated
Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
Prime farmland if irrigated and drained
Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
Prime farmland if subsoiled, completely removing the root inhibiting soil layer
Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
Prime farmland if irrigated and reclaimed of excess salts and sodium
Farmland of statewide importance
Farmland of statewide importance, if drained
Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
Farmland of statewide importance, if irrigated

- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Water Features

- 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 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
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: Lawrence and Martin Counties, Kentucky
Survey Area Data: Version 20, Aug 30, 2024

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

Date(s) aerial images were photographed: Oct 14, 2020—Dec 10, 2020

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 (Prime Farmland)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
FiF	Fiveblock, Fairpoint, and Kaymine soils, 30 to 80 percent slopes, stony	Not prime farmland	138.7	47.4%
Gr	Grigsby fine sandy loam, 0 to 3 percent slopes, frequently flooded	Prime farmland if protected from flooding or not frequently flooded during the growing season	1.5	0.5%
RaF	Rayne-Marrowbone-Dekalb complex, 20 to 80 percent slopes, very rocky	Not prime farmland	39.6	13.5%
uAdoC	Anthroportic Udorthents-Urban land complex, 0 to 15 percent slopes	Not prime farmland	10.7	3.6%
uCskF	Cloverlick-Shelocta-Kimper complex, 20 to 80 percent slopes, very stony	Not prime farmland	37.6	12.8%
uHfsF	Handshoe-Fedscreek-Shelocta complex, 30 to 80 percent slopes, very stony	Not prime farmland	64.7	22.1%
Totals for Area of Interest			**292.7**	**100.0%**

Rating Options—Farmland Classification (Prime Farmland)

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

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United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

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United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix A, Exhibit J

Floodplain Management (CEST and EA)

General Requirements	Legislation	Regulation
Executive Order 11988, Floodplain Management, requires Federal activities to avoid impacts to floodplains and to avoid direct and indirect support of floodplain development to the extent practicable.	Executive Order 11988	24 CFR 55
Reference		
https://www.hudexchange.info/environmental-review/floodplain-management		

1. **Does 24 CFR 55.12(c) exempt this project from compliance with HUD's floodplain management regulations in Part 55?**

   ☐ Yes

   Provide the applicable citation at 24 CFR 55.12(c) here. If project is exempt under 55.12(c)(7) or (8), provide supporting documentation.

   → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

   ☒ No → *Continue to Question 2.*

2. **Provide a FEMA/FIRM or ABFE map showing the site.**

   The Federal Emergency Management Agency (FEMA) designates floodplains. The FEMA Map Service Center provides this information in the form of FEMA Flood Insurance Rate Maps (FIRMs) or Advisory Base Flood Elevations (ABFEs). For projects in areas not mapped by FEMA, use the best available information to determine floodplain information. Include documentation, including a discussion of why this is the best available information for the site.

   Does your project occur in a floodplain?

   ☐ No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

   ☒ Yes

   Select the applicable floodplain using the FEMA map or the best available information:

   ☐ Floodway → *Continue to Question 3, Floodways*

☐ Coastal High Hazard Area (V Zone) → *Continue to Question 4, Coastal High Hazard Areas*

☐ 500-year floodplain (B Zone or shaded X Zone) → *Continue to Question 5, 500-year Floodplains*

☒ 100-year floodplain (A Zone) → *The 8-Step Process is required. Continue to Question 6, 8-Step Process*

3. Floodways

Is this a functionally dependent use?

☐ Yes

The 8-Step Process is required. Work with your HUD FEO to determine a way to satisfactorily continue with this project. Provide a completed 8-Step Process, including the early public notice and the final notice.

→*Continue to Question 6, 8-Step Process*

☐ No

Federal assistance may not be used at this location *unless a 55.12(c) exception applies*. You must either choose an alternate site or cancel the project at this location.

4. Coastal High Hazard Area

Is this a critical action?

☐ Yes

Critical actions are prohibited in coastal high hazard areas. Federal assistance may not be used at this location. Unless the action is excepted at 24 CFR 55.12(c), you must either choose an alternate site or cancel the project.

☐ No

Does this action include construction that is not a functionally dependent use, existing construction (including improvements), or reconstruction following destruction caused by a disaster?

☐ Yes, there is new construction.

New construction is prohibited in V Zones ((24 CFR 55.1(c)(3)).

☐ No, this action concerns only a functionally dependent use, existing construction(including improvements), or reconstruction following destruction caused by a disaster.

This construction must have met FEMA elevation and construction standards for a coastal high hazard area or other standards applicable at the time of construction.

→ *Continue to Question 6, 8-Step Process*

5. **500-year Floodplain**

Is this a critical action?

☐ No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

☐Yes → *Continue to Question 6, 8-Step Process*

6. **8-Step Process**.

Does the 8-Step Process apply? Select one of the following options:

☒ 8-Step Process applies.

Provide a completed 8-Step Process, including the early public notice and the final notice.

→ *Continue to Question 7, Mitigation*

☐ 5-Step Process is applicable per 55.12(a)(1-3).

Provide documentation of 5-Step Process.

Select the applicable citation:

- ☐ *55.12(a)(1)* HUD actions involving the disposition of HUD-acquired multifamily housing projects or "bulk sales" of HUD-acquired one- to four-family properties in communities that are in the Regular Program of the National Flood Insurance Program (NFIP) and in good standing (i.e., not suspended from program eligibility or placed on probation under 44 CFR 59.24).
- ☐ *55.12(a)(2)* HUD's actions under the National Housing Act (12 U.S.C. 1701) for the purchase or refinancing of existing multifamily housing projects, hospitals, nursing homes, assisted living facilities, board and care facilities, and intermediate care facilities, in communities that are in good standing under the NFIP.
- ☐ *55.12(a)(3)* HUD's or the recipient's actions under any HUD program involving the repair, rehabilitation, modernization, weatherization, or improvement of existing multifamily housing projects, hospitals, nursing homes, assisted living facilities, board and care facilities, intermediate care facilities, and one- to four-family properties, in communities that are in the Regular Program of the National Flood Insurance Program (NFIP) and are in good standing, provided that the number of units is not increased more than 20 percent, the action does not involve a conversion from nonresidential to residential land use, the action does not meet the thresholds for "substantial improvement" under § 55.2(b)(10), and the footprint of the structure and paved areas is not significantly increased.
- ☐ *55.12(a)(4)* HUD's (or the recipient's) actions under any HUD program involving the repair, rehabilitation, modernization, weatherization, or improvement of existing nonresidential buildings and structures, in communities that are in the

Regular Program of the NFIP and are in good standing, provided that the action does not meet the thresholds for "substantial improvement" under § 55.2(b)(10) and that the footprint of the structure and paved areas is not significantly increased.

→ *Continue to Question 7, Mitigation*

☐ 8-Step Process is inapplicable per 55.12(b)(1-4).

Select the applicable citation:

☐ *55.12(b)(1)* HUD's mortgage insurance actions and other financial assistance for the purchasing, mortgaging or refinancing of existing one- to four-family properties in communities that are in the Regular Program of the National Flood Insurance Program (NFIP) and in good standing (i.e., not suspended from program eligibility or placed on probation under 44 CFR 59.24), where the action is not a critical action and the property is not located in a floodway or coastal high hazard area.

☐ *55.12(b)(2)* Financial assistance for minor repairs or improvements on one- to four-family properties that do not meet the thresholds for "substantial improvement" under § 55.2(b)(10)

☐ *55.12(b)(3)* HUD actions involving the disposition of individual HUD-acquired, one-to four-family properties.

☐ *55.12(b)(4)* HUD guarantees under the Loan Guarantee Recovery Fund Program (24 CFR part 573) of loans that refinance existing loans and mortgages, where any new construction or rehabilitation financed by the existing loan or mortgage has been completed prior to the filing of an application under the program, and the refinancing will not allow further construction or rehabilitation, nor result in any physical impacts or changes except for routine maintenance.

☐ *55.12(b)(5)* The approval of financial assistance to lease an existing structure located within the floodplain, but only if—

(i) The structure is located outside the floodway or Coastal High Hazard Area, and is in a community that is in the Regular Program of the NFIP and in good standing (i.e., not suspended from program eligibility or placed on probation under 44 CFR 59.24);

(ii) The project is not a critical action; and

(iii) The entire structure is or will be fully insured or insured to the maximum under the NFIP for at least the term of the lease.

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

7. <u>Mitigation</u>

For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the exact measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.

There are several measures being taken to minimize the potential impacts to and from the 100-year floodplain. The project site plan has been modified to ensure none of the homes will be built in the floodplain. Throughout the project best management practices will be used to minimize erosion.

(a) Preserving Lives: To preserve lives, Martin County utilizes an emergency broadcast system and early warning system in case of extreme weather events. In addition to the warning system, an evacuation plan will be developed for evacuating residents. Residents will be briefed on the location of the flood hazard area adjacent to the site as well as emergency shelter locations that are available in the project area.

(b) Preserving Property: All homes are planned to be built outside of the floodplain.

(c) Preserving Natural Values and Minimizing Impacts: The site plans have been modified so that none of the homes will be located in the floodplain. A portion of resident parking spaces are proposed to intersect with the 100-year floodplain. Best Management Practices will be used to minimize erosion and will include the use of silt fences, reseeding and ground stabilization, as well as weekly site inspections to ensure effective sediment control during any activities in the floodplain. Therefore, based on all these mitigating measures, the proposed new construction project will have minimal effects on the FEMA floodplain and adjacent water resources

Which of the following mitigation/minimization measures have been identified for this project in the 8-Step or 5-Step Process? Select all that apply.

- ☐ Permeable surfaces
- ☐ Natural landscape enhancements that maintain or restore natural hydrology
- ☐ Planting or restoring native plant species
- ☐ Bioswales
- ☐ Evapotranspiration
- ☐ Stormwater capture and reuse
- ☐ Green or vegetative roofs with drainage provisions
- ☐ Natural Resources Conservation Service conservation easements or similar easements
- ☐ Floodproofing of structures
- ☐ Elevating structures including freeboarding above the required base flood elevations
- ☒ Other

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

According to the FEMA Flood Hazard Boundary Map, approximately 4.61 acres of the project area will intersect with the 1% Annual Chance Flood Hazard Floodplain, Panel 21159C0043F, effective 09/16/2015 for Martin County Unincorporated Areas (210166). The 8-Step Process is required. The Floodplain and Wetlands Early Public Notice is attached and was published on the Department of Local Government's (DLG) website here: https://dlg.ky.gov/grants/federal/rhp/Pages/default.aspx. The Early Public Notice was published on December 23rd, 2025. The required 15 calendar days were allowed for public comment. As required by regulation, the notice included the project name, location, activity description, total floodplain acreage, responsible entity contact information, and the availability of more detailed project information. No public comments were received. DLG proceeded with steps 3 through 6 of the 8-Step Process. Following the 8-Step Process, DLG has determined that there are no practical alternatives and is committed to minimizing any adverse effects from the floodplain.

The following mitigations will be implemented:

(a) Preserving Lives: To preserve lives, Martin County utilizes an emergency broadcast system and early warning system in case of extreme weather events. In addition to the warning system, an evacuation plan will be developed for evacuating residents. Residents will be briefed on the location of the flood hazard area adjacent to the site as well as emergency shelter locations that are available in the project area.

(b) Preserving Property: All homes are planned to be built outside of the floodplain.

(c) Preserving Natural Values and Minimizing Impacts: The site plans have been modified so that none of the homes will be located in the floodplain. A portion of resident parking spaces are proposed to intersect with the 100-year floodplain. Best Management Practices will be used to minimize erosion and will include the use of silt fences, reseeding and ground stabilization, as well as weekly site inspections to ensure effective sediment control during any activities in the floodplain. Therefore, based on all these mitigating measures, the proposed new construction project will have minimal effects on the FEMA floodplain and adjacent water resources

DLG will publish the Floodplain and Wetlands Notice of Explanation on the Department of Local Government website here: https://dlg.ky.gov/grants/federal/rhp/Pages/default.aspx. This notice will explain this action following submission of the Environmental Review Record. The 8-Step Process memo is attached. With the completion of the 8-Step Process and consultation with the appropriate parties, the project will be in compliance with Executive Orders 11988 and 13690.

Are formal compliance steps or mitigation required?

☒ Yes

☐ No

National Flood Hazard Layer FIRMette

FEMA

82°33'28"W 37°53'17"N



82°32'50"W 37°52'48"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

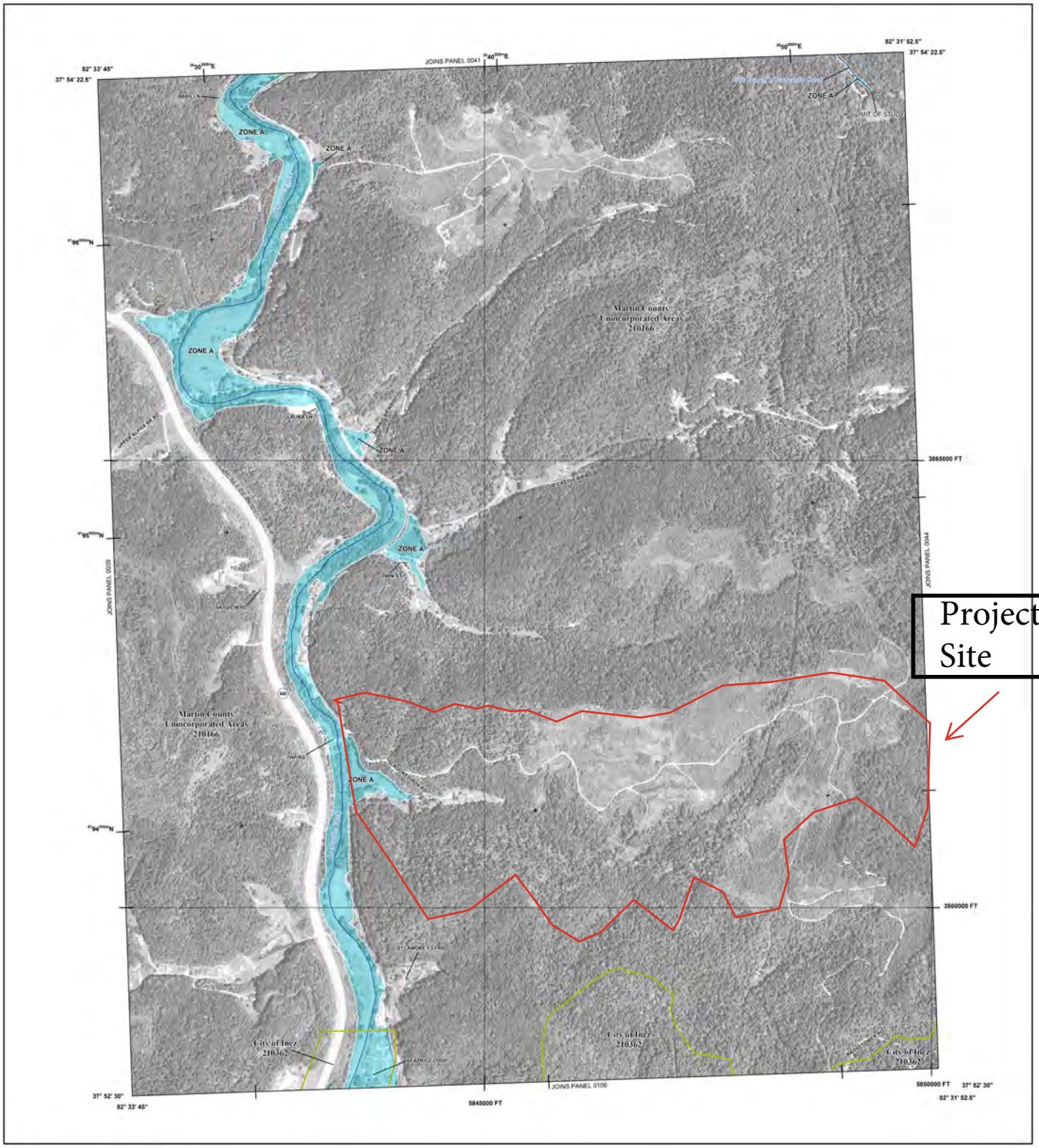
N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/21/2025 at 1:16 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTP://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee See Notes. Zone X

OTHER AREAS
- NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
- Area of Undetermined Flood Hazard Zone D

GENERAL
- Channel, Culvert, or Storm Sewer
- Accredited or Provisionally Accredited Levee, Dike, or Floodwall

NOTES TO USERS

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

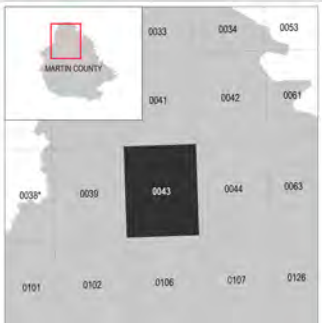
Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on this FIRM was provided in digital format by the U.S. Geological Survey, National Geodetic Survey, National Atlas, Kentucky Transportation Cabinet (KYTC), Kentucky GeoNet, U.S. Army Corps of Engineers, Federal Emergency Management Agency, and the National Agriculture Imagery Program (NAIP). Ortho Imagery was provided by NAIP in 2012, and has a 1 meter ground resolution.

PANEL LOCATOR



FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

MARTIN COUNTY, KY
and Incorporated Areas

PANEL 0043 OF 0252

FEMA

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
INEZ, CITY OF	210362	0043	F
MARTIN COUNTY	210166	0043	F

STRUCTURES

- Non-accredited Levee, Dike, or Floodwall
- Cross Sections with 1% Annual Chance
- Water Surface Elevation (BFE)
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- Base Flood Elevation (BFE)

OTHER FEATURES

- Limit of Study
- Jurisdiction Boundary

In cooperation with the Federal Emergency Management Agency (FEMA) and local communities in Kentucky, this Flood Insurance Rate Map was developed by the Kentucky Division of Water in a digital statewide format to assist communities in their efforts to minimize the loss of property and life through effectively managing development in flood-prone areas. The State of Kentucky has implemented a long term approach to floodplain management to reduce the impacts of flooding. This is demonstrated by the State's commitment to map floodplain areas at the local level. As part of this effort, the Kentucky Division of Water is working closely with FEMA as a Cooperating Technical Partner to produce and maintain this digital FIRM.

0103 0104 0108 0109 0128

*PANEL NOT PRINTED

SCALE

Map Projection:
State Plane Lambert Conformal Conic, Kentucky Zone 1600;
North American Datum 1983; Vertical Datum: NAVD 88

1 INCH = 500 FEET 1:6,000

0 500 1,000 2,000 Feet

0 125 250 500 Meters

VERSION NUMBER
2.3.2.2

MAP NUMBER
21159C0043F

MAP REVISED
SEPTEMBER 16, 2015

State of Kentucky
Federal Emergency Management Agency

8-Step Early Public Notice

Early Notice and Public Review of a Proposed Activity in a FEMA Designated Floodplain

Date: December 23rd, 2025

To: All interested Agencies, Groups and Individuals

This is to give notice that the Department for Local Government (DLG) has determined that the following proposed action under the KY Community Development Block Grant-Recovery Housing Program (CDBG-RHP) is partially located in the 100-year floodplain indicated by the FEMA Flood Map Service Center. Additionally, DLG will be identifying and evaluating practicable alternatives to locating the action within the floodplain and the potential impacts the floodplain may have on the proposed action, as required by Executive Order 11988, in accordance with HUD regulations at 24 CFR 55.20 in Subpart C Procedures for Making Determinations on Floodplain Management and Protection of Wetlands. The proposed project is located at 1616 Rockcastle Road, Inez, Kentucky 41224.

The Thrive CDBG-RHP Transitional Housing Project will involve acquiring approximately 253 acres. Of the project area, 4.61 acres are determined to intersect with the FEMA Flood Map 100-year floodplain. The land to be acquired includes a pre-existing single-family home for rehabilitation and additional project activities include developing up to two single-family residential homes. In total, the homes will serve up to 14 individuals. Per the FEMA Flood Map, the project site borders a Special Flood Hazard Area to the north and west of the project site. The northern and western portion of the project site in the FEMA 100-year floodplain includes an access road. The proposed activities that will occur in the 100-year floodplain include raising the access road and constructing resident parking. At this time, no homes are planned to be constructed in the 100-year floodplain. If it is determined that any of the homes must be in the FEMA floodplain, they will be elevated to meet or exceed the 500-year floodplain elevation (Base Flood Elevation plus two feet). Local emergency management officials will be consulted to determine an evacuation plan for individuals residing in the proposed project location if a flooding event were to occur. If underground utility work is found to be necessary, and if that work intersects with a stream or wetland, project engineers will design and utilize directional boring methods to eliminate potential risk to streams or wetlands.

There are three primary purposes for this notice. First, people who may be affected by activities in floodplain and those who have an interest in the protection of the natural environment should be given an opportunity to express their concerns and provide information about these areas. Commenters are encouraged to offer alternative sites outside of the floodplain, alternative methods to serve the same project purpose, and methods to minimize and mitigate project impacts on the floodplain. Second, an adequate public notice program can be an important public educational tool. The dissemination of information and request for public comment about floodplain can facilitate and enhance Federal efforts to reduce the risks and impacts associated with the occupancy and modification of these special areas. Third, as a matter of fairness, when the Federal government determines it will participate in actions taking place in floodplain, it must inform those who may be put at greater or continued risk.

Written comments must be received by the Department for Local Government at the following address on or before **January 12th, 2026**: Department for Local Government, 100 Airport Road, 3rd Floor, Frankfort, KY 40601 and 502-892-3469, Attention: Jennifer Peters. A full description of the project may also be reviewed from 9am to 4pm at 100 Airport Road, 3rd Floor, Frankfort, KY 40601. Comments may also be submitted via email to Jennifer Peters at jennifer.peters@ky.gov.

Proof of 8-Step Early Public Notice on DLG's Website

Outlook

RE: Brain Teaser - Thrive 8-Step Early Public Notice

From Sutton, Cole (DLG) <ColeC.Sutton@ky.gov>
Date Tue 12/23/2025 8:07
To Peters, Jennifer (DLG) <Jennifer.Peters@ky.gov>; Ruby Smith <RSmith@fahe.org>; Williams, Mark P (DLG) <MarkP.Williams@ky.gov>
Cc Jerri Dyer <JDyer@fahe.org>

Good morning everybody 😊
This has been posted…
https://dlg.ky.gov/grants/federal/rhp/Pages/default.aspx

Cole Sutton, Branch Manager
Compliance Branch
Department for Local Government
Office of the Governor
ColeC.Sutton@ky.gov
502-892-3468

From: Peters, Jennifer (DLG) <Jennifer.Peters@ky.gov>
Sent: Monday, December 22, 2025 8:28 AM
To: Ruby Smith <RSmith@fahe.org>; Williams, Mark P (DLG) <MarkP.Williams@ky.gov>; Sutton, Cole (DLG) <ColeC.Sutton@ky.gov>
Cc: Jerri Dyer <JDyer@fahe.org>
Subject: RE: Brain Teaser - Thrive 8-Step Early Public Notice

Good morning,

Cole, please post this Early Floodplain Notice for Thrive.

Cole is out until Tuesday, so I have changed the dates.

"S:\Federal_Grants\HUD -Recovery Housing Program\2024 Recovery Housing Program\24R-003 Thrive Community\Evidentiary\Early Public Notice Thrive.docx"

From: Ruby Smith <RSmith@fahe.org>
Sent: Friday, December 19, 2025 8:33 AM
To: Williams, Mark P (DLG) <MarkP.Williams@ky.gov>; Peters, Jennifer (DLG) <Jennifer.Peters@ky.gov>; Sutton, Cole (DLG) <ColeC.Sutton@ky.gov>
Cc: Jerri Dyer <JDyer@fahe.org>
Subject: Re: Brain Teaser - Thrive 8-Step Early Public Notice

Thank you for your quick response.

I have attached the public notice for publication above. I have set the date for publication as today, **December 19th**. This, alongside any additional dates in the document, are highlighted

for your review.

Please let me know if there is anything else Fahe can provide.

Best,

Ruby Smith
Fahe
Project Manager
rsmith@fahe.org
(859) 228-2170



***Our offices will be closed from Wednesday, December 24, 2025 through Thursday, January 1, 2026, and will reopen on Friday, January 2, 2026. During this period, a limited team will remain available in Loan Servicing and JCL to support essential operations.

This message may contain confidential and/or proprietary information, and is intended for the person / entity to whom it was originally addressed. Any dissemination, distribution, printing, copying or other use of this material by anyone other than the intended recipient is strictly prohibited. If you have received this communication in error, please discard it and notify us immediately.

From: Williams, Mark P (DLG) <MarkP.Williams@ky.gov>
Sent: Thursday, December 18, 2025 14:47
To: Peters, Jennifer (DLG) <Jennifer.Peters@ky.gov>; Ruby Smith <RSmith@fahe.org>; Sutton, Cole (DLG) <ColeC.Sutton@ky.gov>
Cc: Jerri Dyer <JDyer@fahe.org>
Subject: Re: Brain Teaser - Thrive 8-Step Early Public Notice

Thanks, Jennifer!

Mark Williams

Executive Director

Office of the Governor

Office of State and Federal Grants

Department for Local Government

Office: 502-892-3485

Markp.williams@ky.gov



From: Peters, Jennifer (DLG) <Jennifer.Peters@ky.gov>
Sent: Thursday, December 18, 2025 2:42 PM
To: Williams, Mark P (DLG) <MarkP.Williams@ky.gov>; Ruby Smith <RSmith@fahe.org>; Sutton, Cole (DLG) <ColeC.Sutton@ky.gov>
Cc: Jerri Dyer <JDyer@fahe.org>
Subject: RE: Brain Teaser - Thrive 8-Step Early Public Notice

Good afternoon, This will need be to re-published or posted with DLG listed as the RE and DLG is responsible for the posting/publishing. I need the Notice please

---

From: Williams, Mark P (DLG) <MarkP.Williams@ky.gov>
Sent: Thursday, December 18, 2025 2:36 PM
To: Ruby Smith <RSmith@fahe.org>; Sutton, Cole (DLG) <ColeC.Sutton@ky.gov>; Peters, Jennifer (DLG) <Jennifer.Peters@ky.gov>
Cc: Jerri Dyer <JDyer@fahe.org>
Subject: Re: Brain Teaser - Thrive 8-Step Early Public Notice

Let me throw this by Jennifer.
Thanks!

Mark Williams

Executive Director

Office of the Governor

Office of State and Federal Grants

Department for Local Government

Office: 502-892-3485

Markp.williams@ky.gov



From: Ruby Smith <RSmith@fahe.org>
Sent: Thursday, December 18, 2025 2:28 PM
To: Williams, Mark P (DLG) <MarkP.Williams@ky.gov>; Sutton, Cole (DLG) <ColeC.Sutton@ky.gov>
Cc: Jerri Dyer <JDyer@fahe.org>
Subject: Brain Teaser - Thrive 8-Step Early Public Notice

****CAUTION** PDF attachments may contain links to malicious sites. Please contact the COT Service Desk ServiceCorrespondence@ky.gov for any assistance.**

Good afternoon,

Jerri and I have a question regarding the 8-Step Early Public Notice that was published for Thrive.

The notice includes language suggesting that Thrive is the Responsible Entity, specifically, that Thrive is making the determination that the proposed action is partially located within the 100-year floodplain.

For example:

> This is to give notice that Thrive Community Coalition has determined that the following proposed action under the KY Community Development Block Grant-Recovery Housing Program is partially located in the 100-year floodplain indicated by the FEMA Flood Map Service Center.

Our questions are:

1. Given the language used, will this Early Public Notice meet the applicable requirements, or do we need to revise the language and republish the notice identifying DLG as the entity that made the determination?

2. If we do need to republish, what are our next steps?
    a. Do we need to publish in both Frankfort and Martin County?
    b. Would you prefer to edit the Word document we have already provided, or would you like Fahe to redraft the notice identifying DLG as the Responsible Entity?

Please let us know how you would recommend proceeding. Due to our time constraint with the expiring purchase contract, we would like to get the public notice published as soon as possible.

I have attached above the Early Public Notice Word document and tear sheet for your review.

Thank you!

Best,

Ruby Smith
Fahe

Project Manager
rsmith@fahe.org
(859) 228-2170



***Our offices will be closed from Wednesday, December 24, 2025 through Thursday, January 1, 2026, and will reopen on Friday, January 2, 2026. During this period, a limited team will remain available in Loan Servicing and JCL to support essential operations.

This message may contain confidential and/or proprietary information, and is intended for the person / entity to whom it was originally addressed. Any dissemination, distribution, printing, copying or other use of this material by anyone other than the intended recipient is strictly prohibited. If you have received this communication in error, please discard it and notify us immediately.

8-Step Memo

DOCUMENTATION MEMORANDUM FOR FLOODPLAINS AND WETLANDS EIGHT-STEP PROCESS

Memorandum to File

From: Mark Williams, Executive Director, Department of Local Government

Date: 02-04-2026

Re: Compliance with EO 11988/11990
CDBG-RHP 24R-003, Thrive Transitional Housing Project

The following constitutes compliance with the eight-step process to document compliance with EO 11988.

Step 1: ***Determine whether the action is located in a 100-year floodplain.***

The proposed project includes the acquisition of a property that currently includes a single-family residence, the rehabilitation of the existing residence, and the subsequent development and construction of up to 2 additional homes to provide safe, affordable housing for up to 14 individuals in Substance Use Disorder (SUD) recovery. Project activities will include acquisition of property, rehabilitation, planning and design, infrastructure development, residential housing construction, and grant administration. Together, these homes will comprise the Thrive Recover Well Housing Community and will provide safe, affordable housing for individuals in SUD recovery. These additions to Martin County's housing stock will assist individuals in recovery who are working toward independent, sober living with the option for family reunification.

According to the FEMA Flood Hazard Boundary Map, approximately 4.61 acres of the project area will intersect with the 1% Annual Chance Flood Hazard Floodplain, Panel 21159C0043F, effective 09/16/2015 for Martin County Unincorporated Areas (210166).

According to the National Wetlands Inventory, the US Fish & Wildlife Service, and the Kentucky Department of Fish & Wildlife, no wetlands are involved. Therefore, EO 11990 compliance ends with Step 1.

Step 2: ***Involve public in decision-making process (notice).***

A copy of the Floodplain and Wetlands Early Public Notice is attached and was published in on the Department for Local Government's website here: https://dlg.ky.gov/grants/federal/rhp/Pages/default.aspx. The Early

Public Notice was published on December 23rd, 2025. The required 15 calendar days were allowed for public comment. As required by regulation, the notice included the project name, location, activity description, total floodplain acreage, responsible entity contact information, and the availability of more detailed project information. No public comments were received.

Step 3: ***Determine if there is a practicable alternative.***

This project is being considered to meet the needs of individuals in SUD recovery in Martin County. The Department of Local Government (DLG), considered three potential alternatives:

(1) Locate the project outside the FEMA Floodplain.
   a. Evaluation: After a thorough review of all viable land options within the county, DLG has determined this site to be the most suitable available site for new housing, based on considerations including: the site's proximity to downtown Inez, the secured purchase option and land availability, infrastructure access, environmental impact, and support of community needs.

(2) Locate the project partially within the FEMA floodplain with modifications.
   a. 4.61 acres of the total 253.89-acre property are located in the 100-year floodplain. To assure the safety and resilience of future residents, no homes will be constructed in the floodplain. If it is determined that any of the homes must be located in the FEMA floodplain, they will be elevated to meet or exceed the 500-year floodplain elevation (Base Flood Elevation plus two feet). Portions of the access road leading to the planned entrance to the proposed neighborhood are in the 100-year floodplain. Local emergency management officials will be consulted to determine an evacuation plan for individuals residing in the proposed project location if a flooding event were to occur. Additionally, a portion of the parking spaces for future residents are being proposed to be placed in the 100-year floodplain. All work that occurs in the floodplain will be completed in accordance with Best Management Practices outlined by the Environmental Protection Agency regarding flood mitigation standards, drainage improvements, erosion and runoff control, and other flood-resistant construction practices. These guidelines allow homes to be added to the low housing stock, and provide safe, affordable housing for individuals in Martin County, while ensuring minimal disruption to the floodplain.

(3) No Action Alternative.

a. Evaluation: No action option was considered; however, given the woefully low housing stock available in Martin County, and the disproportionate number of deaths caused due to SUD in the region, DLG determined the necessity for the project. The acquisition of this property and the development of up to three housing units will meet the need in Martin County for an increased stock of transitional housing by providing a stable and sustainable center for transitional housing while offering the opportunity for family reunification to support long-term recovery.

Step 4: ***Identify adverse and beneficial impacts.***

1) Potential adverse impacts: As stated above, 4.61 acres of the 253.89-acre property are located in the FEMA floodplain's 100- year floodplain as determined using the 1-Percent-Annual-Floodplain Approach. Any project within the floodplain has potential adverse impacts:
    a. *Increased likelihood of flood damage*: During a 100-year flood event, there may be some damage to the access road and residents' driveways.
    b. *Disruption of soil erosion and runoff:* Paving and construction can increase soil erosion and runoff by disrupting the soil and increasing impermeable surfaces.

2) Potential beneficial impacts:
    a. *Up to 14 New Single-Family Residences:* This project will increase the housing stock available to individuals in SUD recovery in Martin County where the residential structure is built out of the floodplain. Additionally, the units developed through this grant funding will not only meet the needs of individuals in recovery but also seek to support family reunification when applicable and possible, thereby fostering long-term recovery, holistic wellness, and stability for the individual, their family members, and by extension, the overall community.
    b. *Workforce and Economic Development:* Thrive's Recover Well Community will also provide residents with wraparound services including job training and placement, therefore increasing workforce development and supporting the local community and economy in Martin County.

Step 5: ***Mitigate adverse impacts.***

There are several measures being taken to minimize the potential impacts to and from the FEMA floodplain. The project site plan has been modified to ensure none of the homes will be built in the floodplain. Throughout the project best management practices will be used to minimize erosion.

(a) Preserving Lives: To preserve lives, Martin County utilizes an emergency broadcast system and early warning system in case of extreme weather events. In addition to the warning system, an evacuation plan will be developed for evacuating residents. Residents will be briefed on the location of the flood hazard area adjacent to the site as well as emergency shelter locations that are available in the project area.

(b) Preserving Property: All homes are planned to be built outside of the floodplain.

(c) Preserving Natural Values and Minimizing Impacts: The site plans have been modified so that none of the homes will be located in the floodplain. A portion of resident parking spaces are proposed to intersect with the 100-year floodplain. Best Management Practices will be used to minimize erosion and will include the use of silt fences, reseeding and ground stabilization, as well as weekly site inspections to ensure effective sediment control during any activities in the floodplain. Therefore, based on all these mitigating measures, the proposed new construction project will have minimal effects on the FEMA floodplain and adjacent water resources

Step 6: ***Re-evaluate alternatives.***

After a thorough review of all viable land options within the region, the project site located at 1616 Rockcastle Road was determined to be the most suitable available site for new housing. DLG determined this site's viability based on land availability, infrastructure access, environmental impact, and capacity to meet community needs. To assure the safety and resilience of future residents, no homes will be constructed in the floodplain. Pursuing this property and completing this project will add homes to the low housing stock for individuals in SUD recovery in Martin County, while ensuring minimal disruption to the floodplain.

Step 7: ***Announce and explain decision to the public (notice).***

DLG will publish the Floodplain and Wetlands Notice of Explanation on the Department of Local Government website here: https://dlg.ky.gov/grants/federal/rhp/Pages/default.aspx. This notice will

explain this action following submission of the Environmental Review Record. The public notice to be published is attached.

Step 8: ***The proposed action can now be implemented.***

Thrive Community Coalition (Thrive) is expected to receive $850,000 of CDBG-RHP funds for the acquisition and rehabilitation of a single-family property and the construction of up to two additional single-family housing units of approximately 1,000 sq. feet. The project site is located at 1616 Rockcastle Road, Inez, Kentucky, 41224 (37.884028, -82.552500). The existing residence is a 2,348 square-foot, three-bedroom, two-and-a-half-bathroom home with a two-car garage, situated on 253.89 acres. The proposed new construction will add up to two 1,000-square-foot, two- to three-bedroom homes. Project activities for new construction include land clearing, driveway construction, and water line connection. Together, these homes will comprise the Thrive Recover Well Housing Community and will provide safe, affordable housing for up to 14 individuals with unrelated individuals sharing double-occupied bedrooms in a single-family dwelling or with a single family occupying one unit if family reunification is appropriate and possible. Following rehabilitation, the existing structure will be able to house up to six individuals and each of the additional single-family housing units provides housing for up to four individuals or up to four-person families for a maximum of two years. With these additions to Martin County's housing stock, Thrive will be assisting individuals in recovery who are working toward independent, sober living with the option for family reunification.

Attachments

Final Notice and Public Explanation of a Proposed Activity in a 100-Year Floodplain

Final Notice and Public Explanation of a Proposed Activity in a 100-Year Floodplain

To: All interested Agencies: Department of Local Government, Thrive Community Coalition, Fahe, Groups and Individuals

This is to give notice that the Department of Local Government **under 24 CFR Part 58** has conducted an evaluation as required by **Executive Order 11988, as amended by Executive Order 13690** in accordance with HUD regulations at 24 CFR 55.20 Subpart C Procedures for Making Determinations on Floodplain Management, to determine the potential affect that its activity in the floodplain and wetland will have on the human environment for **Community Development Block Grant-Recovery Housing Project** under **CDBG 24R-003**. The proposed project(s) is located near **Rockcastle Road, Inez, Kentucky.**

The proposed project includes the acquisition of an approximately 253-acre property and aims to rehabilitate the existing single-family residence and develop up to 2 additional homes to provide safe, affordable housing for up to 14 individuals in Substance Use Disorder (SUD) recovery. Project activities will include the acquisition of property, rehabilitation, planning and design, infrastructure development, residential housing construction, and grant administration. According to the FEMA Flood Hazard Boundary Map, approximately 4.61 acres of the project area will intersect with the 1% Annual Chance Flood Hazard Floodplain, Panel 21159C0043F, effective 09/16/2015 for Martin County Unincorporated Areas (210166).

The Department for Local Government has considered the following alternatives and mitigation measures to be taken to minimize adverse impacts and to restore and preserve natural and beneficial values:

- Alternative: Relocate the project outside the FFRMS. Evaluation: After a thorough review of all viable land options within the county, DLG has determined this site to be the most suitable available site for new housing, based on considerations including: the site's proximity to downtown Inez, the secured purchase option and land availability, infrastructure access, environmental impact, and support of community needs.
- Alternative: Locate the project partially within the FFRMS with modifications. Evaluation: 4.61 acres of the total 253.89-acre property are located in the 100-year floodplain. To assure the safety and resilience of future residents, no homes will be constructed in the floodplain. If it is determined that any of the homes must be located in the FEMA floodplain, they will be elevated to meet or exceed the 500-year floodplain elevation (Base Flood Elevation plus two feet). Portions of the access road leading to the planned entrance to the proposed neighborhood are in the 100-year floodplain. Local emergency management officials will be consulted to determine an evacuation plan for individuals residing in the proposed project location if a flooding event were to occur. Additionally, parking spaces for future residents are being proposed to be placed in the 100-year floodplain. All work that occurs in the floodplain

will be completed in accordance with Best Management Practices outlined by the Environmental Protection Agency regarding flood mitigation standards, drainage improvements, erosion and runoff control, and other flood-resistant construction practices. These guidelines allow homes to be added to the low housing stock, and provide safe, affordable housing for individuals in Martin County, while ensuring minimal disruption to the floodplain.

- Mitigation: The Department of Local Government will take several measures to minimize the potential impacts to and from the FFRMS floodplain. The project site plan has been modified to ensure none of the homes will be built in the floodplain.
    - To Preserve Lives: Martin County utilized an emergency broadcast system and early warning system in case of extreme weather events. In addition to the warning system, an evacuation plan will be developed for evacuating residents. Residents will be briefed on the location of the flood hazard area adjacent to the site as well as emergency shelter locations that are available in the project area.
    - To Preserve Property: All homes are planned to be built outside of the floodplain.
    - To Preserve Natural Values and Minimizing Impacts: Best Management Practices will be used to minimize erosion and will include the use of silt fences, reseeding and ground stabilization, as well as weekly site inspections to ensure effective sediment control during any activities in the floodplain. Therefore, based on all these mitigating measures, the proposed new construction project will have minimal effects on the FEMA floodplain and adjacent water resources

The Department of Local Government has reevaluated the alternatives to building in the floodplain and has determined that it has no practicable alternative. Environmental files that document compliance with steps 3 through 6 of **Executive Order 11988, as amended by Executive Order 13690**, are available for public inspection, reviewing, and copying upon request at the times and location delineated in the last paragraph of this notice for receipt of comments.

There are three primary purposes for this notice. First, people who may be affected by activities in floodplains and those who have an interest in the protection of the natural environment should be given an opportunity to express their concerns and provide information about these areas. Second, an adequate public notice program can be an important public educational tool. The dissemination of information about floodplains can facilitate and enhance Federal efforts to reduce the risks associated with the occupancy and modification of these special areas. Third, as a matter of fairness, when the Federal government determines it will participate in actions taking place in floodplains, it must inform those who may be put at greater or continued risk.

Written comments must be received by the Department for Local Government at the following address on or before **TBD**: Department for Local Government, 100 Airport Road, 3rd Floor,

Frankfort, KY 40601 and 502-892-3469, Attention: Jennifer Peters. A full description of the project may also be reviewed from 9am to 4pm at 100 Airport Road, 3rd Floor, Frankfort, KY 40601. Comments may also be submitted via email to Jennifer Peters at jennifer.peters@ky.gov.

Date: TBD

Appendix A, Exhibit K

Historic Preservation (CEST and EA)

General requirements	Legislation	Regulation
Regulations under Section 106 of the National Historic Preservation Act (NHPA) require a consultative process to identify historic properties, assess project impacts on them, and avoid, minimize, or mitigate adverse effects	Section 106 of the National Historic Preservation Act (16 U.S.C. 470f)	36 CFR 800 "Protection of Historic Properties"
References		
https://www.hudexchange.info/environmental-review/historic-preservation		

Threshold

Is Section 106 review required for your project?

☐ No, because the project consists solely of activities listed as exempt in a Programmatic Agreement (PA). (See the PA Database to find applicable PAs.)
Either provide the PA itself or a link to it here. Mark the applicable exemptions or include the text here:

→ *Continue to the Worksheet Summary.*

☐ No, because the project consists solely of activities included in a No Potential to Cause Effects memo or other determination [36 CFR 800.3(a)(1)].
Either provide the memo itself or a link to it here. Explain and justify the other determination here:

→ *Continue to the Worksheet Summary.*

☒Yes, because the project includes activities with potential to cause effects (direct or indirect). → *Continue to Step 1.*

The Section 106 Process

After determining the need to do a Section 106 review, initiate consultation with regulatory and other interested parties, identify and evaluate historic properties, assess effects of the project on properties listed on or eligible for the National Register of Historic Places, and resolve any adverse effects through project design modifications or mitigation.

Note that consultation continues through all phases of the review.

Step 1: Initiate consultation

Step 2: Identify and evaluate historic properties

Step 3: Assess effects of the project on historic properties

Step 4: Resolve any adverse effects

Step 1 - Initiate Consultation

The following parties are entitled to participate in Section 106 reviews: Advisory Council on Historic Preservation; State Historic Preservation Officers (SHPOs); federally recognized Indian tribes/Tribal Historic Preservation Officers (THPOs); Native Hawaiian Organizations (NHOs); local governments; and project grantees. The general public and individuals and organizations with a demonstrated interest in a project may participate as consulting parties at the discretion of the RE or HUD official. Participation varies with the nature and scope of a project. Refer to HUD's website for guidance on consultation, including the required timeframes for response. Consultation should begin early to enable full consideration of preservation options.

Use the When To Consult With Tribes checklist within Notice CPD-12-006: Process for Tribal Consultation to determine if you should invite tribes to consult on a particular project. Use the Tribal Directory Assessment Tool (TDAT) to identify tribes that may have an interest in the area where the project is located. Note that consultants may not initiate consultation with Tribes.

Select all consulting parties below (check all that apply):

☒State Historic Preservation Officer (SHPO)

☐Advisory Council on Historic Preservation

☒Indian Tribes, including Tribal Historic Preservation Officers (THPOs) or Native

☐Hawaiian Organizations (NHOs)

List all tribes that were consulted here and their status of consultation:

Eastern Band of Cherokee Indians (No Response/Time Elapsed)
Cherokee Nation (No Effect Concurrence Letter provided to Fahe on 09/30/2025)

☐Other Consulting Parties

List all consulting parties that were consulted here and their status of consultation:

Describe the process of selecting consulting parties and initiating consultation here:

Consultation was initiated with the Kentucky Heritage Council (SHPO).
Utilizing the HUD Tribal Directory Assessment Tool, the Cherokee Nation and Eastern Band of Cherokee Indians were identified as two tribal consulting bodies that may have an interest in the area. The Cherokee Nation and the Eastern Band of Cherokee Indians were invited to be consulting parties on 09-09-2025. The Eastern Band of Cherokee Indians did not provide a response within the 30-day window. The Cherokee Nation replied on September 30th, 2025, with a No Effect concurrence letter.

Provide all correspondence, notices, and notes (including comments and objections received) and continue to Step 2.

Step 2 - Identify and Evaluate Historic Properties

Define the Area of Potential Effect (APE), either by entering the address(es) or providing a map depicting the APE. Attach an additional page if necessary.

1616 Rockcastle Road, Inez, Kentucky 41224 (37.884028, -82.552500)



Gather information about known historic properties in the APE. Historic buildings, districts and archeological sites may have been identified in local, state, and national surveys and registers, local historic districts, municipal plans, town and county histories, and local history websites. If not already listed on the National Register of Historic Places, identified properties are then evaluated to see if they are eligible for the National Register.
Refer to HUD's website for guidance on identifying and evaluating historic properties.
In the space below, list historic properties identified and evaluated in the APE.
Every historic property that may be affected by the project should be listed. For each historic property or district, include the National Register status, whether the SHPO has concurred with the finding, and whether information on the site is sensitive. Attach an additional page if necessary.

Avanti Archeology completed a Phase I archeological survey on the project site. Following a surface survey, structural remains assumed to be a spring house, well, or possible chimney, were identified. Additionally, subsurface testing was conducted and produced a deposit of artifacts dated to the early 20th century. Avanti Archaeology advised that if the identified archaeological site, **15Mt38**, cannot be avoided, it may be eligible for listing on the National Register of Historic Places (NRHP).

The State Historic Preservation office concurred with Avanti's determination that the project would receive an "Adverse Effect" determination if the archaeological site could not be avoided.

Provide the documentation (survey forms, Register nominations, concurrence(s) and/or objection(s), notes, and photos) that justify your National Register Status determination.
Was a survey of historic buildings and/or archeological sites done as part of the project?
If the APE contains previously unsurveyed buildings or structures over 50 years old, or there is a likely presence of previously unsurveyed archeological sites, a survey may be necessary. For Archeological surveys, refer to HP Fact Sheet #6, Guidance on Archeological Investigations in HUD Projects.

☒ Yes → *Provide survey(s) and report(s) and continue to Step 3.*

Additional notes:

On 07-24-2025, the State Historic Preservation Office (SHPO) provided a letter determining that no historic-age structures are within or adjacent to the project area and that an archaeological survey is warranted for all areas where ground-disturbing activities take place.

In response to State Historic Preservation Office consultation, Avanti Archeology completed a Phase I archeological survey on the project site. Following a surface survey, structural remains assumed to be a spring house, well, or possible chimney, were identified. Additionally, subsurface testing was conducted and produced a deposit of artifacts dated to the early 20th century. Avanti Archaeology advised that if the identified archaeological site, 15Mt38 cannot be avoided, it may be eligible for listing on the National Register of Historic Places (NRHP).

In a letter dated January 7th, 2026, the State Historic Preservation office concurred with Avanti's determination that the project would receive an "Adverse Effect" determination if the archaeological site could not be avoided. However, with the revised site plans, Thrive will be able to complete all ground-disturbing activities and new construction outside of site 15Mt38, thereby preserving the integrity of the identified area.

☐ No → *Continue to Step 3.*

Step 3 - Assess Effects of the Project on Historic Properties

Only properties that are listed on or eligible for the National Register of Historic Places receive further consideration under Section 106. Assess the effect(s) of the project by applying the Criteria of Adverse Effect. (36 CFR 800.5)] Consider direct and indirect effects as applicable as per HUD guidance.

Choose one of the findings below - No Historic Properties Affected, No Adverse Effect, or Adverse Effect; and seek concurrence from consulting parties.

☒ No Historic Properties Affected

Document reason for finding:

☐ No historic properties present. → *Provide concurrence(s) or objection(s) and continue to the Worksheet Summary.*

☒ Historic properties present, but project will have no effect upon them. → *Provide concurrence(s) or objection(s) and continue to the Worksheet Summary.*

If consulting parties concur or fail to respond to user's request for concurrence, project is in compliance with this section. No further review is required. If consulting parties object, refer to (36 CFR 800.4(d)(1)) and consult further to try to resolve objection(s).

☐ No Adverse Effect

Document reason for finding:

Does the No Adverse Effect finding contain conditions?

☐ Yes

Check all that apply: (check all that apply)

☐ Avoidance

☐ Modification of project

☐ Other

Describe conditions here:

→ *Monitor satisfactory implementation of conditions. Provide concurrence(s) or objection(s) and continue to the Worksheet Summary.*

☐ No → *Provide concurrence(s) or objection(s) and continue to the Worksheet Summary.*

If consulting parties concur or fail to respond to user's request for concurrence, project is in compliance with this section. No further review is required. If consulting parties object, refer to (36 CFR 800.5(c)(2)) and consult further to try to resolve objection(s).

☐ Adverse Effect

Document reason for finding:

Copy and paste applicable Criteria into text box with summary and justification. Criteria of Adverse Effect: 36 CFR 800.5]

Notify the Advisory Council on Historic Preservation of the Adverse Effect and provide the documentation outlined in 36 CFR 800.11(e). The Council has 15 days to decide whether to enter the consultation (Not required for projects covered by a Programmatic Agreement).

→ *Continue to Step 4.*

Step 4 - Resolve Adverse Effects

Work with consulting parties to try to avoid, minimize or mitigate adverse effects. Refer to HUD guidance and 36 CFR 800.6 and 800.7.

Were the Adverse Effects resolved?

☐ Yes

Describe the resolution of Adverse Effects, including consultation efforts and participation by the Advisory Council on Historic Preservation:

For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the exact measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.

→ *Provide signed Memorandum of Agreement (MOA) or Standard Mitigation Measures Agreement (SMMA). Continue to the Worksheet Summary.*

☐ No

The project must be cancelled unless the "Head of Agency" approves it. Either provide approval from the "Head of Agency" or cancel the project at this location.

Describe the failure to resolve Adverse Effects, including consultation efforts and participation by the Advisory Council on Historic Preservation and "Head of the Agency":

Explain in detail the exact conditions or measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.

→ *Provide correspondence, comments, documentation of decision, and "Head of Agency" approval. Continue to the Worksheet Summary.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

Utilizing the HUD Tribal Directory Assessment Tool, the Cherokee Nation and Eastern Band of Cherokee Indians were identified as two tribal consulting bodies that may have an interest in the area. The Cherokee Nation and the Eastern Band of Cherokee Indians were invited to be consulting parties on 09-09-2025. The Eastern Band of Cherokee Indians did not provide a response within the 30-day window. The Cherokee Nation replied on September 30th, 2025, with a No Effect concurrence letter.

A Section 106 Consultation was initiated with the Kentucky Heritage Council (SHPO) on 07-21-2025. On 07-24-2025, SHPO provided a determination of No Historic Properties Affected and that an archaeological survey is warranted.

In response to State Historic Preservation Office consultation, Avanti Archeology completed a Phase I archeological survey on the project site. Following a surface survey, structural remains assumed to be a spring house, well, or possible chimney, were identified. Additionally, subsurface testing was conducted and produced a deposit of artifacts dated to the early 20th century. Avanti Archaeology advised that if the identified archaeological site, 15Mt38 cannot be avoided, it may be eligible for listing on the National Register of Historic Places (NRHP).

In a letter dated January 7th, 2026, the State Historic Preservation office concurred with Avanti's determination that the project would receive an "Adverse Effect" determination if the archaeological site could not be avoided. However, with the revised site plans, Thrive will be able to complete all ground-disturbing activities and new construction outside of site 15Mt38, thereby preserving the integrity of the identified area.

Additional site plans were provided to SHPO on 02/03/2026. On 02/19/2026, SHPO concurred with a "No Adverse Effect" determination if all ground-disturbing activities and new construction can be completed outside of site 15Mt38.

This project is in compliance with Historic Preservation requirements. No further action or mitigation is required.

Are formal compliance steps or mitigation required?

☐ Yes

☒ No

Initial SHPO Determination Letter
07-24-2025

ANDY BESHEAR
GOVERNOR

JACQUELINE COLEMAN
LT. GOVERNOR

TOURISM, ARTS AND HERITAGE CABINET
KENTUCKY HERITAGE COUNCIL
THE STATE HISTORIC PRESERVATION OFFICE
410 HIGH STREET
FRANKFORT, KENTUCKY 40601
(502) 564-7005
www.heritage.ky.gov

LINDY CASEBIER
SECRETARY

CRAIG A. POTTS
EXECUTIVE DIRECTOR &
STATE HISTORIC PRESERVATION OFFICER

July 24, 2025

Ruby Smith
FAHE
319 Oak Street
Berea, KY 40403
rsmith@fahe.org

RE: **HUD**, Proposed Acquisition, Rehabilitation, and New Construction of Residential Structures Located at 1616 Rockcastle Road in Martin County, Kentucky

Dear Ms. Smith,

Thank you for your submittal of project specifics regarding the above-referenced undertaking. We understand the proposed project involves acquisition and rehabilitation of a single-family residential structure in addition to constructing two additional single-family residential structures on the property located at 1616 Rockcastle Road in Inez, Kentucky.

Our review indicates that the proposed project will not adversely affect any properties or sites that are listed in or eligible for the National Register of Historic Places.

Based on the documentation provided, an **archaeological survey is warranted** for all areas where ground disturbing activities are to take place. The archaeological survey should be conducted by a qualified archaeologist. Upon completion of the investigation, a pdf version of the report should be submitted through our INHERIT portal system.

Should you have any questions, please contact Sarah Jackson or Stephanie Dooley of my staff at sarah.mccarttjackson@ky.gov or stephanie.dooley@ky.gov.

Sincerely,

Craig A. Potts,
Executive Director and
State Historic Preservation Officer

KHC #: 251683
CP: smj, sd

TEAM KENTUCKY TOURISM, ARTS AND HERITAGE CABINET | New Kentucky Home

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SHPO Determination Letter
01-07-2026

ANDY BESHEAR
GOVERNOR

JACQUELINE COLEMAN
LT. GOVERNOR

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KENTUCKY HERITAGE COUNCIL
THE STATE HISTORIC PRESERVATION OFFICE
410 HIGH STREET
FRANKFORT, KENTUCKY 40601
(502) 564-7005
www.heritage.ky.gov

LINDY CASEBIER
SECRETARY

CRAIG A. POTTS
EXECUTIVE DIRECTOR &
STATE HISTORIC PRESERVATION OFFICER

January 7, 2026

Ruby Smith
Project Manager-FAHE
319 Oak Street
Berea, KY 40403
Email: rsmith@fahe.org

RE: *An Intensive Phase I Archaeological Survey for the Proposed Acquisition, Rehabilitation, and New Construction of Residential Structures at 1616 Rockcastle Road Martin County, Kentucky*
Report by: Jon Endonino

Dear Ms. Smith,

Thank you for your submittal of the above referenced archaeology report. The report discusses the survey results of approximately 3.0 acres for the new construction of residential structures. One new site (15MT38) was identified during this investigation.

Site 15MT38 was recorded as a 20th century historic residence. Site boundaries fall entirely within the area of potential effect (APE). The author recommends site 15MT38 as *potentially eligible* for listing on the National Register of Historic Places (NRHP) under Criterion D and further investigation is warranted in the event that the site cannot be avoided during construction activities. We agree with the author's eligibility recommendation and concur that additional investigation is warranted to fully determine the NRHP eligibility of site 15MT38.

We would concur with a finding of **Adverse Effect** and accept this report without revisions.

Should you have any questions, please contact Stephanie Dooley of my staff at stephanie.dooley@ky.gov.

Sincerely,

Craig A. Potts,
Executive Director and
State Historic Preservation Officer

KHC #: 252617; prev. 251683
CP: sd

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Final SHPO determination Letter
02-19-2026

ANDY BESHEAR
GOVERNOR

JACQUELINE COLEMAN
LT. GOVERNOR

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FRANKFORT, KENTUCKY 40601
(502) 564-7005
www.heritage.ky.gov

LINDY CASEBIER
SECRETARY

CRAIG A. POTTS
EXECUTIVE DIRECTOR &
STATE HISTORIC PRESERVATION OFFICER

February 19, 2026

Ruby Smith
FAHE
319 Oak Street
Berea, KY 40403
Email: rsmith@fahe.org

RE: **HUD,** Change to the Area of Potential Effect (APE) for the Proposed Acquisition, Rehabilitation, and New Construction of Residential Structures in Martin County, Kentucky

Dear Ms. Smith,

Thank you for your recent submission of the documentation pertaining to this undertaking. We understand this proposed undertaking consists of the new construction of two single-family homes at 1616 Rockcastle Road in Rockcastle, Kentucky. Our office originally provided comment on January 7th accepting the Phase I archaeology report (Endonino 2025) and providing an **Adverse Effect** determination based the impact this undertaking would have on the potentially eligible site 15MT38. Since that time, we understand that the APE has been relocated in order to avoid site 15MT38 during construction activities.

Due to the avoidance of site 15MT38, our office would concur with a finding of **No Adverse Effect**. In the event that human remains or cultural resources are identified during construction activities, the county coroner and the Kentucky Heritage Council shall be notified.

If you have any questions, please contact Stephanie Dooley of my staff at stephanie.dooley@ky.gov.

Sincerely,

Craig A. Potts,
Executive Director and
State Historic Preservation Officer

KHC #s: 260244; prev. 252617. 251683
CP: sd

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Cherokee Nation Response Letter

GWYᏍ DᏃᏢ
CHEROKEE NATION®
P.O. Box 948 • Tahlequah, OK 74465-0948
918-453-5000 • www.cherokee.org

Chuck Hoskin Jr.
Principal Chief
GᏢ ᎮᎸᏢ ᏚᏁᏚ
0ᎾEOGᏍᏫ

Bryan Warner
Deputy Principal Chief
ᏚZᏫᏢVᏫ
WᏢᏁ DᏓᎴᏁ 0ᎾEOGᏍᏫ

September 30, 2025

Ruby Smith
Federation of Appalachian Housing Enterprises, Inc.
319 Oak Street
Berea, KY 40403

Re: Thrive Community Coalition, 1616 Rockcastle Road, Inez, KY

Dear Ruby Smith:

The Cherokee Nation (Nation) is in receipt of your correspondence about the proposed **Thrive Community Coalition**, and appreciates the opportunity to provide comment upon this project. This communication is intended for government-to-government consultation with a sovereign federally recognized Tribal Nation. Information received in consultation will be deemed confidential unless explicit consent is provided by the Nation.

The Nation maintains databases and records of cultural, historic, and pre-historic resources in this area. Our Historic Preservation Office (Office) reviewed this project, cross referenced the project's legal description against our information, and found no instances where this project intersects or adjoins such resources. Thus, the Nation does not foresee this project imparting impacts to Cherokee cultural resources at this time.

However, the Nation requests that the Federation of Appalachian Housing Enterprises, Inc. (FAHE) halt all project activities immediately and re-contact our Office for further consultation if items of cultural significance are discovered during the course of this project. Additionally, the Nation requests that FAHE conduct appropriate inquiries with other pertinent Historic Preservation Offices regarding historic and prehistoric resources not included in the Nation's databases or records.

If you require additional information or have any questions, please contact me at your convenience. Thank you for your time and attention to this matter.

Wado,

Elizabeth Toombs

Elizabeth Toombs, Tribal Historic Preservation Officer
Cherokee Nation Tribal Historic Preservation Office
elizabeth-toombs@cherokee.org
918.453.5389

SHPO Submission

July 21st, 2025

Kentucky Heritage Council
State Historic Preservation Office
410 High Street
Frankfort, KY 40601

To Whom It May Concern:

Thrive Community Coalition (Thrive) is requesting up to $1,000,000 for the acquisition and rehabilitation of a single-family property and the construction of up to two additional single-family housing units of approximately 1,000 sq. feet. The project site is located at 1616 Rockcastle Road, in Inez, Kentucky (37.884028, -82.552500). The existing residence is a 2,348-square-foot, three-bedroom, two-and-a-half-bathroom home with a two-car garage, situated on 253.89 acres. The proposed new construction will add up to two 1,000-square-foot, two- to three-bedroom homes. Together, these homes will provide safe, affordable housing for up to two years to individuals in recovery who are working toward independent, sober living.

In preparation for an Environmental Assessment pursuant to the National Environmental Policy Act, it is necessary to ascertain what effects, both positive and negative, the planned project could have on a host of environmental concerns, including Land Development, Environmental Design and Historic Values, Community Facilities and Services, and Natural Features.

On behalf of Thrive, I would like to invite your response of concerns or comments regarding any of the aforementioned environmental items within 30 days of this letter. Should you have any concerns regarding the impact of this project, please advise on required measures or precautions to be taken.

The Section 106 Cover Sheet, OSA Report, and Kentucky Cultural Resource Map are attached for your review. If you have any questions or need additional material, please contact me at 859-228-2170 or rsmith@fahe.org. Thank you for your assistance.

Sincerely,

Ruby Smith

Ruby Smith

CC: Application and Environmental Review Files
Enclosures

KENTUCKY HERITAGE COUNCIL COVER SHEET FOR SECTION 106 SUBMISSIONS

If you are applying for federal funds or permits, **we want to help you with your project** as early in the process as possible. Our reviewers need up to 30 days to review and provide comments on our submission. DON'T WAIT! Visit our webpage and submit your documentation to the INHERIT portal: https://heritage.ky.gov/compliance/Pages/overview.aspx.

Contact Nicole via email with questions or concerns: Nicole.Konkol@ky.gov.

SECTION 1: APPLICANT INFORMATION

Project Applicant: Thrive Community Coalition

Contact Person (name & position)**:** Ruby Smith, Consultant (Fahe)

Return Address: 319 Oak Street, Berea, KY 40403

Telephone: (859)228-2170 **E-mail:** rsmith@fahe.org

Project Title: Thrive CDBG - RHP Transitional Housing Project

SECTION 2: AGENCY INFORMATION

Funding/Permitting Agency: Kentucky Department of Local Government

Agency Contact Person (name & position)**:** Mark Williams

Telephone: 502-892-3485 **E-mail:** markp.williams@ky.gov

SECTION 3: PROJECT LOCATION

Street Address (or other location)**:** 1616 Rockcastle Road

City: Inez Kentucky **County:** Martin County

Lat (Dec/Deg): 37.884028 **Long (Dec/Deg):** -82.552500

SECTION 4: PROJECT TYPE (please check all that apply)

Proposed Activity: ☐ Demolition ☒ Rehabilitation ☐ Structural Relocation ☐ Trails

☒ New Construction ☒ Land and/or Building Acquisition ☒ Sewer/Water Lines ☐ Roads/Bridges

☐ Non-Construction Planning/Refinancing ☐ Other (describe):

SECTION 5: IDENTIFICATION OF KNOWN HISTORIC PROPERTIES

OSA Preliminary Site Check #: P190079

Provide a detailed description of your project. If necessary, include it in your pdf attachments.

Thrive Community Coalition (Thrive) is requesting up to $1,000,000 for the acquisition and rehabilitation of a single-family property and the construction of up to two additional single-family housing units of approximately 1,000 sq. feet. The project site is located at 1616 Rockcastle Road, in Inez, Kentucky (37.884028, -82.552500). The existing residence is a 2,348-square-foot, three-bedroom, two-and-a-half-bathroom home with a two-car garage, situated on 253.89 acres. The proposed new construction will add up to two 1,000-square-foot, two- to three-bedroom homes. Together, these homes will provide safe, affordable housing for up to two years to individuals in recovery who are working toward independent, sober living.

Is there anything over 50 years of age in or visible from the project location? ☐ **Yes** ☒ **No**

SECTION 6: ATTACHMENTS - Attach All.

All documentation should be labeled with the project name or site address.

- ☒ Clear, current photographs of the project site and anything over 50 years of age in or visible from it.
- ☒ Site map/plan indicating the exact location and boundaries of the project area.
- ☒ Detailed description of the project (may include plans, scope of work, and other available information.)
- ☒ Documentation of prior ground disturbance (e.g. maps, photographs, underground utility plans, etc.)
- ☒ Any known information about the history/use of the property and local significance.
- ☑ Results of your Preliminary Records Review from the Site Identification web portal.

Submit all information via the INHERIT portal. Submission of initial Section 106 documentation to any individual reviewer will delay distribution and review.

Kentucky Office of State Archaeology
University of Kentucky, 1020A Export Street, Lexington, KY 40506
Phone:859-257-1944 Fax:859-323-1698 email:ky-osa@lsv.uky.edu
Confidential Information
Not for Public Release

Preliminary Records Review Coversheet

This report includes only previously recorded archaeological resources within your project area and its immediate vicinity and may not be exhaustive of all archaeological resources present, including those not yet identified. **Note: Projects located on lands owned or leased by the Commonwealth or any state agency or any political subdivision of municipal corporation of the Commonwealth are subject to the Kentucky Antiquities Act (KRS 164.705 – KRS 164.735; KRS 164.990).**

Date Request Processed: 7/18/2025
Preliminary Review Number:P190079
Project Title: Thrive Community Coalition Project

Paid via: ☐ Check (Check No.:)
☒ Credit Card (Transaction ID: 00000023735)

This report does not constitute Section 106 consultation or 'clearance' from the KHC/SHPO or compliance with the Kentucky Antiquities Act.

If you have any questions, please contact OSA at (859)257-1944 or ky-osa@uky.edu

Kentucky Office of State Archaeology

University of Kentucky, 1020A Export Street, Lexington, KY 40506
Phone:859-257-1944 Fax:859-323-1698 email:ky-osa@lsv.uky.edu

Confidential Information
Not for Public Release

Preliminary Review Number:P190079

Review Performed On: 7/18/2025

Preliminary Records Review Results

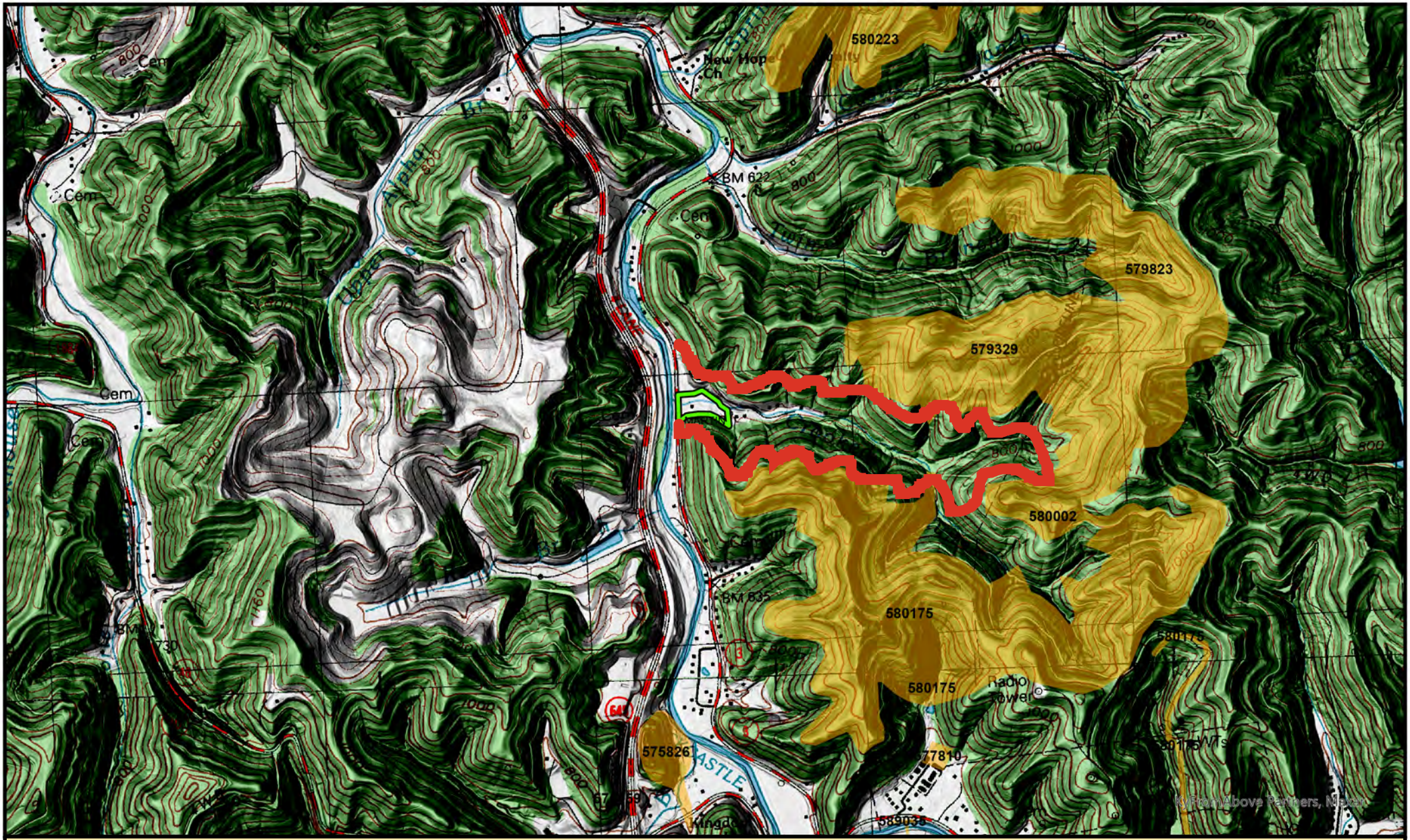
Archaeological Sites

No previously recorded archaeological sites are within your project area or an additional 30 m buffer.

Previous Archaeological Project Areas

No previously recorded archaeological project areas are within your project area or an additional 30 m buffer.

This report does not constitute Section 106 consultation or 'clearance' from the KHC/SHPO or compliance with the Kentucky Antiquities Act.



Project Coordinates Submitted to OSA

Previous Archaeological Survey Boundaries

Phase 2 & 3 Archaeological Surveys

Note: Archaeological Site Locations NOT Shown

0 0.23 0.45 0.9 1.35 1.8 Kilometers

N

P190079
Thrive Community Coalition Project

Kentucky Office of State Archaeology
University of Kentucky, 1020A Export Street, Lexington, KY 40506
phone: 859-257-8207 email: ky-osa@uky.edu

Confidential Information: Not for Public Release

MEMO:

July 21st, 2025

RE: Project Description, Explanation of Prior Ground Disturbance, and History/Use of Property.

To Whom It May Concern:

Following the acquisition of the 253.58 acres of land and single-family home located at 1616 Rockcastle Road, in Inez, Kentucky (37.884028, -82.552500), Thrive Community Coalition will rehabilitate the home and construct up to two additional 1,000 square foot, two- to three-bedroom homes. These housing units will provide safe, affordable, short-term housing for up to two years to individuals in recovery who are working toward independent, sober living.

There is currently one property on the land to be acquired. Project activities include rehabilitation and mitigation of water damage to the existing home, land clearing, driveway construction, sewer and water line connections, and the new construction of up to two single-family housing units.

Prior ground disturbances include digging foundation and installation of underground septic for the existing property. The existing property is a three-bedroom, two-and-a-half-bath single-family property and has been exclusively used for residential purposes. There are no historic properties near or visible from the property. The property has no local significance.

Sincerely,

Ruby Smith

Ruby Smith

Appendix A

When To Consult With Tribes Under Section 106

Section 106 requires consultation with federally-recognized Indian tribes when a project may affect a historic property of religious and cultural significance to the tribe. Historic properties of religious and cultural significance include: archeological sites, burial grounds, sacred landscapes or features, ceremonial areas, traditional cultural places, traditional cultural landscapes, plant and animal communities, and buildings and structures with significant tribal association. The types of activities that may affect historic properties of religious and cultural significance include: ground disturbance (digging), new construction in undeveloped natural areas, introduction of incongruent visual, audible, or atmospheric changes, work on a building with significant tribal association, and transfer, lease or sale of properties of the types listed above.

If a project includes any of the types of activities below, invite tribes to consult:

☒ **significant ground disturbance (digging)**
Examples: new sewer lines, utility lines (above and below ground), foundations, footings, grading, access roads

☐ **new construction in undeveloped natural areas**
Examples: industrial-scale energy facilities, transmission lines, pipelines, or new recreational facilities, in undeveloped natural areas like mountaintops, canyons, islands, forests, native grasslands, etc., and housing, commercial, and industrial facilities in such areas

☐ **incongruent visual changes**
Examples: construction of a focal point that is out of character with the surrounding natural area, impairment of the vista or viewshed from an observation point in the natural landscape, or impairment of the recognized historic scenic qualities of an area

☐ **incongruent audible changes**
Examples: increase in noise levels above an acceptable standard in areas known for their quiet, contemplative experience

☐ **incongruent atmospheric changes**
Examples: introduction of lights that create skyglow in an area with a dark night sky

☐ **work on a building with significant tribal association**
Examples: rehabilitation, demolition or removal of a surviving ancient tribal structure or village, or a building or structure that there is reason to believe was the location of a significant tribal event, home of an important person, or that served as a tribal school or community hall

☐ **transfer, lease or sale of a historic property of religious and cultural significance**
Example: transfer, lease or sale of properties that contain archeological sites, burial grounds, sacred landscapes or features, ceremonial areas, plant and animal communities, or buildings and structures with significant tribal association

☐ **None of the above apply**

Thrive CDBG-RHP Transitional Housing Project	Ruby Smith	7/21/2025
Project	**Reviewed By**	**Date**

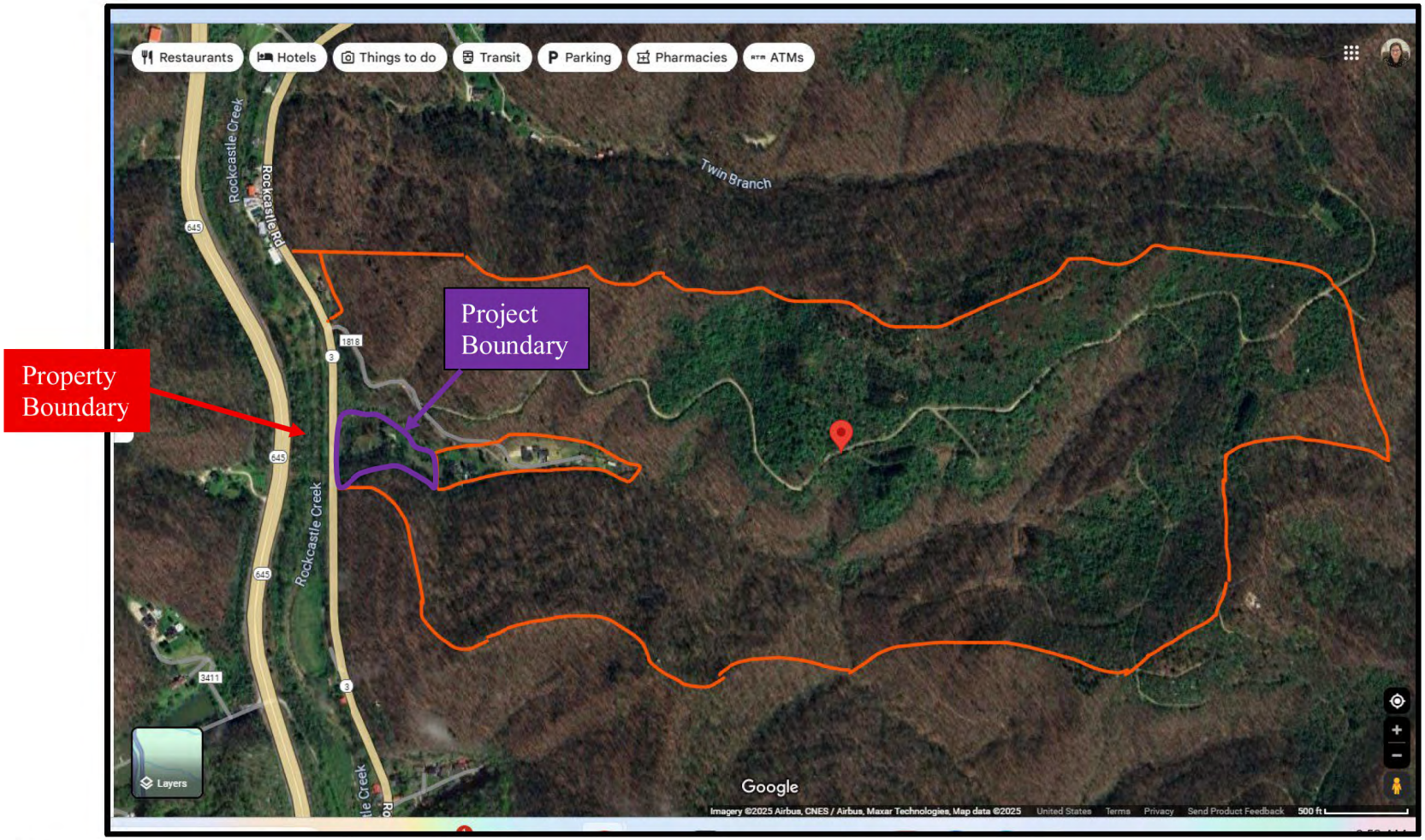
Aerial Site View Map



Aerial Site View – Project Boundary

Source: GoogleEarth

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)

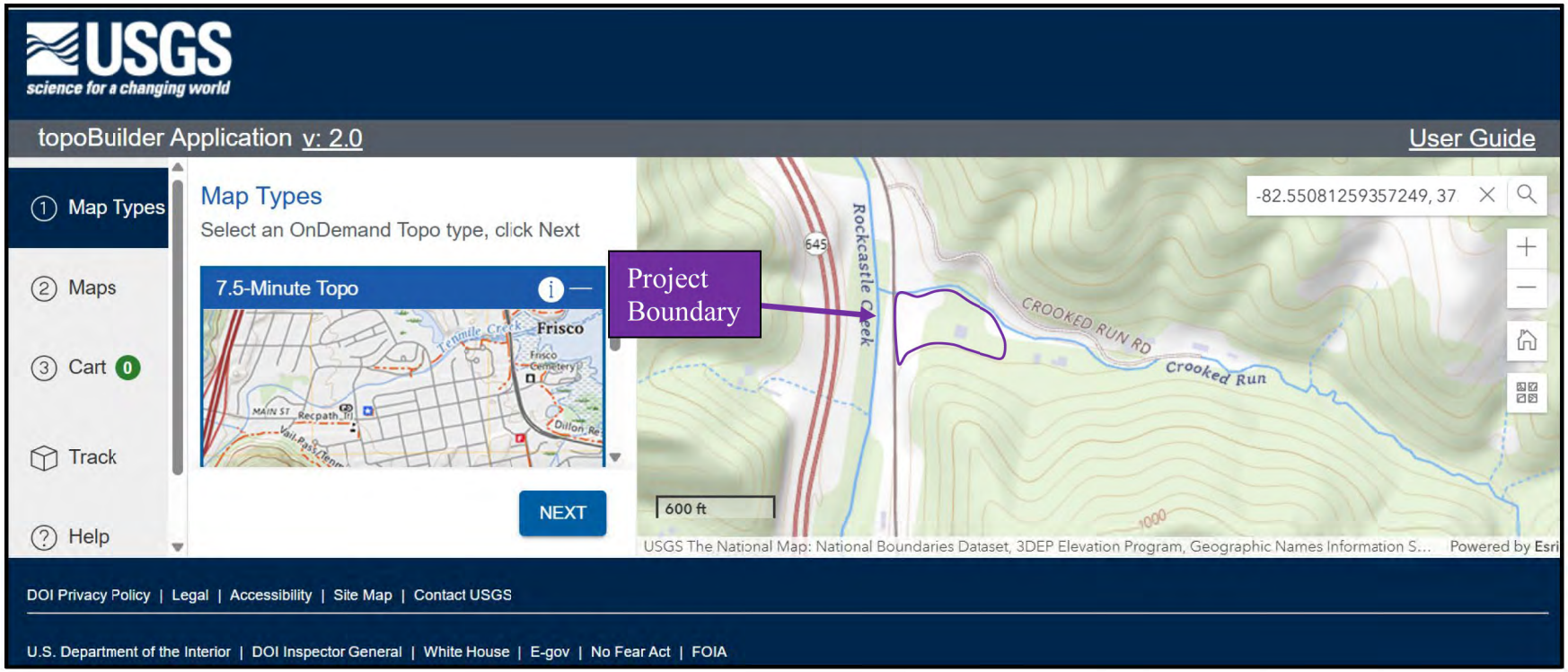


Aerial Site View - Property Boundary

Source: GoogleEarth

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)

Topographical Map



Topographical Map

Project Boundary

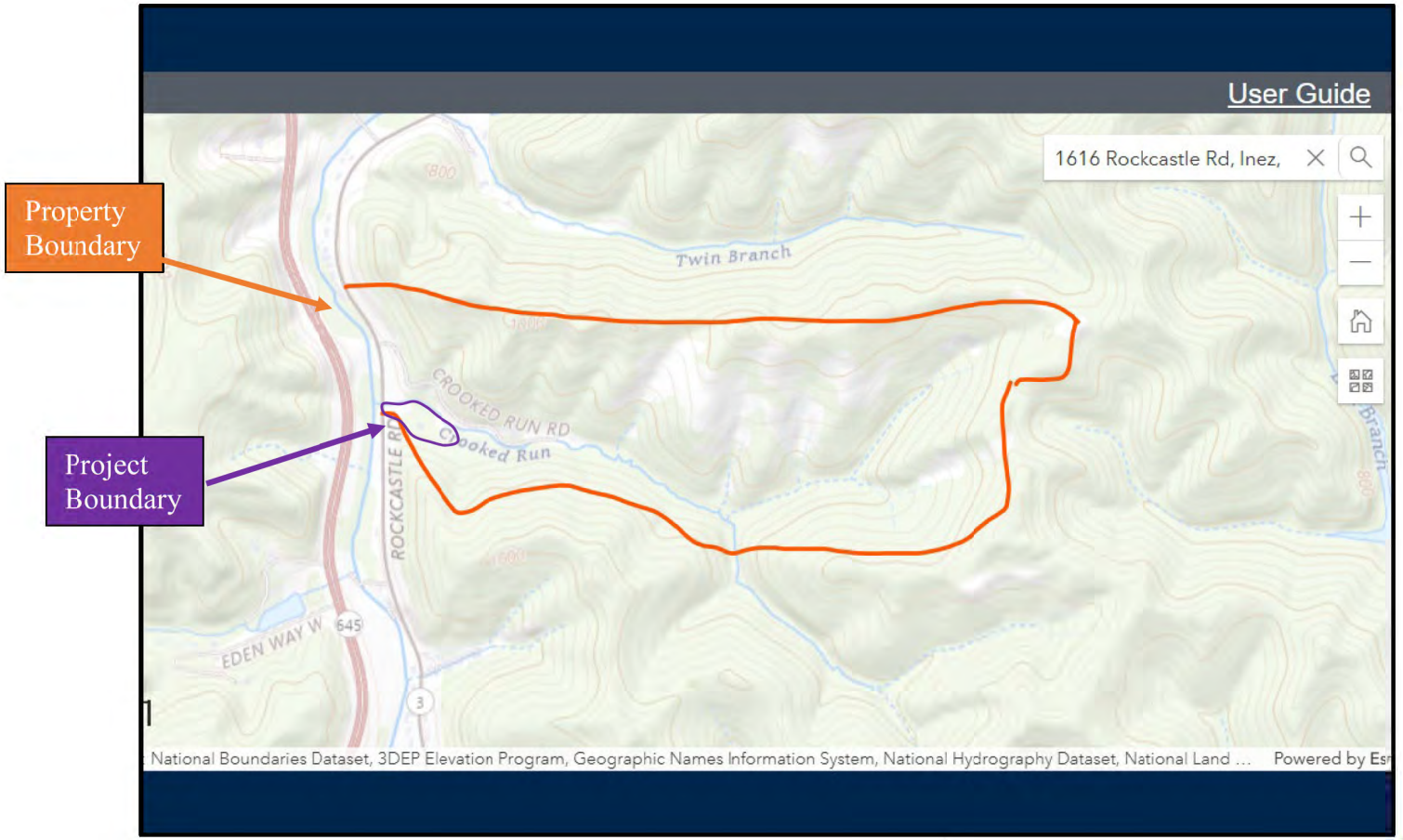
Source: USGS TopoBuilder https://topobuilder.nationalmap.gov/

Legend

Property Boundary:

Project Boundary:

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



Topographical Map

Property Boundary

Source: USGS TopoBuilder https://topobuilder.nationalmap.gov/

Legend

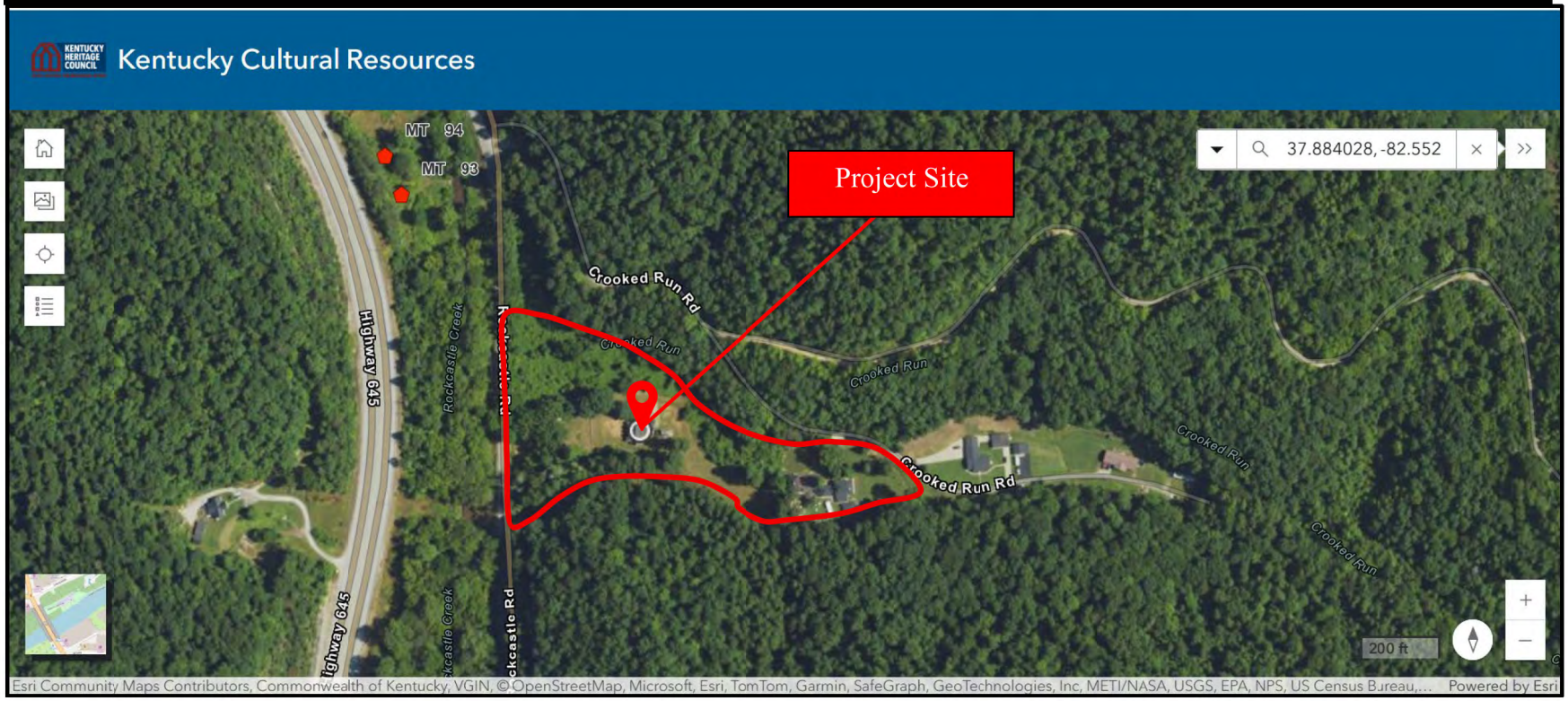
Property Boundary:

Project Boundary:

1616 Rockcastle Road, Inez, Kentucky 41224

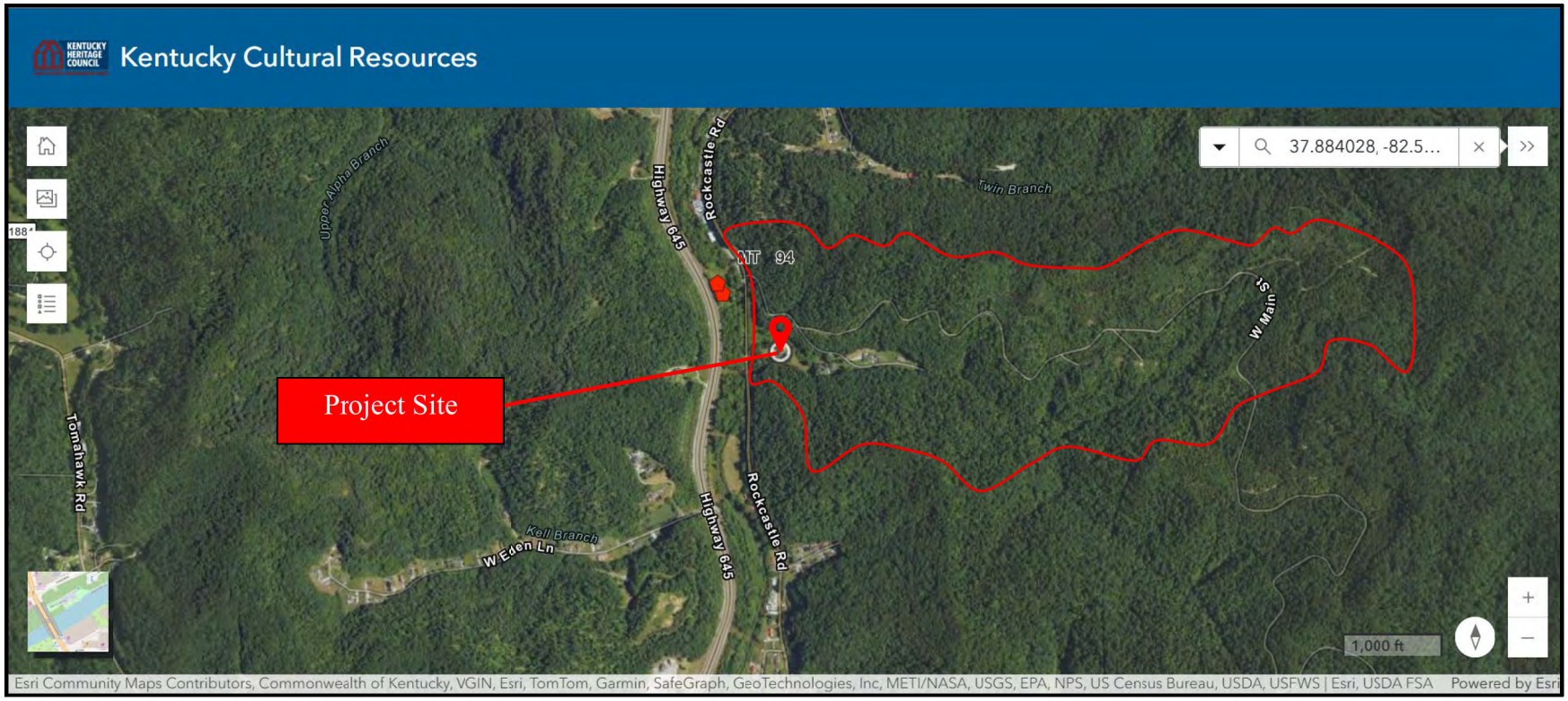
(37.884028, -82.552500)

Kentucky Cultural Resources Map



Cultural Resource Map – Zoomed Out
Source: https://kyshpo.maps.arcgis.com/

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



Cultural Resource Map – Zoomed In
Source: https://kyshpo.maps.arcgis.com/

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)

Site Photo

Property Notes:

The current property to be rehabilitated is a three-bedroom, two-and-a-half-bathroom home.

The property is not occupied.

Rehabilitation activities include the moderate repair to the basement ceiling due to water damage.

A purchase option is in place for the site.



Front-view of current property to be acquired and rehabilitated.
Current property not inhabited.

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



Side-view of current property to be acquired

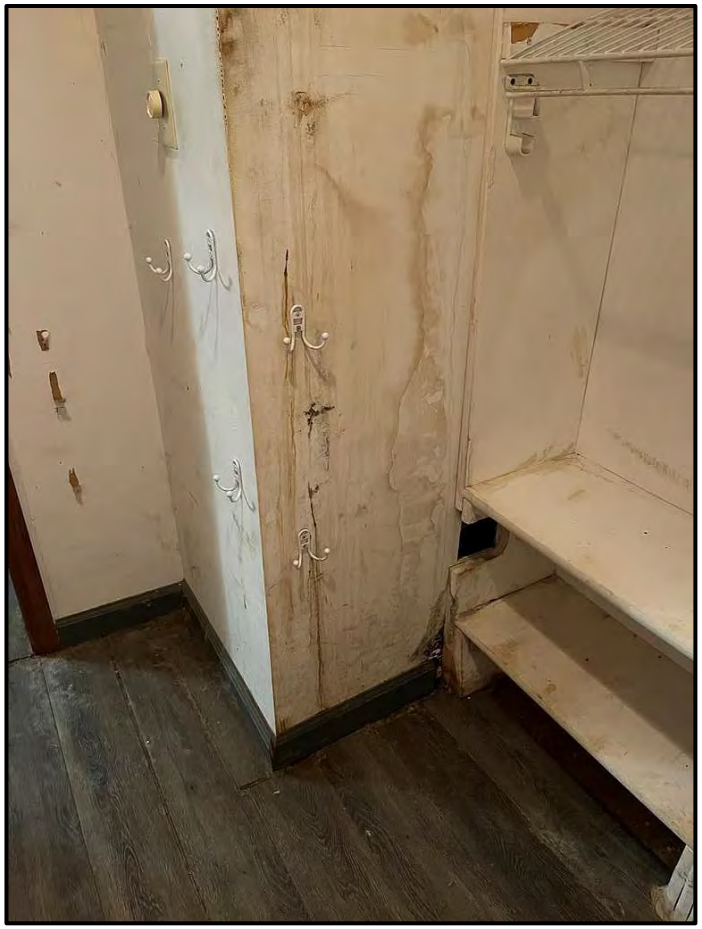
1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



Driveway-view of current property to be acquired

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)





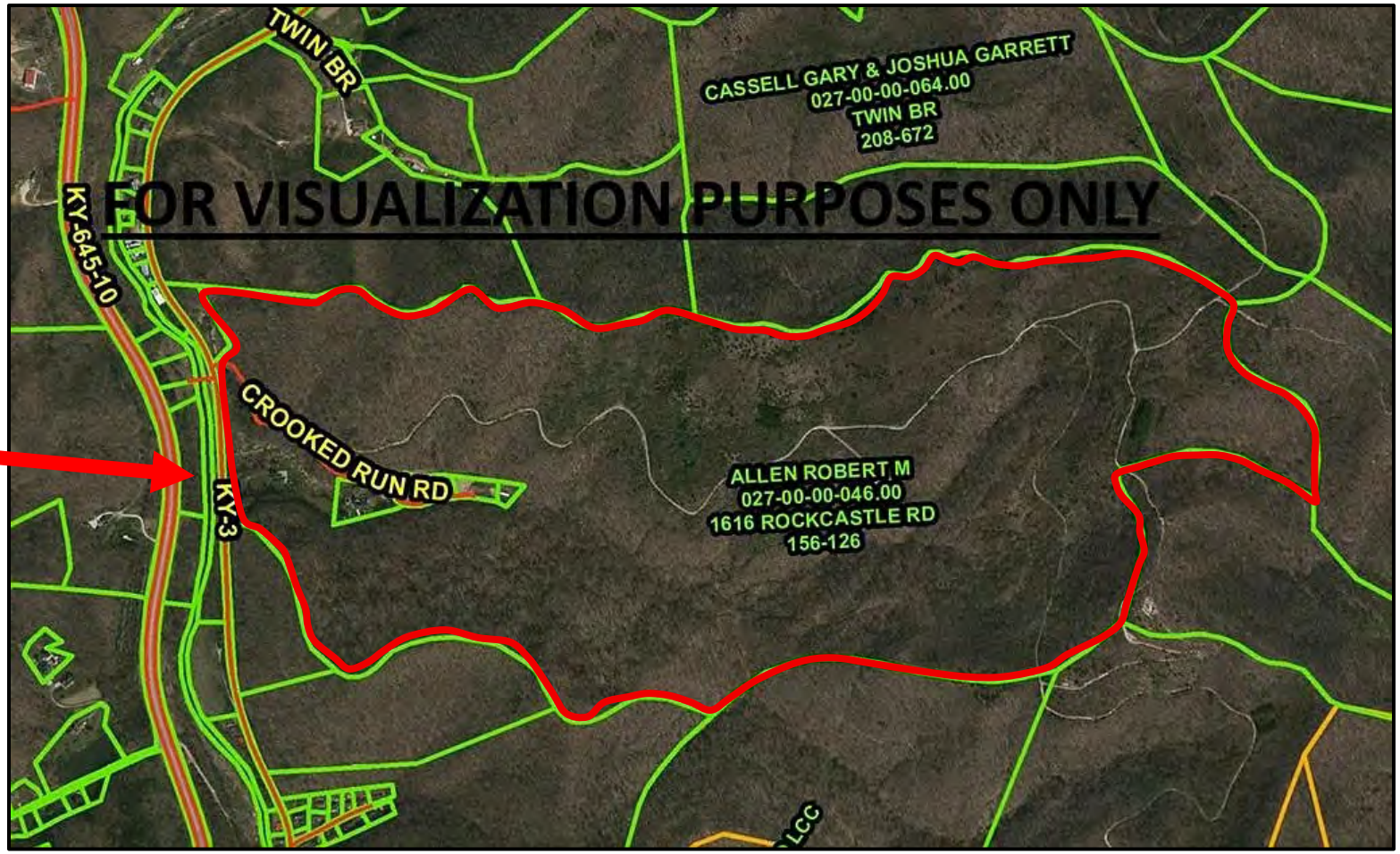
Necessary repair priorities following acquisition: Moderate basement water damage

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



Necessary repair priorities following acquisition: Moderate basement water damage

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



Map of total land to be acquired

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)

PURCHASE AGREEMENT

This **PURCHASE AGREEMENT** is dated July 10, 2025, by and between _____ ("Seller"), and **Thrive Community Coalition**. ("Purchaser"). This document shall be considered fully executed upon the latest date of signature by the Purchaser and all parties with identified ownership interest in the property (Seller). The Parties agree as follows:

In consideration of the "Option Payment" described herein, the Seller hereby gives and grants to the Purchaser, Purchaser's heirs and assigns the exclusive option, right and privilege of purchasing, for the sum of **three hundred thousand dollars ($300,000.00)**, that certain real property, together with all improvements thereon, located at **1616 Rockcastle Road, Inez, KY 41224 and consisting of approximately 253.89 acres**.

OPTION PAYMENT: The sum of fifteen thousand dollars ($15,000) shall be paid by Purchaser to Seller as a non-refundable "Option Payment" to bind this Option. In the event that Purchaser exercises its option hereunder, said Option Payment shall be repaid to Purchaser, in the form of credit at closing. However, notwithstanding the foregoing, the Option Payment shall not be returned to Purchaser if Purchaser does not consummate the transaction contemplated in accordance with the provisions herein.

EXERCISE OF OPTION: In order to exercise the Option, the Purchaser shall give notice of its election to exercise the Option to:

SELLER ADDRESS OF COMMUNICATION

CONTACT NAME: _____
STREET: _____
CITY/STATE/ZIP: _____
PHONE/EMAIL: _____

PAYMENT OF PURCHASE PRICE: The balance of purchase price will be paid in cash at closing. Purchaser agrees to pay its closing costs, aliens and encumbrances on title of any kind, as well as prepaid items at time of closing.

PRORATION: All rents, taxes, interest and any assessments involved shall be adjusted and prorated to date of transfer of deed, unless otherwise provided herein.

RISK OF LOSS: All risks or loss or damage to the premises by fire or other casualty shall remain with Seller until date Purchaser takes ownership of the property ("closing.")

INSPECTION BY PURCHASER: At all times prior to its exercise of the Option and the closing, Purchaser, with prior notice to Seller, shall have the right to inspect and test the property in a reasonable manner. The Purchaser shall have the right to enter onto the Property with prior notice to Seller for the purpose of conducting environmental studies, surveys, geological/engineering studies, and assessing availability of public utilities, all of which will

which will be done at Purchaser's expense. The property is being sold in "AS IS" condition, including but not limited to, all physical aspects and environmental conditions.

SURVEY: Purchaser shall, at its own expense, and option, have the subject property surveyed and a plat recorded (if such is necessary for legal conveyance of the property) so that the property can be conveyed to Purchaser. Purchaser is also responsible for obtaining at its expense all approvals necessary from Planning and Zoning or other governmental agencies.

CLOSING AND TITLE: At closing, an unencumbered, marketable title to the property shall be conveyed to Purchaser by deed of general warranty with the usual covenants such as any qualified title company will ensure, free and clear of all liens and encumbrances except (a) such liens and encumbrances as Purchaser my specifically approve and (b) easements of record as to the use and improvements of the property which do not adversely impact Purchaser's intended development and use of the Property. Should the title to the property appear defective or if adverse environmental issues exist with respect to the Property, Seller has fourteen (14) days after receipt of notice from Purchaser of such defect or defects within which to remedy same at the cost of the Seller. The restriction and other terms and conditions of this Contract shall survive the closing.

POSSESSION: Possession of the Property, in the condition described herein, unoccupied and free from any leases or rights of third parties in possession shall be delivered by Seller to Purchaser as of the date of the closing.

EFFECTIVE DATE: This Agreement shall be effective upon signature and remain in effect until January 31, 2026. Upon mutual agreement by the parties, this agreement may be extended.

MISCELLANEOUS: This Agreement shall apply to, inure to the benefit of, and be binding upon and enforceable against the parties hereto and their respective heirs, successors, and or assigns, to the extent as if specified at length throughout this Contract.

This Agreement contains all of the terms, promises, covenants, conditions and representations made or entered into by or between Seller and Purchaser; supersedes all prior discussions and agreements whether written or oral between Seller and Purchaser with respect to the Option and all other matters contained herein; and constitutes the sole and entire agreement between Seller and Purchaser with respect thereto.

This Agreement may not be modified or amended unless such amendment is set forth in writing and executed by both Seller and Purchaser with the formalities hereof.

IN WITNESS WHEREOF, the parties hereto have agreed to this Option to Purchase on the day and year specified below.

SELLER:

SELLER:

Seller Signature **Date:**

Seller Name (Printed)

PURCHASER: Thrive Community Coalition

Purchaser Signature **Date:** 7/10/25

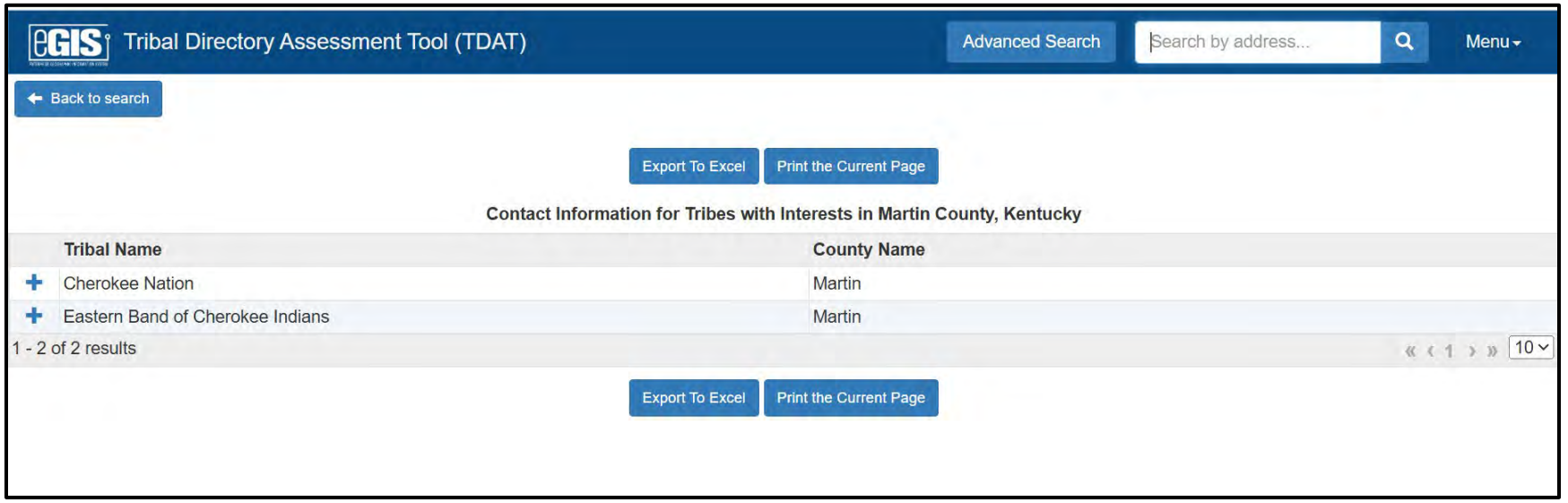
Purchaser Name (Printed)

CEO

Title

THPO Identification Tool

Historic Preservation



Identified TDAT Tribes in Martin County – Cherokee Nation and Eastern Band of Cherokee Indians
Source: Tribal Directory Assessment Tool, https://egis.hud.gov/tdat/

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)

Cherokee Indian Response Email

Outlook

RE: THPO Consultation Request - Cherokee Nation

From Elizabeth Toombs <elizabeth-toombs@cherokee.org>
Date Tue 9/30/2025 15:54
To Ruby Smith <RSmith@fahe.org>

1 attachment (164 KB)
093025 HUD COR Thrive Community Coalition.pdf;

Thank you for the review request, Ms. Smith. Attached is Cherokee Nation's response to the proposed undertaking. Please let me know if there are any questions or concerns.

Wado,

Elizabeth Toombs, Tribal Historic Preservation Officer
Cherokee Nation
Tribal Historic Preservation Office
PO Box 948
Tahlequah, OK 74465-0948
918.453.5389

From: Ruby Smith <RSmith@fahe.org>
Sent: Tuesday, September 9, 2025 7:24 AM
To: Elizabeth Toombs <elizabeth-toombs@cherokee.org>
Cc: Jerri Dyer <JDyer@fahe.org>; Jon Brooks <JBrooks@fahe.org>
Subject: [EXTERNAL] THPO Consultation Request - Cherokee Nation

Good morning,

On behalf of Thrive Community Coalition, Fahe would like to request your consultation for a Community Development Block Grant - Recovery Housing Program (CDBG-RHP) project located at 1616 Rockcastle Road, Inez, Kentucky 41224 (37.884028, -82.552500).

To assist in the requested consultation, I have included the project information below for your review:

> **Address:** 1616 Rockcastle Road, Inez, Kentucky 41224 (37.884028, -82.552500)
> **Project Description:** Thrive Community Coalition (Thrive) received $650,000 of CDBG-RHP funds for the acquisition and rehabilitation of a single-family property and the construction of up to two additional single-family housing units of approximately 1,000 sq. feet. The project site is located at 1616 Rockcastle Road, Inez, Kentucky (37.884028, -82.552500). The existing residence is a 2,348 square-foot, three-bedroom, two-and-a-half-bathroom home with a two-car garage, situated on 253.89 acres. The proposed new construction will add up to two 1,000-square-foot, two- to three-bedroom homes. Project activities for new construction include land clearing, driveway construction, and water line connection. Together, these homes will comprise the Thrive Recover Well Housing Community and will provide safe, affordable housing for up to 14

> individuals with unrelated individuals sharing double-occupied bedrooms in a single-family dwelling or with a single family occupying one unit if family reunification is appropriate and possible. Following rehabilitation, the existing structure will be able to house up to six individuals and each of the additional single-family housing units provides housing for up to four individuals or up to four-person families for a maximum of two years. With these additions to Martin County's housing stock, Thrive will be assisting individuals in recovery who are working toward independent, sober living with the option for family reunification.

Please also find attached scoping letters and maps to assist in your consultation.

Thrive Community Coalition invites concerns or comments regarding the project within 30 days of this letter

Please don't hesitate to reach out with any questions or concerns.

Best,

Ruby Smith
Fahe
Project Manager
rsmith@fahe.org
(859) 228-2170



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Eastern Band of Cherokee Indians Email Correspondence

Outlook

THPO Consultation Request - Eastern Band of Cherokee Indians

From Ruby Smith <RSmith@fahe.org>
Date Tue 9/9/2025 8:23
To syerka@nc-cherokee.com <syerka@nc-cherokee.com>; pmyers@nc-cherokee.com <pmyers@nc-cherokee.com>
Cc Jerri Dyer <JDyer@fahe.org>; Jon Brooks <JBrooks@fahe.org>

1 attachment (20 MB)
Scoping Letter Packet - SHPO Thrive CDBG-RHP - FINAL (small).pdf;

Good afternoon,

On behalf of Thrive Community Coalition, Fahe would like to request your consultation for a Community Development Block Grant - Recovery Housing Program (CDBG-RHP) project located at 1616 Rockcastle Road, Inez, Kentucky 41224 (37.884028, -82.552500).

To assist in the requested consultation, I have included the project information below for your review:

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Best,

Ruby Smith
Fahe
Project Manager
rsmith@fahe.org
(859) 228-2170



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Archaeological Survey



AN INTENSIVE PHASE I ARCHAEOLOGICAL SURVEY FOR THE PROPOSED ACQUISITION, REHABILITATION, & NEW CONSTRUCTION OF RESIDENTIAL STRUCTURES AT 1616 ROCKCASTLE ROAD, MARTIN COUNTY, KENTUCKY

Avanti Archaeology
Report 2510
Richmond, Kentucky

December 2025

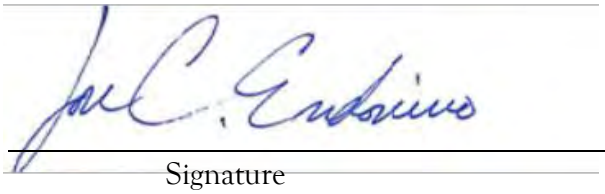
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AN INTENSIVE PHASE I ARCHAEOLOGICAL SURVEY FOR THE PROPOSED ACQUISITION, REHABILITATION, & NEW CONSTRUCTION OF RESIDENTIAL STRUCTURES AT 1616 ROCKCASTLE ROAD, MARTIN COUNTY, KENTUCKY

Report Prepared for:
Ruby Smith
Project Manager
Federation of Appalachian Housing Enterprises
319 Oak Street
Berea, Kentucky 40403
(859) 228-2170
RSmith@fahe.org

Report prepared and submitted by:

Jon C. Endonino Ph.D., RPA
Owner & Principal Investigator
Avanti Archaeology Services
Richmond, KY 40475
avantiarchaeology@gmail.com
352-817-9230



Signature

December 19, 2025
Date

Avanti Archaeology
Report 2510

Lead Agency: U.S. Department of Housing and Urban Development

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REPORT ABSTRACT

Avanti Archaeology Services conducted an Intensive Phase I Archaeological Survey of the approximately 3.0-acre Thrive APE for Federation of Appalachian Housing Enterprises (FAHE) on behalf of Thrive Community Coalition in advance of the proposed acquisition, rehabilitation, and new construction of residential structures at 1616 Rockcastle Road in Inez, Martin County, Kentucky funded by a Community Development Block Grant under the Recovery Housing Program (CDBG-RHP) administered by the U.S. Department of Housing and Urban Development (HUD). This Phase I archaeological survey aimed to locate and identify previously unrecorded archeological sites within the Area of Potential Effects (APE) and assess the impacts of the proposed undertaking on them in accordance Section 106 of the National Historic Preservation Act (NHPA) of 1966.

Pre-field background research determined that the eastern half of the APE was disturbed by prior landscape alterations based on Udorthents-Urban land soils, and the observation that the lower course of Crooked Branch had been rerouted north and away from the APE as a result of a historic map review. The southeastern corner of the APE is characterized by slopes greater than 15%, the area between the sloped terrain and the current residence is low-lying and marshy with standing and flowing water, and the current residence sits atop ground that has been disturbed by mounding and leveling. Because of these conditions and documented disturbances, no subsurface testing was conducted in the eastern half of the APE. Surface survey in this area did not produce any evidence of surface features or other archeological remains.

Piles of fill cover the southwestern corner of the APE, and a driveway runs along its northern side about 10-15 meters south of the APE boundary. These were excluded from subsurface testing. In the remaining portions of the western half of the APE, STPs were excavated on a grid pattern at 10-m intervals on a level landform that includes what was the house pad for a pre-1914 structure. Eighteen STPs were excavated and 13 produced a total of 99 historic artifacts that resulted in the identification of archaeological site 15Mt38. Chronological information from the ceramic, glass, and nails confirm a timeframe for the sites' occupation during the opening decades of the 20th century, some time after 1900 and for certain by 1914, and also produced some evidence for its use into the 1960s and thereafter. Sediment profiles in STPs offer evidence for a truncated soil sequence, probably from leveling in advance of building the pre-1914 structure. Over this truncated soil sequence, and particularly in the northern and western edges of the site, an organically enriched midden deposit with high densities of artifacts was identified. Artifact density is estimated to be 283 per square meter. The formation of midden at the site, and that it is relatively intact today, indicates that 15Mt38 retains a significant level of depositional integrity.

Based on the available information, site 15Mt38 may be eligible for listing on the NRHP under Criterion D, its potential to provide information related to early 20th century life in a remote rural community in one of the most economically depressed regions in Kentucky, and the United States overall, at the turn of the 20th century. This was a period economic change with the growth of coal extraction made possible by the incursion of roads and railroads into the Eastern Coal Fields region, and demand for timber driven by World War I and the post-war housing boom. Archaeological data the site contains may offer insights into the quality of life, economic

strategies, and adaptations to the social and economic conditions within this context. Further, 15Mt38 appears to retain its integrity based on the formation of midden deposits with a high artifact density over a truncated natural soil sequence and has not been subjected to any significant disturbance. For these reasons, it is the opinion of the Principal Investigator that the proposed undertaking will have an ***Adverse Effect*** on 15Mt38. If the site cannot be avoided, additional work to make a final NRHP eligibility determination is recommended.

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CHAPTER 1
INTRODUCTION

PROJECT PURPOSE

The Federation of Appalachian Housing Enterprises (FAHE) contracted Avanti Archaeology Services on behalf of Thrive Community Coalition funded by a Community Development Block Grant under the Recovery Housing Program (CDBG-RHP) administered by the U.S. Department of Housing and Urban Development (HUD) to conduct an intensive Phase I archaeological survey in advance of the proposed acquisition, rehabilitation, and new construction of residential structures at 1616 Rockcastle Road in Inez, Martin County, Kentucky (hereafter Thrive). An archaeological survey was requested by the Kentucky Heritage Council (KHC) in a letter to Ruby Smith, Project Manager for FAHE from Craig Potts, Executive Director and State Historic Preservation Officer (SHPO), dated July 24, 2025. The letter states that "an archaeological survey is warranted for all areas where ground disturbing activities are to take place" and that the "archaeological survey should be conducted by a qualified archaeologist." The letter also notes that a SHPO review of "the proposed project will not adversely affect any properties or sites that are listed in or eligible for the National Register of Historic Places." This Phase I archaeological survey aimed to locate and identify previously unrecorded archeological sites within the Area of Potential Effects (APE) and assess the impacts of the proposed undertaking on them in accordance Section 106 of the National Historic Preservation Act (NHPA) of 1966. HUD is the lead agency for this undertaking.

This report of investigations represents a good faith effort to locate, identify, and characterize archaeological sites within the Thrive APE and evaluate their eligibility for listing on the National Register of Historic Places (NRHP). This report conforms to the "Specifications for Conducting Field Work and Preparing Cultural Resource Assessment Reports" (Sanders 2017) issued by the Kentucky Heritage Council/State Historic Preservation Office.

PROJECT DESCRIPTION

Thrive Community Coalition proposes to acquire and rehabilitate a residential structure at 1616 Rockcastle Road in Inez, Martin County, Kentucky and construct up to two new single-family homes. Additional on-site ground disturbing activities will include land clearing, the construction of a driveway, and connection of water service. Project funding includes a HUD CDBG-RHP grant.

PROJECT AREA LOCATION & DESCRIPTION

The APE is located at 1616 Rockcastle Road in Inez, Martin County, Kentucky within the southeastern quadrant of the USGS 7.5' Milo quadrangle map northwest of Inez. It measures approximately 3.0-acres and lies east of Rockcastle Road, east of Rockcastle Creek, and south of Crooked Run (Figure 1-1). The floodplain of Rockcastle Creek and steep sideslopes to the north and south are the dominant landscape features. Currently there is an unoccupied single-family residence within the APE (Figure 1-3, A & B). The yard is open and level with a few ornamental trees and shrubs but is otherwise covered in grass. Slopes exceeding 15% characterize the eastern end of the APE (Figure 1-3, C), and a gas pipeline runs along the southern side at the base of the steep sideslope (Figure 1-3, D). An aerial view of the APE is shown Figure 1-2. Representative views of the project area are shown in Figures 1-3 through 1-5.

INVESTIGATIONS HISTORY

Project Registration (FY26-13693) and a Request for Archaeological Site and Project Area Information were submitted to the Kentucky Office of State Archaeology (OSA) December 9, 2025, and processed December 10, 2025. The findings are presented in Chapter 3. Fieldwork totaled 9.5 person hours over two field days and occurred on December 14th and 15th, 2025. Jon C. Endonino Ph.D., RPA conducted the fieldwork, artifact analysis, and authored this report.

CURATION

The artifacts recovered during this project are the property of the landowner, Thrive Community Coalition, and will be returned following the acceptance of this report by KHC. Field notes, photographs, maps, and other associated documentation are on file at the Avanti Archaeology Services office in Richmond, Kentucky. This report will be available through the OSA at the University of Kentucky and the Kentucky Heritage Council, Frankfort, where copies are on file.

SUMMARY OF FINDINGS & RECOMMENDATIONS

An intensive Phase I archaeological survey was conducted for the 3-acre Thrive APE. A review of the Martin County soil survey and USGS maps indicate significant disturbance to the eastern half of the APE from historic land alterations. In addition, pedestrian survey of the eastern half of the APE also determined that much of it has slopes >15%, and along the northern border in the eastern half there is marshy terrain with standing and flowing water associated with Crooked Branch. Clear evidence for disturbance in the form of mounding, cutting, and leveling was also noted around the location of the residence at 1616 Rockcastle Road. All of the disturbed areas in the

eastern half of the APE were subjected to pedestrian survey but were excluded from subsurface testing. No archaeological features were identified on the surface.

Subsurface testing and pedestrian survey were conducted west of the current residence except for the driveway and in the southwestern corner where piles of fill covered the ground surface. Subsurface testing in the western half of the APE resulted in the identification of one new archaeological site, 15Mt38, a historic 20th century residence. Eighteen STPs were excavated and 13 yielded a total of 99 historic artifacts. Positive STPs are confined to an elevated landform, and it generally defines the site boundary. Glass, ceramics, and nails recovered support an early through late 20th century occupation. The residence was constructed circa 1914 based on historic USGS topographic maps and the artifacts recovered agree with this timeframe. Potential architectural features were identified and include what appears to be a well or spring house remnant at the south side of the APE cut into the hillside, and what may be the base of the chimney. What could be mantles or lintels are on the ground surface within the center of the site, at least one of which is chamfered on one edge. Dressed sandstone architectural blocks have been repurposed to build a wall north-south through the yard of the single family home, as well as serving as a border or skirting around the porch.

Stratigraphic profiles exposed in some of the STPs suggest that a house pad was prepared before construction and truncated the natural stratigraphic profile of the soil, cutting down to the lighter colored subsoil. On the north and west sides of the site near, on, and at the base of the slope of the house pad, organically enriched midden deposits formed and contain the densest and most diverse array of artifacts at the site. More importantly, the formation of midden over a truncated natural soil profile indicates that the site likely possesses a high level of integrity and has escaped any significant disturbance despite the demolition of the pre-1914 structure and the construction of another home a short distance east.

Taking the currently available information into consideration, site 15Mt38 appears potentially eligible for listing on the NRHP under Criterion D, its potential to provide information related to early 20th century life in a remote rural community in one of the most economically depressed regions in Kentucky, and the United States overall, at the turn of the 20th century. This was a period economic change with the growth of coal extraction made possible by the incursion of roads and railroads into the Eastern Coal Fields region, and demand for timber driven by World War I and the post-war housing boom. Archaeological data the site contains may offer insights into the quality of life, economic strategies, and adaptations to the social and economic conditions within this context. Further, 15Mt38 appears to possess a high level of integrity judging from the formation of midden deposits with a high artifact density. For these reasons, it is the opinion of the Principal Investigator that the proposed undertaking will have an ***Adverse Effect*** on 15Mt38. If the site cannot be avoided, additional work to make a final NRHP eligibility determination is recommended.



Figure 1-1. Location of the Thrive APE, Martin County, Kentucky. USGS Milo 7.5' quadrangle. Map scale 1:10,000.



Figure 1-2. Aerial view of the Thrive APE, Martin County, Kentucky.

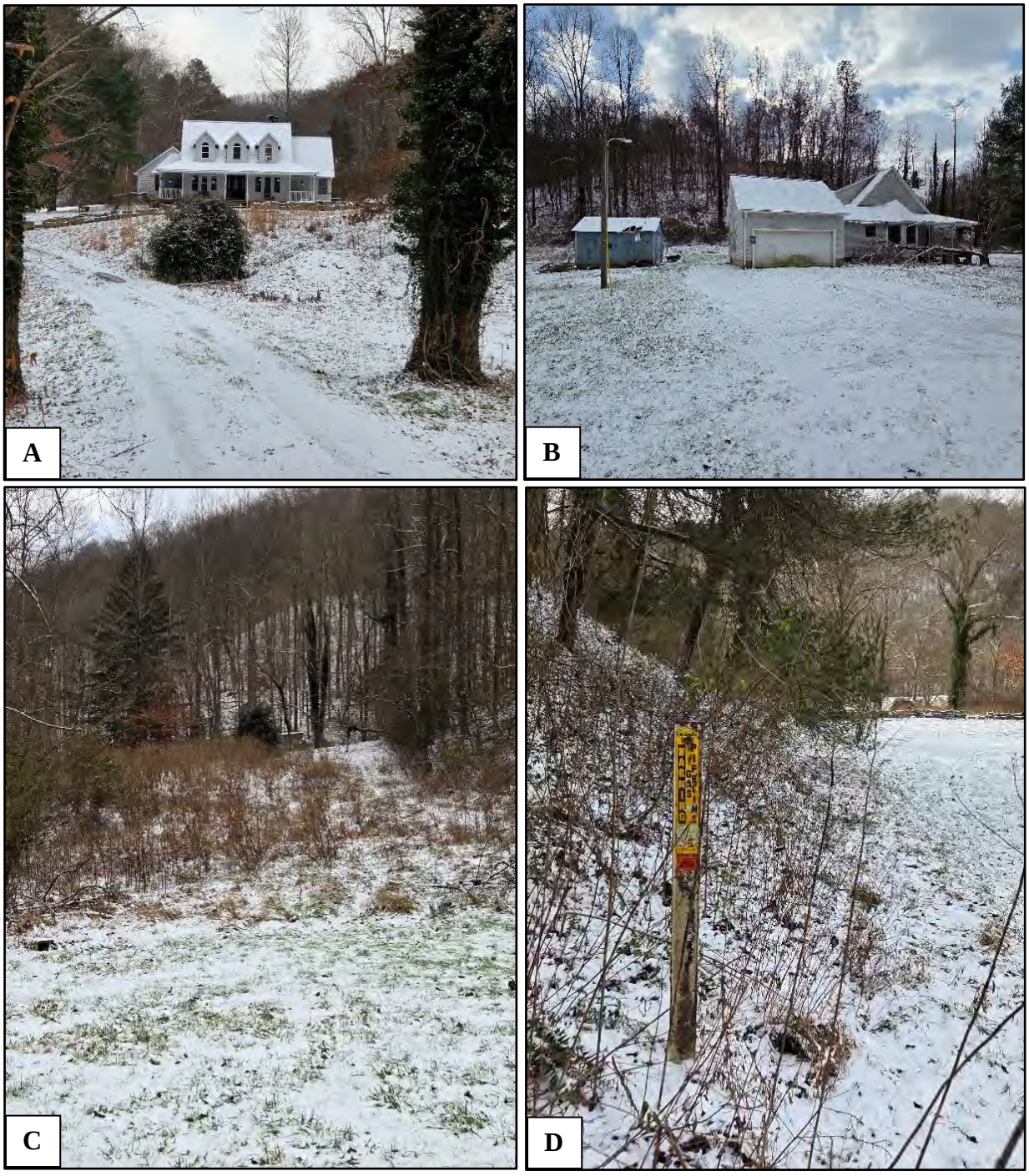


Figure 1-3. Representative views of the Thrive APE. A, view from Rockcastle Road; B, residence, garage, and shed in the center of the APE; C, steeply sloped terrain in the eastern end of the APE; D, Chesapeake gas pipeline corridor and >15% slopes on southern side of the APE.



Figure 1-4. Marshy area along the northern boundary in the eastern half of the APE, facing east-northeast.



Figure 1-5. View of fill dump piles in the southwestern corner of the APE, facing southeast.



Figure 1-6. Results of archaeological survey and areas excluded from testing within the Thrive APE, Inez, Martin County, Kentucky.

CHAPTER 2
ENVIRONMENTAL CONTEXT

PALEOENVIRONMENTAL CONDITIONS

The early Holocene, dating from 12,700 to 11,300 BP, was associated with major and rapid warming temperatures, decreases in cloud cover, and generalized landscape instability (Delcourt 1979:270). Estimated temperature increases during this period were three times greater than later Holocene fluctuations. During the early Holocene, rapid increases in boreal plant species occurred on the Allegheny Plateau in response to the retreat of the Laurentide ice sheet from the continental United States (Maxwell and Davis 1972:517-519; Whitehead 1973:624). At lower elevations, deciduous species were returning after having migrated to the southern Mississippi Valley refugia during the Wisconsin advances (Delcourt and Delcourt 1983:147). The climate during the early Holocene seems considerably cooler than the modern climate, and extant species in upper altitude zones of the Allegheny Plateau reflect conditions most like the Canadian boreal forest region (Maxwell and Davis 1972:515-516).

Conditions at lower elevations were probably less severe and favored the transition from boreal to mixed mesophytic species. Middle Holocene (8,000 to 4,000 BP) climate conditions appear to have been consistently drier and warmer than twentieth century conditions (Delcourt 1979: 271; Wright 1968). The influx of westerly winds during this Hypsithermal climatic episode contributed to periods of severe moisture stress in the Prairie Peninsula and to an eastward advance of prairie vegetation (Wright 1968). Delcourt (1979:274) has identified Middle Holocene moisture stress along the Cumberland Plateau in Tennessee but indicated that upland barrens did not expand appreciably as did the Midwestern prairies. Changes in Archaic settlement patterns in both central and northern Missouri were associated with possible decreases in upland resource availability during the Hypsithermal and coincided with the Middle Archaic period in the Cumberland Plateau.

The earliest distinguishable Late Holocene climatic episode began circa 5,000 to 4,000 BP. and ended around 2,800 BP. This episode was associated with the establishment of modern deciduous forest communities in the southern highlands and increased precipitation across most of the mid-continental United States (Delcourt 1979:270; Maxwell and Davis 1972:517-519). Beginning around 2,800 BP, warm conditions like the modern climate prevailed until the onset of the Neo-Boreal episode around 700 BP. Fluctuations in this Late Holocene Pacific episode appear to have varied locally, with either increased or decreased temperatures and precipitation (Delcourt 2002). Certain fluctuations have been associated with adaptive shifts in Midwestern prehistoric subsistence and settlement systems. An example is Struever and Vickery's (1973) suggestion of a possible correlation between the onset of a cooler and moister period circa 1,600 BP. and increased use of polygonum species (smartweed) by Late Woodland groups in the Midwest (Struever and Vickery 1973:1215-1216). Researchers have inferred warmer temperatures for the Great Plains and drier conditions for the Upper Great Lakes during this same period (1,600-1,300 BP.) (Delcourt 2002). Other fluctuations during the Pacific episode are similarly non-uniform across

the mid-continental United States; however, the interfaces of all fluctuations were generally consistent. Local paleoecological evidence is required to determine the kinds of climatic fluctuations Woodland populations experienced during the Pacific episode. Given evidence of fluctuations elsewhere, it is most likely that changes occurred circa 1,700 BP, 1,300 BP, and 900 BP, with a possible fourth change around 2,300 BP.

Studies of historic weather patterns and tree ring data by Fritts (1971) indicate that climatological averages were "unusually mild" when compared with seventeenth and nineteenth century trends. His study suggested that winters were generally colder, weather anomalies were more common, and severe winters were more frequent between A.D. 1602 and 1899 than after 1900. These cooler, moister conditions are associated with the Neo-Boreal episode, or Little Ice Age, which began around 700 BP and coincided with minor glacial advances in the northwest and Europe. The effects of the Neo-Boreal episode, which ended during the mid- to late-nineteenth century, have not been studied in detail for this region. Despite this, it appears that the area experienced less radical temperature decreases during the late Neo-Boreal than did the upper Midwest and northern Plains (Fritts 1971). Related changes in extant vegetation should therefore be more difficult to detect. It is probably safe to assume, however, that average temperatures were at least a few degrees cooler during the late Prehistoric and early Historic periods. The frequency of severe winters and average winter precipitation were probably greater as well.

CURRENT ENVIRONMENTAL CONDITIONS

Physiography

The Thrive APE is located within Cumberland Plateau in the mountains of eastern Kentucky and the Eastern Coal Fields physiographic area, an area characterized by extensively dissected lower Pennsylvanian age rock formations (Davis 1924). Topographically the region is rugged and mountainous. Within the project APE topography is relatively level and occupies an area of floodplain at the south side of Crooked Run east of Rockcastle Creek. Elevation is approximately 201 meters (660 feet) AMSL (Figure 2-1). The gentle slopes of the property and proximity to water would have been attractive for settlement.

Geology

The primary geological formation within the APE is Quaternary alluvium associated with Rockcastle Creek and Crooked Run. Quaternary alluvium occurs throughout Kentucky in larger streams and tributaries and consists of terrace and floodplain deposits (McDowell and Newell 2001). Deposits consist of boulders, cobbles, pellets, sand, silt, and clay in various proportions with most deposited during the Holocene, but Pleistocene alluvium also occurs (McDowell and Newell 2001). Within the APE Quaternary Alluvium occurs throughout except for a small portion at the eastern and western ends adjacent to steeply sloped terrain of the mountain to the south which is characterized by the Middle Pennsylvanian Hyden Formation that consists primarily of sandstone, siltstone, claystone, and coal.

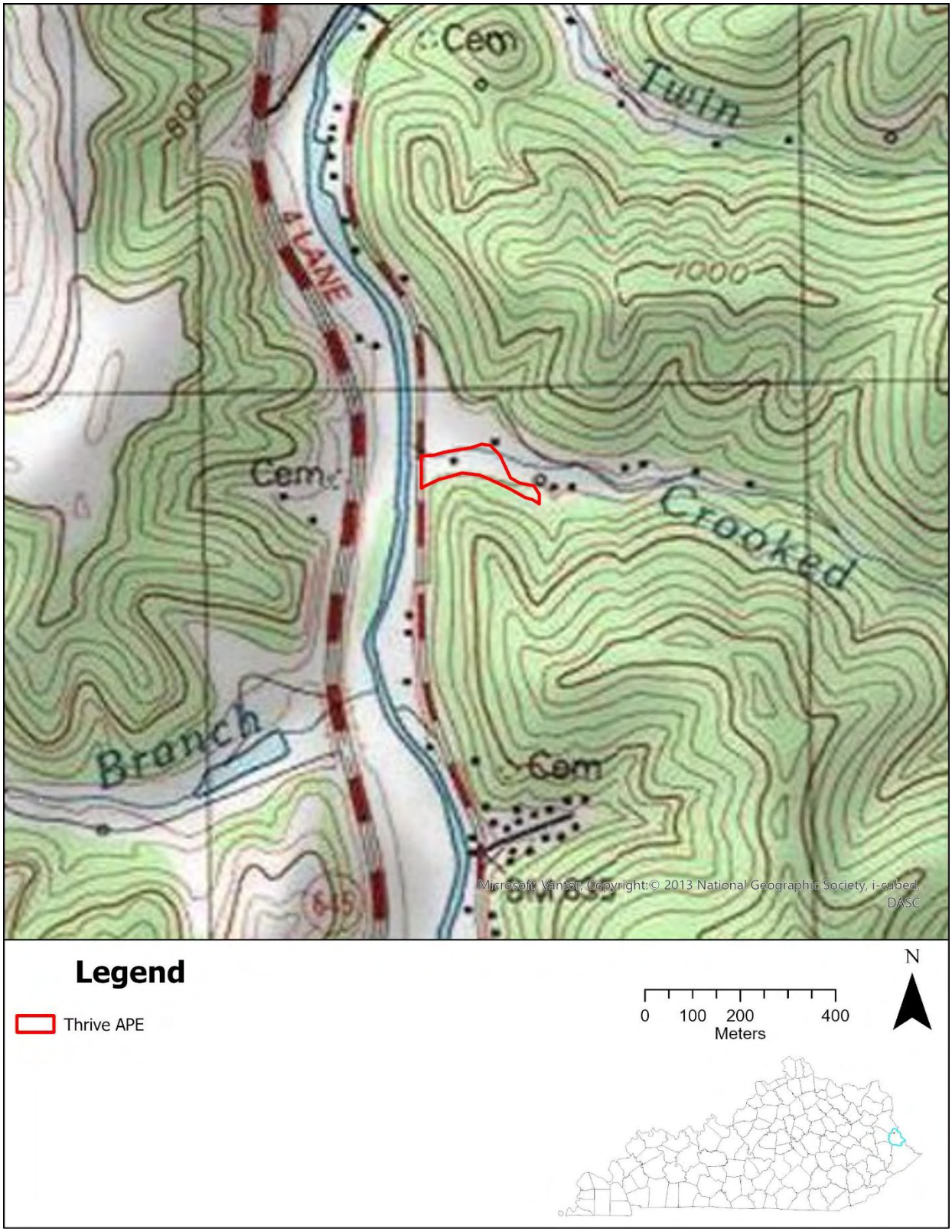


Figure 2-1. Physiography of the Thrive APE, Martin County, Kentucky.

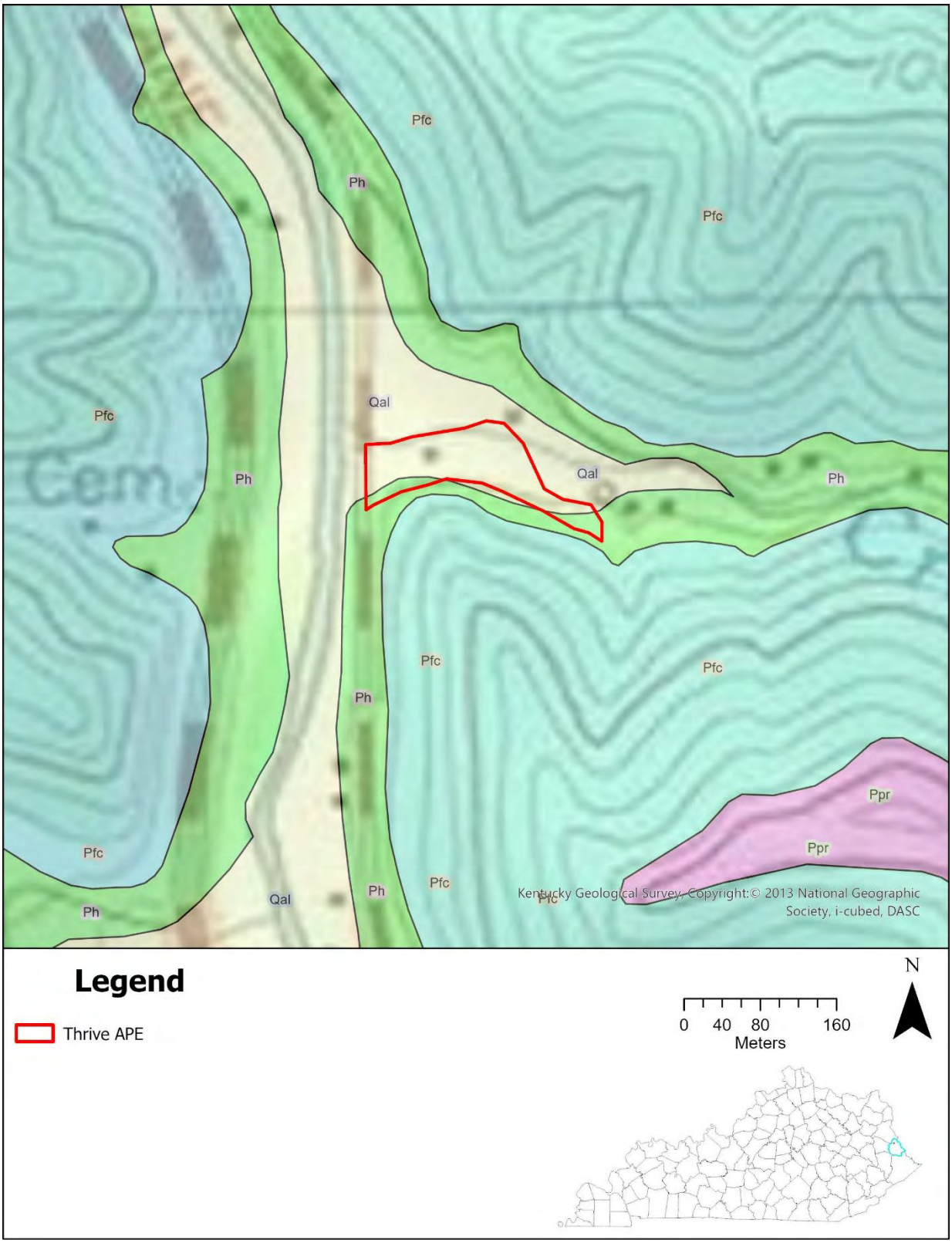


Figure 2-2. Geology of the Thrive APE, Martin County, Kentucky.

Hydrology

The project area is within the Big Sandy watershed. The principal hydrological feature near the APE is Crooked Run, an Order 1 stream that feeds into the Order 5 Rockcastle Creek (Figure 2-3). The APE is located southeast of the confluence of these streams. Both water sources would have been available a short distance away for residents in both the recent and distant past. A discrepancy in the course of Crooked Run was identified in reviewing 1954 and 2022 USGS Milo 7.5' topographic maps. On the 1954 USGS topographic map and GIS data layers for hydrology Crooked Run traverses along the northern boundary of the APE. However, on the 2022 Milo, KY topographic map and on a LiDAR based DEM, the course of the creek is farther north and closer to the edge of the southwest facing mountain slope to the north. A side-by-side comparison is shown in Figure 2-4. Originally believed to be a discrepancy in the georeferencing of hydrological stream feature GIS layer, the variance between the Milo, KY USGS maps show that as late as 1992 the course of Crooked Run was at the northern APE boundary, indicating that its course has been altered within the past 33 years. In addition, this comparison also revealed changes to the local topography within and near the APE. A gully or ravine at the east end of the APE has apparently been in-filled and leveled based on changes in the shape of the topographic lines between the 1954 and 2022 USGS Milo, KY quadrangle maps.

Soils

Soils within the APE are characterized by two main types: Grigsby fine sandy loam, frequently flooded and Udorthents-Urban land complex, 0-12% slopes (Figure 2-5). At the southern end small areas of Cloverlick-Shelocta-Kimper complex, 20-80% slopes, very stony may also be present and are associated with the steeply slopped terrain that flanks the APE.

Grigsby fine sandy loam, frequently flooded is the primary soil type in the western half of the APE. This soil is very deep and well drained and typically found within floodplain contexts with slopes less than 3%. A typical profile consists of a surface layer of brown fine sandy loam from the ground surface to 28 cm (0-11 in.); and subsoil of brown sandy loam from 28-48 cm (11-19 in.), yellowish brown fine sandy loam from 48-81cm (19-32 in.), and dark yellowish brown fine sandy loam from 81-137 cm (32-54 in.) (Blanford and Moore 2005:55).

Udorthents-Urban land complex, 0-12% slopes are disturbed soils that occur so close that they cannot be separated at the selected mapping scale and characterize the eastern half of the APE east of the current residence. Urban land includes residences, industrial sites, commercial sites, parking lots, schools, and other permanent structures and are variable in their composition. Udorthents is made up of fill material composed of soil and rock altered from its natural state for the purpose of road construction, building site development and typically occur along streams and industrial sites. Composition is extremely variable due to the extensive human alteration (Blanford and Moore 2005:70). Within the Thrive APE Udorthents-Urban land complex soils are likely the product of preparing roads and home sites in the APE, and those that occur farther east along Crooked Run.

Cloverlick-Shelocta-Kimper complex, 20-80% slopes, very stony is a very deep to deep and well-drained soil found on the north- and east-facing mountain sideslopes composed of a brown channery loam overlying a subsoil of yellowish brown channery loam to extremely channery loam



Figure 2-3. Hydrology of the Thrive APE, Martin County, Kentucky.

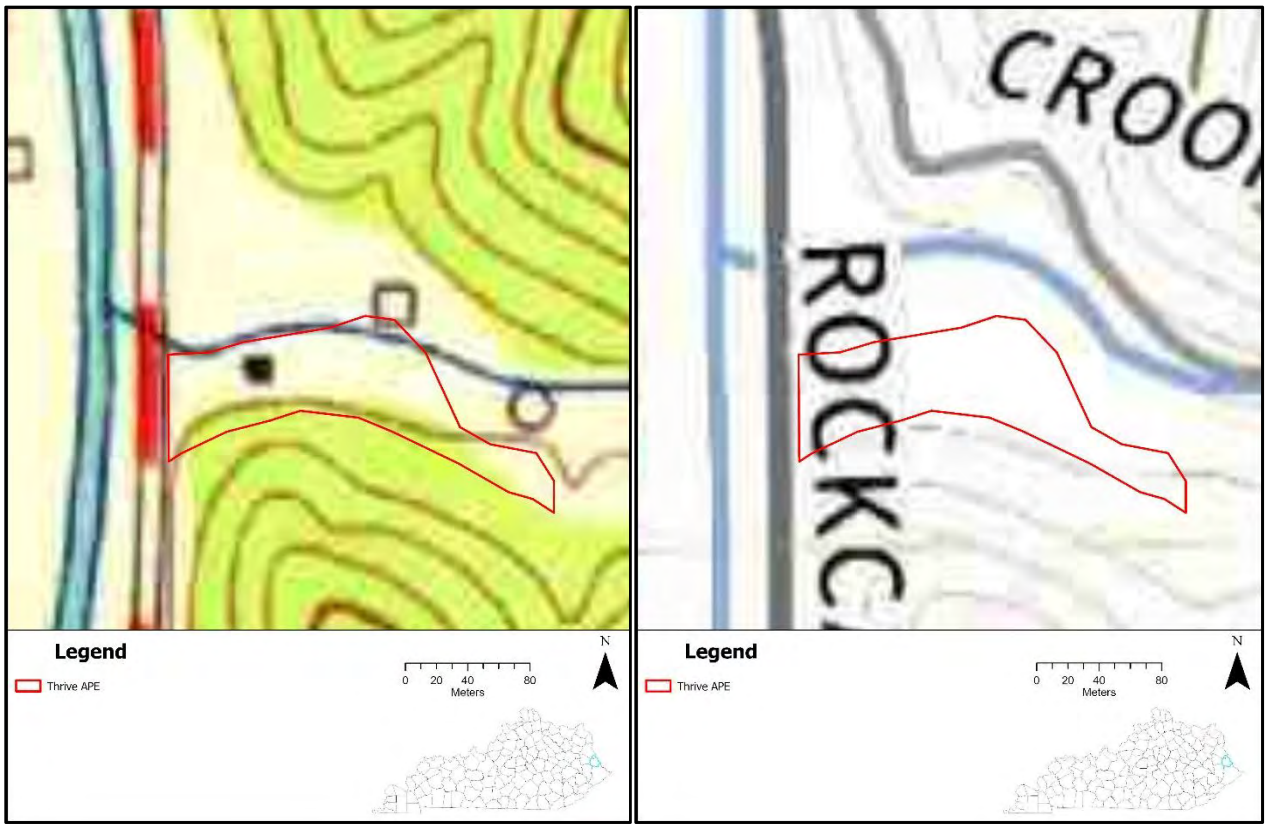


Figure 2-4. Changes in the course of lower segment of Crooked Run relative to the Thrive APE, Martin County, Kentucky. Redirection and channelization occur in the period between 1954 and 2022 based on a comparison of the USGS 7.5' Milo, KY quadrangle.

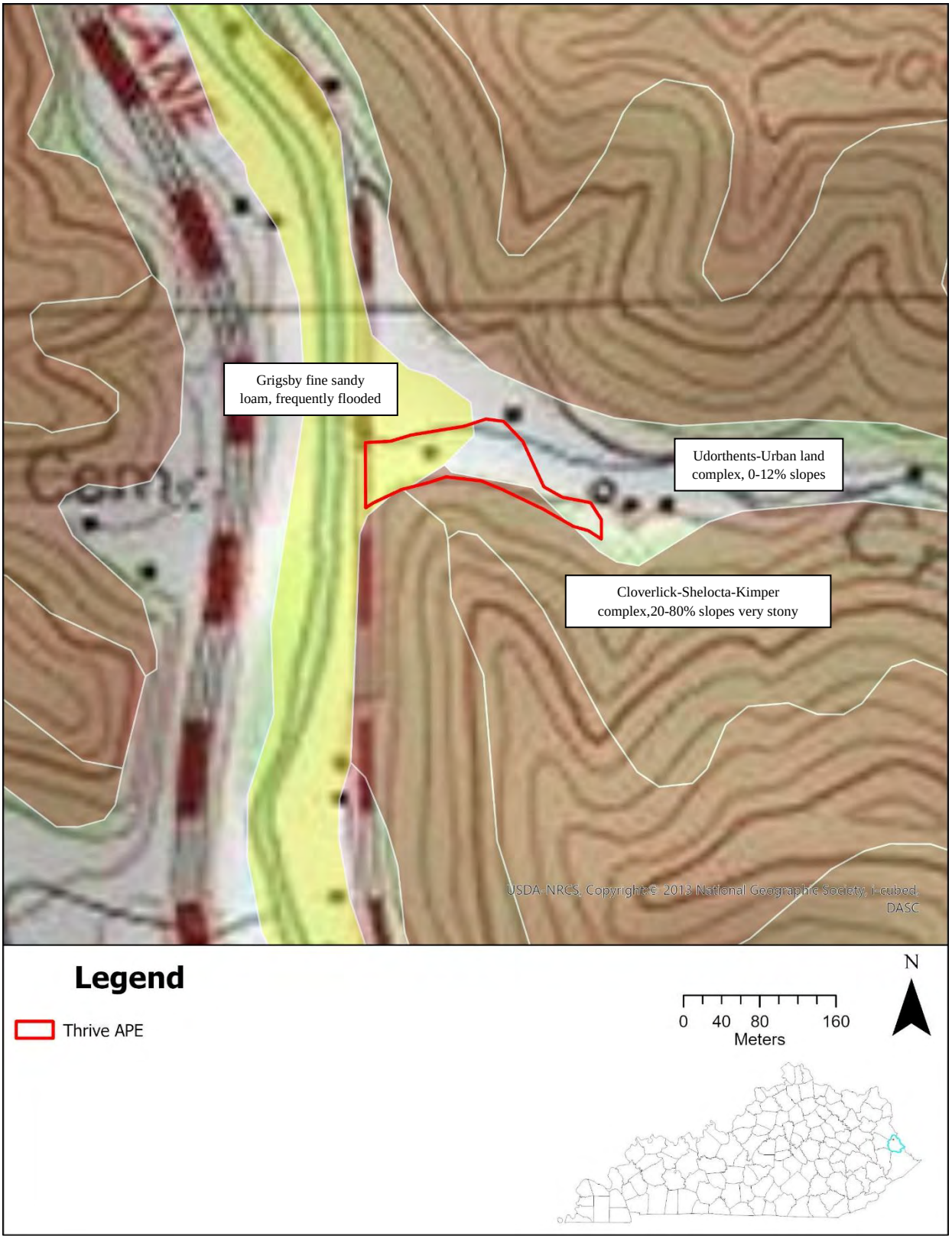


Figure 2-5. Soil types within the Thrive APE, Martin County, Kentucky.

(Blanford and Moore 2005:42). Considering the association of this complex with strongly sloped terrain, there will be no subsurface testing where it occurs.

Ecological Communities

Vegetation

Eastern Kentucky falls within the "Carolinian Biotic Province" of Dice (1943:17). In Appalachia, forests are characterized by a mixed mesophytic forest composition with a diverse array of species, both broad-leaved deciduous and coniferous. The oak-hickory association is dominant in the western portion of the province which includes Kentucky. Specific tree species compositions depend on several factors including elevation, soil drainage properties, and local soil associations. Vegetation identified within the APE peripheral to the cleared and maintained aeras around the residence included ironweed, goldenrod, blackberry, greenbrier, and Japanese honeysuckle. Grasses, herbaceous plants and ornamental shrubs including crepe myrtle occurred within the residential yard. A white pine tree and several oak trees line the driveway from Rockcastle Road to the residence.

Fauna

Fauna inhabiting the broadleaved, deciduous forests of the Eastern Mountains Region of Kentucky are typical of the Carolinian Biotic Province (Dice 1943:16-18). Many of the species associated with this kind of environment are still resident in the region today. Others, however, due to over hunting and habitat loss were extirpated. Larger mammals important to the Native American inhabitants of the region and early colonists like bison and elk were hunted to extinction. Elk, however, was reintroduced to the region in recent times and the populations have successfully reestablished themselves. Predators, among them the red and gray wolf, panther, and Black Bear are permanently extinct. Other species still common in the region today include white tailed deer, raccoon, opossum, squirrels, bobcat, turkey, grouse, quail, rabbit, skink, a variety of snakes, eastern box tortoise, and a host of songbirds. In creeks typical of the area turtles and shellfish along with bony fishes are common although shellfish populations are under threat from alterations to aquatic ecosystems. Many of the species that inhabit the region today were historically important to the Native American groups that resided there for millennia before the arrival of European colonists and found frequently in archaeological contexts.

DESCRIPTION OF THE PROJECT AREA

The Thrive APE is contained within the southeastern quadrant of the USGS 7.5' Milo quadrangle map northwest of Inez, Kentucky and is situated within the floodplain of Rockcastle Creek and Crooked Run, tributaries of Big Sandy River. The terrain is relatively flat with an elevation of approximately 195 meters (640 feet) AMSL. Rockcastle Creek and Crooked run are primary hydrological features and are west and north of the APE, respectively. Comparing historic and modern USGS topographic maps and contemporary LiDAR DEMs show that the course of Cooked Run near its confluence with Rockcastle Creek has been altered, moving farther north along the

base of the south facing mountain north of the APE. Changing the course of Crooked Run to follow a more northerly course would have required significant landscape modifications, and these are borne out in part by the soils that occur within and near the APE. Additional terraforming is registered in the apparent infilling of a gully or ravine at the eastern end of the APE as indicated by changes in the topographic lines east of the APE when comparing USGS Milo quadrangle maps over time. Soil types are largely split between the naturally occurring Grigsby fine sandy loam in the west, and the highly disturbed Udorthents and Urban Land in the east, with a small amount of Cloverlick-Shelocta-Kimper complex, 20-80% slopes, very stony at the southern side flanking the north-facing mountain slopes. Considering the occurrence of well drained soils in the west of the APE, the level land surface near Rockcastle Creek and Crooked Branch, the likelihood of encountering archaeological sites within the western portion of APE is considered high. The presence of heavily disturbed and terraformed terrain in the eastern half suggests a low potential for archaeological sites and, if sites are present, their integrity is likely entirely or significantly compromised. Currently the APE is characterized by a single-family home, driveway, and a maintained yard with stands of trees.

CHAPTER 3
PREVIOUS RESEARCH & CULTURAL CONTEXTS

PREVIOUS ARCHAEOLGOICAL SURVEYS

Ten previous archaeological surveys were identified within 2 kilometers of the project APE during a search by OSA. Three surveys occur within 450 m to 1300 m of the APE, but no surveys occurred within it. Previous surveys within 2 kilometers of the Thrive APE are discussed below.

A Report of Archaeological Survey and Testing on the Ulysses to Inez Road, Lawrence and Martin Counties, Kentucky (Survey# 576159) was prepared for the Kentucky Department of Transportation by the Division of Environmental Analysis of the Kentucky Department of Transportation (Fiegel 1980). Archaeological reconnaissance and site testing was conducted along 15.87 kilometers (9.86 miles) of the Ulysses-Inez Road Corridor to locate archaeological sites, test those sites to assess their significance, and determine their National Register eligibility and recommend mitigation measures. Four archaeological sites were identified, two in Lawrence County (15La199, 15La200) and two in Martin (15Mt5, 15Mt6). Both of the Lawrence County sites were lithic scatters and subjected to limited test excavations. Both sites were determined to be ineligible for NRHP listing. The Martin County sites were both rockshelters. Site testing at 15Mt5 and 15Mt6 (see the discussion below for both sites) determined that neither are eligible for NRHP listing. No further work was recommended for any of the four sites.

An Archaeological Assessment of the Proposed Quail Hollow II Apartments, Ltd., Martin County, Kentucky (Survey# 577810) was prepared for Capital Properties, Inc. by Cultural Resource Analysts, Inc. (Hand 1987). This Phase I archaeological survey was conducted for a proposed apartment complex in Inez, Martin County, Kentucky and represents an expansion of the existing Quail Hollow I apartment complex. The APE consisted of approximately 2 acres where three buildings and a parking lot were constructed. Prior disturbance from landscape alteration and debris dumping were noted and limited to the southern end of the project area. Intensive pedestrian survey supplemented by STPs were carried out and failed to identify any archaeological sites or other historical resources. No further work was recommended.

A Coal Mine Survey on Crooked Run in Martin County, Kentucky (Survey# 579329) was performed for Alchemy Engineering Associated by Cultural Resource Analysts, Inc. (Hand 1992). Approximately 139.90 acres were surveyed and consisted mainly of steep sideslopes, narrow stream bottoms, and narrow ridgetops. Portions of the study area were previously disturbed by timbering activities. Field methods included intensive pedestrian survey supplemented with shovel testing. No sites or other historical properties were identified. No further work was recommended.

A Coal Mine Survey on Twin Branch in Martin County, Kentucky (Survey# 579823) was prepared for Alchemy Engineering Associates by Cultural Resource Analysts, Inc. (Creasman 1994). Approximately 82.55 acres were surveyed and consisted mainly of steep sideslopes, narrow stream

bottoms, and narrow ridgetops. Portions of the study area were previously disturbed by timbering activities. Field methods included intensive pedestrian survey supplemented with shovel testing. No sites or other historical properties were identified. No further work was recommended.

A Coal Mine Survey Along Crooked Run and Twin Branch in Martin County, Kentucky (Survey# 580002) was prepared for Alchemy Engineering Associates by Cultural Resource Analysts, Inc. (Bradbury 1995). Approximately 40 acres were surveyed and consisted mainly of steep sideslopes, narrow stream bottoms, and narrow ridgetops. Portions of the study area were previously disturbed by timbering activities. Field methods included intensive pedestrian survey supplemented with shovel testing. No sites or other historical properties were identified. No further work was recommended.

A Coal Mine Survey Between Crooked Branch and Rockcastle Creek in Martin County, Kentucky (Survey#580175) was prepared for Alchemy Engineering Associates by Cultural Resource Analysts, Inc. (Richmond 1995). Approximately 173.44 acres were surveyed and consisted mainly of steep sideslopes, narrow stream bottoms, and narrow ridgetops. Portions of the study area were previously disturbed by timbering activities, mining, and coal and gas exploration activities. Field methods included intensive pedestrian survey supplemented with shovel testing. No sites or other historical properties were identified. No further work was recommended.

Phase I Archaeological Survey of the Rockcastle Mining, Inc. Rockcastle Creek Coal Permit Area, Martin County, Kentucky (Survey# 580223) was prepared for Bocook Engineering, Inc. by Betty McGraw Consulting Archaeologist (McGraw 1995). Approximately 355.47 acres were surveyed utilizing pedestrian survey augmented by shovel testing. No sites or other historical properties were identified. No further work was recommended.

Phase I Cultural Resources Survey of Line PM-117 Replacement Project, Johnson and Martin Counties, Kentucky (Survey# 587167) was prepared for NiSource Gas Transmission and Storage by GAI Consultants, Inc. (Hood 2013). This project proposed replacing the existing PM-117 natural gas pipeline over a length of 12.12 km (7.53 miles) within new and existing ROW. The study corridor measured 200 feet wide by 7.53 miles. Additionally, 10 proposed access roads totaling 18.91 kilometers (11.75 miles) and four extra workspaces covering 0.29 hectares (0.72 acres) were also surveyed. The total APE for the project measured 102.98 hectares (254.48 acres). A small family cemetery was identified within a portion of the proposed ROW, and the proposed centerline was rerouted to avoid it. No other cultural resources were identified. No further work was recommended

Phase I Archaeological Survey for the Proposed Rockcastle Creek Pedway Project, City of Inez, Martin County, Kentucky (Survey# 589035) was prepared for QK4 and the Kentucky Transportation Cabinet by Amec Foster Wheeler Environment and Infrastructure, Inc. (French 2015). The APE for this project consisted of a 102 meter linear corridor that extends from Board Walk, crosses Rockcastle Creek, and intersections with an 85 meter perpendicular corridor along the edge of KY Route 3. The total project area is 0.23 acres. No archaeological sites were located within the APE. No further work was recommended.

PREVIOUSLY RECORDED ARCHAEOLOGICAL SITES

Two previously recorded archaeological sites, 15Mt5 and 15Mt6, were recorded within 2km of the Thrive APE. Both sites were identified and investigated as part of Survey# 576159 by Fiegel (1980), *A Report of Archaeological Survey and Testing on the Ulysses to Inez Road, Lawrence and Martin Counties, Kentucky*. Site descriptions are based on Fiegel's (1980) testing results.

15Mt5

Site 15Mt5 is a pre-Contact Native American rockshelter site located 400 meters west of the confluence of Alpha Branch and Rockcastle Creek. The shelter is south-facing and was reportedly used as a pig pen according to local informants. Vandalism to the site was reported from December 1979 to January 1980. A single lithic flake identified on the surface of the rockshelter led to the installation of posthole tests that showed that the upper 30 cm of the deposits were disturbed, but that there were intact cultural deposits below it contains cultural materials and ash (Feigel 1980:100). Two excavation units were placed within the site, one measuring 0.5x1-m and another measuring 2x2-m. Strata encountered in TU-1 were disturbed in the upper 35 cm, and all others were undisturbed. Stratum 4 is gray in color and overlies the bedrock and appears to be organically enriched due to human activity. Test Unit 2 identified only two strata, the uppermost disturbed, and the lower stratum undisturbed (Fiegel 1980:105). Diagnostic cultural materials came from the upper disturbed stratum, and small amounts of debitage and vertebrate fauna were found in the lower stratum. The site was interpreted as a "maintenance site" that was "utilized sporadically through time" (Fiegel 1980:111). The recovery of a Brewerton Side Notched and a grit tempered ceramic sherds indicate Late Archaic and Woodland components at the site. Significantly more non-diagnostic materials were recovered that included 101 debitage, 5 utilized flakes, 10 stone tools, 101 vertebrate fauna, 3 bone tools (awls), and a variety of early 20th century materials including wire nails, whiteware and ironstone, and container glass of various colors (clear, brown, aqua). Feigel (1980:111) concluded that the site is not significant because of the disturbance to the upper 35cm of the deposits, and that a large sample of the site's contents has already been collected. For these reasons, the site was considered to hold limited potential to produce more information beyond what had already been recovered. No additional work was recommended.

15Mt6

Site 15mt6 is a south-facing rockshelter located on an upland ridge approximately 200 meters north of Preston Branch. The site was identified based on the recovery of 16 shell tempered pottery sherds were observed and collected from the surface. Two 1x2-m excavation units were placed within the shelter where the pottery was recovered. Test Unit 1 was excavated to a depth of 50 cm and did not recover any cultural materials. Test Unit 2 recovered an additional 34 shell tempered pottery sherds and was excavated to a total depth of 10 cm before encountering bedrock. All of the cultural materials were recovered within the first 5 cm of the ground surface. A Ft. Ancient component for this site is indicated on the OSA site form. Feigel (1980:119) interprets 15Mt6 as a temporary camp and determined that it is not significant based on the fact that it was virtually completely excavated and little if any data remains at the site." No further archaeological work was recommended.

HISTORICAL MAP REVIEW

Historical USGS topographic maps were reviewed and provided important information related to historical development within the APE. The 1914 1:48,000 USGS topographic map, the 1916 Inez 1:62,500 USGS topographic map, and 1954 Milo 7.5' 1:24,000 topographic map all show a structure at the western end of the APE. On the 1914 and 1916 (Figure 3-1) maps, the structure appears outside and east of the APE boundary, but it is within it on the 1954 map. The discrepancy is likely due to variance introduced during georeferencing of the original maps and/or their original, larger mapping scale. On the 1954 7.5' Milo, KY quadrangle the structure is contained within the APE (Figure 3-2). When juxtaposed on a modern aerial image, the structure depicted on the 1914 and 1916 maps are shown within the front yard of the current, modern residence. Moreover, the current residence is of a contemporary architectural style. Together, this indicates a historic structure once stood on the property in the front yard of the contemporary home, and the two are not one in the same.

Two additional structures are shown on the 1954 Milo, KY map at the edge of the APE on its northern and eastern sides. One of these, located on the north side of the APE, appears to intrude slightly into it. The second structure, situated just north of the eastern end and outside the APE, is round in shape, and together with the other structure appears to represent outbuildings, perhaps with agricultural functions. Neither structure appears on contemporary aerial images, and they apparently have been demolished.

Considering the available information, a historic structure built prior to 1914 once stood within the APE and has since been demolished. There are also what appear to be domestic, perhaps agricultural outbuildings nearby, but just outside the APE and may have been associated with the now demolished structure. Subsurface structural remains and artifacts associated with the residence and possibly other structures are likely to be encountered during this archaeological survey.

PRE-CONTACT NATIVE AMERICAN CONTEXTS

The following overview provides an outline for the major prehistoric and historic developments to contextualize the sites and findings during this work. The following generalized discussion was mainly based upon summaries provided in Kentucky Archaeology (Lewis 1996) and The Archaeology of Kentucky: Volumes I and II (Pollack 2008). Additional information from other relevant sources is provided where warranted.



Figure 3-1. The USGS 1916 Inez 1:62,500 quadrangle showing structures and other features near the Thrive APE, Martin County, Kentucky.

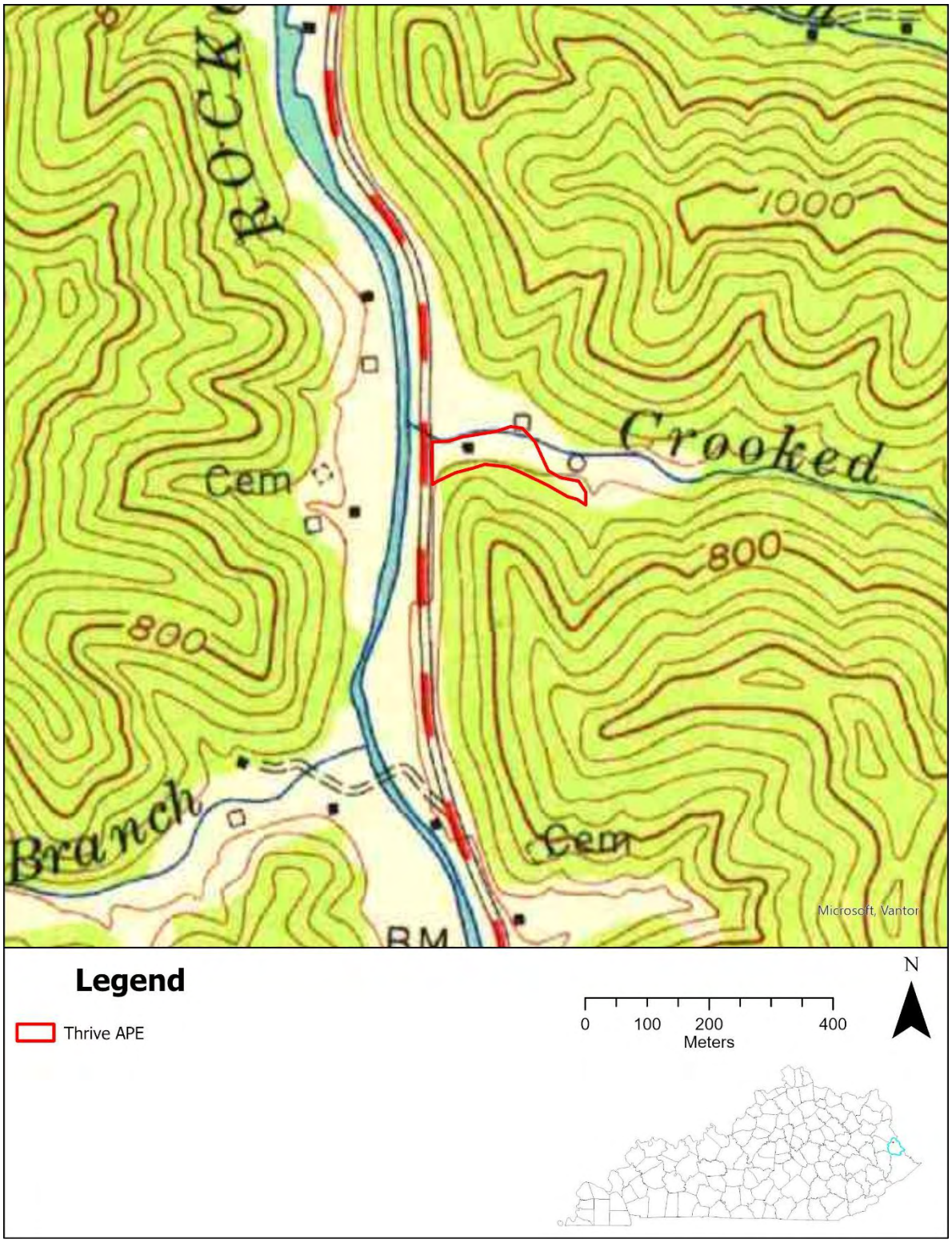


Figure 3-2. The USGS 1954 Milo 1:24,000 quadrangle showing structures and other features near and within the Thrive APE, Martin County, Kentucky.

Paleoindian

The Paleoindian (13,500+ - 11,500 cal BP) period represents the initial inhabitations of the Western Hemisphere by the ancestors of contemporary Native Americans. The initial peopling of the Americans occurred prior to 13,500 cal BP (Halligan et al. 2016), a millennium or more before Clovis culture developed. Colonizing populations of Native Americans arrived during the end of ice-age near the end of the Pleistocene. The climate was cooler and drier and vegetative communities were radically different. Faunal communities likewise were different. Many species of now extinct mammals such as mammoth, mastodon, camel, horse, bison and their predators including saber-toothed tiger, short faced cave bear, lions, and dire wolf. A warming climate and changing ecologies occurred during this period, leading to the extinction of numerous large mammals and triggered changes in human adaptations.

The Paleoindian period is divided into Early, Middle, and Late sub-periods that are marked by changes in stone tool technology. Early Paleoindian is strongly associated with lanceolate-shaped Clovis points, notable for their distinctive fluting, blades and blade cores, and unifacial end scrapers (Tankersley 1996). Unfluted lanceolate projectile point forms follow Clovis and include Barnes, Redstone, and Beaver Lake and are diagnostic of the Middle Paleoindian period and Dalton points are diagnostic of the Late Paleoindian Period.

Settlement and subsistence patterns are interrelated. During the Early and Middle Paleoindian periods in Kentucky are associated with regions possessing lower topographic relief. Although present, sites are less often found in the mountains of Eastern Kentucky. Paleoindian sites in the Cumberland Plateau in Kentucky that have been identified are multicomponent and often disturbed and deposits producing them undated (Bush 1988). Considerably more sites are found in the Pennyroyal and Bluegrass regions of the state. Historically, Paleoindian subsistence has been assumed to have focused on hunting large mammals like mastodon and mammoth. While large mammals were part of the diet for Paleoindians, it is more probable that diet was broader and included a diversity of small and medium sized mammals in addition to plant resources, notably mast and hickory and walnut. Warming associated with the end of the Pleistocene and beginning of the Holocene led to alterations of ecological communities. Transitions from coniferous to deciduous forest resulted in more productive environments and Late Paleoindian sites are found in regions only sporadically inhabited previously. Notably, the mountainous regions of eastern Kentucky (Bush 1988; Tankersley 1996). The progressive warming at the onset of the Early Holocene and alterations to the structure and composition of ecological communities led to changes in lifeways and material culture as late Paleoindian societies adapted to the changing world. These changes mark the onset of the Archaic period (Anderson and Sassaman 2012; Tankersley 1996).

Archaic

Following the gradual warming at the end of the Pleistocene further diversification of lifeways occurred across the southeast and Kentucky. The Archaic period (11,500-3000 cal BP) is conventionally divided into three sub-periods: Early, Middle, and Late (Anderson and Sassaman 2012; Anderson and Sassaman 1996). Changes in the form of hafted bifaces associated with each

period are used as diagnostic criteria for identifying Archaic sub-periods. Other changes in subsistence, settlement, and social organization also occurred.

The Early Archaic (11,500-8900 cal BP) witnessed increasing global temperatures and the expansion of oak and hickory dominated forests (Anderson and Sassaman 2012:71). Human populations were well established across the Southeastern U.S. by this time and adapted to the changing environments at the end of the Pleistocene. Some continuity is evident between the Paleoindian and Early Archaic in land-use patterns and stone tool technology (end scrapers). However, other aspects of lithic technology, notably haftable bifaces, changed. Lanceolate forms of the Paleoindian period were supplanted by side- and corner-notched hafted bifaces early-on (Thebes, St. Charles, Kirk Corner-Notched, Pine Tree) and later with bifurcate based (MacCorkle, Kanawha, LeCroy, St. Albans) and stemmed forms (Kirk Stemmed) occurring towards the end of the Early Archaic (Anderson and Sassaman 2012:71; Justice 1987; Jefferies 1996). Subsistence practices of Early Archaic foragers emphasized small game and mast resources, particularly hickory and walnut. Aquatic resources (fish, shellfish) apparently were not important in Kentucky during the Early Archaic (Jefferies 1996). The wide distribution of Early Archaic bifaces in all environmental and physiographic contexts indicates populations were widely distributed and likely seasonally mobile. An important aspect of settlement during the Early Archaic is the extensive use of cave and rockshelter sites (Anderson and Sassaman 2012: 71; Walthall 1998).

The Middle Archaic (8900-5000 cal BP) period is associated with regional diversification of lifeways and further changes in the environment. During the Middle Archaic a warm, dry period impacted the midcontinent and Southeast and is referred to as the Hypsithermal climatic interval, affecting ecological communities and humans alike. Subsistence practices reflect local conditions, a broad-based foraging pattern was typical for this period and a diversity of plants, and animal resources exploited. A major development was the extensive utilization of aquatic resources with fish and shellfish constituting a major portion of the subsistence base for groups inhabiting river valleys, lakes, and marshes (Dye 1996). At some of these locations dense midden deposits accumulated (Jefferies 1996). The diversity in regional traditions during the Middle Archaic is reflected in a diversity of projectile point styles. Among the more common types are Morrow Mountain, Eva, Big Sandy, Godar, and Matanzas. End scrapers made on broken bifaces also occur. Ground stone tools are an important aspect of lithic technology at this time and includes grooved axes, bannerstones, and nutting stones (Jefferies 1996; Sassaman 1996). Settlement patterns during the Middle Archaic emphasize mobility and is reflected in the wide distribution of sites and their ephemeral nature. Exceptions are sites located adjacent to aquatic environments where midden deposits developed.

Alterations to the lifeways associated with climatic moderation after about 5000 cal. BP. are associated with the Late Archaic (5000–3000 cal BP). Changes in technology associated with changes in lifeways is reflected in the stone tool technology. A diversity of stemmed forms dominate the Late Archaic compared to the notched forms typical of the Middle Archaic. Stem forms include straight, expanding, and contracting and include the Merom-Trimble, Lebetter, Gary, Wade, and McWhinney types (Jefferies 1996:55, Justice 1987). At some sites bone tools are present and include awls and pins. During this period several significant developments occurred, notably evidence for emerging social differentiation among some groups, notably peoples inhabiting Green River shell mounds (Jefferies 1996:54). Otherwise, groups largely remained

egalitarian. One significant development is the increased use of plants that would become domesticated cultigens during the succeeding Woodland period, notably starchy seeds such as goosefoot, marsh elder, and knot weed as well as tropical cultigens including squash and gourds (Jefferies 1996:57). Although plants that would later become domesticates were important, a significant use of hickory nuts and other mast resources were important in Late Archaic subsistence. Also important to subsistence are deer, turkey, small mammals, fish, and fruits. Overall, a broad, generalized foraging pattern prevailed. Settlement systems were characterized by small base camps in floodplains, numerous small camps within flood plains, widely scattered across uplands, and rockshelters. Excluding basecamps, sites tend to be short-term occupations and their wide and uniform distribution within the Bluegrass indicates a uniform distribution of plant and animal resources across this region (Jefferies 1996:62).

Woodland

The Woodland period (3000-1000 cal BP) is used to describe several well-defined archaeological cultures in the eastern U.S. to describe Native American groups who made pottery, constructed burial mounds and other earthworks, and who subsisted on hunting and gathering as well as gardening. The Woodland period is divided into Early, Middle, and Late sub-periods and reflect several changes in technology, settlement, and ritual practices.

The Early Woodland (3000-2200 cal BP) is differentiated from Late Archaic in part by the widespread adoption of ceramic technology at or around 3000 cal. BP. Within the Bluegrass the earliest pottery is Fayette Thick. Fayette Thick vessels are barrel-shaped jars and large, deep basin-shaped jars decorated with cord-marking and fabric-impressing on pastes tempered with coarse grit and rocks (Griffin 1943). A number of notched and stemmed haftable bifaces were produced and include Gary, Wade, Greeneville, Nolichucky, and Adena types (Railey 1996). The oldest preserved textiles are recovered from sites dating to the Early Woodland, many coming from rockshelters in eastern Kentucky. Early Woodland subsistence was largely hunting and gathering supplemented by gardening. Important subsistence resources included large and small mammals, fish, turkey, nuts, and cultigens including squash, sunflower, maygrass, goosefoot, amaranth, and knotweed (Railey 1996:84). Settlement patterns were similar to the Late Archaic and within the widely distributed across the rolling uplands and consisted of numerous small, frequently shifting camps. Specialized ritual sites and an important addition during the Woodland period, mounds and associated earthworks, occurring after about 2500 cal. BP. (Railey 1996:84). Notably absent in the Early Woodland are base camps and this indicates that there was little change in settlement systems between the Late Archaic and Early Woodland (Railey 1996:86). Adena culture is often considered synonymous with Early Woodland but this ritual and mortuary tradition spans both the late Early Woodland and early Middle Woodland.

Middle Woodland (2200-1500 cal BP) witnessed a dramatic elaboration of ritual life and long-distance exchange networks and is manifest in the proliferation of burial mounds, earthworks, and non-local materials and exotic artifacts (Railey 1996:124). These elaborations in ritual, monument construction and exchange (for objects included in mortuary ritual) was not uniformly adopted across the midcontinent and there is considerable local variation in both the timing and intensity of participation in the ritual and mortuary programs of Adena and Hopewell. Materials associated with Adena includes objects of copper, galena, and other non-local minerals, smoking pipes,

engraved stone tablets, and a variety of stone tools including projectile and knife forms including Adena stemmed. Adena ceramics are limestone or sandstone tempered, typically undecorated although incised, cord marked and check stamped were made. Temporally mound-building activities of Adena and Hopewell overlap in Kentucky. Hopewell influence is greatest north of the Ohio River although its influence in Kentucky is undeniable. According to Railey (1996:100) "Adena should be viewed as an early regional expression of Hopewell rather than as its predecessor. The decline of Adena and Hopewell exchange and ritual practices appears to have been less of an evolutionary (or cultural) transition and more of a full-scale breakdown of long-distance relationships (Railey 1996:123).

The Late Woodland (1500-1000 cal BP) is marked by a sharp decline in the construction of mounds and earthworks and long-distance exchange that was so significant in the preceding Middle Woodland and is one outcome of the collapse of the Hopewell Interaction Sphere. Apart from these broader changes related to ritual and exchange, little else appears to have substantively changed with strong local cultural continuity. Ceramics and other tools remain essentially unchanged. An important technological development, however, was the introduction of the bow and arrow at approximately 1200-1300 cal. BP. and with it small, triangular projectile points (Railey 1996:111). Subsistence during the Late Woodland changed little from the preceding Early and Middle Woodland. During the terminal Late Woodland, from 1100-1200 cal. BP. maize-based horticulture was adopted although hunting and gathering remained important (Railey 1996:111). Settlement patterns vary geographically with some regions of the state showing a move towards nucleated, circular villages whereas others maintain a more dispersed settlement pattern. Within the Bluegrass there is considerable local variation and includes village locations as well as rockshelter occupations and are associated with the Newtown Complex (Railey 1996:116). Near the end of this period and prior to the development of Ft. Ancient, nucleated villages are abandoned in central Kentucky and groups return to a more dispersed settlement.

Late Prehistoric (Ft. Ancient)

Ft. Ancient (1000-250 cal BP) represents the Late Prehistoric period in central and eastern Kentucky. Following the Woodland period, groups in central and eastern Kentucky, although contemporaries of Mississippian groups located along the Mississippi and lower Ohio Valleys, were not full participants in the social and ritual transformations of the latter. Nor were they participants in the far-flung exchange networks of the Mississippians although they were not completely outside of these networks. Late prehistoric groups of Ft. Ancient appear, rather, to reflect the changes manifest in the Late Woodland and their turn towards the local. Ft. Ancient is divided into early, middle, and late sub-periods. Early Ft. Ancient (1000-800 cal BP) groups inhabited much of central and northeast Kentucky. Settlement may have consisted of scattered dwellings along ridges as suggested by the Muir site in Jessamine County (Sharp 1996:162). Ceramics are typically include plain and cord marked limestone tempered wares with strap or loop handles. Long, narrow "Type 2" triangular projectile points are common as are bone tools such as awls and reamers. Subsistence depended significantly on wild game: deer, elk, bear, turkey, raccoon, squirrel, among others. Aquatic resources contributed little to the diet (Sharp 1996:164). Corn cultivation was important and beans, erect knotweed, and sunflower was also grown. Middle Ft. Ancient (800-600 cal. BP.) sites are well-documented, and settlements once again become nucleated, typically an array of houses around a central plaza and surrounded by a ring of midden

deposits. Linear settlements are still present along ridgetops and river terraces. Some circular villages have small burial mounds on the plaza edge or burials in front of individual houses. Ceramics are shell- or limestone-tempered jars with lugged rims or thick strap or loop handles (Sharp 1996:169). Necks of some jars are decorated with incised designs, otherwise ceramics tend to be plain or cord-marked. Subsistence practices were largely like Early Ft. Ancient. Late Ft. Ancient (600-250 cal BP) was marked by several important changes. Significant among these was an increase in village size but a decrease in the number of villages, the disappearance of burial mounds and predominance of family cemeteries, and the homogenization of domestic pottery styles (Sharp 1996:170). Collectively these are referred to as the Madisonville horizon. European/American trade goods become part of the material culture of Late Ft. Ancient groups and includes several gun parts, utilitarian goods, and ornaments (Sharp 1996:175). Although there are some similarities between the material culture and villages of Late Ft. Ancient and the historic era Shawnee, demonstrating specific connections have not been satisfying and remain elusive.

POST-CONTACT HISTORICAL CONTEXTS

Indigenous Contact Period

Establishing a link between prehistoric cultures and historic Native Americans tribes is difficult since similar material culture may be shared by ethnically distinct groups. In addition, there are historic factors associated with the region that increase the difficulty of establishing ties between archaeological and historic cultures. Approximately 150 years passed between Desoto's initial explorations (A.D. 1539 and 1543) and the major Euro-American exploration of the isolated area lying west of the Appalachians. During this hiatus, Native American people were affected by introduced diseases, declining populations, and exposure to alien social, political, and economic institutions. Some Native American groups living near coastal European colonies gained ascendancy over more remote groups due to favorable trade positions and access to new technology. Major shifts in Native population occurred. Ancient antagonisms that had been resolved through ritualistic raids and counter raids, escalated into endemic warfare conducted for economic gain. By 1770, Kentucky was largely void of more permanent Native American settlement. None-the-less, Iroquois, Shawnee, Cherokee, and Chickasaw, all laid claim to tracts of Kentucky territory. Additionally, many other groups including the Delaware, Wyandot, and Miami, used the area regularly for hunting.

Historic Period

Following European contact on the eastern coast of America infections disease significantly reduced Native populations and the rich and varied pre-contact cultures were forever changed. When Europeans began to descend the Ohio, Mississippi, and other rivers and cross the Appalachian Mountains in the 17th and 18th centuries Native American groups inhabiting what is now Kentucky included the Shawnee, Cherokee, Chickasaw, Yuchi, Iroquois, and Mosopelea. In the Bluegrass region of Kentucky, the Shawnee were the principal Native American group. One Shawnee town, Eskippakihiki, was the last surviving Shawnee village in Kentucky and was located in Clark County. The town was surrounded by a stockade estimated at 200 meters in diameter and

surrounded by 3000-5000 acres cleared agricultural fields. A French census from 1736 estimates that 200 families were in residence with a population numbering 800-1000. Eskippakhiki was apparently abandoned between 1752 and 1769.

The history of Europeans in Kentucky dates to the last quarter of the 17th century when the lands along the Mississippi River Valley, including Kentucky, were claimed by Rene-Robert Cavelier, Sieur de la Salle for France. Following the signing of the Treaty of Paris in 1762 these lands were ceded to the British Crown and became part of the Virginia Colony. Iroquois claims on much of Kentucky were settled when the British negotiated its purchase in the Treaty of Fort Stanwix in 1768. In the decade that followed increasing Euro-American settlement occurred throughout central and eastern Kentucky, and the Bluegrass region with numerous forts, stations, and settlements established at this time. Daniel Boone and James Harrod are notable figures in the early history and settlement of Kentucky.

Martin County

The following historical narrative for Martin County is adapted and paraphrased from Kleber (1992a:613). Martin County was the 116th county formed within the commonwealth and lies at its easternmost extent. Formed from portions of Floyd, Johnson, Pike and Lawrence Counties, Martin County borders West Virginia with the Tug Fork forming its eastern border. Formed September 1, 1870, and named for Col. John P. Martin, a state senator and U.S. Congressman from Prestonsburg. Warfield was the original county seat but was moved to Inez in 1873.

Extractive industries have formed the core of the county's economy since its formation, along with retail and public service. Coal mining began in the late 19th century at Warfield. A major early coal mining operation was established at Himmlerville in 1918 where Hungarian immigrant Martin Himmler established a mine and extracted "good coal" there. As recently as 1986, there were about 100 coal mines operating, producing more than 7 million tons of coal underground and another 5.5 million tons by surface mining. Out of state interests held fully 75% of the mineral rights in the county. Artificially low tax rates allowed for major profits for owners and operators of coal companies while limiting the benefits to local citizens. As an example, the largest mineral rights owner owned 81,000 acres valued at $7 million and paid Martin County $76 in taxes. Other natural resources extracted from the county include oil, natural gas, and hardwood timber. In 1971 10,735 barrels of oil were pumped. Only 1.7% of the land in the county was in farms in 1982 and totaled less than $500,000 in in crop and livestock receipts.

President Lyndon Johnson visited the Thomas Fletcher family in 1964 and initiated the War on Poverty. Fletcher was an unemployed sawmill worker with eight children and survived on an income of four hundred dollars per year (Eller 2008:81). Within the county, wages increased only when the coal company wages began to infuse cash into the local economy. Much today as in the past, Martin County's residents are still largely dependent directly or indirectly on wages from the coal industry.

Inez

The historical summary for Inez is adapted and paraphrased from Kleber (1992b:452). First settled around 1810, Inez originally named Arminta Ward's Bottom, later changed to Eden, and subsequently changed again as another town had the name. Inez was chosen as the town name June 23, 1874, allegedly in honor of the daughter of postmaster at nearby Louisa, Leo Frank. Since 1873 Inez has served as the Martin County seat. Four successive courthouses have stood in Inez, the first built of logs erected in 1873-1881 was replaced, and the new courthouse subsequently burned in 1891. The third courthouse stood until it was replaced with a new one in 1933. The current courthouse was built from 1938-1941. Inez's economy, like many of the other counties and communities in eastern Kentucky, is dependent upon the coal industry.

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CHAPTER 4
FIELD METHODS

Field methods employed for this intensive Phase I archaeological survey were developed based on the nature of the APE, characteristics of the local physiography, and information obtained through background research presented in Chapters 2 and 3. Given the occurrence of well-drained soils, a permanent water source, and both level and slightly elevated terrain, and the occurrence of a pre-1914 structure in the western half of the APE, it was anticipated that an archaeological site would be present. A review of topographic maps and the *Soil Survey of Lawrence and Martin Counties, Kentucky* indicate that significant disturbance has occurred in the eastern half of the project area including cutting and filling, whereas the western half was not subject to these same alterations. A testing strategy was developed and implemented based on these conditions.

OVERALL APPROACH TO SURVEY

The approach to this intensive Phase I archaeological survey took current and previous disturbance and the presence of a pre-1914 structure in the APE into consideration. The eastern portion of the APE, which was disturbed by previous land altering activities, is also characterized by wetlands with both standing and running water. These areas were subjected to pedestrian survey. This area extended from the eastern side of the current residence to the southeastern extent of the APE. The western side of the APE was systematically tested with STPs except for areas that were characterized by slopes exceeding 15%, were covered with fill dirt dump piles, disturbed by construction of the current residence, or covered by the residence itself. Ground cover obscured the entirety of the surface within the APE and was characterized by grass and herbaceous plants and recent snowfall. STPs were the only suitable method for detecting archaeological sites. Overall conditions were favorable for subsurface testing given the mainly flat, open ground of the APE. A grid-based testing strategy was implemented. The testing methods are described and disused below.

ARCHAEOLOGICAL METHODS

Surface Inspection

All of the ground surface within the APE was covered with grass, herbaceous vegetation, and a coating of snow with 0% visibility. Despite the extremely poor visibility, the APE was walked to identify potential cultural features at or near the ground surface. No subsurface testing was undertaken in the eastern half of the APE due to the documented disturbance indicated by soil classifications and changes in the local topography based on USGS quadrangle maps, as well as slopes exceeding 15%, and marshy areas with standing water. All of the eastern half of the APE

was subjected to surface inspection. Surface inspection was also conducted between STP locations and in the immediate vicinity of each STP within the western half of the APE.

Sub-Surface Testing

Subsurface testing followed a grid pattern aligned to the cardinal directions oriented 10 meters west of the northwest porch corner of the residence. The grid covered the elevated terrain south of the driveway, west of the residence, and east of the piles of fill deposited at the west end of the property south of the driveway. The majority of the grid is sited atop an apparent house pad for the pre-1914 structure. STPs were excavated at 10-m intervals. Transects were established with a Suunto sighting compass and pin flags set at each STP location using a 100-m tape. Additional STPs were placed on the north side of the driveway immediately south of the northern APE boundary. The location and orientation of these STPs was designed to intersect any structural and artifactual remains associated with the pre-1914 structure, and any other archaeological remains that may be present.

Shovel Test Pits measured approximately 30-cm square and were excavated until sub-soil was encountered. Excavated sediments were passed through ¼" screen. Artifacts recovered were placed into resealable artifact bags and labeled with the appropriate provenience information. Shovel Test Pit location, stratigraphic descriptions and depths, and artifact content and depth of recovery was recorded for every STP in a field notebook. Additional information on physiography, environment, field crew, weather conditions, time spent in the field, and other relevant observations were also recorded in the field notebook. STP locations were recorded on a measured site sketch map. Terrain and landscape conditions were marked on an aerial image of the APE. Hardcopy maps were necessary due to poor cellular coverage that limited the efficacy of GPS technologies. Sketch maps and landscape condition maps were georeferenced and site maps were created in ArcGIS Pro.

AREAS NOT TESTED

The western half of the APE west of the current single-family residence and the area immediately around it were excluded from testing because of the disturbance that occurred in these areas, slopes exceeding 15% in the easternmost part of the APE, and wet, marshy ground with standing water along the northern edge northeast and east of the residence. Areas not subjected to subsurface testing are shown in Figure 4-1. Images of the excluded areas are shown in Figures 4-2, 4-3, and 4-4 and include the area where fill was dumped in the west, the elevated house pad for the current residence, marshy areas to the east and north of the residence, and terrain in excess of 15% slopes.



Figure 4-1. Areas not tested within the Thrive APE.



Figure 4-2. Marshy area along the northern boundary in the eastern half of the APE, facing west northeast.



Figure 4-3. View of fill dump piles in the southeastern corner of the APE, facing southeast.



Figure 4-4. View of the area of greater than 15% slopes in the southeastern corner of the APE, facing southeast.

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CHAPTER 5
ARTIFACT DESCRIPTION & ANALYSIS

LABORATORY METHODS

Artifacts recovered 15Mt38 within the Thrive APE were washed, classified, counted, weighed, and cataloged. After initial post-field processing, detailed analyses were performed. A total of 99 artifacts were recovered. Glass and metal artifacts make up the largest part of the assemblage, with ceramics following distantly, and coal and shell making up the balance. Most of the assemblage consisted of container and window glass, and nails. The methods used in the analysis of these materials are described below.

Historic Artifact Analysis Methods

Historic artifacts were washed and sorted into major material categories (glass, ceramic, metal, etc.) and assigned to functional groups (kitchen, architecture, arms, personal, etc.) after South (1977). When possible, element type is identified (e.g., base of bottle, jar lip, ceramic foot ring, etc.), and other useful attributes for classification (e.g., color, decoration type, etc.). In combination, these functional assignments and descriptive attributes, especially those that are temporally diagnostic, were important for inferring site chronology and function.

Glass

Identification of container glass artifacts utilized information from the Society for Historical Archaeology's Historic Glass Bottle Identification and Information Website (https://sha.org/bottle/) and relevant publications related to manufacturing and color. Glass was sorted initially based on inferred function inferred from form, separating container, pressed/cut, and window glass, and then separated by color. Diagnostic attributes related to manufacture that might be helpful in chronology were also noted including finishes, color, seams, maker's marks, etc. (Lockhart 2006; Lorrain 1968; Newman 1970; White 1978). Glass color was determined by placing fragments on a sheet of white paper.

Ceramics

Identification of ceramics proceeded by identifying the type of paste, glaze, decoration, and vessel element. Identification was facilitated by on-line comparative collections of the Archaeological Society of Connecticut (http://www.connarchaeology.org/html/historic_ceramics.html) and the Florida Museum of Natural History (https://www.floridamuseum.ufl.edu/histarch/gallery_types/). When possible and with a sufficiently large assemblage of ceramics, sherds were sorted into vessel lots based on attributes such as paste, glaze, decoration, thickness, and vessel form. Vessel lots were assigned to morphological forms and functional classes when possible.

Metal

Metal artifacts were identified based on type of metal (ferrous, non-ferrous) and form. Together and in combination these different attributes provide a means to assess the chronology and function of historic era sites. Identification and interpretation of nails recovered followed Adams (2002), Young (1994), and Wells (1998).

ARTIFACT ANALYSIS RESULTS

Phase I investigations at 15Mt38 produced 99 historic artifacts represented by three primary material classes – glass, ceramic, metal – and single specimens of coal and shell. A summary of the artifacts recovered is presented in Table 5-1. Glass artifacts accounted for just over half (51.5%) of the assemblage. Of these, container and window glass, respectively, accounted for the majority with the balance made up of lamp and pressed glass. Following glass, metal artifacts were the second most frequent making up 36.4% of the assemblage and nails make up most of these. Ceramic artifacts constitute an additional 10.1% of the assemblage and while few in number this assemblage was diverse with five different varieties represented. The balance consists of single specimens of coal and shell. A discussion of the artifacts recovered by class is presented below.

Glass

Just over half of the assemblage recovered from 15Mt38 is made up of glass artifacts, the majority of which are fragments of containers like bottles and jars, or container associated glass objects like canning lids. Window glass is next in abundance with lesser amounts of lamp and pressed glass rounding out this artifact class. A discussion of the glass artifacts divided by sub-types is presented below. Representative examples of glass artifacts from 15Mt38 are shown in Figure 5-1.

Colorless Container Glass (n=10, 38.7g)

Colorless container glass consists mainly of body fragments, some retaining diagnostic elements indicating at least three are panel bottles, square in shape, and are likely druggist or patent medicine bottles. One of these bottles has a beveled side and partial embossed lettering, “HA..” and “FU..” One other colorless container is a neck fragment with a vertical seam. The remainder are non-diagnostic body fragments. While the morphology of these glass container fragments is somewhat helpful in identifying vessel form, and possibly contents, they are not particularly diagnostic chronologically. However, at least two of the fragments show evidence that they are machine made (seams, curved/molded form). Machine-made rectangular bottles were commonly used from the mid to late 1910s and usually lack proprietary embossing (SHA 2025) and thus provides some artifact-based data confirming the early 20th century age for this site.

Table 5-1. Summary of artifacts recovered from 15Mt38.

Glass			Count	Weight
	Container			
		Colorless	10	38.78
		Aqua	7	18.00
		Solarized	9	22.99
		White	1	6.64
	Lamp			
		Colorless	3	0.82
	Pressed			
		Colorless	1	13.80
	Window			
		Light green	7	10.50
		Aqua	2	6.12
	Flat			
		Blue	1	0.15
	Melted		10	88.99
		Subtotal	*51*	*206.79*
Ceramic				
	Whiteware			
		Plain	6	6.95
		Embossed	1	6.72
		Yellow Glaze	1	6.72
	Stoneware			
		Salt glazed	1	5.08
		Albany glaze	1	6.19
		Subtotal	*10*	*31.66*
Metal				
		Wire nails	27	202.75
		UID Nail	5	65.63
		Iron hinge	1	27.58
		Oil lamp burner	1	63.18
		UID cast iron	1	6.78
		Tire pressure gauge	1	53.99
		Subtotal	*36*	*419.91*
Other				
		Coal	1	0.90
		Shell	1	0.96
		Subtotal	*2*	*1.86*
TOTAL			**99**	**657.22**

Solarized Container Glass (n=9, 22.99g)

Solarized container glass varied in the intensity of the violet to purple coloration, and most were lightly solarized. Seven of the nine fragments of solarized glass are non-diagnostic body fragments and can only be classified as containers, presumably of some kind of liquid contents. One basal

fragment from a bottle, likely produced with a press-and-blow type machine, was probably a wide-mouthed container like food bottles and jars, milk bottles, and canning jars (SHA 2025). The threaded closure resembling a mason jar was also found. Like the non-diagnostic body fragments, the contents of the bottle cannot be determined. However, the threaded screw finish resembling a "bead seal" mason jar (SHA 2025), suggests that its contents were the products of home canning. The press-and-blow machine and bead seal canning jars were produced with machines and methods dating from the early 20th century, from about 1910-1915. This date for glass manufacturing agrees with the general timeframe for the production of glass where manganese was added to produce colorless container glass, a process that was most common from about 1881-1920 although it began earlier in some places and persisted later in others (Lockhart 2006).

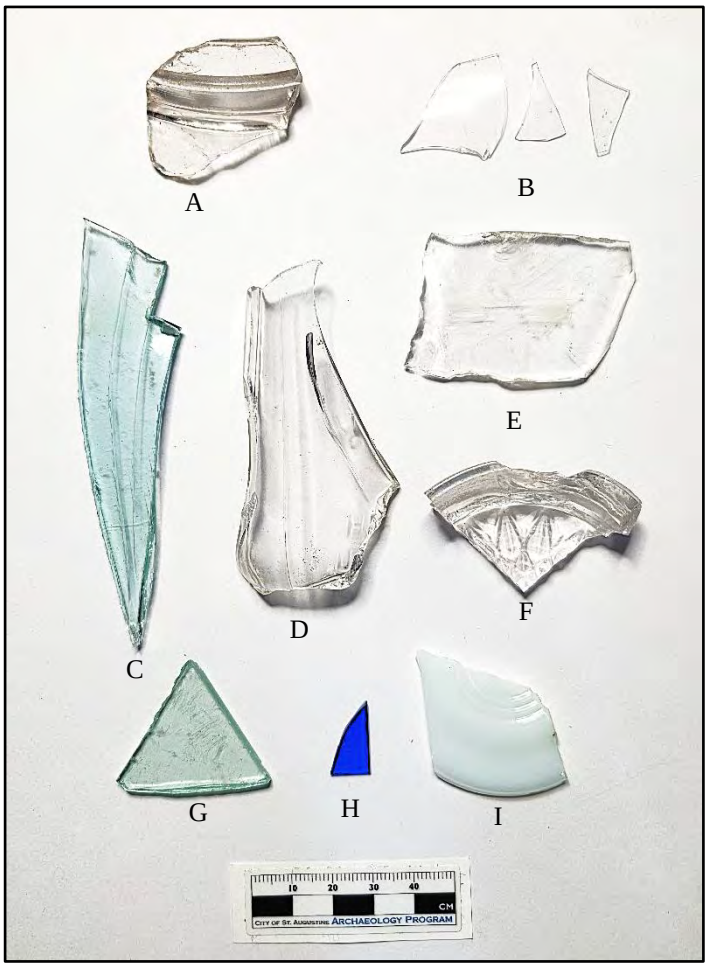


Figure 5-1. Representative glass artifacts from 15Mt38: A, solarized mason jar finish (Cat.# 4.2); B, colorless lamp chimney glass (Cat.# 9.3); C, aqua container glass, probable Mason jar (Cat.# 13.2); D, embossed colorless panel bottle body fragment (Cat.#10.7); E, colorless panel bottle body fragment (Cat.# 5.3); F, colorless pressed glass ashtray (Cat.# 5.7); G, aqua window glass (Cat.# 6.2); H, blue flat glass (Cat.# 12.5); I, white glass canning seal lid (Cat.# 2.2).

Aqua Container Glass (n=7, 18.00g)

Of the seven fragments of aqua container glass, five are non-diagnostic body fragments, and two have diagnostic attributes that allow for a determination of shape and function. One of the latter is the shoulder or basal corner of a machine-made panel bottle, and the other is a fragment of a canning or "Mason" jar, likely of the bead seal type. Aqua glass containers were produced as early as the 18th century and were very common through the 19th century, becoming uncommon after the 1920s, although fruit/Mason jars are an exception where aqua color persists longer (SHA 2025). Based on this information, the panel bottle was likely produced some time from 1900-1930 given that it was machine made and aqua glass phases out in the 1920s. The Mason jar fragment is also likely associated with this timeframe but could also be more recent.

White Container/Canning Seal (n=1, 6.64g)

While not a container strictly speaking, the white or "milk" glass canning liners were part of a container system for home canning. This fragment appears to be a "Boyd's" although no writing is present on the specimen to confirm this. A patent for these kinds of glass canning seals was issued in 1869, but this specimen likely post-dates 1902 when these became common (Beauprè 2021).

Lamp Glass (n=3, 0.82g)

Three fragments of thin, curved colorless glass from 15Mt38 are interpreted as lamp chimney fragments. Their occurrence possibly indicates an early 20th century age for these items given that residence was built around or prior to 1914, two decades before electrification arrived in Martin County and Inez in 1938 when the New Liberty Substation came online (Arnold 2023), although it could also have served well past the first electrical service to the area.

Pressed Glass (n=1, 13.8g)

A pressed colorless glass ashtray, round in shape with a pressed diamond pattern was recovered and is one of the few artifacts not classifiable as Kitchen or Architecture functional groups, but rather the Tobacco group. This artifact is not temporally diagnostic and is representative of the personal and social practice of smoking that was common from the 17th century onward. Approximately one-quarter of the ashtray is represented by this specimen.

Window Glass (n=9, 16.62g)

Of the nine window glass fragments, seven are light green in color, two are aqua, and one is blue. Fragments are generally consistent in thickness although one of the aqua colored fragments is thinner than the rest. These fragments are not easily assigned to a timeframe, but can be assumed to post-date 1914, time after which a residence is known to be standing.

Blue Flat Glass (n=1, 0.15g)

The single blue glass fragment is flat, think, and has two straight sides that converge to form a 90 degree angle. Possibly this fragment is part of a stained glass window, or a blue glass panel, perhaps for a lamp or other object. This artifact is not temporally diagnostic.

Melted Glass (n=10, 88.99g)

Ten fragments of melted glass were all recovered from STP-8 and found in association with burned nails, charcoal, and reddened, burned subsoil. The glass items that melted appear to be containers that collapsed in on themselves. Burned glass is not diagnostic and likely is of a more recent age than the other glass objects discussed above given that they apparently were melted when the wooden architectural elements of the demolished pre-1914 home were burned.

Ceramics

Slightly more than 10% of the 15Mt38 artifact assemblage was made up by ceramics. All are refined earthenwares and represented mainly by whiteware with two examples of stoneware. Forms included indicate both utilitarian storage and serving functions for the vessels represented by these fragments. A discussion of this small group of artifacts is presented below, and representative specimens are shown in Figure 5-2.

Plain Whiteware (n=6, 6.95g)

Plain, undecorated whiteware accounts for the majority of the ceramics. Most of these are small and non-diagnostic. However, despite their small size, most are flat (n=4) and potentially represent plate fragments. Two have a rounded surface and are split longitudinally through the ceramic body, possibly indicating that they were part of a handle like those on a pitcher. These plain whiteware fragments are not temporally diagnostic, being produced from the middle 18th century onwards, but likely post-date 1900 at 15Mt38 given the estimated construction date of the post-1914 structure and the container glass assemblage discussed above.

Embossed Whiteware (n=1, 6.72g)

A single rim of embossed whiteware was recovered. The rim is scalloped and the embossed linear design occurs below the rim on the exterior. On the interior there is a lip just below the rim, indicating that this vessel had a lid to cover the contents, like a sugar bowl or other similar container. The embossing is not diagnostic, nor is the vessel type. This artifact likely post-dates 1900 given the estimated construction date of 1914 for the structure and the age of container glass discussed above.

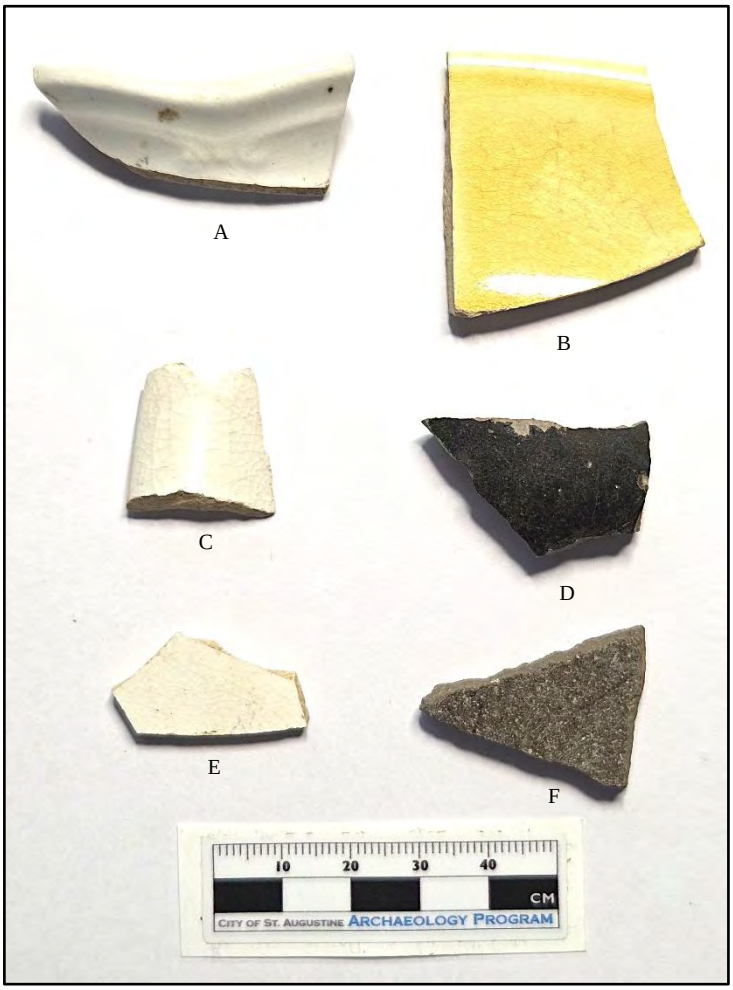


Figure 5-2. Representative ceramics from 15Mt38: A, whiteware with embossed rim (Cat.# 9.9); B, yellow glazed whiteware (Cat. #9.10); C, possible whiteware handle (Cat. 10.2); D, Albany glazed stoneware (Cat.# 10.3); E, whiteware body fragment (Cat.# 5.1); F, salt glazed stoneware with interior Albany slip (Cat.# 6.4).

Yellow Glazed Whiteware (n=1, 6.72g)

A single fragment of yellow glazed whiteware with a tapering rim representing a plate form was recovered. This specimen is a decorated utilitarian tableware. This artifact post-dates 1900 given the estimated construction date of the pre-1914 structure and the container glass discussed above.

Salt Glazed Stoneware (n=1, 5.08g)

The salt glazed stoneware sherd has the distinctive "orange peel" textured exterior and a brown Albany slipped interior. Salt glazing becomes less common after the 1860s, but Albany slipped interiors were especially popular during the late 19th and early 20th centuries (Greer 1981:194). Stoneware is a typically thick, durable ceramic that was used for heavy, utilitarian objects like jugs, crocks, churns, and pitchers (Stelle 1989). An early 20th century age for this artifact agrees with other ceramic and glass artifacts recovered from 15Mt38.

Albany Glaze Stoneware (n=1, 6.19g)

This stoneware fragment has Albany slip and a lead glaze on the exterior surface and is unglazed on the interior. First developed around Albany, New York, it was produced in the Midwest after 1825, became less common after 1910, and a terminal date of 1940 has been suggested (Zilmer 1987:35). Like the salt glazed stoneware discussed above, this variety, too, served a utilitarian function and dates to the first half of the 20th century.

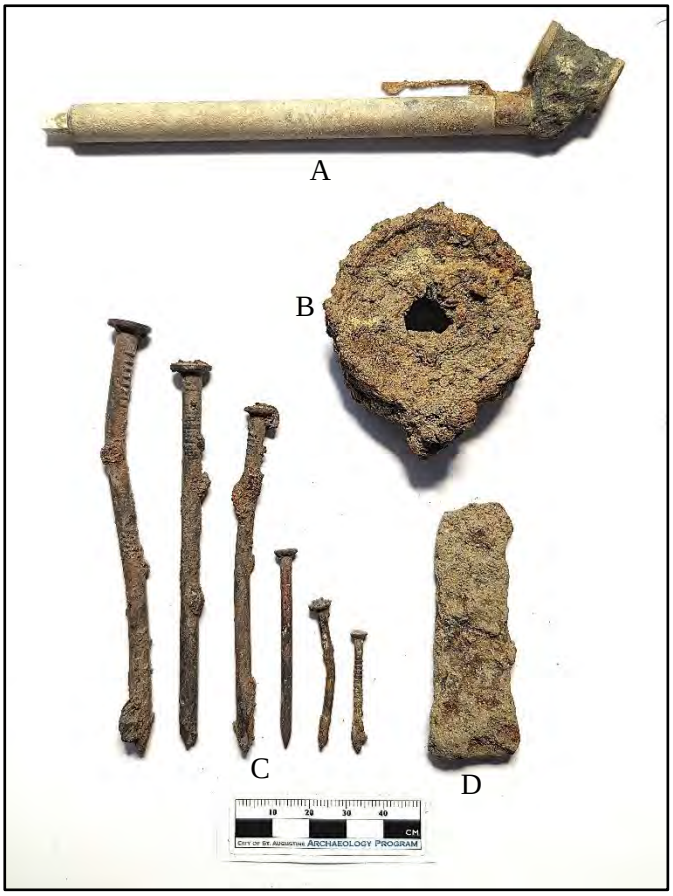


Figure 5-3. Representative metal artifacts from 15Mt38: A, pencil tire pressure gauge (Cat.# 13.1); B, iron cap (Cat.# 9.3); C, wire nails (Cat.# 8.2-8.7); D, possible iron hinge (Cat.# 4).

Metal

Metal artifacts were the second most frequent artifact class recovered from 15Mt38. Wire nails and the tire pressure gauge were easily identified typologically and functionally and provided some useful chronological information for the construction of the structure that once stood at the site, as well as the duration of its use. Other artifacts (UID cast iron, possible cast iron hinge, and the iron cap are ambiguous for form, function, and age. A representative selection of metal artifacts is shown in Figure 5-3.

Wire Nails (n=24, 184.2g)

All of the nails recovered from 15Mt38 are wire nails and provide a useful means for refining the timeframe for the construction of the pre-1914 structure on the property. The best preserved and most diverse collection of nails from the site came from STP-8, the location of a burn pile, and consequently all of the specimens from this location were well-preserved, mostly uncorroded, and could be accurately measured to assess their form and function. The different nails penny weights and their sizes for the nails recovered from 15Mt38 are shown in Table 5-2. Penny weight categories correspond to length, and several different lengths were identified. The diversity represented is what might be expected for an entire structure, from heavy-duty framing (30d & 20d) to interior framing (16d) and finishing (8-2d), with significant representation from "general duty" sizes like 16d. The occurrence of wire nails to the exclusion of machine cut nails indicates that the construction of the pre-1914 structure occurred after 1900 considering that wire nails were commonly available from U.S. manufacturers after about 1894 (Adams 2002).

Table 5-2. Penny weight for nails recovered from 15Mt38.

Penny weight	Length	Count	Percent
30d	4.5	1	4.17
20d	4.0	2	8.33
16d	3.5	8	33.33
8d	2.5	2	8.33
6d	2.0	7	29.17
3d	1.25	3	12.50
2d	1.0	1	4.17
TOTAL		**24**	**100.00**

UID Nails (n=5, 62.63g)

Five fragments of highly corroded ferrous metal with the general morphology associated with nails given their generally round cross-section and expanded heads were recovered. Due to the fragmentary and heavy corrosion more detailed description and analysis are not possible. Because of the round cross-section for these specimens, they are assumed to be wire nails and share the same chronology as those discussed above.

Iron Cap (n=1, 63.18g)

A heavily corroded iron cap was recovered from STP-9 and although heavily corroded retains morphological elements that permitted its identification. This artifact measures 50.4 mm in diameter and 17.2 mm in height. There is a 10 mm perforation in the center and an extension on one side that may only be adhering corrosion. Initially this specimen was believed to be a oil lamp burner but it is dissimilar from late 19th century and early 20th century examples in both form and material. This artifact is morphologically and temporally ambiguous.

Possible Iron Hinge (n=1, 27.58g)

A cast iron object that is possibly a hinge fragment was found at 15Mt38. This specimen measures 65.8 mm in length, 23.5 mm at its widest end, and is 3.3-3.6 mm in thickness. In form it expands from the narrow end towards the thick end in width, and it is generally uniform in thickness until the wider end is reached where its thickness increases to 4.1mm. Because of the fragmentary and extensive corrosion on this specimen it is both functionally and temporally ambiguous.

UID Cast Iron (n=1, 6.78g)

A small fragment of heavily corroded cast iron measuring 42.9 mm in length, 14.1mm in width, and 3.3 mm in thickness, generally rectangular in shape with one end slightly larger was recovered from STP-7. This artifact is morphologically ambiguous due to its fragmentary nature and the fact that it is heavily corroded, and also chronologically ambiguous.

Tire Pressure Gauge (n=1, 53.99g)

A pencil tire pressure gauges patent was granted to J. Briechle Dec. 11, 1962, and therefore post-dates the patent issue date in age. This artifact represents the latter portion of the site's occupation and potentially extends to end of the 20th century.

Other Materials

Coal (n=1, 0.90g)

A single piece of coal was collected from STP-2. Although coal was encountered within other STPs it was not collected and this fragment serves as a representative example of this material at the site. Coal fragments not collected from other STPs occurred mainly within the midden deposits on the north and western edges of the site. Coal is not temporally diagnostic, but its use as a home heating fuel increased in the second half of the 19th century until the middle of the 20th century.

Shell (n=1, 0.96g)

A single fragment of ark (Arcidae) shell fragment was recovered from STP-11 and is the only artifact from this location. The thick ribbing on the exterior surface is consistent with the Arcidae family. The fragment was too small for a more precise identification but given that it is a marine species and is not native to Kentucky, it must have been brought to 15Mt38 as a souvenir, novelty, or as part of décor. By itself this artifact is not temporally diagnostic.

CONCLUSIONS

Artifacts recovered from 15Mt38 provide supporting evidence for the age and function of the pre-1914 structure identified on USGS topographic maps discussed in Chapter 3. A combination of manufacturing techniques identified from mold seams, closures, bases, and color for glass artifacts

are consistent with an early 20th century age for the initial construction and occupation of the residence. The exclusive use of wire nails also supports this same timeframe as wire nails were generally the primary type used for construction after 1890, with some exceptions, and the diversity of nail sizes indicates that the sample from STP-8 are largely representative of an entire structure, from heavy framing to trim work. The pencil type tire pressure gauge speaks to the later occupation of the site, post-1960, although some of the recovered glass and ceramics could also date to the second half of the 20th century given the long production history of machine made bottles, clear glass, and whiteware ceramics. The domestic character of the materials recovered also provides important information on the nature of the structure and its use. Based on the ceramics and glass, materials clearly associated with South's (1977) Kitchen group, along with oil lamp chimney glass, speak to domestic activities that would be expected of a residential structure. Architectural group artifacts, namely window glass and nails, were the second most abundant functional artifact group, further underscoring 15Mt38 as the site of a domestic, residential structure.

Artifact density was fairly high. Based on the excavation of 0.35 cubic meters during this Phase I survey and the recovery of 99 artifacts, artifact density was calculated to be approximately 283 artifacts per cubic meter. The greatest artifact densities were within the midden deposits on the north and west sides of the site and at the burn pile locus at STP-8. The occurrence of most of the ceramic and glass artifacts within the midden and the relatively high artifact density per cubic meter suggests that archaeological deposits at 15Mt38 potentially hold sufficient data to address questions related to life in Martin County at the turn of the 20th century, particularly related household consumer behavior and economic strategies and practices which can be discerned through analyses of the Kitchen group, Tobacco, and Personal artifacts which the site has already produced. Additional testing would likely produce more of these kinds of artifacts and others in addition.

CHAPTER 6
SITE DESCRIPTION

15Mt38

Elevation: 201 m (660 feet) AMSL
UTM Coordinates: Zone 17S, N-4194089, E-363435
Components: 20th century
Site Type: Historic residence
Size: 1665 m^2 (0.41 acres)
Distance to water: 10 meters
Direction to nearest water: North
Type and extent of disturbance: Structure demolition, minor
Topography: Flat, floodplain terrace
Vegetation: Grasses, herbaceous plants
Ground Surface Visibility: 0%
Aspect: Flat

Site Description

Site 15Mt38 is located within the floodplains of Crooked Branch and Rockcastle Creek (Figure 6-1). Crooked Branch is an Order 1 stream, a tributary of Rockcastle Creek, and the nearest water source to the site that, prior to alterations to its channel, flowed within 10 meters of the pre-1914 structure. Rockcastle Creek is an Order 5 stream and a tributary of the Big Sandy River. Elevation for the site is approximately 201 meters (660 feet) AMSL. Vegetation at the site consisted of oak and pine trees, and crepe myrtle. Grass and herbaceous plants that along with recent snowfall completely obscured the ground surface. A general view of the site is shown in Figures 6-2.

15Mt38 is a single component site with an early through late 20th century component represented by a moderately dense artifact scatter and midden deposit. The distribution of artifacts corresponds to the location of the structure depicted on the 1914, 1916, and 1954 USGS quadrangle maps (see the historic map review in Chapter 3). Subsurface testing within the western half of the APE resulted in the identification of a concentration of artifacts on the summit and both the northern and western slopes of a level plateau that once served as the house pad for a residential structure. The distribution of artifact producing STPs and architectural stone features are shown in Figure 6-3. An abundance of architectural sandstone, many showing clear evidence for shaping, have been repurposed to construct a low wall in front of the current residence as well as skirting around its porch (Figure 6-4). Two large, flat sandstone blocks, possibly mantles, a rectangular sandstone and concrete platform that may have been the base of a chimney, the rock wall made from sandstone blocks, and a possible well or springhouse are also visible on the ground surface. The distribution of artifacts and co-occurrence of architectural stone and possible architectural remains constitutes the site. Artifact distribution is moderate to dense with concentrations on the north and



Figure 6-1. Site map for 15Mt38 in relation to the pre-1914 structure on the 1954 USGS Milo 7.5' quadrangle map.



Figure 6-2. General view of 15Mt38. View to the southeast.

west sides. Dense artifact concentrations and midden coincide and are concentrated on the northern side of the site and extend down the sloped north side of the house pad to the edge of the current driveway (see Figure 6-2 above). Testing was confined to the APE boundaries. Site 15Mt38 appears not to extend outside of the APE, measuring approximately 45 meters north-south and 37 meters east-west, covering 1665 m^2 (0.41 acres).

Investigation Methods

15Mt38 was identified based on the recovery of a concentration of artifact-producing STPs and possible stone architectural remains. Shovel test pits within the site were excavated at 10-m intervals on a grid pattern established with compass and 100-meter tape. The grid was established approximately 10 meters west of the current residence and within 5 meters north of the steep side slopes at the south side of the APE. Testing occurred on an elevated landform that once served as the pad for a pre-1914 structure. All of the STPs on the elevated house platform produced artifacts. Based on the distribution of STPs and natural landscape features, the site does not appear to extend outside of the APE, although portions of it may be underneath the fill dump piles to the west, and underneath the residential structure to the east. North of the driveway, STPs failed to produce



Figure 6-3. Distribution of positive STPs and architectural and possible architectural features within 15Mt38.

artifacts. Shovel Test Pit locations were recorded on a measured site sketch map that included architectural features, and possible features, associated with the pre-1914 structure and the current residence. Visible landmarks were used to georeference the site sketch map with a modern aerial image.



Figure 6-4. Architectural sandstone along porch of residence. View to the east.

Depositional Context

Sediments encountered in STPs varied across the site. At the southern and eastern edges soil profiles were consistent with Grigsby fine sandy loam, frequently flooded (Blanford and Moore 2005). A typical Grigsby fine sandy loam, frequently flooded profile in STPs consisted of 10YR3/3 brown sandy silt loam from the ground surface to a depth ranging from 10-30 cm below surface. Underlying the sandy silt loam was a subsoil characterized by 10YR4/4 yellowish brown sandy silt to sandy clay loam. Additional STPs around the perimeter of the site, mainly on the north and west sides, were characterized by organically enriched sediments that were darker than the upper zone of Grigsby fine sandy loam. Color for these ranged from 10YR3/1 very dark gray to 10YR2/1 black in color and are interpreted as representing a domestic yard midden. Darker midden soils overlie the usual 10YR4/4 to 10YR4/6 dark yellowish brown loamy clay to clay loam subsoil. In STP-8, a 10YR2/1 black zone rich in charcoal, melted glass and an abundance of nails overlay a 5YR4/4 reddish brown thermally modified subsoil, indicating it was the location of a burn pile for the wooden remains of the pre-1914 structure. Carbon inputs into the soil through charcoal and other organic matter are responsible for the darker color. In several STPs charcoal flecking occurs at the interface of the organically enriched midden zone and the underlying subsoil, divided by a somewhat sharp interface indicating a truncated soil horizon, particularly in the north and west of the site, that may indicate pre-construction land leveling. The development of midden deposits over an apparent truncated soil sequence implies that midden may have formed in place and were not created through organic enrichment of the already existing upper zone of a typical Grigsby silt loam profile. Considering the stratigraphic information currently available, archaeological deposits at 15Mt38 are mostly if not entirely undisturbed despite the demolition of the pre-1914 structure. Moreover, a significant portion of the sediments at the site are apparently entirely anthropogenic in origin, having formed since the construction of the pre-1914 structure. Midden formation and the absence of any evidence for plowing or any other kinds of disturbance indicate that 15Mt38 could retain a high level of integrity. A high degree of stratigraphic integrity at this site, the data it has yielded, or may yet yield, are of a kind and quality that lend themselves to spatial analysis.

Artifacts

Ninety-nine artifacts were recovered and included a variety of domestic and architectural materials. Domestic artifacts are mainly associated with South's (1977) Kitchen functional group. Kitchen group material includes a variety of container glass, whiteware, yellow glazed whiteware, embossed whiteware, and Albany slipped stoneware. Architectural group artifacts consisted primarily of nails and window glass, but a hinge was also recovered in addition to the abundance of dressed architectural stone at the site. Tobacco and Domestic group artifacts present and include a pressed glass ashtray and chimney glass fragments from an oil lamp. Date ranges for much of the container glass, ceramics, and nails are all consistent with an early 20th century timeframe (see Chapter 5). Melted glass associated with a burn pile was found but cannot be classified and apparently were burned along with wood from the pre-1914 structure given the abundance of nails of multiple sizes found along with them. The highest densities of container glass, ceramics, and chimney glass came from the midden deposits on the north side of the site. Based on the predominance of the Kitchen, Domestic, and Architectural group artifacts recovered, the assemblage supports the suspected function of the pre-1914 structure as a residence. Artifact density for 15Mt38 is estimated at 283 artifacts per cubic meter.

Summary and National Register Evaluation

Site 15Mt38 is a historic residence constructed around 1914, possibly earlier, and was occupied through the end of the 20th century. Moderate to dense artifact content within organically enriched midden deposits were identified. Deposits were particularly dense along the northern and western portions of the site and indicate that it contains data that hold the potential to offer details related to the household economy in terms of domestic production (canning/preserving) and participation in consumer markets given the abundance and variety of container glass and ceramics recovered during a period when timber and coal production in Martin County greatly expanded around the time of World War I. Moreover, the presence of a possible chimney base in the center of the site and what may be a spring fed well at the southern end, both made of sandstone mortared with concrete, suggest the potential for additional domestic features below the ground surface. Stratigraphic profiles signal what appears to be a high degree of integrity. *In situ* formation of midden and the fact that the site has never been subjected to plowing or other potentially damaging activities, except for the demolition of the pre-1914 structure and burning the wooden architectural remains, are strong evidence for site integrity. Considering the information potential that this site possesses related to a period of economic growth nationally, and specifically in Martin County where timber and coal expanded in the opening decades of the 20th century around World War I, 15Mt38 offers an opportunity to investigate the economic impacts on one of the county's households, and potentially other changes throughout the later 20th century. Because of its data potential in conjunction with the well-preserved deposits, it is the opinion of the Principal Investigator that 15Mt38 should be considered as potentially meeting the requirements for NRHP listing under Criterion D.

Project Impacts

The proposed acquisition and rehabilitation the residential structure at 1616 Rockcastle Road and construction of up to two new single-family homes and the associated land clearing, construction

of a driveway, and connection of water service will impact 15Mt38 unless the project is designed to exclude the site's footprint. It is the opinion of the Principal Investigator that 15Mt38 retains a high level of integrity and may be eligible for NRHP listing under Criterion D due to its potential to contribute information on the lives of Martin County residents in the early 20th century. If the site cannot be avoided, then additional testing is recommended to make a final NRHP determination.

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CHAPTER 7
SUMMARY & RECOMMENDATIONS

Avanti Archaeology Services conducted an Intensive Phase I Archaeological Survey of the approximately 3.0-acre Thrive APE for FAHE on behalf of Thrive Community Coalition in advance of the proposed acquisition, rehabilitation, and new construction of residential structures at 1616 Rockcastle Road in Inez, Martin County, Kentucky with a HUD CDBG-RHP grant. An archaeological survey was requested by KHC in a letter to Ruby Smith, Project Manager for FAHE from Craig Potts, Executive Director and SHPO, dated July 24, 2025. This Phase I archaeological survey aimed to locate and identify previously unrecorded archeological sites within the APE and assess the impacts of the proposed undertaking on them in accordance Section 106 of the NHPA of 1966.

Based on pre-field background research, it was determined that the eastern half of the APE was disturbed by prior landscape alterations due to the classification of soils there as Udorthents-Urban land, and the observation that the lower course of Crooked Branch had been rerouted north and away from the APE. Field observations showed that the southeastern corner of the APE is characterized by slopes greater than 15%, that the area between the sloped terrain and the current residence is low-lying and marshy with standing and flowing water present at the time of field work, and that the current residence sits atop ground that has been both leveled (south, west) and mounded (east, north). Given these field conditions and documented disturbance, no subsurface testing was conducted in the eastern half of the APE. Surface survey was conducted for these areas and did not produce any evidence of surface features or other archeological remains.

Subsurface testing and pedestrian survey were limited to the portions of the APE west of the current residence with the exception of an area in the southwestern corner where piles of fill have been dumped, and the driveway. A total of 18 STPs were excavated and 13 produced 99 artifacts resulting in the identification of a new archeological site, 15Mt38. Site 15Mt38 is restricted to the elevated platform where the pre-1914 structure was sited as shown on the 1954 USGS Milo 7.5' quadrangle map and earlier historic 1914 and 1916 USGS topographic maps. Artifacts recovered confirm the presence of this structure, its function, and its age. The majority of the glass, ceramic, and nail artifacts date to the first half of the 20th century. Artifacts are most frequent on the northern and western sides of the site and are contained within organically enriched midden deposits with an estimated artifact density of 283 artifacts per cubic meter. These midden deposits appear to have formed over top of a truncated natural soil profile where land leveling in preparation to construct the historic residence cut down to the natural subsoil. Midden formation over the truncated soil profile suggests that the site retains a high level of integrity and has not witnessed significant disturbance to the archaeological deposits.

Considering the currently available information, site 15Mt38 may be eligible for listing on the NRHP under Criterion D, its potential to provide information related to early 20th century life in a remote rural community in one of the most economically depressed regions in Kentucky, and the United States overall, at the turn of the 20th century. This was a period economic change with the

growth of coal extraction made possible by the incursion of roads and railroads into the Eastern Coal Fields region, and demand for timber driven by World War I and the post-war housing boom. Archaeological data the site contains may offer insights into the quality of life, economic strategies, and adaptations to the social and economic conditions within this context. Further, 15Mt38 appears to retain its integrity judging from the formation of midden deposits with a high artifact density over a natural soil horizon truncated in the early 20th century and that has not been subjected to any significant disturbance. For these reasons, it is the opinion of the Principal Investigator that the proposed undertaking will have an ***Adverse Effect*** on 15Mt38. If the site cannot be avoided, additional work to make a final NRHP eligibility determination is recommended.

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Appendix A, Exhibit L

Noise (EA Level Reviews)

General requirements	Legislation	Regulation
HUD's noise regulations protect residential properties from excessive noise exposure. HUD encourages mitigation as appropriate.	Noise Control Act of 1972 General Services Administration Federal Management Circular 75-2: "Compatible Land Uses at Federal Airfields"	Title 24 CFR 51 Subpart B
References		
https://www.hudexchange.info/programs/environmental-review/noise-abatement-and-control		

1. **What activities does your project involve? Check all that apply:**

☒ New construction for residential use
NOTE: HUD assistance to new construction projects is generally prohibited if they are located in an Unacceptable zone, and HUD discourages assistance for new construction projects in Normally Unacceptable zones. See 24 CFR 51.101(a)(3) for further details.
→ *Continue to Question 2.*

☐ Rehabilitation of an existing residential property
NOTE: For major or substantial rehabilitation in Normally Unacceptable zones, HUD encourages mitigation to reduce levels to acceptable compliance standards. For major rehabilitation in Unacceptable zones, HUD strongly encourages mitigation to reduce levels to acceptable compliance standards. See 24 CFR 51 Subpart B for further details.
→ *Continue to Question 2.*

☐ A research demonstration project which does not result in new construction or reconstruction, interstate, land sales registration, or any timely emergency assistance under disaster assistance provisions or appropriations which are provided to save lives, protect property, protect public health and safety, remove debris and wreckage, or assistance that has the effect of restoring facilities substantially as they existed prior to the disaster
→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

☐ None of the above
→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

2. **Complete the Preliminary Screening to identify potential noise generators in the vicinity (1000' from a major road, 3000' from a railroad, or 15 miles from an airport). Indicate the findings of the Preliminary Screening below:**

☐ There are no noise generators found within the threshold distances above.

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide a map showing the location of the project relative to any noise generators.*

☒ Noise generators were found within the threshold distances.

→ *Continue to Question 3.*

3. **Complete the Noise Assessment Guidelines to quantify the noise exposure. Indicate the findings of the Noise Assessment below:**

☒ Acceptable: (65 decibels or less; the ceiling may be shifted to 70 decibels in circumstances described in §24 CFR 51.105(a))

Indicate noise level here: 59

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide noise analysis, including noise level and data used to complete the analysis.*

☐ Normally Unacceptable: (Above 65 decibels but not exceeding 75 decibels; the floor may be shifted to 70 decibels in circumstances described in 24 CFR 51.105(a))

Indicate noise level here:

If project is rehabilitation:

→ *Continue to Question 4. Provide noise analysis, including noise level and data used to complete the analysis.*

If project is new construction:

Is the project in a largely undeveloped area[1]?

☐ No

→ *Continue to Question 4. Provide noise analysis, including noise level and data used to complete the analysis, and any other relevant information.*

[1] A largely undeveloped area means the area within 2 miles of the project site is less than 50 percent developed with urban uses or does not have water and sewer capacity to serve the project.

☐ Yes

→*Your project requires completion of an Environmental Impact Statement (EIS) pursuant to 51.104(b)(1)(i). Elevate this review to an EIS-level review.*

☐ Unacceptable: (Above 75 decibels)

Indicate noise level here: [ ]

If project is rehabilitation:

HUD strongly encourages conversion of noise-exposed sites to land uses compatible with high noise levels. Consider converting this property to a non-residential use compatible with high noise levels.

→ *Continue to Question 4. Provide noise analysis, including noise level and data used to complete the analysis, and any other relevant information.*

If project is new construction:

Your project requires completion of an Environmental Impact Statement (EIS) pursuant to 51.104(b)(1)(i). You may either complete an EIS or provide a waiver signed by the appropriate authority. Indicate your choice:

☐ Convert to an EIS

→ *Provide noise analysis, including noise level and data used to complete the analysis.*

Continue to Question 4.

☐ Provide waiver

→ *Provide an Environmental Impact Statement waiver from the Certifying Officer or the Assistant Secretary for Community Planning and Development per 24 CFR 51.104(b)(2) and noise analysis, including noise level and data used to complete the analysis.*

Continue to Question 4.

4. **HUD strongly encourages mitigation be used to eliminate adverse noise impacts. Explain in detail the exact measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation. This information will be automatically included in the Mitigation summary for the environmental review.**

☐ Mitigation as follows will be implemented:

→ *Provide drawings, specifications, and other materials as needed to describe the project's noise mitigation measures. Continue to the Worksheet Summary.*

☐ No mitigation is necessary.

Explain why mitigation will not be made here:

→ *Continue to the Worksheet Summary.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

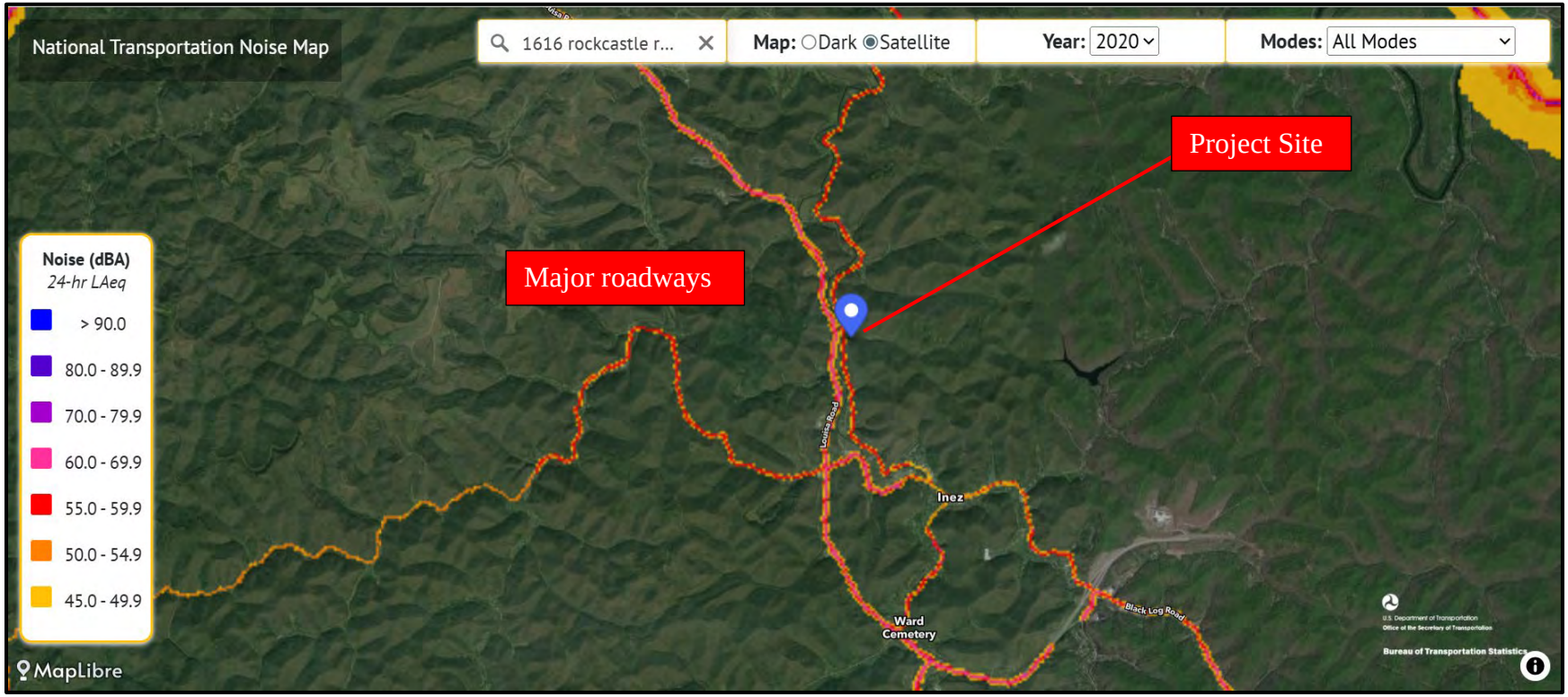
There are no active railroads within 3,000ft of the proposed site. There were two roads with KYTC data within 1,000ft of the proposed site, 080-KY-0003 -000 (KY-3) and 080-KY-0645 -000 (Highway 645). The 10-year projected DNL for 080-KY-0003 -000 (KY-3) was 57 and the 10-year projected DNL for 080-KY-0645 -000 (Highway 645) was 54. According to HUD's DNL Calculator, the 10-year projected combined DNL is 59dB, which is below the 65dB threshold established by HUD.
The Big Sandy Regional Airport is located approximately 12.94 miles from the project site. Fahe completed a Small Airport Noise Worksheet for the airport; however, operations data was not available in the Big Sandy AMR report. To address this, Airport Manager Gary Cox was consulted and provided the necessary operations information. Based on the worksheet, the low number of annual air carrier operations ensures that airplane-related noise does not extend beyond the airport boundaries.
No further action or mitigation is required, and the project is in compliance with HUD's noise regulations.

Are formal compliance steps or mitigation required?

☐ Yes

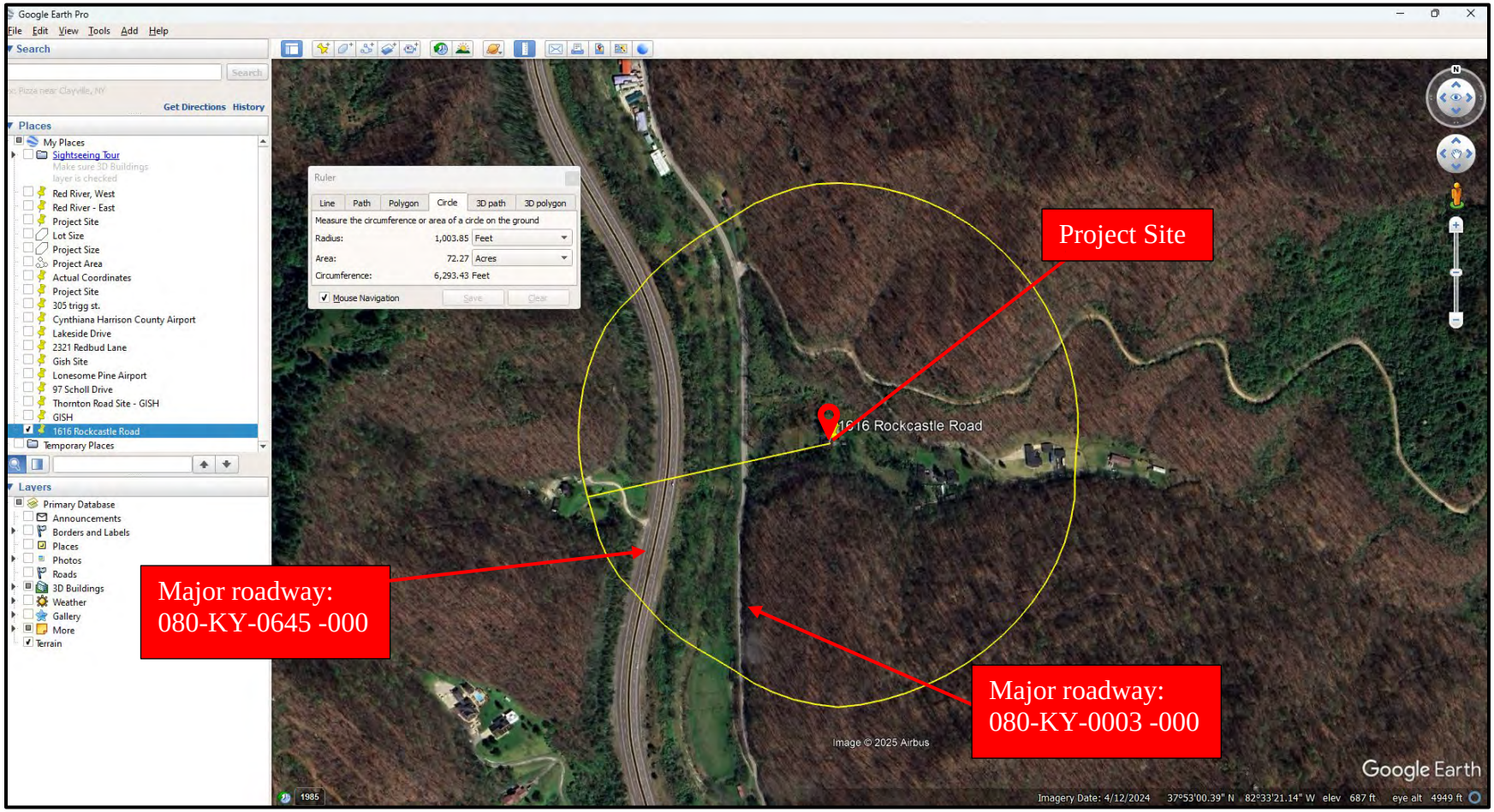
☒ No

Noise Abatement & Control



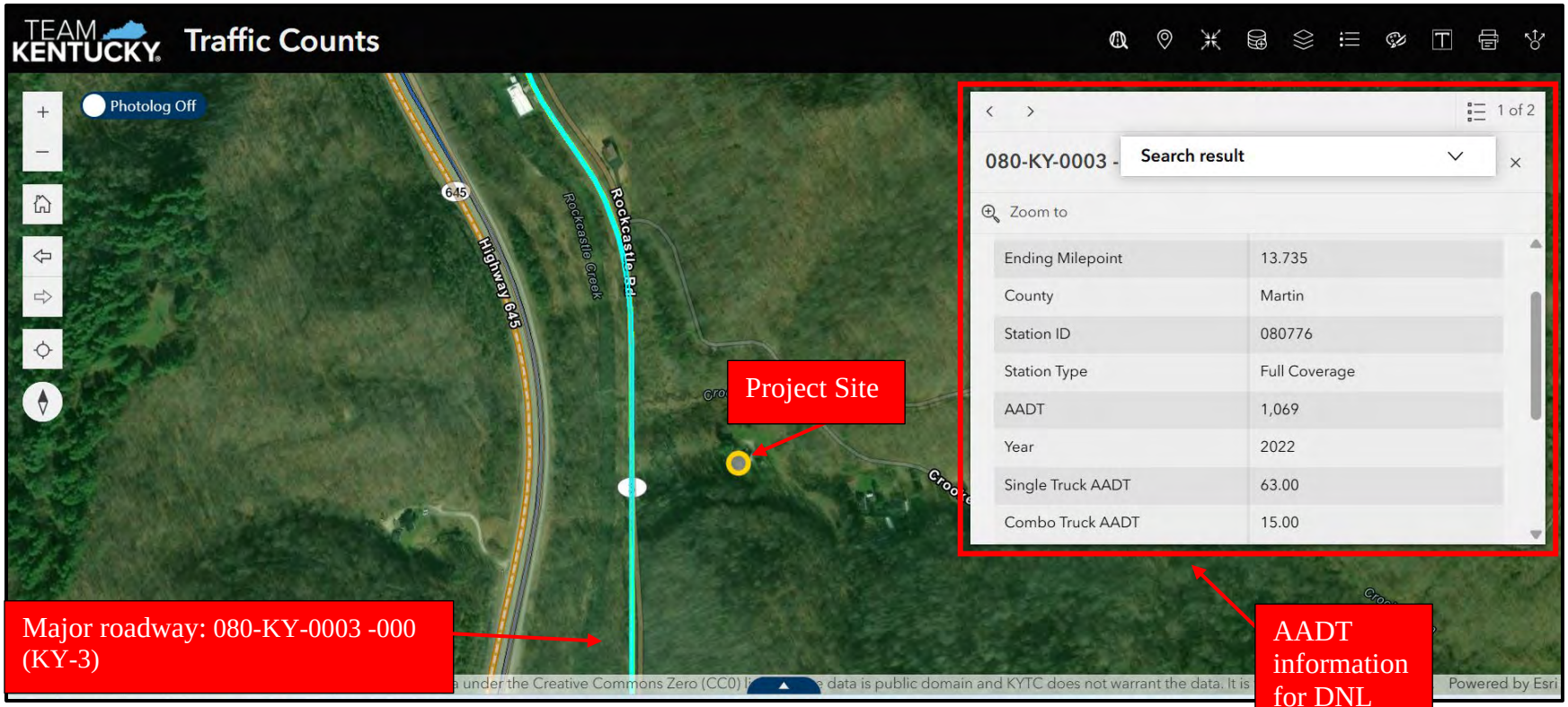
National Transportation Noise Map
Source: https://maps.dot.gov/BTS/NationalTransportationNoiseMap/

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



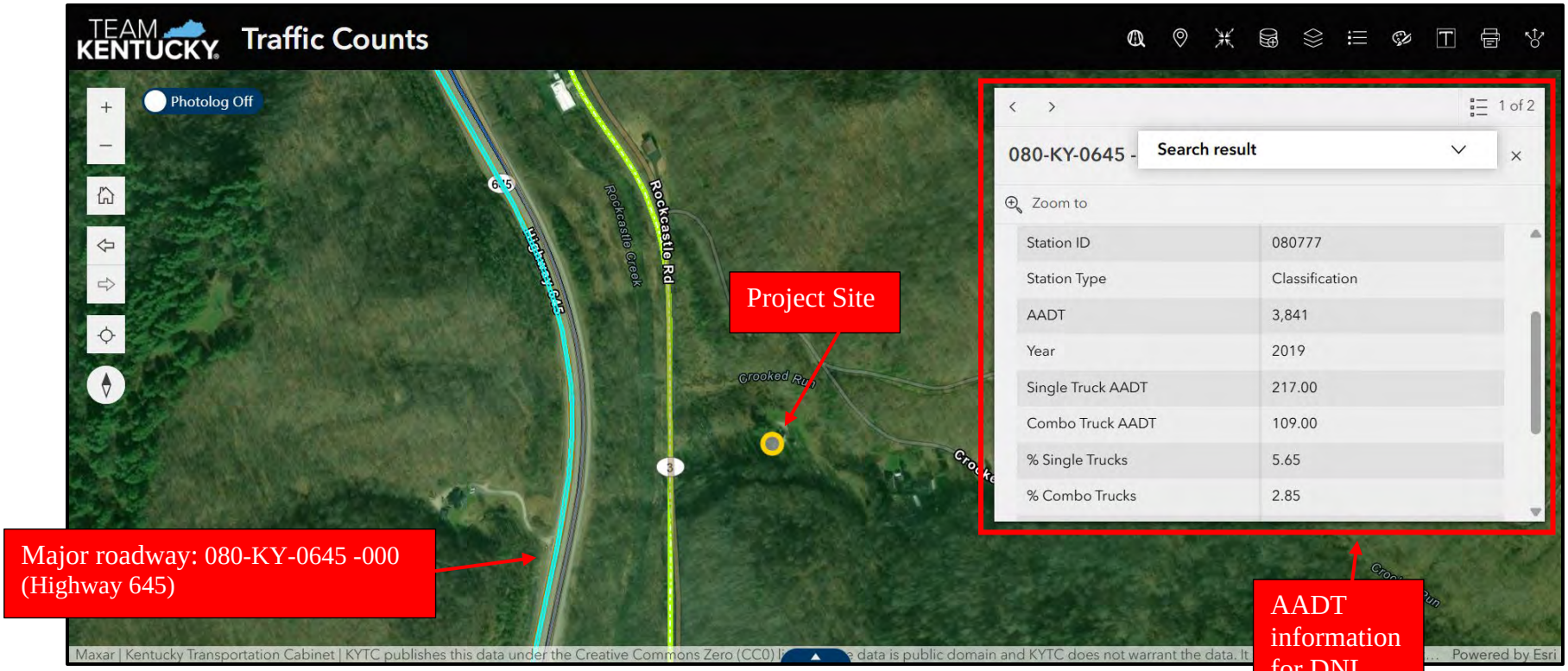
1,000-foot major roadway map. Two major roadways identified: 080-KY-0003 -000 (KY-3) and 080-KY-0645 -000 (Highway 645)
Source: google.com/earth

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



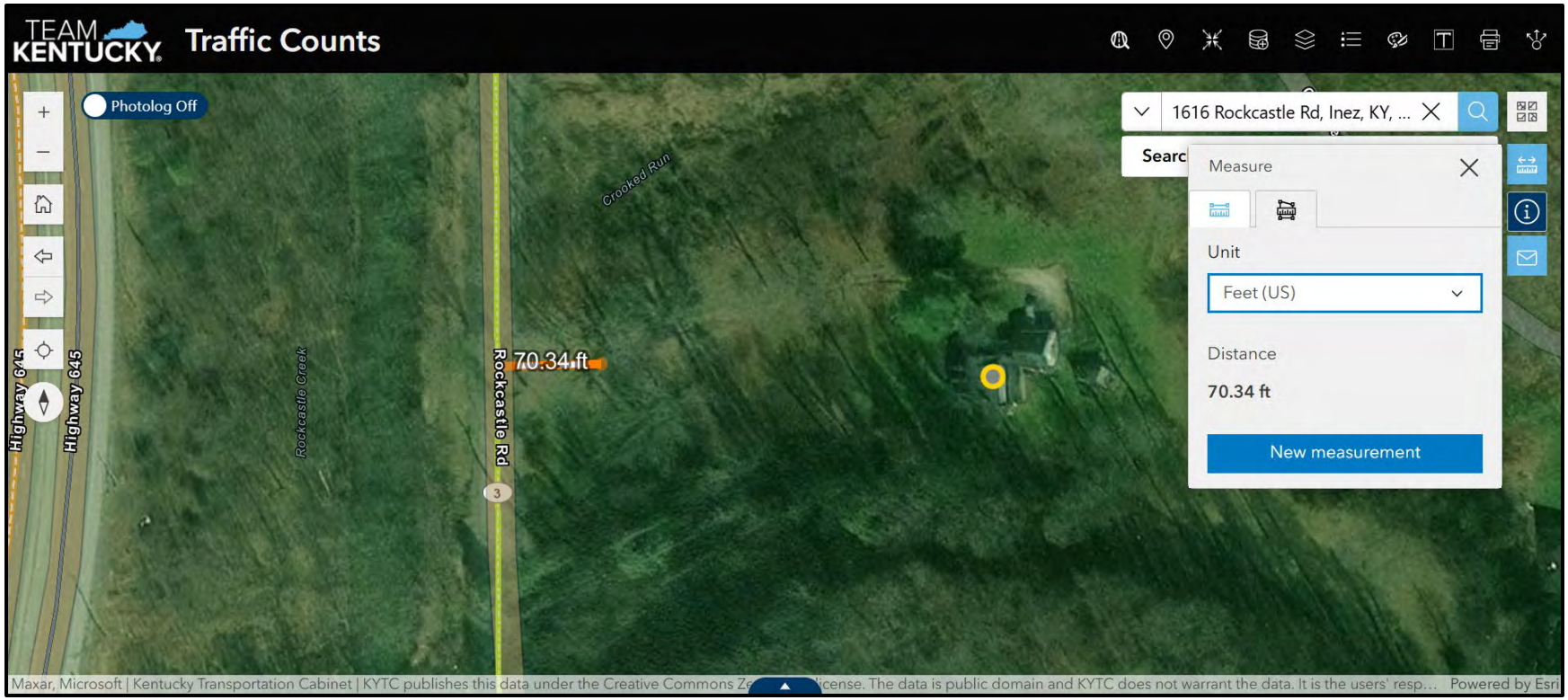
1,000-foot major roadway map – 080-KY-0003 -000 (KY-3)
Source: https://maps.kytc.ky.gov/trafficcounts/

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



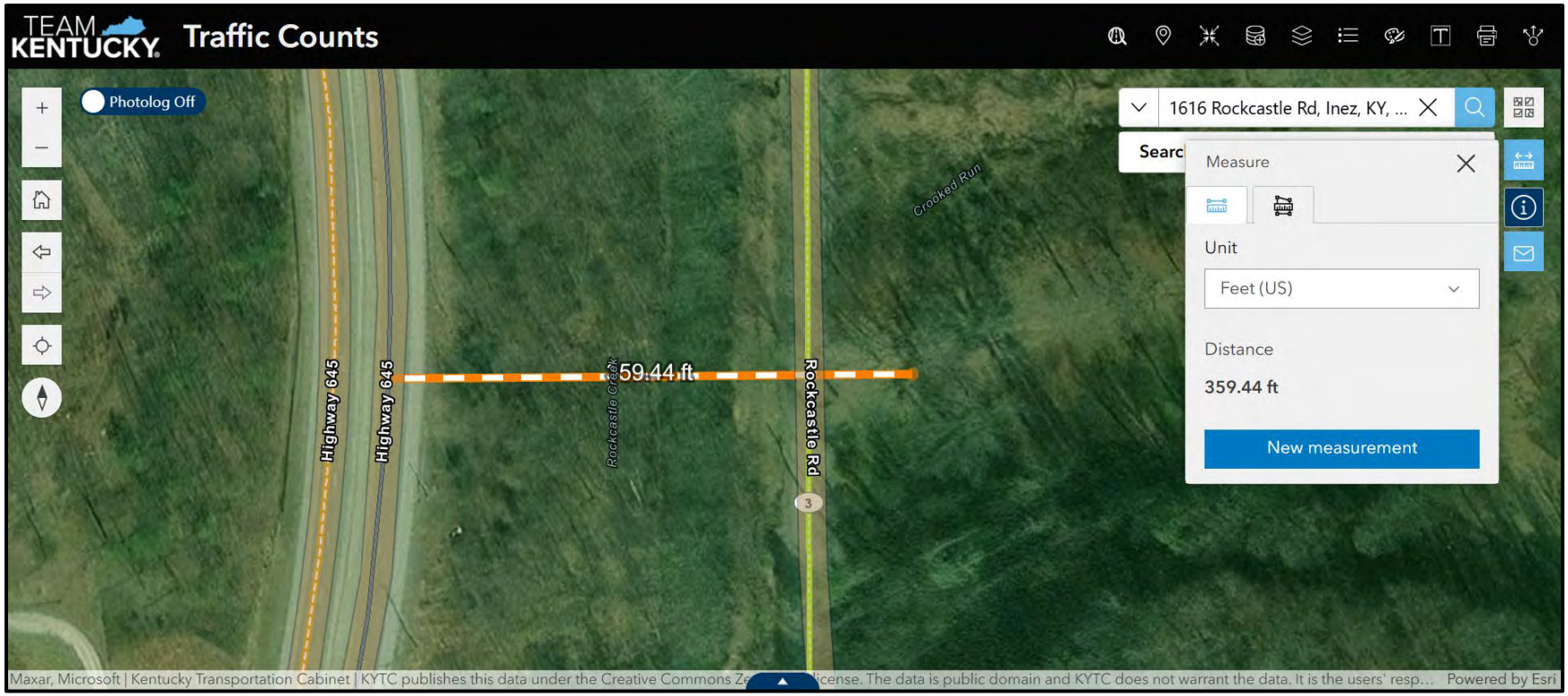
1,000-foot major roadway map – 080-KY-0645 -000 (Highway 645)
Source: https://maps.kytc.ky.gov/trafficcounts/

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



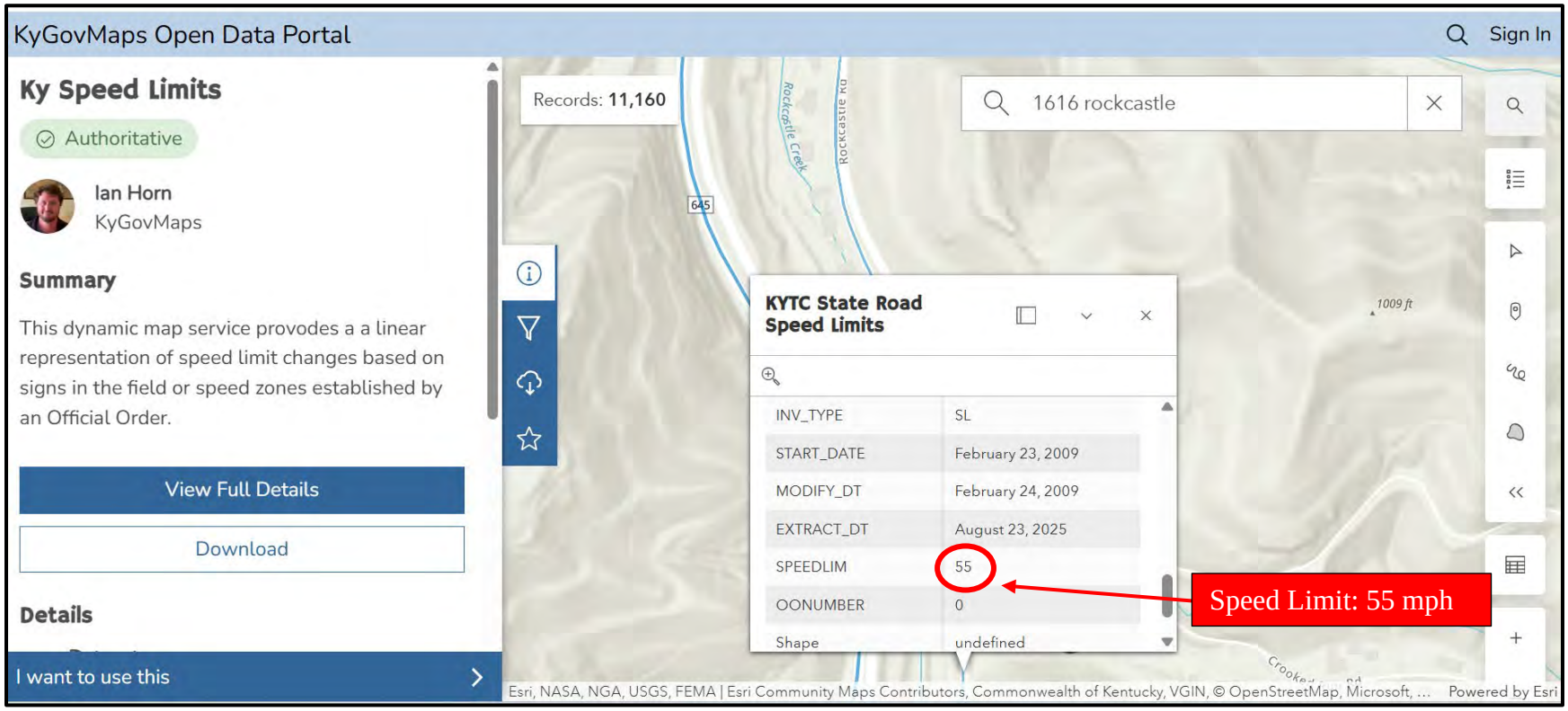
Nearest point of the project site distance to 080-KY-0003 -000 (KY-3)– 70.34 feet
Source: https://maps.kytc.ky.gov/trafficcounts/

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



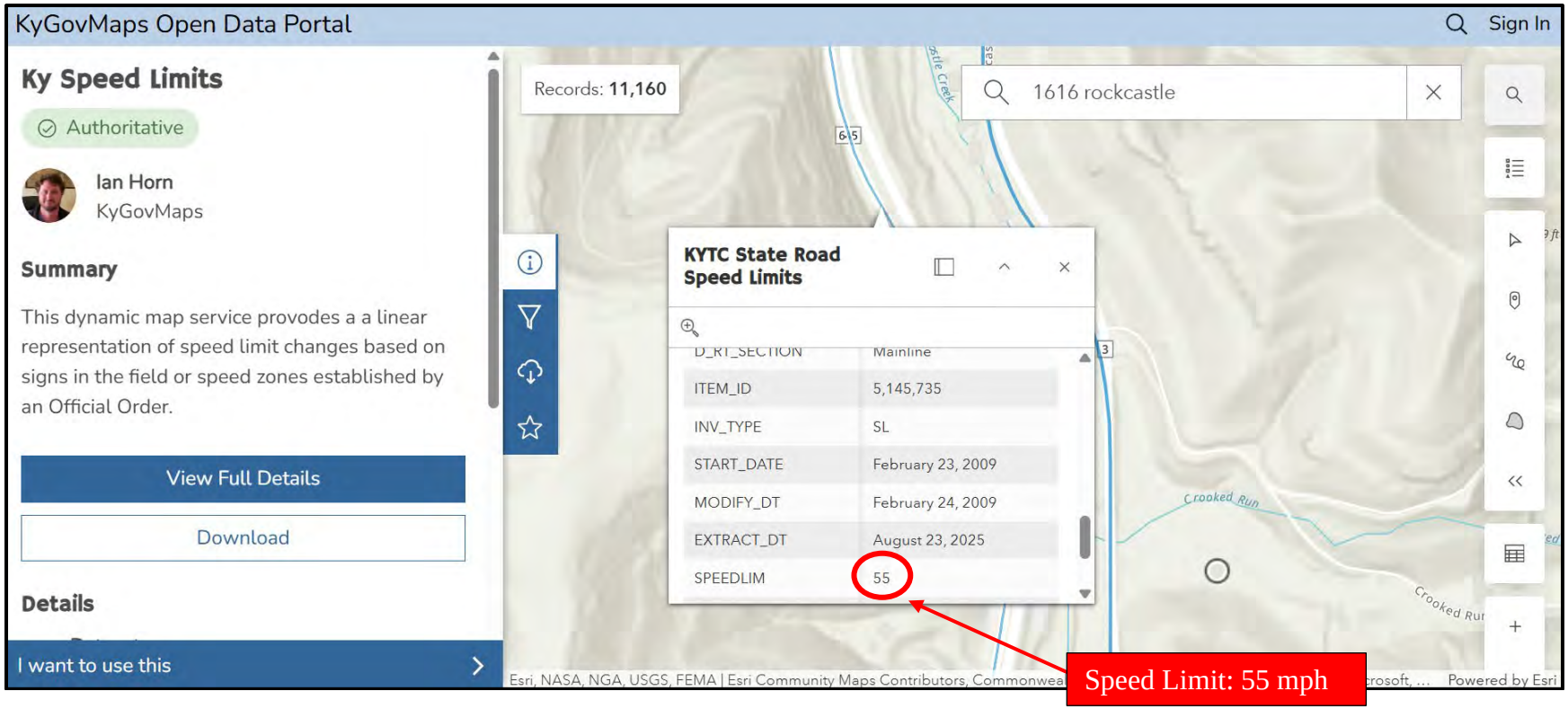
Nearest point of the project site distance to 080-KY-0645 -000 (Highway 645) – 359.44 feet
Source: https://maps.kytc.ky.gov/trafficcounts/

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



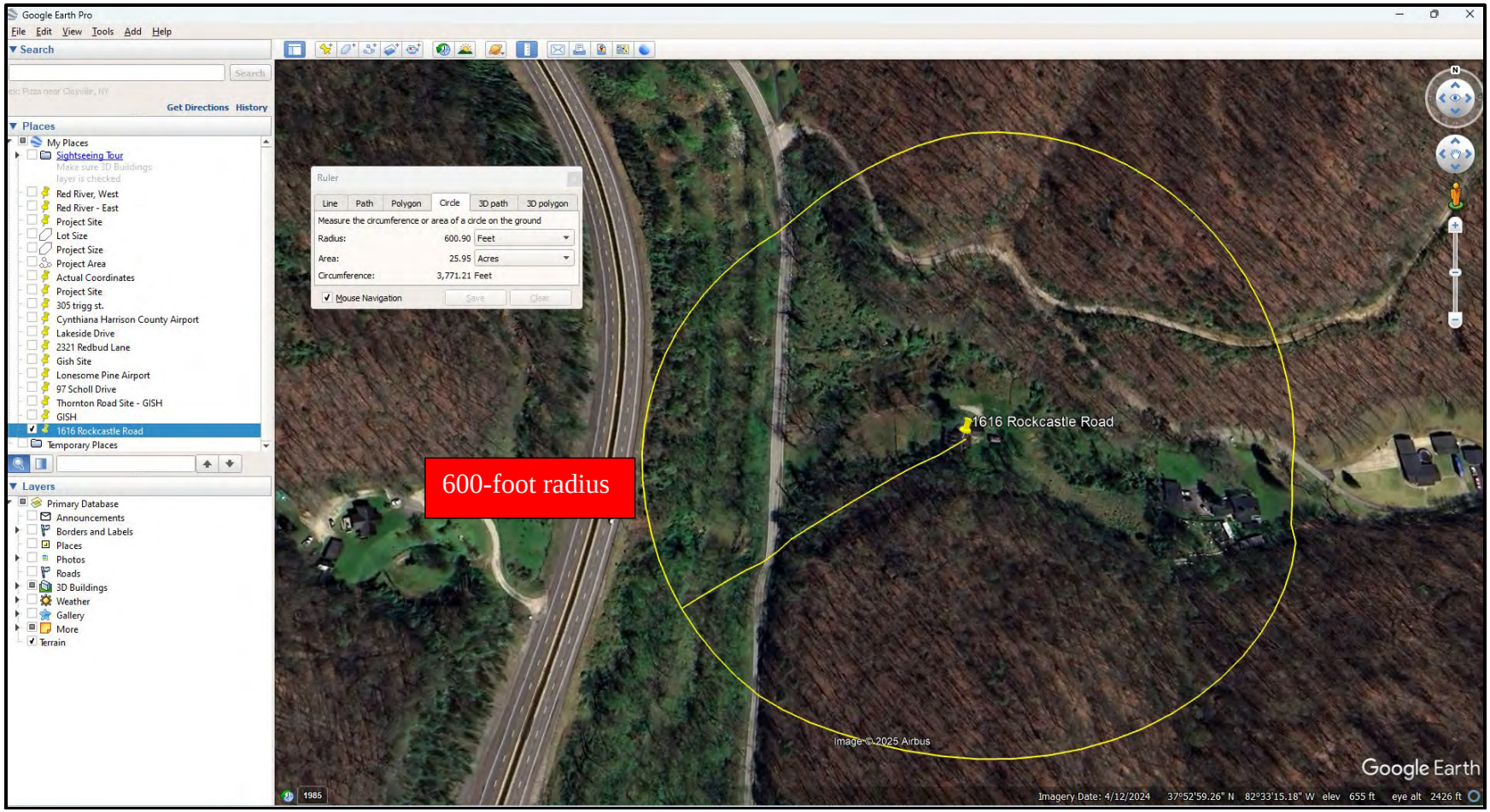
080-KY-0003 -000 (KY-3) Speed Limit – 55 MPH
Source: google.com/maps

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



080-KY-0645 -000 (Highway 645) Speed Limit – 55 MPH
Source: google.com/maps

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



Area Assessed for Stop Sign/Traffic Light – 600- foot radius – N/A No Applicable Stop Signs/Traffic Lights within 600 feet.
Source: https://google.com/earth

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)

Year	AADT	Year	AADT	Year	AADT
2025		2015		2005	
2024		2014		2004	1950
2023		2013	1331	2003	
2022	1069	2012		2002	
2021		2011		2001	2410
2020		2010	1600	2000	
2019	1297	2009		1999	
2018		2008		1998	
2017		2007	2040	1997	
2016	1417	2006		1996	2030

Noise Calculation to find 10-year projected AADT

1. Calculate the closest 10-year difference

1331 (yr. 2013)-1069 (yr. 2022) = (difference) 262

2. Subtract to find the number of years in between

2022-2013=9

3. Divide difference (262) by 9 to find annual change

262 (difference between closest 10-year counts) / 9 (number of years between counts) = 29

4. Multiply 29 (annual averaged difference) by the number of years until 2036 (10 years from today) to get a 10-year projection

29 (annual average difference) x 14 (number of years until 2036) = 406

5. Subtract this amount the current AADT since the AADT has shown decline

1069 (yr. 2022) - 406 (average projected difference) = 663

6. Percent Single Trucks (Medium Trucks)

663 (AADT) x 0.059 (% Single) = 39.117 (rounded to 39)

7. Percent Combo Trucks (Heavy Trucks)

663 (AADT) x 0.0076 (% Heavy) = 5.0388 (rounded to 5)

080-KY-0003 -000 (KY-3) - Historical Data, Station ID: 080776, 10-year projected AADT =663
Source: https://datamart.kytc.ky.gov/EDSB_SOLUTIONS/CTS/

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)

Year	AADT	Year	AADT	Year	AADT
2025		2015		2005	
2024		2014		2004	4920
2023		2013	4487	2003	
2022		2012		2002	
2021		2011		2001	5110
2020		2010	4350	2000	
2019	3841	2009		1999	
2018		2008		1998	
2017		2007	4620	1997	
2016	3449	2006		1996	4950

Noise Calculation to find 10-year projected AADT

1. Calculate the closest 10-year difference
4350(yr. 2010) - 3841 (yr. 2019) = (difference) 509

2. Subtract to find the number of years in between
2022-2013=9

3. Divide difference (509) by 9 to find annual change
509 (difference between closest 10-year counts) / 9 (number of years between counts) = 56.55 (rounded to 57)

4. Multiply 57 (annual averaged difference) by the number of years until 2036 (10 years from today) to get a 10-year projection
57 (difference) x 17 (number of years from 2019 to 2036) = 969

5. Subtract this amount the current AADT since the AADT has shown decline
3,841 (yr. 2022) - 969 (average projected difference) = 2,872

6. Percent Single Trucks (Medium Trucks)
2,872 (AADT) x 0.057 (% Single) = 163.7 (rounded to 164)

7. Percent Combo Trucks (Heavy Trucks)
2,872 (AADT) x 0.0285 (% Heavy) = 81.85 (rounded to 82)

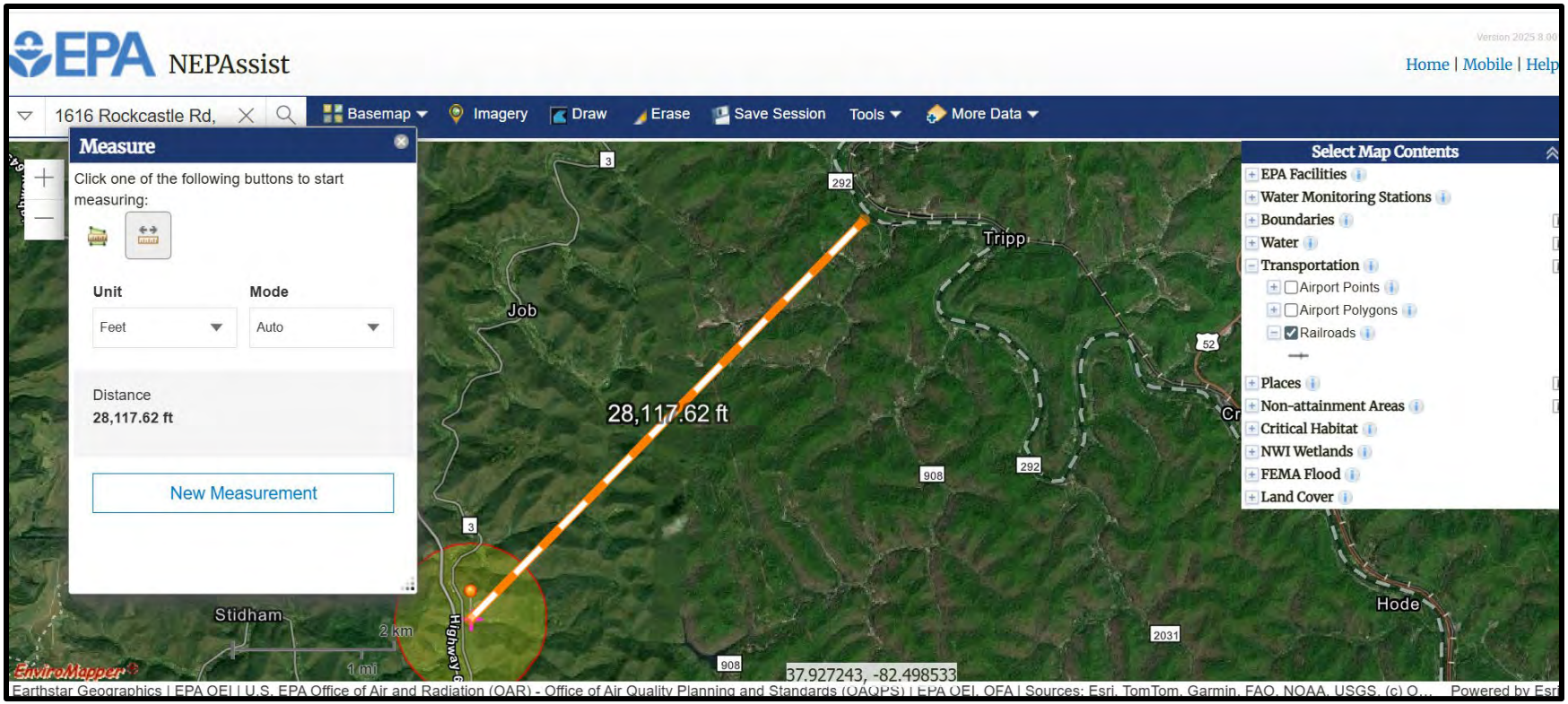
080-KY-0645 -000 (Highway 645) - Historical Data, Station ID: 080777, 10-year projected AADT =2,872
Source: https://datamart.kytc.ky.gov/EDSB_SOLUTIONS/CTS/

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



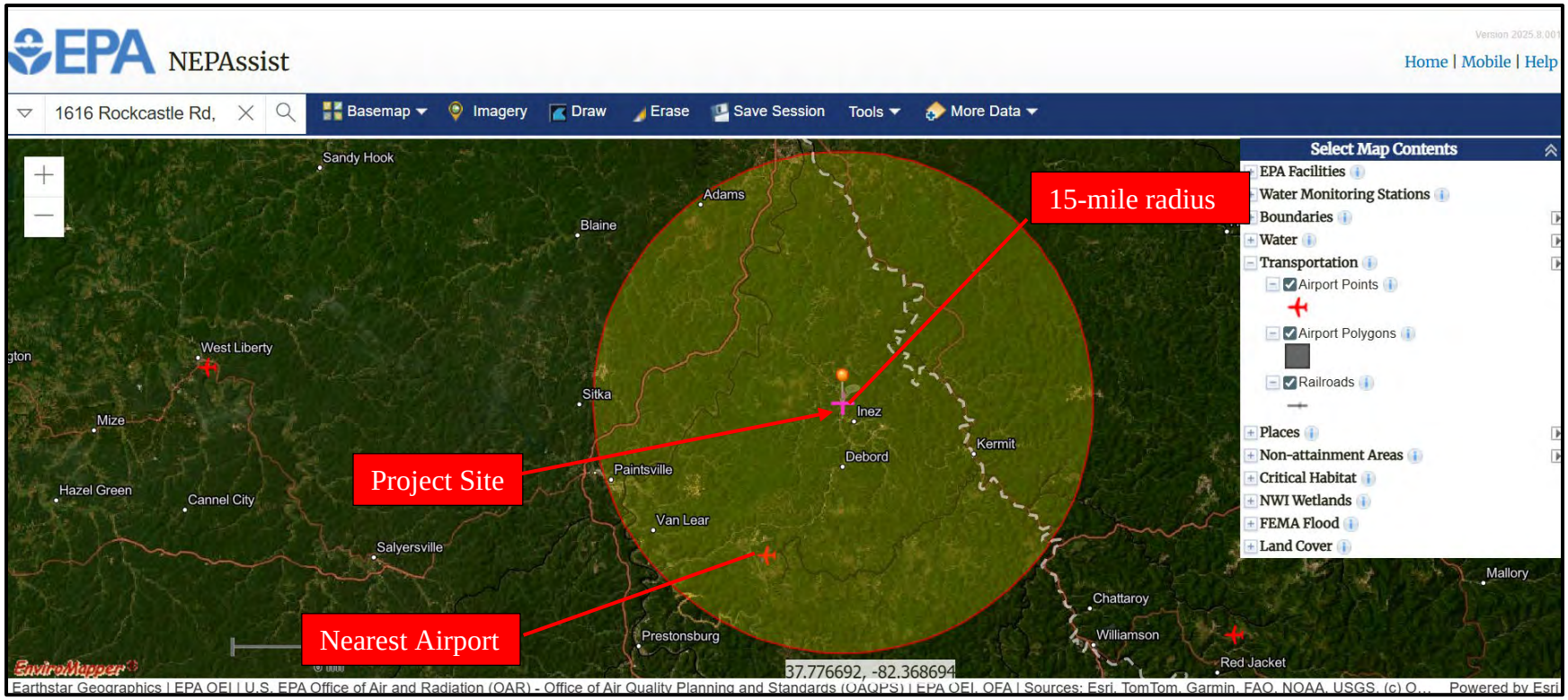
3,000-foot major railway map – No railroad identified
Source: https://nepassisttool.epa.gov/nepassist/nepamap.aspx

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



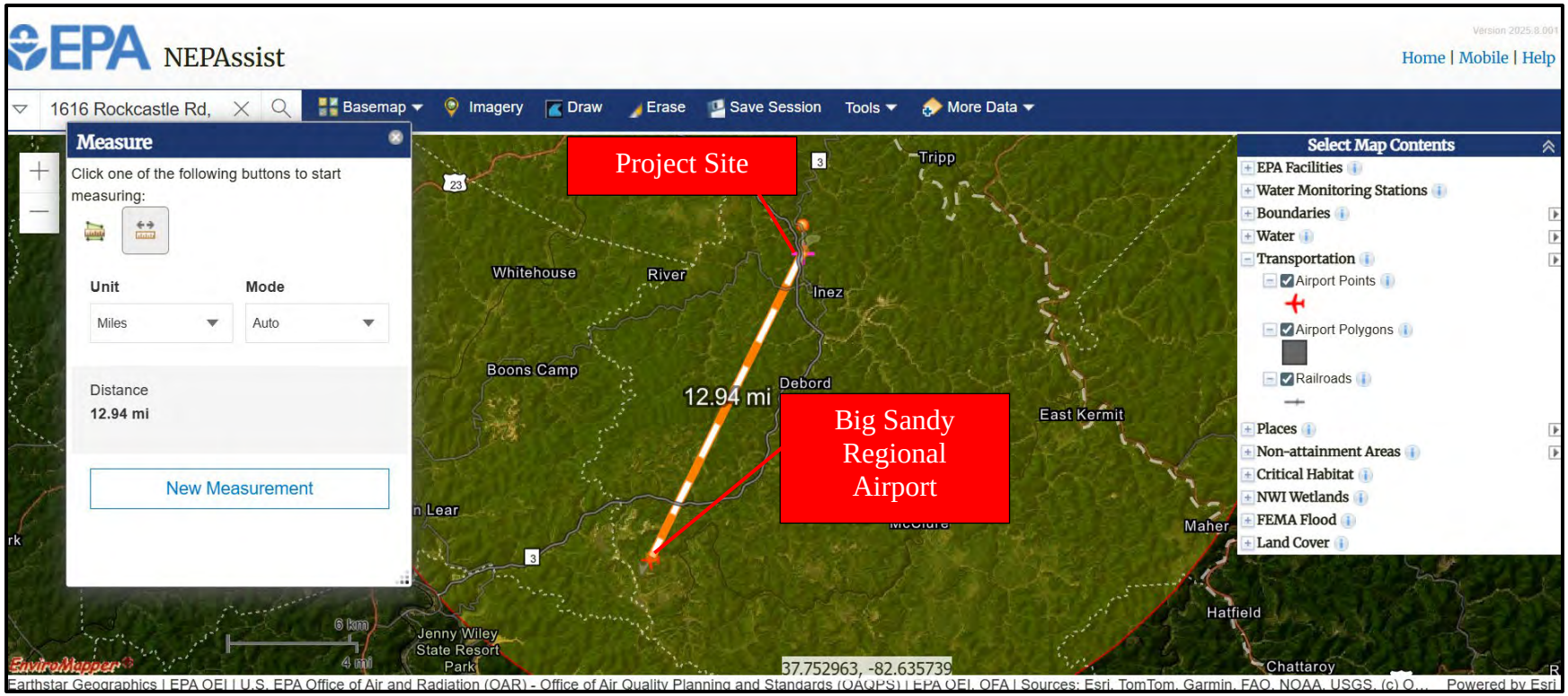
3,000-foot major railway map – Nearest railway identified 28,117.62 feet away
Source: https://nepassisttool.epa.gov/nepassist/nepamap.aspx

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



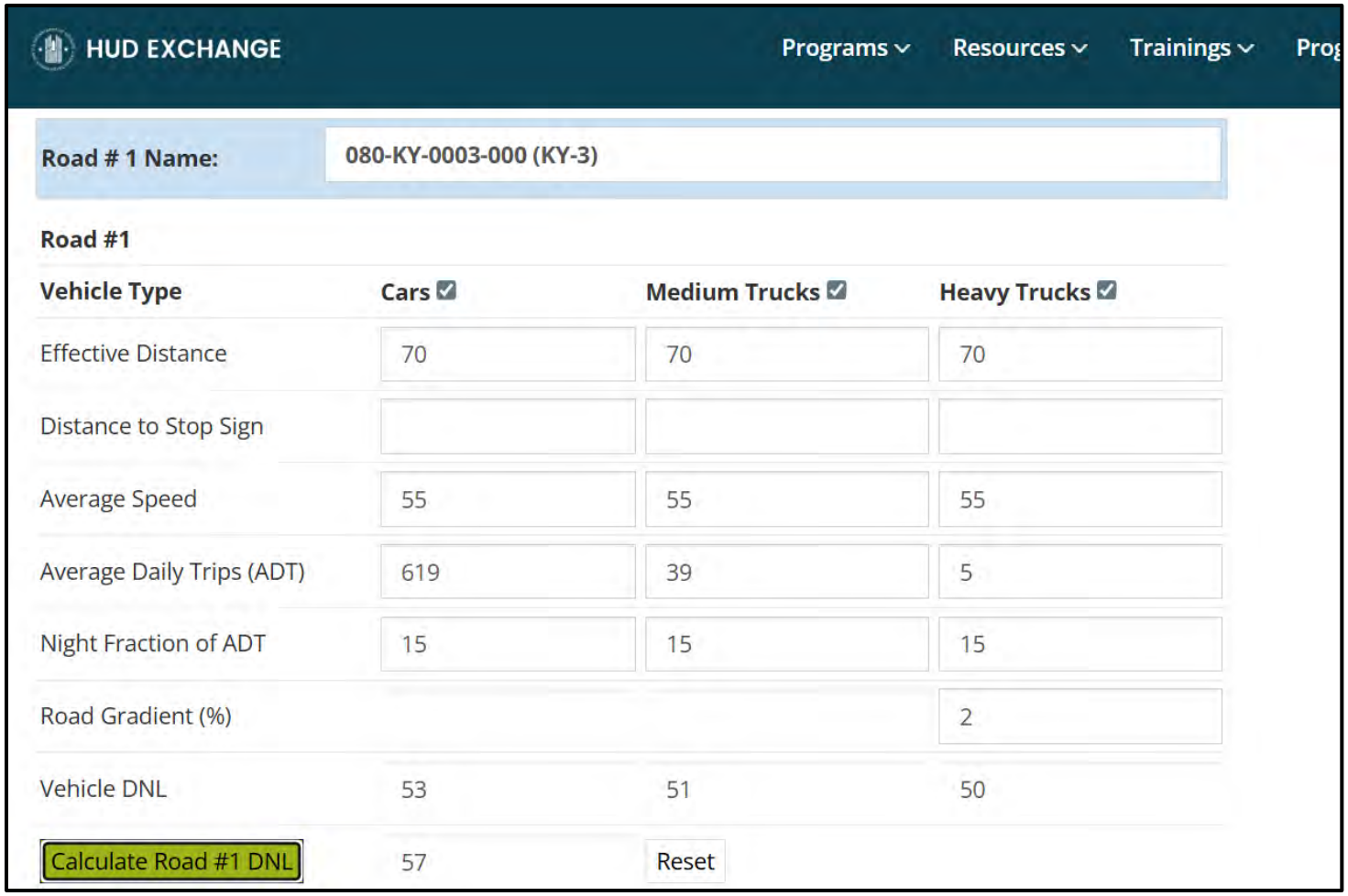
15-mile airport map – Nearest airport – Big Sandy Regional Airport
Source: https://nepassisttool.epa.gov/nepassist/nepamap.aspx

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



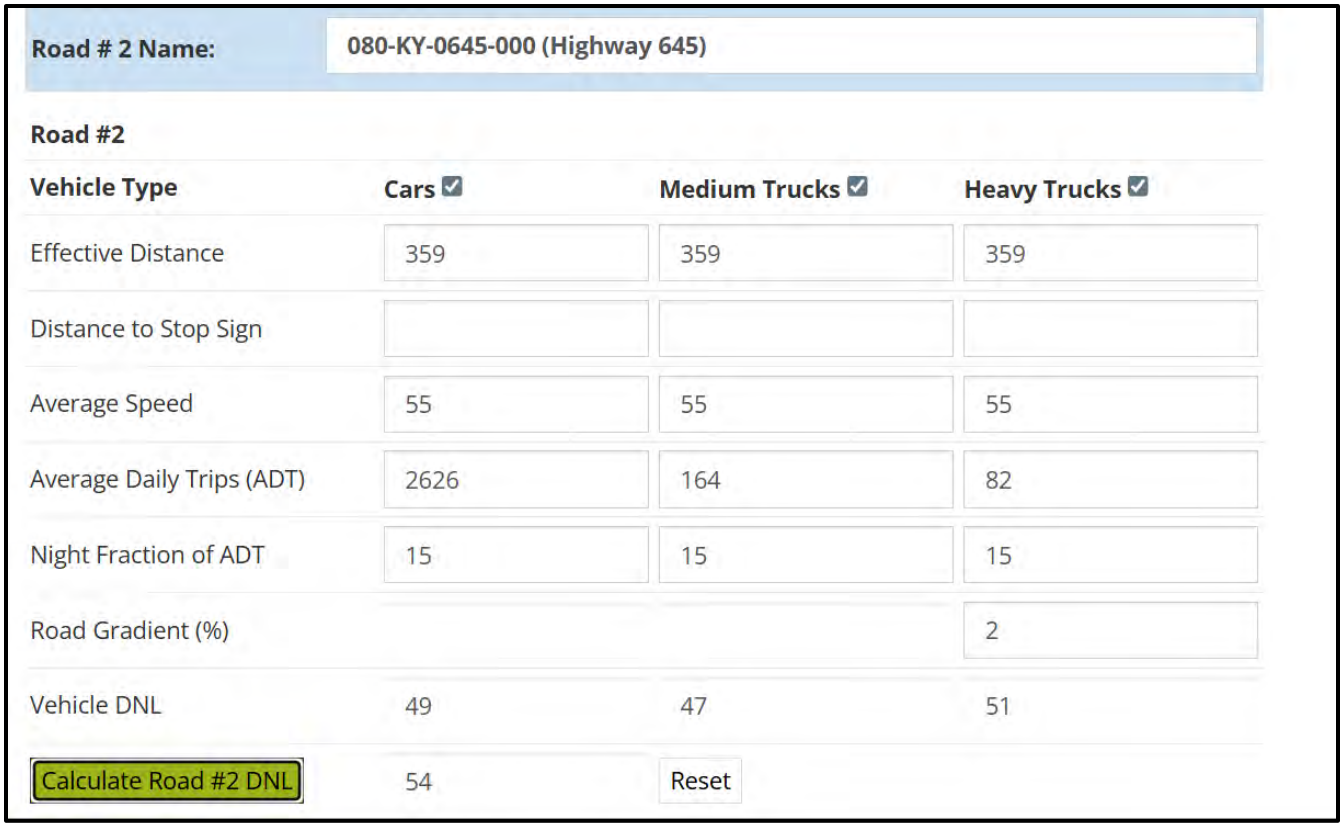
Nearest Airport - Big Sandy Regional Airport, 12.94 miles
Source: *https://nepassisttool.epa.gov/nepassist/nepamap.aspx*

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



080-KY-0003 -000 (KY-3) Road DNL Calculation – Vehicle DNL 57
Source: https://www.hudexchange.info/programs/environmental-review/dnl-calculator/

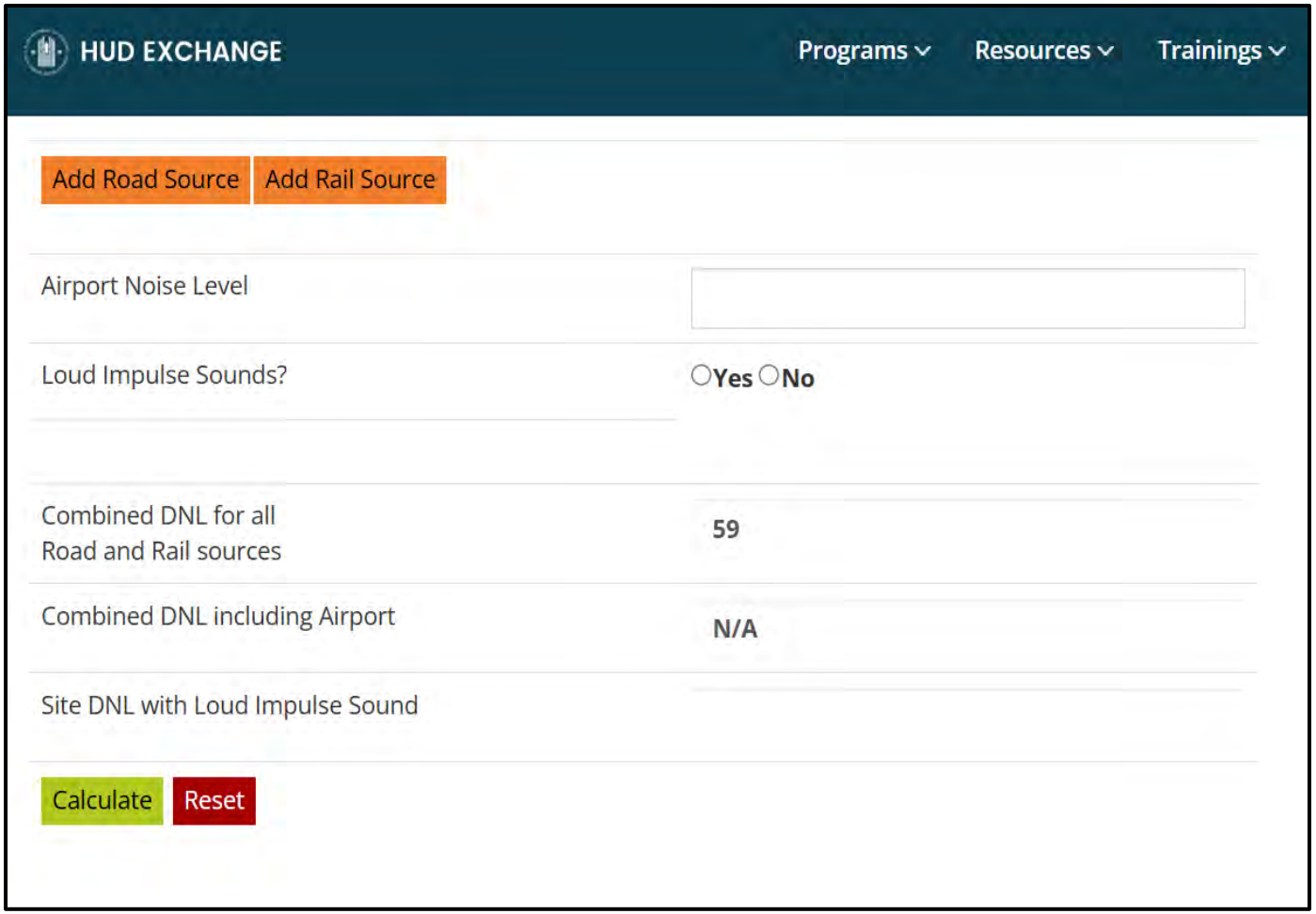
1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



Road # 2 Name:	080-KY-0645-000 (Highway 645)		
Road #2			
Vehicle Type	**Cars** ☑	**Medium Trucks** ☑	**Heavy Trucks** ☑
Effective Distance	359	359	359
Distance to Stop Sign			
Average Speed	55	55	55
Average Daily Trips (ADT)	2626	164	82
Night Fraction of ADT	15	15	15
Road Gradient (%)			2
Vehicle DNL	49	47	51
Calculate Road #2 DNL	54	Reset	

080-KY-0645 -000 (Highway 645) Road DNL Calculation – Vehicle DNL 54
Source: https://www.hudexchange.info/programs/environmental-review/dnl-calculator/

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



Combined DNL - 59
Source: https://www.hudexchange.info/programs/environmental-review/dnl-calculator/

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)

Historic Traffic Volume Summary
080-KY-0003 -000

Historical Traffic Volume Summary

Station Details:

Sta ID:	080776
Sta Type:	Full Coverage
Map:	MapIt
District:	12
County:	Martin
Route:	080-KY-0003 -000
Route Desc:	KY-3

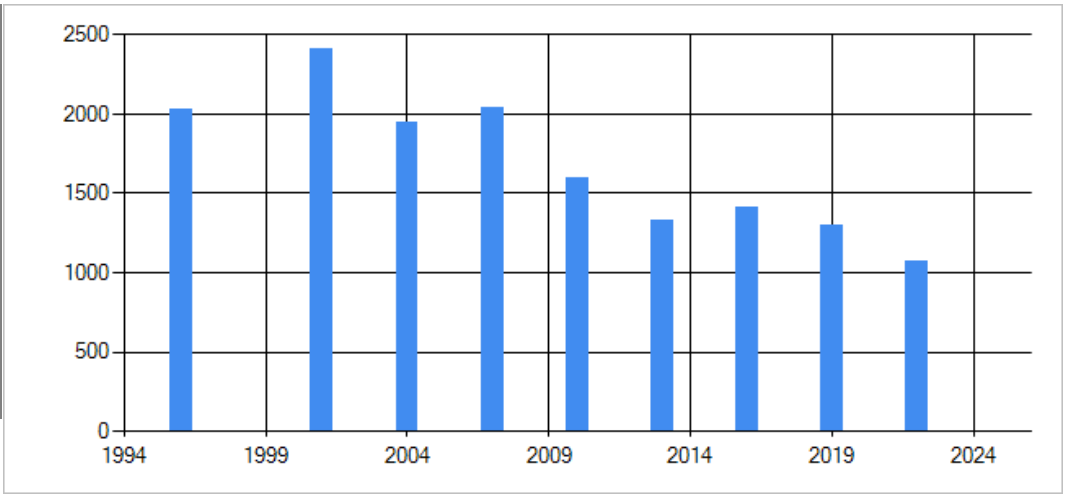
Begin MP:	11.2450
Begin Desc:	KY 40
End Mp:	13.7350
End Desc:	CASTLE BRANCH ROAD
Impact Year:	
Year Added:	

Newest Count:

AADT:	1069
Year:	2022
% Single:	5.9710
% Combo:	0.7570
K Factor:	10.90
D Factor:	58

Definitions:
Sta. ID - Three digit county number + station number
MP - milepoint
Impact Year – year of significant change to traffic pattern within station segment
AADT – Annual Average Daily Traffic – the annualized average 24-hour volume of vehicles on a segment of roadway
% Single – single unit truck volume as a percentage of the AADT
% Combo – combination truck volume as a percentage of the AADT
K Factor – peak hour volume as a percentage of the AADT
D Factor – percentage of peak hour volume flowing in the peak direction

Year	AADT	Year	AADT	Year	AADT
2025		2015		2005	
2024		2014		2004	1950
2023		2013	1331	2003	
2022	1069	2012		2002	
2021		2011		2001	2410
2020		2010	1600	2000	
2019	1297	2009		1999	
2018		2008		1998	
2017		2007	2040	1997	
2016	1417	2006		1996	2030



Historic Traffic Volume Summary
080-KY-0645 -000

Historical Traffic Volume Summary

Station Details:

Sta ID:	080777
Sta Type:	Classification
Map:	MapIt
District:	12
County:	Martin
Route:	080-KY-0645 -000
Route Desc:	KY-645

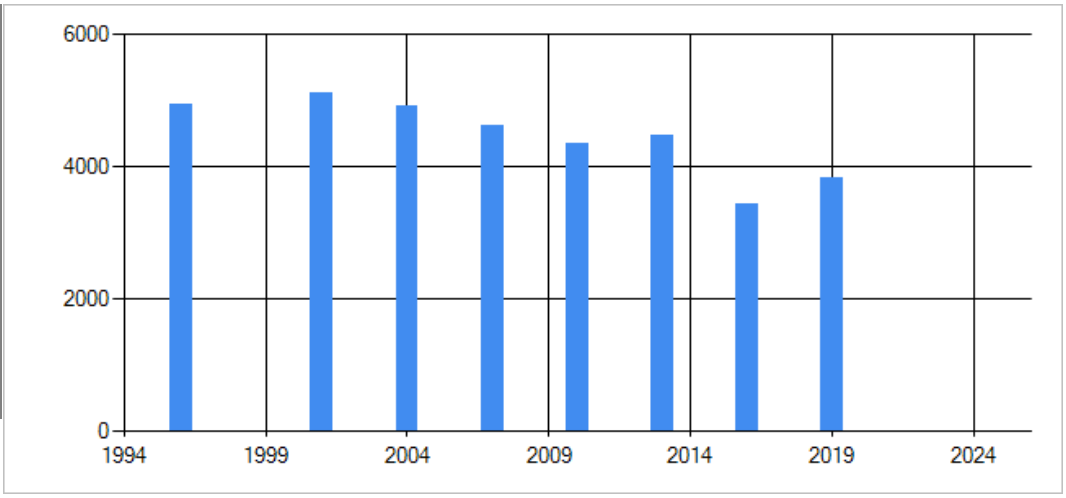
Begin MP:	1.0170
Begin Desc:	KY 1884
End Mp:	4.6820
End Desc:	KY 40 NEAR INEZ
Impact Year:	
Year Added:	

Newest Count:

AADT:	3841
Year:	2019
% Single:	5.6530
% Combo:	2.85
K Factor:	11.20
D Factor:	57

Definitions:
Sta. ID - Three digit county number + station number
MP - milepoint
Impact Year – year of significant change to traffic pattern within station segment
AADT – Annual Average Daily Traffic – the annualized average 24-hour volume of vehicles on a segment of roadway
% Single – single unit truck volume as a percentage of the AADT
% Combo – combination truck volume as a percentage of the AADT
K Factor – peak hour volume as a percentage of the AADT
D Factor – percentage of peak hour volume flowing in the peak direction

Year	AADT	Year	AADT	Year	AADT
2025		2015		2005	
2024		2014		2004	4920
2023		2013	4487	2003	
2022		2012		2002	
2021		2011		2001	5110
2020		2010	4350	2000	
2019	3841	2009		1999	
2018		2008		1998	
2017		2007	4620	1997	
2016	3449	2006		1996	4950



HUD DNL Calculation

Day/Night Noise Level (DNL) Calculator

The Day/Night Noise Level Calculator is an electronic assessment tool that calculates the Day/Night Noise Level (DNL) from roadway and railway traffic. For more information on using the DNL calculator, view the **Day/Night Noise Level Calculator Electronic Assessment Tool Overview (/programs/environmental-review/daynight-noise-level-electronic-assessment-tool/)**.

Guidelines

- To display the Road and/or Rail DNL calculator(s), click on the "Add Road Source" and/or "Add Rail Source" button(s) below.
- All Road and Rail input values must be positive non-decimal numbers.
- All Road and/or Rail DNL value(s) must be calculated separately before calculating the Site DNL.
- All checkboxes that apply must be checked for vehicles and trains in the tables' headers.
- **Note #1:** Tooltips, containing field specific information, have been added in this tool and may be accessed by hovering over all the respective data fields (site identification, roadway and railway assessment, DNL calculation results, roadway and railway input variables) with the mouse.
- **Note #2:** DNL Calculator assumes roadway data is always entered.

Tools and Guidance

Day/Night Noise Level Assessment Tool User Guide (/resource/3822/day-night-noise-level-assessment-tool-user-guide/)

Day/Night Noise Level Assessment Tool Flowcharts (/resource/3823/day-night-noise-level-assessment-tool-flowcharts/)

Federal Railroad Administration Railroad Operations Data Sources (https://www.hudexchange.info/resource/6027/railroad-administration-railroad-operations-data-sources/)

DNL Calculator

Site ID	Thrive Recover Well
Record Date	02/18/2026
User's Name	Ruby Smith

Road # 1 Name:	**080-KY-0003-000 (KY-3)**

Road #1

Vehicle Type	**Cars** ☑	**Medium Trucks** ☑	**Heavy Trucks** ☑
Effective Distance	70	70	70
Distance to Stop Sign			
Average Speed	55	55	55
Average Daily Trips (ADT)	619	39	5
Night Fraction of ADT	15	15	15
Road Gradient (%)			2
Vehicle DNL	53	51	50
Calculate Road #1 DNL	57	Reset	

Road # 2 Name:	**080-KY-0645-000 (Highway 645)**

Road #2

Vehicle Type	**Cars** ☑	**Medium Trucks** ☑	**Heavy Trucks** ☑

Effective Distance	359	359	359
Distance to Stop Sign			
Average Speed	55	55	55
Average Daily Trips (ADT)	2626	164	82
Night Fraction of ADT	15	15	15
Road Gradient (%)			2
Vehicle DNL	49	47	51

Calculate Road #2 DNL | 54 | Reset

Add Road Source | Add Rail Source

Airport Noise Level	
Loud Impulse Sounds?	◯Yes ◯No
Combined DNL for all Road and Rail sources	**59**
Combined DNL including Airport	**N/A**
Site DNL with Loud Impulse Sound	

Calculate | Reset

Mitigation Options

If your site DNL is in Excess of 65 decibels, your options are:

- **No Action Alternative**: Cancel the project at this location
- **Other Reasonable Alternatives**: Choose an alternate site
- **Mitigation**
    - **Contact your Field or Regional Environmental Officer (/programs/environmental-review/hud-environmental-staff-contacts/)**
    - Increase mitigation in the building walls (only effective if no outdoor, noise sensitive areas)
    - Reconfigure the site plan to increase the distance between the noise source and noise-sensitive uses
    - Incorporate natural or man-made barriers.
    - Construct noise barrier. See the **Barrier Performance Module (/programs/environmental-review/bpm-calculator/)**

Airport Master Record
Big Sandy Regional Airport

AIRPORT MASTER RECORD

Data Source: https://www.faa.gov/air_traffic/flight_info/aeronav/aero_data/ **Print Date:** 09/02/2025

1 ASSOC CITY: PRESTONSBURG
2 AIRPORT NAME: BIG SANDY RGNL
3 CBD TO AIRPORT (NM): 9 NE
4 STATE: KY
6 REGION/ADO: ASO /MEM
LOC ID: SJS
5 COUNTY: MARTIN, KY
7 SECT AERO CHT: CINCINNATI
FAA SITE NR: 07345.*A

GENERAL

10 OWNERSHIP: PUBLIC
11 OWNER: BIG SANDY REGIONAL AIRPORT BD
12 ADDRESS: 2960 AIRPORT ROAD
DEBORD, KY 41214
13 PHONE NR: (606) 369-6818
14 MANAGER: GARY COX
15 ADDRESS: 2960 AIRPORT ROAD
DEBORD, KY 41214
16 PHONE NR: 606-298-5930

17 ATTENDANCE SCHEDULE:

MONTHS	DAYS	HOURS
ALL	ALL	0800-DUSK

18 AIRPORT USE: PUBLIC
19 ARPT LAT: 37-45-3.457N ESTIMATED
20 ARPT LONG: 82-38-12.234W
21 ARPT ELEV: 1221.5 SURVEYED
22 ACREAGE: 136
23 RIGHT TRAFFIC: NO
24 NON-COMM LANDING:
25 NPIAS/FED AGREEMENTS: YES / NGY
26 FAR 139 INDEX: /

SERVICES

70 FUEL: 100LL A+
71 AIRFRAME RPRS:
72 PWR PLANT RPRS:
73 BOTTLE OXYGEN:
74 BULK OXYGEN:
75 TSNT STORAGE: TIE
76 OTHER SERVICES: AMB

BASED AIRCRAFT

Validated by basedaircraft.com

90 SINGLE ENG: 15
91 MULTI ENG: 0
92 JET: 2
93 HELICOPTERS: 1
TOTAL: 18
94 GLIDERS:
95 MILITARY:
96 ULTRA-LIGHT:
VTOL:

FACILITIES

80 ARPT BCN: WG
81 ARPT LGT SKED: SEE RMK
BCN LGT SKED: SS-SR
82 UNICOM: 123.050
83 WIND INDICATOR: YES-L
84 SEGMENTED CIRCLE: YES
85 CONTROL TWR: NO
86 FSS: LOUISVILLE
87 FSS ON ARPT: NO
88 FSS PHONE NR:
89 TOLL FREE NR: 1-800-WX-BRIEF

OPERATIONS

Information on aircraft operations is available from FAA's Aviation System Performance Metrics https://aspm.faa.gov

RUNWAY DATA

30 RUNWAY IDENT:		**03/21**
AVL FOR PART 121/380 OPS:		
31 LENGTH:		5,051
32 WIDTH:		100
33 SURF TYPE-COND:		ASPH-E
34 SURF TREATMENT:		NONE
35 GROSS WT:	S	19.0
36 (IN THSDS)	D	
37	2D	
38	2D/2DS	
39 PCN / PCR:		7/F/D/X/T (PCN)

LIGHTING/APCH AIDS

40 EDGE INTENSITY:	MED
42 RWY MARK TYPE-COND:	NPI- G / NPI- G
43 VGSI:	P2L / P2L
44 THR CROSSING HGT:	38 / 25
45 VISUAL GLIDE ANGLE:	4.00 / 3.00
46 CNTRLN-TDZ:	- / -
47 RVR-RVV:	- / -
48 REIL:	Y / Y
49 APCH LIGHTS:	/

OBSTRUCTION DATA

50 FAR 77 CATEGORY:	C / C
51 DISPLACED THR:	/ 49
52 CTLG OBSTN:	POLE / TREE
53 OBSTN MARKED/LGTD:	/
54 HGT ABOVE RWY END:	72 / 8
55 DIST FROM RWY END:	1,391 / 316
56 CNTRLN OFFSET:	191L / 218L
57 OBSTN CLNC SLOPE:	16:1 / 14:1
58 CLOSE-IN OBSTN:	N / N

DECLARED DISTANCES

60 TAKE OFF RUN AVBL (TORA):	/
61 TAKE OFF DIST AVBL (TODA):	/
62 ACLT STOP DIST AVBL (ASDA):	/
63 LNDG DIST AVBL (LDA):	/

110 REMARKS:

A 016 AFT HR SVC - 606-371-3793.
A 043 RWY 03 PAPI UNUSBL BYD 6 DEGS RIGHT OF CNTRLN.
A 081 ACTVT REIL RWY 03 & 21; MIRL RWY 03/21 - CTAF. PAPI RWY 03 & 21 OPR CONSLY.
A 110-001 BIRDS & DEER ON & INVOF ARPT.
A 110-002 FOR CD CTC HUNTINGTON ATCT AT 304-453-2490.

111 INSPECTOR: (S) 112 LAST INSP: 07/12/2022 113 LAST INFO RES:

Big Sandy Regional Airport
Airport Noise Calculation

Airport Noise Worksheet

Use this worksheet to identify information needed to evaluate a site's exposure to aircraft noise.

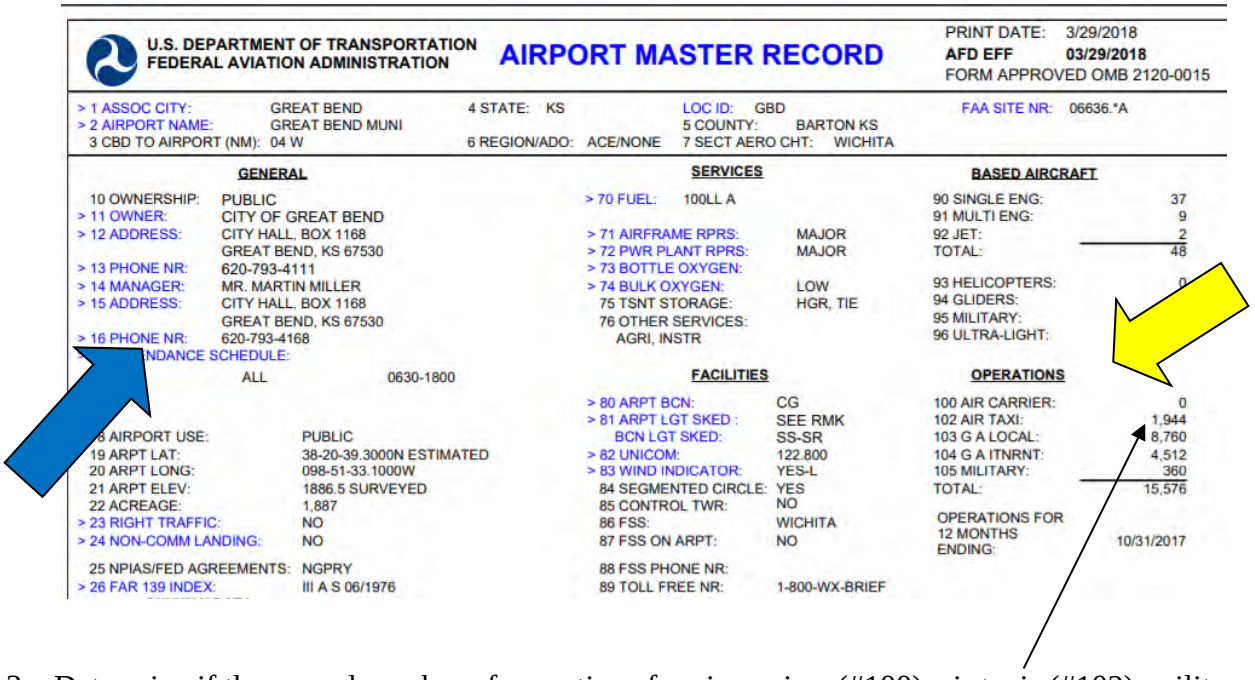
Name and Location of Project: Thrive Community Coalition Recovery Housing - 1616 Rockcastle Road, Inez Kentucky 41224
Name of Airport: Big Sandy Regional Airport
Person completing worksheet: Ruby Smith Date: 09/19/2025

1. Determine if the proposed site/project is within 15 miles of a civil or military airport.

☐ No. Attach a scaled map identifying the location of the proposed project site and the location of any airports. *Further use of this worksheet is not required.*

■ Yes. Attach a scaled map identifying the location of the proposed project site and the location of any airports. *Continue.*

2. Determine the number of operations at the airport by:
   - Go to: https://adip.faa.gov/agis/public/#/public
   - Find your airport using the Search function
   - Hover mouse over airport symbol on map
   - Click on "Published 5010"
   - Complete section 3 below by using Operations data found in the report (see yellow arrow in the example below)



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

AIRPORT MASTER RECORD

PRINT DATE: 3/29/2018
AFD EFF 03/29/2018
FORM APPROVED OMB 2120-0015

> 1 ASSOC CITY: GREAT BEND
> 2 AIRPORT NAME: GREAT BEND MUNI
3 CBD TO AIRPORT (NM): 04 W
4 STATE: KS
6 REGION/ADO: ACE/NONE
LOC ID: GBD
5 COUNTY: BARTON KS
7 SECT AERO CHT: WICHITA
FAA SITE NR: 06636.*A

GENERAL

10 OWNERSHIP: PUBLIC
> 11 OWNER: CITY OF GREAT BEND
> 12 ADDRESS: CITY HALL, BOX 1168 GREAT BEND, KS 67530
> 13 PHONE NR: 620-793-4111
> 14 MANAGER: MR. MARTIN MILLER
> 15 ADDRESS: CITY HALL, BOX 1168 GREAT BEND, KS 67530
> 16 PHONE NR: 620-793-4168
NDANCE SCHEDULE:
ALL 0630-1800
8 AIRPORT USE: PUBLIC
19 ARPT LAT: 38-20-39.3000N ESTIMATED
20 ARPT LONG: 098-51-33.1000W
21 ARPT ELEV: 1886.5 SURVEYED
22 ACREAGE: 1,887
> 23 RIGHT TRAFFIC: NO
> 24 NON-COMM LANDING: NO
25 NPIAS/FED AGREEMENTS: NGPRY
> 26 FAR 139 INDEX: III A S 06/1976

SERVICES

> 70 FUEL: 100LL A
> 71 AIRFRAME RPRS: MAJOR
> 72 PWR PLANT RPRS: MAJOR
> 73 BOTTLE OXYGEN:
> 74 BULK OXYGEN: LOW
75 TSNT STORAGE: HGR, TIE
76 OTHER SERVICES: AGRI, INSTR

FACILITIES

> 80 ARPT BCN: CG
> 81 ARPT LGT SKED : SEE RMK
BCN LGT SKED: SS-SR
> 82 UNICOM: 122.800
> 83 WIND INDICATOR: YES-L
84 SEGMENTED CIRCLE: YES
85 CONTROL TWR: NO
86 FSS: WICHITA
87 FSS ON ARPT: NO
88 FSS PHONE NR:
89 TOLL FREE NR: 1-800-WX-BRIEF

BASED AIRCRAFT

90 SINGLE ENG: 37
91 MULTI ENG: 9
92 JET: 2
TOTAL: 48
93 HELICOPTERS: 0
94 GLIDERS:
95 MILITARY:
96 ULTRA-LIGHT:

OPERATIONS

100 AIR CARRIER: 0
102 AIR TAXI: 1,944
103 G A LOCAL: 8,760
104 G A ITNRNT: 4,512
105 MILITARY: 360
TOTAL: 15,576
OPERATIONS FOR 12 MONTHS ENDING: 10/31/2017

3. Determine if the annual number of operations for air carriers (#100), air taxis (#102), military (#105), and general aviation (#103 plus #104) exceeds the thresholds provided below.

#100 Annual air carrier operations __0____. Is this 9,000 or more? Yes __ No X
#102 Annual air taxi operations ___0___. Is this 18,000 or more? Yes __ No X
#105 Annual military operations _0__. __Is this 18,000 or more? Yes __ No X
#103+#104 Annual general aviation operations _1,825_. Is this 72,000 or more? Yes__ No X

4. If you answer "No" on each of the questions above, it is assumed the noise attributed to the airplanes will not extend beyond the boundaries of the airport. Maintain the documentation

in your Environmental Review Record (ERR). You are finished with the evaluation of airport noise for this airport.

If you have marked any question in #3 with "Yes," continue to 5.

5. Contact the airport manager, (see blue arrow above) and ask them if the airport has noise contour maps. Are contour maps available?

☐ Yes. Locate your project on the noise contour map. If there are no roads or railroads that are being considered for noise, utilize the information from the contour map to determine if the site is acceptable. If roads or railroads are being considered, input the information obtained from the airport noise contours, along with the road and railroad information, into HUD online noise calculation tool at https://www.hudexchange.info/programs/environmental-review/daynight-noise-level-electronic-assessment-tool/.

☐ No. Construct the approximate DNL contours by using the guidance on page 52 and 53 of the HUD Noise Guidebook. You will need to obtain the following information from the airport:

(a) The number of nighttime jet operations (10pm to 7 am).
(b) The number of daytime jet operations (7 am to 10 pm).
(c) The flight paths of the major runways.
(d) Any available information about expected changes in airport traffic (e.g., will the number of operations increase or decrease in the next 10 to 15 years?).

Contact your HUD Environmental Officer if you need assistance.

Appendix A, Exhibit M

Sole Source Aquifers (CEST and EA)

General requirements	Legislation	Regulation
The Safe Drinking Water Act of 1974 protects drinking water systems which are the sole or principal drinking water source for an area and which, if contaminated, would create a significant hazard to public health.	Safe Drinking Water Act of 1974 (42 U.S.C. 201, 300f et seq., and 21 U.S.C. 349)	40 CFR Part 149
Reference		
https://www.hudexchange.info/environmental-review/sole-source-aquifers		

1. **Does your project consist solely of acquisition, leasing, or rehabilitation of an existing building(s)?**

   ☐Yes → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

   ☒No → *Continue to Question 2.*

2. **Is the project located on a sole source aquifer (SSA)[1]?**

   ☒No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide documentation used to make your determination, such as a map of your project (or jurisdiction, if appropriate) in relation to the nearest SSA and its source area.*

   ☐Yes → *Continue to Question 3.*

3. **Does your region have a memorandum of understanding (MOU) or other working agreement with EPA for HUD projects impacting a sole source aquifer?**

   Contact your Field or Regional Environmental Officer or visit the HUD webpage at the link above to determine if an MOU or agreement exists in your area.

   ☐Yes → *Provide the MOU or agreement as part of your supporting documentation. Continue to Question 4.*

   ☐No → *Continue to Question 5.*

4. **Does your MOU or working agreement exclude your project from further review?**

   ☐Yes → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide documentation used to make your determination and document where your project fits within the MOU or agreement.*

[1] A sole source aquifer is defined as an aquifer that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer. This includes streamflow source areas, which are upstream areas of losing streams that flow into the recharge area.

☐No → *Continue to Question 5.*

5. **Will the proposed project contaminate the aquifer and create a significant hazard to public health?**

   Consult with your Regional EPA Office. Your consultation request should include detailed information about your proposed project and its relationship to the aquifer and associated streamflow source area. EPA will also want to know about water, storm water and waste water at the proposed project. Follow your MOU or working agreement or contact your Regional EPA office for specific information you may need to provide. EPA may request additional information if impacts to the aquifer are questionable after this information is submitted for review.

   ☐No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide your correspondence with the EPA and all documents used to make your determination*.

   ☐Yes → *Work with EPA to develop mitigation measures. If mitigation measures are approved, attach correspondence with EPA and include the mitigation measures in your environmental review documents and project contracts. <u>If EPA determines that the project continues to pose a significant risk to the aquifer, federal financial assistance must be denied.</u> Continue to Question 6.*

6. **In order to continue with the project, any threat must be mitigated, and all mitigation must be approved by the EPA. Explain in detail the proposed measures that can be implemented to mitigate for the impact or effect, including the timeline for implementation.**

   → *Continue to the Worksheet Summary below. Provide documentation of the consultation (including the Managing Agency's concurrence) and any other documentation used to make your determination.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

There are no sole source aquifers in Kentucky. The project is in compliance with Sole Source Aquifer requirements.

Are formal compliance steps or mitigation required?

☐ Yes

☒ No

ArcGIS Web Map



3/26/2019, 10:39:24 AM

Sole Source Aquifers - Labels

SSA

1:4,622,324

0 37.5 75 150 mi

0 62.5 125 250 km

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community

Web AppBuilder for ArcGIS

Esri, HERE, Garmin, NGA, USGS, NPS | US EPA Office of Water | Map Service and data: US EPA Office of Environmental Information (OEI). Data: US Census Bureau |

Appendix A, Exhibit N

Wetlands (CEST and EA)

General requirements	Legislation	Regulation
Executive Order 11990 discourages that direct or indirect support of new construction impacting wetlands wherever there is a practicable alternative. The Fish and Wildlife Service's National Wetlands Inventory can be used as a primary screening tool, but observed or known wetlands not indicated on NWI maps must also be processed. Off-site impacts that result in draining, impounding, or destroying wetlands must also be processed.	Executive Order 11990	24 CFR 55.20 can be used for general guidance regarding the 8 Step Process.
References		
https://www.hudexchange.info/environmental-review/wetlands-protection		

1. **Does this project involve new construction as defined in Executive Order 11990, expansion of a building's footprint, or ground disturbance?**
   The term "new construction" shall include draining, dredging, channelizing, filling, diking, impounding, and related activities and any structures or facilities begun or authorized after the effective date of the Order.

   ☐ No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

   ☒ Yes → *Continue to Question 2.*

2. **Will the new construction or other ground disturbance impact an on- or off-site wetland?**
   The term "wetlands" means those areas that are inundated by surface or ground water with a frequency sufficient to support, and under normal circumstances does or would support, a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds. Wetlands under E.O. 11990 include isolated and non-jurisdictional wetlands.

   ☒ No, a wetland will not be impacted in terms of E.O. 11990's definition of new construction.
   → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide a map or any other relevant documentation to explain your determination.*

   ☐ Yes, there is a wetland that be impacted in terms of E.O. 11990's definition of new construction.

→*You must determine that there are no practicable alternatives to wetlands development by completing the 8-Step Process.*
Provide a completed 8-Step Process as well as all documents used to make your determination, including a map. Be sure to include the early public notice and the final notice with your documentation.
Continue to Question 3.

3. **For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the exact measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.**

Which of the following mitigation actions have been or will be taken? Select all that apply:

- ☐ Permeable surfaces
- ☐ Natural landscape enhancements that maintain or restore natural hydrology through infiltration
- ☐ Native plant species
- ☐ Bioswales
- ☐ Evapotranspiration
- ☐ Stormwater capture and reuse
- ☐ Green or vegetative roofs with drainage provisions
- ☐ Natural Resources Conservation Service conservation easements
- ☐ Compensatory mitigation

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

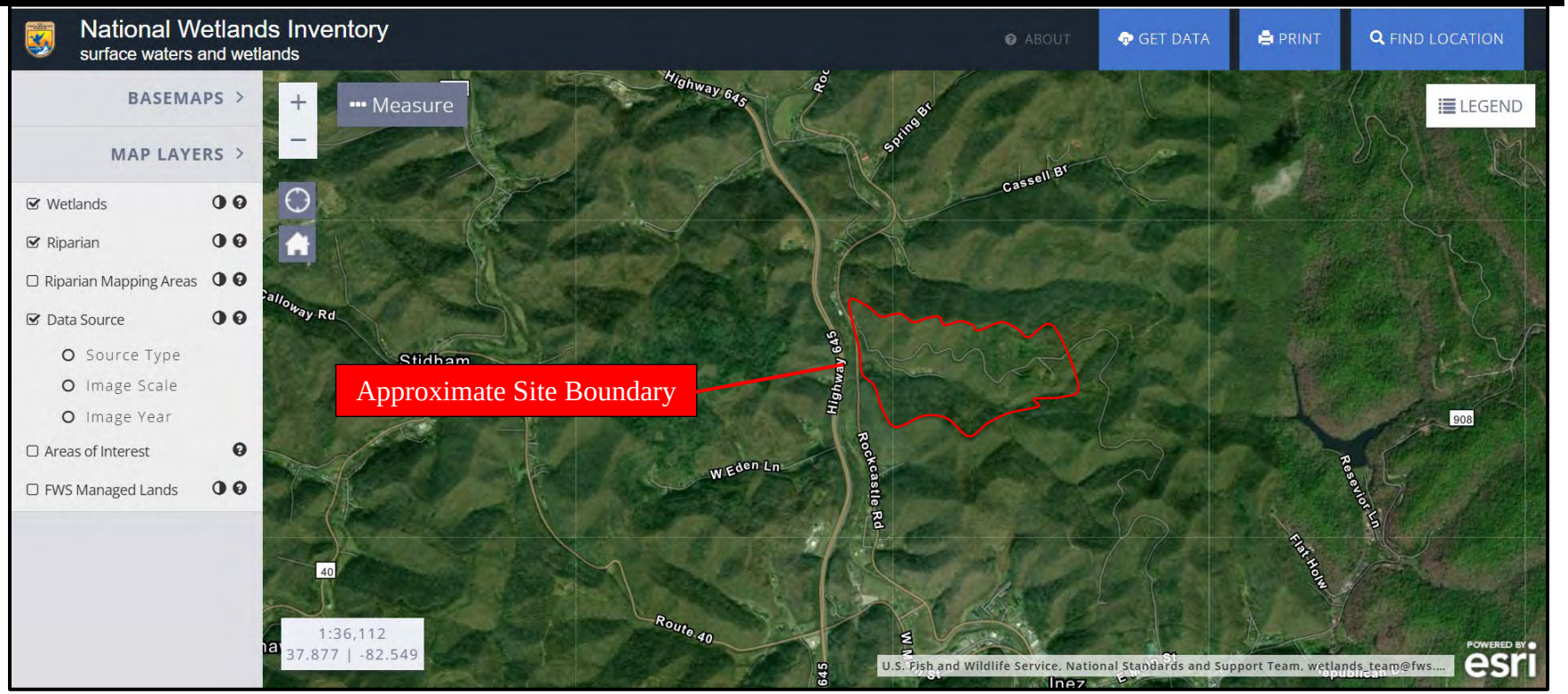
Per the USFWS Wetlands map, there are no wetlands on the project site. The project is in compliance with Executive Order 11990. No further action or mitigation is required.

Are formal compliance steps or mitigation required?

☐ Yes

☒ No

Wetlands Protection



National Wetlands Inventory – The project site is not located in a wetland
Source: https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)

Appendix A, Exhibit O

Wild and Scenic Rivers (CEST and EA)

General requirements	Legislation	Regulation
The Wild and Scenic Rivers Act provides federal protection for certain free-flowing, wild, scenic and recreational rivers designated as components or potential components of the National Wild and Scenic Rivers System (NWSRS) from the effects of construction or development.	The Wild and Scenic Rivers Act (16 U.S.C. 1271-1287), particularly section 7(b) and (c) (16 U.S.C. 1278(b) and (c))	36 CFR Part 297
References		
https://www.hudexchange.info/environmental-review/wild-and-scenic-rivers		

1. **Is your project within proximity of a NWSRS river as defined below?**
   Wild & Scenic Rivers: These rivers or river segments have been designated by Congress or by states (with the concurrence of the Secretary of the Interior) as wild, scenic, or recreational
   Study Rivers: These rivers or river segments are being studied as a potential component of the Wild & Scenic River system.
   Nationwide Rivers Inventory (NRI): The National Park Service has compiled and maintains the NRI, a register of river segments that potentially qualify as national wild, scenic, or recreational river areas

   ☒ No
   → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide documentation used to make your determination, such as a map identifying the project site and its surrounding area or a list of rivers in your region in the Screen Summary at the conclusion of this screen.*

   ☐ Yes, the project is in proximity of a Nationwide Rivers Inventory (NRI) River.
   → *Continue to Question 2.*

2. **Could the project do *any* of the following?**
   - Have a direct and adverse effect within Wild and Scenic River Boundaries,
   - Invade the area or unreasonably diminish the river outside Wild and Scenic River Boundaries, or
   - Have an adverse effect on the natural, cultural, and/or recreational values of a NRI segment.

Consultation with the appropriate federal/state/local/tribal Managing Agency(s) is required, pursuant to Section 7 of the Act, to determine if the proposed project may have an adverse effect on a Wild & Scenic River or a Study River and, if so, to determine the appropriate avoidance or mitigation measures.
Note: Concurrence may be assumed if the Managing Agency does not respond within 30 days; however, you are still obligated to avoid or mitigate adverse effects on the rivers identified in the NWSRS

☐ No, the Managing Agency has concurred that the proposed project will not alter, directly, or indirectly, any of the characteristics that qualifies or potentially qualifies the river for inclusion in the NWSRS.

→ *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide documentation of the consultation (including the Managing Agency's concurrence) and any other documentation used to make your determination.*

☐ Yes, the Managing Agency was consulted and the proposed project may alter, directly, or indirectly, any of the characteristics that qualifies or potentially qualifies the river for inclusion in the NWSRS.

→ *Continue to Question 3.*

3. For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the proposed measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.

→ *Continue to the Worksheet Summary below. Provide documentation of the consultation (including the Managing Agency's concurrence) and any other documentation used to make your determination.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

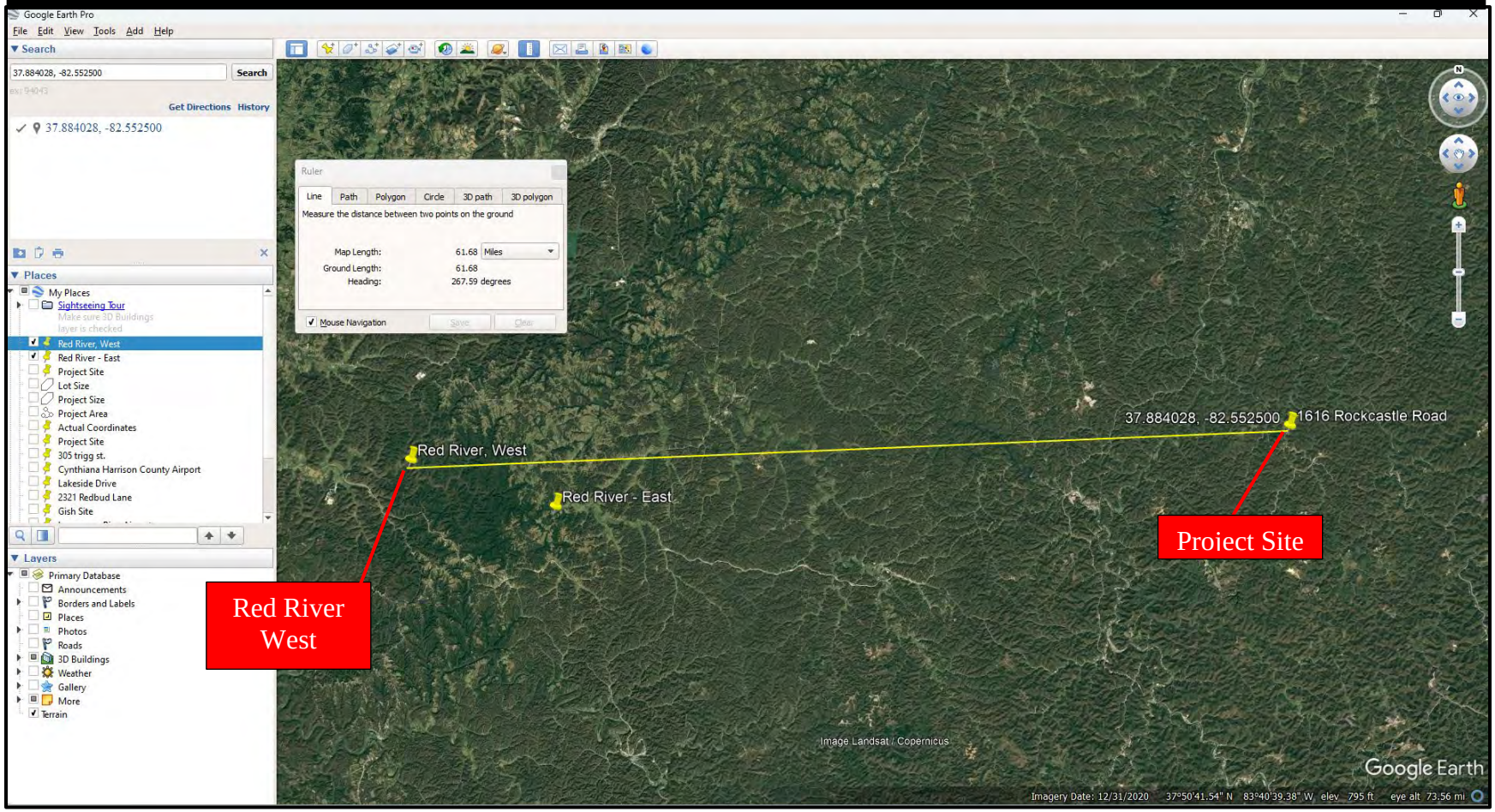
This project is not within proximity of a NWSRS river. The project is in compliance with the Wild and Scenic Rivers Act. Red River, the nearest NWSRS, is 51 miles from the site. Russell Fork, the nearest NWI, is 30.21 miles from the site, and there are no study rivers in Kentucky. This project is in compliance with the Wild and Scenic Rivers Act of 1968. No further action or mitigation is required.

Are formal compliance steps or mitigation required?

☐ Yes

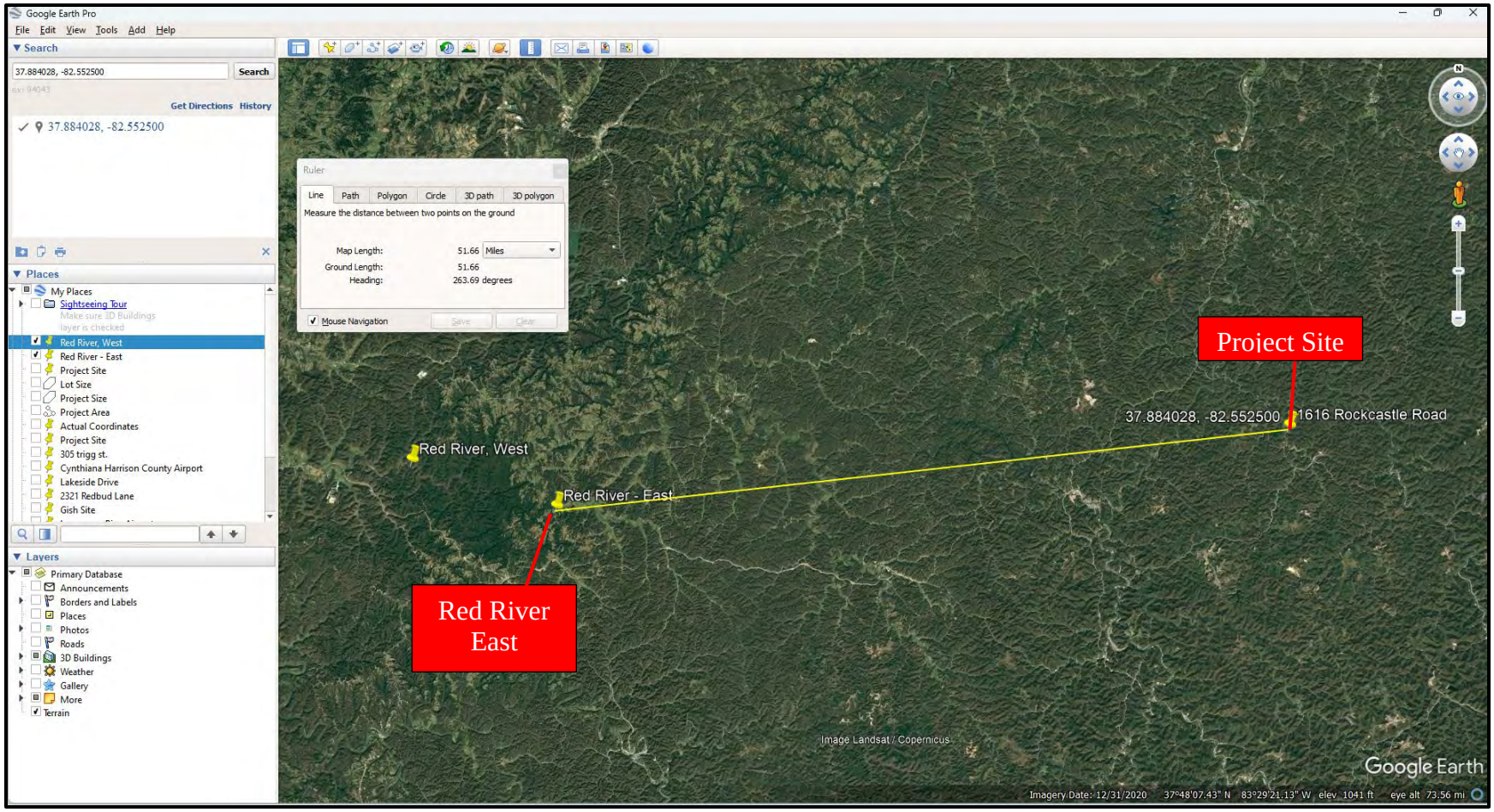
☒ No

Wild and Scenic Rivers



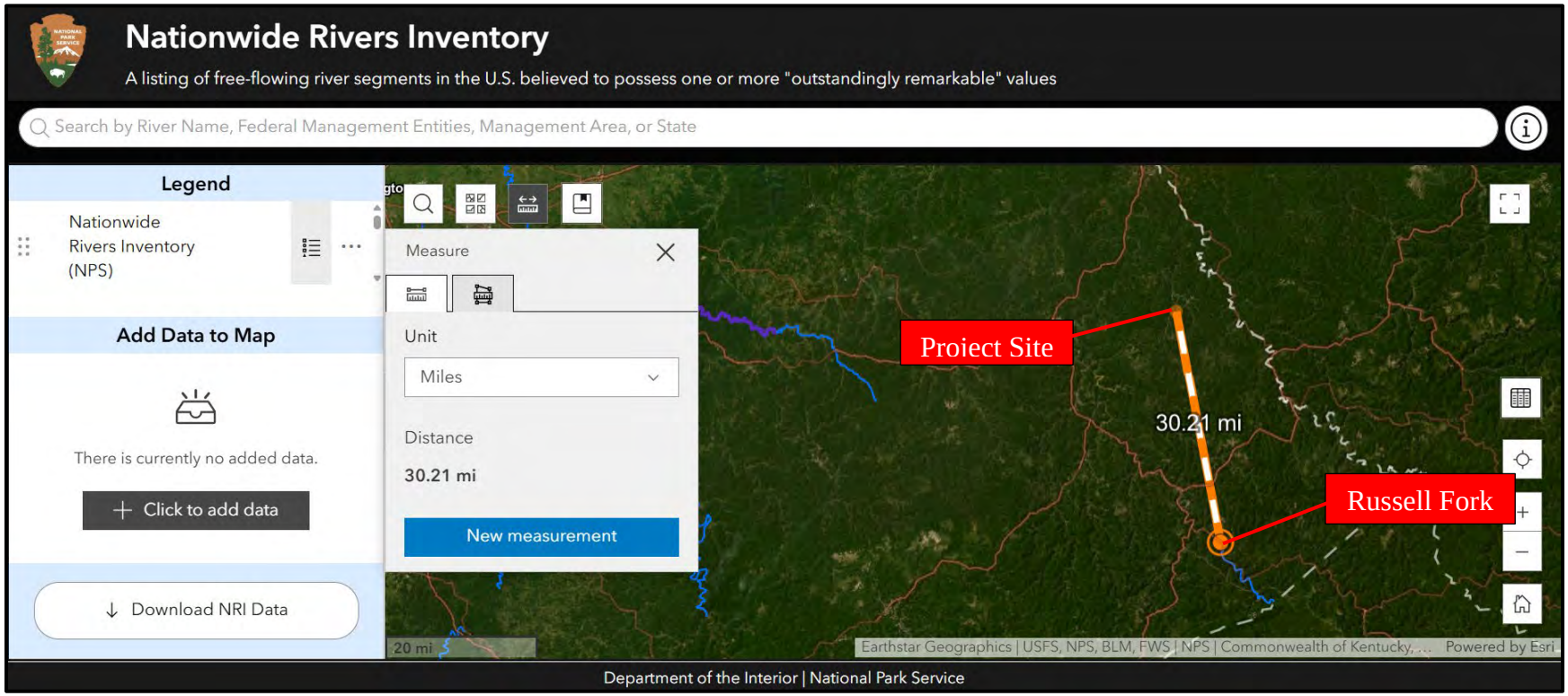
Distance to Red River West with measure - The proposed site is approximately 61 miles from the Red River.
*Source:*GoogleEarth www.google.com/earth

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



Distance to Red River East with measure - The proposed site is approximately 51 miles from the Red River.
*Source:*GoogleEarth www.google.com/earth

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



The proposed site is approximately 30.21 miles from Russell Fork, the nearest rivers listed in the National River Inventory.
Source: https://www.nps.gov/subjects/rivers/nationwide-rivers-inventory.htm

1616 Rockcastle Road, Inez, Kentucky 41224
(37.884028, -82.552500)



Red River

Kentucky

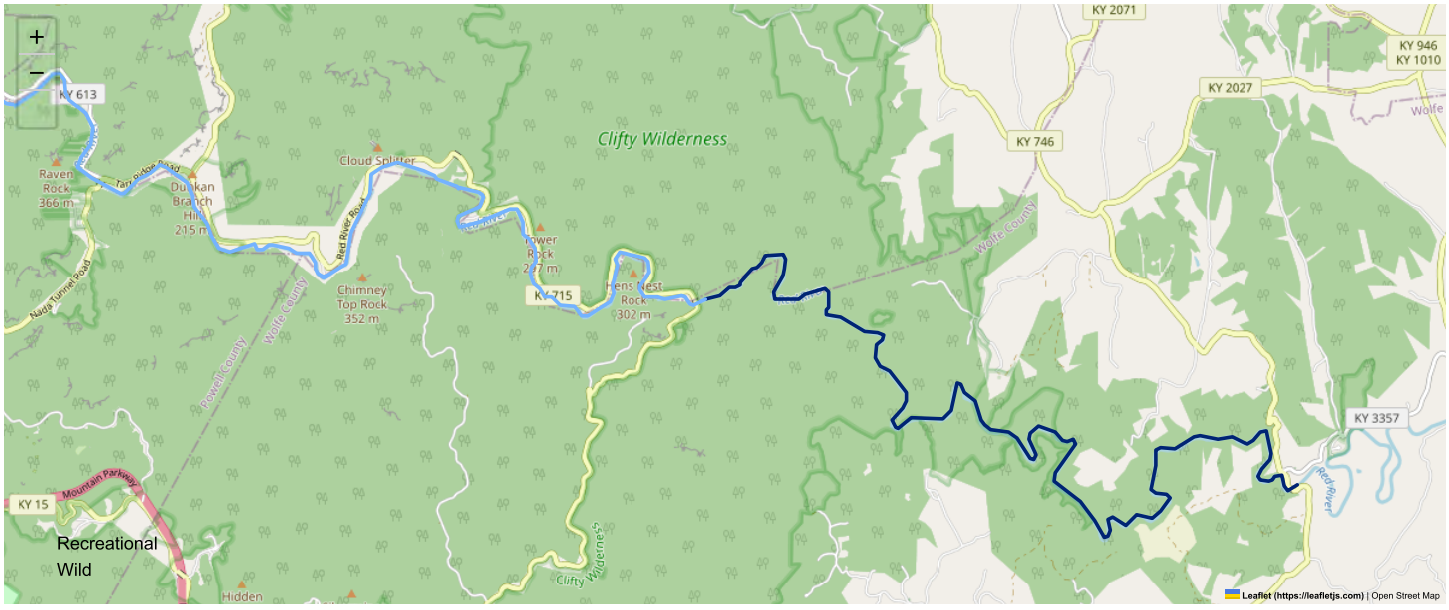
The Red River flows through the Red River Gorge geological area and bisects the Clifty Wilderness. Sandstone cliffs, rock shelters, natural stone arches, and boulders provide excellent views of unique geological features nestled among the mountain laurel, rhododendron, and hemlocks. The river offers scenic views, as well as protection for numerous prehistoric and historic sites featuring unique ethnobotanic remains and other features that led to the designation of this area as a Natural Historic Landmark. The surrounding cliff lines are home to the white-haired goldenrod, a plant only found in the Red River Gorge, as well as numerous other species of wildlife. More than 70 species of fish and 16 mussels thrive in the free-flowing waters of the Red River. The scenic beauty and geological formations throughout the river corridor attract thousands of visitors each year.

This area is managed as wilderness to provide a semi-primitive, non-motorized experience near trails, access points, and other areas of concentrated use. In other more remote areas, primitive recreation experiences are available. Access to the river corridor is limited to a few primitive hiking trails in order to protect natural resources rather than provide for for human comfort or convenience. People are challenged to rely on their own physical abilities and follow primitive “leave no trace” recreational pursuits. Facilities, such as trailheads and bulletin boards, are usually located outside the wilderness. Hiking, primitive camping, rock climbing, fishing, hunting, canoeing, kayaking, and rafting are allowed where they do not adversely impact the wilderness resource.

The U.S. Forest Service maintains one access point at Copperas Creek Canoe Launch on Highway 715. The river is too low for canoeing or kayaking most of the year. However, Class I-III rapids may be experienced after late fall and spring floods or heavy rains.

A camping permit is required for dispersed camping in the Red River Gorge Geological Area. Permits can be purchased at local vendors or Gladie Learning Center.

The Red River corridor is black bear habitat. Proper food storage is required. The forest website and area bulletin boards provide additional information regarding food storage requirements and other rules.



VIEW LARGER MAP (/MAP?RIVER=RED)

Designated Reach

December 2, 1993. From the Highway 746 Bridge to the confluence with the School House Branch.

Outstandingly Remarkable Values ⓘ ()

Botany

The conjunction of several climatological, geologic, and topographic features has created a diversity of plant life in a variety of ecological niches. Of particular interest is the drip line area at the base of cliff lines where rock shelters exist. These areas provide suitable environment for th...

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Fish

The river environment contains 3 at-risk aquatic species in addition to 16 mussel species. It also provides a high quality warm-water fishery of 70 fish species, including such sport fish as rock bass, catfish, and smallmouth bass, as well as numerous types of sunfish and muskellunge. The river i...

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Geology

The area is famous for its rugged and unique topography and geology, including numerous natural arches, pinnacles, and prominent cliffs. Perhaps the most striking feature of the area is the sandstone arches carved out by years of wind and water erosion. The most popular arch is Sky Bridge, a grac...

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History

Old saltpeter mine activity from as far back as the Civil War era can be found in some rockshelters. In the 1880s, there was a boom in logging activity in the area. The Nada Tunnel, the western portal for the area, is a narrow tunnel dug out of the rock originally created for a narrow-gage rail l...

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Prehistory

The uniqueness of the Red River Gorge Geological Area and its river corridor is not only a draw for present day adventurers, but as far back as 10,000 years, it drew Native Americans to its natural beauty and abundant resources. Most ridges harbor cliff lines with rock shelters at their base. The...

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Recreation

The Red River draws river enthusiasts from all over Kentucky, as well as surrounding states. Rugged shorelines edged with steep rock cliffs and a river with abundant large boulders provide canoeists and kayakers a variety of whitewater, from Class II and III during the winter and spring run-offs ...

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Scenery

The Red River is a central feature of the Red River Gorge Geological Area. The eastern part of the area contains the Clifty Wilderness, which is bisected by the wild segment of the Red River. Because of its outstanding natural features, the Red River Gorge Geological Area is also designated as a ...

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Managing Partners And Contacts

Daniel Boone National Forest

(606) 713-3688 (tel:%28606%29713-3688)

Documents

Public Law 103-170 (Red River Designation Act) (https://www.rivers.gov/sites/rivers/files/2022-10/Public%20Law%20103-170.pdf)

Public Law 95-625 (https://www.rivers.gov/sites/rivers/files/2022-10/Public%20Law%2095-625.pdf)

Red River Draft Study Report & Environmental Impact Statement (https://www.rivers.gov/sites/rivers/files/2023-02/red-draft-study-eis.pdf)

Classification/Mileage



Recreational — 10.3 miles; Wild — 9.1 miles; Total — 19.4 miles.

Show more

Contact Us (/contact) | National Awards (/national-awards) | The Numbers (/numbers) | Nationwide Rivers Inventory (/nri) | Documents (/documents)

PARTNERS

Bureau of Land Management (https://blm.gov/programs/national-conservation-lands/wild-and-scenic-rivers)
National Park Service (https://www.nps.gov/orgs/1912/index.htm)
NPS Partnership Rivers (https://www.nps.gov/orgs/1912/partnership-wild-and-scenic-rivers.htm)
U.S. Fish & Wildlife Service (https://fws.gov)
U.S. Forest Service (https://www.fs.usda.gov/managing-land/wild-scenic-rivers)
River Management Society (http://river-management.org/)

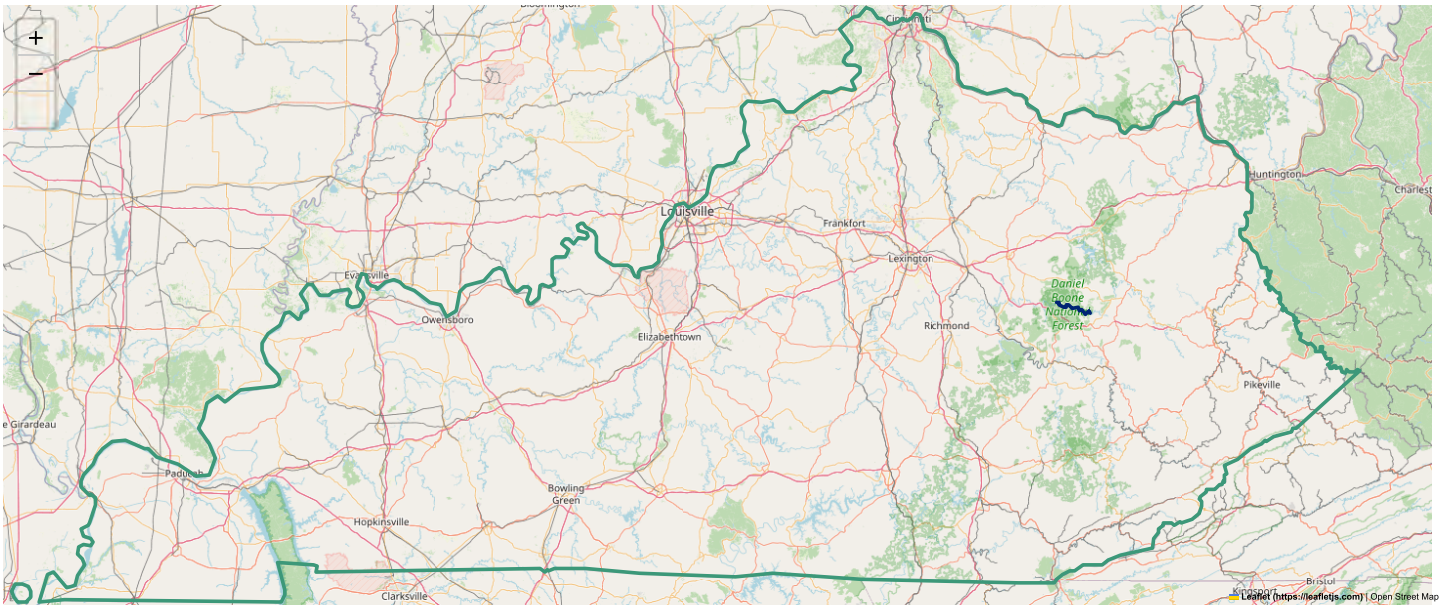
REFERENCES

Bibliography (/bibliography)
Interagency Council (/council)
Stewardship (/stewardship)
News (/news)
Videos (/video)
Vulnerability Disclosure Policy (/vulnerability-disclosure-policy)



Kentucky has many lakes and rivers that are perfect for fishing, swimming, or just relaxing on the water. All rivers in Kentucky flow to the Mississippi River, nearly all by virtue of flowing to its major tributary, the Ohio River, which forms the state's entire northern border.

Kentucky has approximately 49,105 miles of river, of which 19.4 miles of one river, the Red, are designated as Wild & Scenic—less than 4/100ths of 1% of the state's river miles.



Rivers In Kentucky



(/river/red)

Red River (/river/red)
Kentucky (/river/red)



Study Rivers

There are two study provisions in the Act — Section 5(a), through which Congress directs the study of select rivers, and Section 5(d)(1), which directs federal agencies to identify potential additions to the National Wild and Scenic Rivers System (National System) through federal agency plans. A brief explanation is provided in the following respective sections below.

Current Active Studies

Currently, there are two rivers or river systems under “authorized” study under Section 5(a) of the Wild & Scenic Rivers Act. This does not include those that might be under assessment as part of normal agency land-planning processes.

- Kissimmee River, Florida (Public Law 117-328, December 29, 2022) – Study not yet initiated by the National Park Service.
- Little Manatee River, Florida (Public Law 117-328, December 29, 2022) – Study not yet initiated by the National Park Service.

Section 2(a)(ii) Studies

Under Section 2(a)(ii) of the Act, a governor (or governors for a river in multiple states) of a state can request that a river be designated, provided certain conditions are met (refer to the **Council White Paper on Section 2(a)(ii) (/rivers/rivers/sites/rivers/files/2023-01/2aii.pdf)** for specifics). The National Park Service then conducts a study to determine of certain conditions are met. Here are some of the studies conducted under Section 2(a)(ii). Again, if you don’t see a study listed, we do not have a copy.

Section 2(a)(ii) Studies

- **Allagash River Study Report (/rivers/rivers/sites/rivers/files/2022-12/allagash-study.pdf)**, Maine
- **American River Eligibility Report (/rivers/rivers/sites/rivers/files/2022-12/american-eel-klamath-smith-trinity-study.pdf)**, California
- **American River Environmental Impact Statement (/rivers/rivers/sites/rivers/files/2022-12/american-eel-klamath-smith-trinity-eis.pdf)**, California
- **Big & Little Darby Creeks Study Report & Environmental Assessment (/rivers/rivers/sites/rivers/files/2022-12/big-little-darby-creeks-study-ea.pdf)**, Ohio
- **Eel River Eligibility Report (/rivers/rivers/sites/rivers/files/2022-12/american-eel-klamath-smith-trinity-study.pdf)**, California
- **Eel River Environmental Impact Statement (/rivers/rivers/sites/rivers/files/2022-12/american-eel-klamath-smith-trinity-eis.pdf)**, California
- **Klamath River Eligibility Report (/rivers/rivers/sites/rivers/files/2022-12/american-eel-klamath-smith-trinity-study.pdf)**, California
- **Klamath River Environmental Impact Statement (/rivers/rivers/sites/rivers/files/2022-12/american-eel-klamath-smith-trinity-eis.pdf)**, California
- **Klamath River Study Report (/rivers/rivers/sites/rivers/files/2023-01/klamath-study.pdf)**, Oregon
- **Lumber River Study Report (/rivers/rivers/sites/rivers/files/2023-01/lumber-study.pdf)**, North Carolina
- **New River (South Fork) Study Report & Environmental Impact Statement (/rivers/rivers/sites/rivers/files/2023-01/new-sf-study-eis.pdf)**, North Carolina
- **Smith River Eligibility Report (/rivers/rivers/sites/rivers/files/2022-12/american-eel-klamath-smith-trinity-study.pdf)**, California
- **Smith River Environmental Impact Statement (/rivers/rivers/sites/rivers/files/2022-12/american-eel-klamath-smith-trinity-eis.pdf)**, California
- **Trinity River Eligibility Report (/rivers/rivers/sites/rivers/files/2022-12/american-eel-klamath-smith-trinity-study.pdf)**, California
- **Trinity River Environmental Impact Statement (/rivers/rivers/sites/rivers/files/2022-12/american-eel-klamath-smith-trinity-eis.pdf)**, California
- **Wallowa River Study Report (/rivers/rivers/sites/rivers/files/2023-01/wallowa-study.pdf)**, Oregon
- **Westfield River Study Report & Environmental Assessment (Initial Study 1993) (/rivers/rivers/sites/rivers/files/2023-01/westfield-river-evaluation-ea.pdf)**,

Massachusetts

- **Westfield River Draft Study Report (Expansion 2002) (/rivers/rivers/sites/rivers/files/2023-01/westfield-draft-2aii-addition-study.pdf)**, Massachusetts

Musconetcong River Special Study

In 1997, 18 of 19 municipalities along the Musconetcong River in New Jersey voted to request that the National Park Service study the river to determine its eligibility and suitability for inclusion into the National System. This was done under the authorities of Public Law 102-460,the lower Delaware River study legislation. (The Musconetcong River is a tributary to the Delaware River.) Here is the **Musconetcong River Study Report (/rivers/rivers/sites/rivers/files/2023-01/musconetcong-study.pdf)**. Following that, the Musconetcong River was designated under **Public Law 109-452 (/rivers/rivers/sites/rivers/files/2022-10/Public%20Law%20109-452.pdf)**. That same law authorized an additional segment for study, and that segment was added in June of 2022. Here is the **Federal Register notice (/rivers/rivers/sites/rivers/files/2023-02/musconetcong_frn-vol.87-no.107.pdf)** adding that additional segment.

Wolf River Special Study

Even before the Wild & Scenic Rivers Act, the Bureau of Outdoor Recreation (since absorbed into the National Park Service) looked at the Wolf River in Wisconsin for protection as a “wild river.” Here is the **Wolf River Lake Central Regional Task Group Draft Study Report (/rivers/rivers/sites/rivers/files/2023-01/wolf_river_wisconsin_draft-study_sept_1964.pdf)** and **Wolf River Study Report (/rivers/rivers/sites/rivers/files/2022-12/wolf-bor-study.pdf)**.

Section 5(d)(1), Agency-Identified Studies

In recent years, hundreds of rivers have been identified for study through Section 5(d)(1) of the Act. This provision directs federal agencies to identify potential addition to the National System through their respective resource and management plans. Its application has resulted in numerous individual river designations, statewide legislation (e.g., Omnibus Oregon Wild and Scenic Rivers Act, P.L. 100-557; Michigan Scenic Rivers Act, P.L.

102-249) and multi-state legislation (e.g., Omnibus Public Land Management Act of 2009, P.L. 111-11). Here are examples of agency-identified studies and transmittal documents (if available).

Section 5(d)(1) Studies

- **Arctic National Wildlife Refuge Wild & Scenic River Review (/rivers/rivers/sites/rivers/files/2023-01/arctic-nwr.pdf)**
- **Arizona Bureau of Land Management Statewide Study LEIS (/rivers/rivers/sites/rivers/files/2023-01/arizona-blm-study-leis.pdf)**
- **Arizona Bureau of Land Management Statewide Study River Assessments (/rivers/rivers/sites/rivers/files/2023-01/arizona-blm-study-leis-rivers.pdf)**
- **Blue River & KP Creek (Arizona) (/rivers/rivers/sites/rivers/files/2023-01/blue-kp-creek-study.pdf)**
- **Flathead River Draft Proposed Addition & Environmental Impact Statement (Montana) (/rivers/rivers/sites/rivers/files/2023-01/flathead-deis.pdf)**

Utah Statewide Suitability Study:

- **Record of Decision (/rivers/rivers/sites/rivers/files/2023-02/utah-study-rod.pdf)**
- **Environmental Impact Statement (/rivers/rivers/sites/rivers/files/2023-02/utah-study-eis.pdf)**
- **Appendices (/rivers/rivers/sites/rivers/files/2023-02/utah-study-addendices.pdf)**

Section 5(d)(2) Study – Klamath River

One river was authorized for study by Congress through Section 5(d)(2) of the Act, the Klamath River in Oregon. Here is the **Klamath River Draft Study Report (/rivers/rivers/sites/rivers/files/2023-01/klamath-upper-draft-study_0.pdf)**.

Section 5(a), Congressionally Authorized Studies

Through Section 5(a), Congress authorizes the study of select rivers and directs one of the four federal river-administering agencies to conduct the study, as outlined in Sections 4(a) and 5(c) of the Wild & Scenic Rivers Act. The enabling legislation of 1968, P.L. 90-542, authorized 27 rivers for study as potential components of the National System. Amendments to the law have increased the number of studies authorized by Congress to 144.

These studies have lead to 50 designations by either Congress or the Secretary of the Interior. One study led to the establishment of a National Recreation Area.

The number of rivers included in the National System differs from the number of rivers authorized for study by Congress for the following reasons:

- Not all rivers studied are found eligible or suitable for designation—many study rivers will not be included in the National System.
- Some rivers are designated by Congress or the Secretary of the Interior without a pre-authorization or 5(a) study (e.g., Niobrara River).
- Some rivers are designated as a result of recommendations in federal agency plans (e.g., 49 rivers designated in Oregon in 1988).

The 146 rivers below have been authorized for study. The agency leading the study is indicated as National Park Service (NPS), Bureau of Outdoor Recreation (BOR), Heritage Conservation and Recreation Service (HCRS), Bureau of Land Management (BLM), or U.S. Forest Service (USFS). Within the Department of the Interior, the study function was transferred from the HCRS (formerly the BOR) to the NPS by Secretarial Order Number 3017, January 25, 1978. All studies indicated as BOR or HCRS were completed by these agencies before the program was transferred to the NPS. The BLM was delegated responsibility for conducting studies on Public Lands on October 11, 1988. The USFS (Department of Agriculture) has always conducted studies on National Forest System Lands and as directed by Congress.

We have collected a few of the study reports and associated documents prepared at the direction of Congress; those documents are noted below. If you do not see a report here, we do not have it, and you will have to contact the study agency at the local level for a copy.

For each study river, the number in parentheses is the approximate number of miles to be studied. If river segments were designated, the total designated mileage appears in the text.

I. Public Law 90-542 (October 2, 1968) — 27 Rivers, Studies Due October 2, 1978

(1) **Allegheny, Pennsylvania.** (BOR) Letter report to Congress on January 23, 1974. River not qualified. **Study Report & EIS (/rivers/rivers/sites/rivers/files/2023-01/allegheny-study-deis.pdf)** (69.5 miles)

(2) **Bruneau, Idaho.** (BOR) Report recommending congressional designation transmitted to Congress on May 23, 1977. **Study Report (/rivers/rivers/sites/rivers/files/2023-01/bruneau-study.pdf)** (121 miles)

(3) **Buffalo, Tennessee.** (NPS) Report transmitted to Congress on October 2, 1979. Preservation of river by state recommended. **Study Report (/rivers/rivers/sites/rivers/files/2023-01/buffalo-study.pdf)** (117 miles)

(4) **Chattooga, North Carolina, South Carolina, and Georgia.** (USFS) Fifty-six point nine miles added to the National System, Public Law 93-279, May 10, 1974. **Study Report (/rivers/rivers/sites/rivers/files/2023-01/chattooga-study.pdf)** (56.9 miles)

(5) **Clarion, Pennsylvania.** (BOR) Letter report to Congress on February 22, 1974. River not qualified. **Study Report (/rivers/rivers/sites/rivers/files/2023-01/clarion-study.pdf)** (90 miles)

(6) **Delaware, Pennsylvania and New York.** (BOR) Seventy-five point four miles added to the National System, Public Law 95-625, November 10, 1978. **Study Report (/rivers/rivers/sites/rivers/files/2023-01/upper-delaware-study.pdf)** (75.4 miles)

(7) **Flathead, Montana.** (USFS) Two hundred nineteen miles added to the National System, Public Law 94-486, October 12, 1976. **Flathead River Study Report and Draft Environmental Impact Statement (/rivers/rivers/sites/rivers/files/2023-01/flathead-study.pdf)** (219 miles)

(8) **Gasconade, Missouri.** (BOR) Report transmitted to Congress on May 23, 1977. Preservation of river by state recommended. (265 miles)

(9) **Illinois, Oregon.** (USFS) Fifty point four miles added to the National System, Public Law 98-494, October 19, 1984. **Study Report (/rivers/rivers/sites/rivers/files/2023-01/illinois-study.pdf)** (88 miles)

(10) **Little Beaver, Ohio.** (BOR) Thirty-three miles added to the National System by the Secretary of the Interior on October 23, 1975. Report transmitted to Congress on February 10, 1976. **Study Report (/rivers/rivers/sites/rivers/files/2023-01/little-beaver-creek-study.pdf)** (33 miles)

(11) **Little Miami, Ohio.** (BOR) Sixty-six miles added to the National System by the Secretary of the Interior on August 20, 1973. Report transmitted to Congress on November 5, 1973. An additional 28-mile segment was added by the Secretary of the Interior on January 28, 1980. **Study Report (/rivers/rivers/sites/rivers/files/2023-02/little-miami-study.pdf)** (94 miles)

(12) **Maumee, Ohio and Indiana.** (BOR) Report transmitted to Congress on September 13, 1974. River not qualified. (236 miles)

(13) **Missouri, Montana.** (BOR) One hundred forty-nine miles added to the National System, Public Law 94-486, October 12, 1976. **Study Report (/rivers/rivers/sites/rivers/files/2023-01/missouri-study-mt.pdf)**, **Environmental**

Statement (/rivers/rivers/sites/rivers/files/2023-01/missouri-study-environmental-statement.pdf) (180 miles)

(14) **Moyie, Idaho.** (USFS) Report transmitted to Congress on September 13, 1982. Designation not recommended. (26.1 miles)

(15) **Obed, Tennessee.** (BOR/NPS) Forty-five miles added to the National System, Public Law 94-486, October 12, 1976. Report transmitted to Congress on April 26, 1985. Submission of final report was in abeyance pending completion of a mineral evaluation. Further designation was not recommended. **Study Report (/rivers/rivers/sites/rivers/files/2023-02/obed-study.pdf)** (100 miles)

(16) **Penobscot, Maine.** (BOR) Report transmitted to Congress on May 23, 1977. Preservation of river by state recommended. (327 miles)

(17) **Pere Marquette, Michigan.** (USFS) Sixty-six point four miles added to the National System, Public Law 95-625, November 10, 1978. **Study Report (/rivers/rivers/sites/rivers/files/2023-02/pere-marquette-study.pdf)** (153 miles)

(18) **Pine Creek, Pennsylvania.** (NPS) Report transmitted to Congress on October 2, 1979. Preservation of river by state recommended. (51.7 miles)

(19) **Priest, Idaho.** (USFS) Report recommending congressional designation transmitted to Congress on October 2, 1979. (67 miles)

(20) **Rio Grande, Texas.** (BOR) One hundred ninety-one point two miles added to the National System, Public Law 95-625, November 10, 1978. **Study Report (/rivers/rivers/sites/rivers/files/2023-02/rio-grande-tx-study.pdf)**, **Environmental Impact Statement (/rivers/rivers/sites/rivers/files/2023-02/rio-grande-tx-eis.pdf)** (556 miles)

(21) **Saint Croix, Minnesota and Wisconsin.** (BOR) Twenty-seven mile federally administered segment added to the National System by Public Law 92-560, October 25, 1972. Twenty-five mile state-administered segment added by the Secretary of the Interior on June 17, 1976. **Study Report (/rivers/rivers/sites/rivers/files/2023-02/lower-st-croix-study.pdf)** (52 miles)

(22) **St. Joe, Idaho.** (USFS) Sixty-six point three miles added to the National System, Public Law 95-625, November 10, 1978. (132.1 miles)

(23) **Salmon, Idaho.** (USFS) One hundred twenty-five miles added to the National System, Public Law 96-312, July 23, 1980. Additional 53 miles subject to provisions of Section 7(a) of Public Law 90-542. (237 miles)

(24) **Skagit, Washington.** (USFS) One hundred fifty-seven point five miles added to the National System, Public Law 95-625, November 10, 1978. **Study Report (/rivers/rivers/sites/rivers/files/2023-02/skagit-study.pdf)** (166.3 miles)

(25) **Suwannee, Florida and Georgia.** (BOR) Report transmitted to Congress on March 15, 1974. Preservation of river by state recommended. **Study Report (/rivers/rivers/sites/rivers/files/2023-02/suwannee-study.pdf)** (272 miles)

(26) **Upper Iowa, Iowa.** (BOR) Report transmitted to Congress on May 11, 1972. Preservation of river by state recommended. (80 miles)

(27) **Youghigheny, Maryland and Pennsylvania.** (NPS) Report transmitted to Congress on October 2, 1979. Preservation of river by state recommended. (49 miles)

II. Public Law 93-621 (January 3, 1975) — 29 Rivers, Studies Due October 2, 1979, (Dolores River Due October 2, 1976, Green and Yampa Rivers Due January 1, 1987)

(28) **American, California.** (USFS) Thirty-eight point three miles added to the National System, Public Law 95-625, November 10, 1978. (41.1 miles)

(29) **Au Sable, Michigan.** (USFS) Twenty-three miles added to the National System, Public Law 98-444, October 4, 1984. **Study Report & Environmental Impact Statement (/rivers/rivers/sites/rivers/files/2023-01/ausable-study-eis.pdf)** (165 miles)

(30) **Big Thompson, Colorado.** (NPS) Report transmitted to Congress on October 2, 1979. Designation not recommended. (13.6 miles)

(31) **Cache la Poudre, Colorado.** (USFS) Seventy-six miles added to the National System, Public Law 99-590, October 30, 1986. **Study Report & Environmental Impact Statement (/rivers/rivers/river/cache-la-poudre)** (76 miles)

(32) **Cahaba, Alabama.** (USFS) Report transmitted to Congress on December 14, 1979. River not qualified. (116 miles)

(33) **Clarks Fork, Wyoming.** (USFS) Twenty point five miles added to the National System, Public Law 101-628, November 28, 1990. **Study Report & Environmental Statement (/rivers/rivers/sites/rivers/files/2023-02/yellowstone-study-environmental-statement.pdf)** (23 miles)

(34) **Colorado, Colorado and Utah.** (NPS) Report transmitted to Congress on April 26, 1985. Designation not recommended. (75.7 miles)

(35) **Conejos, Colorado.** (USFS) Report recommending congressional designation transmitted to Congress on September 13, 1982. (48.8 miles)

(36) **Elk, Colorado.** (USFS) Report recommending congressional designation transmitted to Congress on September 13, 1982. (35 miles)

(37) **Encampment, Colorado.** (USFS) Report recommending congressional designation transmitted to Congress on October 2, 1979. (19.5 miles)

(38) **Green, Colorado and Utah.** (NPS) Report transmitted to Congress in combination with the Yampa River on November 14, 1983. The river was determined eligible, but the Secretary did not include a recommendation for designation. (91 miles)

(39) **Gunnison, Colorado.** (NPS) Report recommending congressional designation transmitted to Congress on October 2, 1979. (29 miles)

(40) **Illinois, Oklahoma.** (HCRS) Report transmitted to Congress on October 2, 1979. Preservation of river by state recommended. (115 miles)

(41) **John Day, Oregon.** (NPS) One hundred forty-seven point five miles added to the National System, Public Law 100-557, October 28, 1988. **Study Report (/rivers/rivers/sites/rivers/files/2023-01/john-day-study.pdf)** (149 miles)

(42) **Kettle, Minnesota.** (NPS) Report transmitted to Congress on October 2, 1979. Preservation of river by state recommended. (79 miles)

(43) **Los Pinos, Colorado.** (USFS) Report recommending congressional designation transmitted to Congress on September 13, 1982. (54 miles)

(44) **Manistee, Michigan.** (USFS) Twenty-six miles added to the National System, Public Law 102-249, March 3, 1992. **Study Report & Environmental Impact Statement (/rivers/rivers/sites/rivers/files/2023-01/manistee-study-eis.pdf)** (232 miles)

(45) **Nolichucky, Tennessee and North Carolina.** (NPS) Report transmitted to Congress on April 26, 1985. River not qualified. (110 miles)

(46) **Owyhee, Idaho & Oregon.** (NPS) One hundred twenty miles added to the National System, Public Law 98-494, October 19, 1984. **Study Report (/rivers/rivers/sites/rivers/files/2023-02/owyhee-id-study-eis.pdf)** (192 miles)

(47) **Piedra, Colorado.** (USFS) Report recommending congressional designation transmitted to Congress on September 13, 1982. (53 miles)

(48) **Shepaug, Connecticut.** (NPS) Report transmitted to Congress on October 2, 1979. Preservation of river by state and local action recommended. (28 miles)

(49) **Sipsey Fork, Alabama.** (USFS) Sixty-one miles added to the National System, Public Law 100-547, October 28, 1988. (71 miles)

(50) **Snake, Wyoming.** (USFS) Report recommending congressional designation transmitted to Congress on September 13, 1982. (50 miles)

(51) **Sweetwater, Wyoming.** (NPS) Report transmitted to Congress on November 14, 1979. Designation not recommended. **Study Report (/rivers/rivers/sites/rivers/files/2023-02/sweetwater-study.pdf)** (9.5 miles)

(52) **Tuolumne, California.** (NPS/USFS) Eighty-three miles added to the National System, Public Law 98-425, September 28, 1984. **Study Report (/rivers/rivers/sites/rivers/files/2023-02/tuolumne-study.pdf)** (92 miles)

(53) **Upper Mississippi, Minnesota.** (BOR) Report recommending congressional designation transmitted to Congress on August 25, 1977. (466 miles)

(54) **Wisconsin, Wisconsin.** (NPS/USFS) Report transmitted to Congress on October 2, 1979. Preservation of river by state recommended. (82.4 miles)

(55) **Yampa, Colorado.** (NPS) Report transmitted to Congress in combination with Green River on November 14, 1983. The river was determined eligible, but the Secretary did not include a recommendation for designation. (47 miles)

(56) **Dolores, Colorado.** (BOR/USFS) Report recommending Congressional designation transmitted to Congress on May 23, 1977. (105 miles)

III. Public Law 94-199 (December 31, 1975) — 1 River, Study Due October 1, 1979

(57) **Snake, Washington, Oregon and Idaho.** (NPS) Report transmitted to Congress on April 26, 1985. Designation not recommended. **Study Report & Environmental Impact Statement (/rivers/rivers/sites/rivers/files/2023-02/snake-study-eis.pdf)** (33 miles)

IV. Public Law 94-486 (October 12, 1976) — 1 River, Study Due October 1, 1980

(58) **Housatonic, Connecticut.** (NPS) Thirty point eight miles added the National System, Public Law 117-328, December 29, 2022. Report transmitted to Congress on October 2, 1979. Preservation of river by state and local action initially recommended. **Study Report (/rivers/rivers/sites/rivers/files/2023-01/housatonic-study.pdf)**, **Section 2(a)(ii) Application (/rivers/rivers/sites/rivers/files/2023-01/housatonic-2aii-application.pdf)**, **Federal Register 2(a)(ii) Notice (/rivers/rivers/sites/rivers/files/2023-01/housatonic-federal-register-notice-2aii-application.pdf)**, (51 miles)

V. Public Law 95-625 (November 10, 1978) — 17 rivers, studies due October 1, 1984

V. Public Law 95-625 (November 10, 1978) — 17 Rivers, Studies Due April 1, 1981

(59) **Kern (North Fork), California.** (USFS) One hundred fifty-one miles of the North and South Forks added to the National System, Public Law 100-174, November 24, 1987. **North Fork Study Report (/rivers/rivers/sites/rivers/files/2023-01/kern-nf-study.pdf)**, **North Fork Environmental Impact Statement (/rivers/rivers/sites/rivers/files/2023-02/kern-nf-study-eis.pdf)**, **South Fork Study Report & Draft Environmental Impact Statement (/rivers/rivers/sites/rivers/files/2023-01/kern-sf-study-deis.pdf)**, **North & South Forks Record of Decision (/rivers/rivers/sites/rivers/files/2023-01/kern-nf-sf-rod.pdf)** (74 miles)

(60) **Loxahatchee, Florida.** (NPS) Seven point five miles added to the National System by the Secretary of the Interior on May 17, 1985. **Study Report & Environmental Impact Statement (/rivers/rivers/sites/rivers/files/2023-01/loxahatchee-study-eis.pdf)** (25 miles)

(61) **Ogeechee, Georgia.** (NPS) Report transmitted to Congress on April 26, 1985. Preservation of river by state recommended. (246 miles)

(62) **Salt, Arizona.** (USFS) Report transmitted to Congress on September 13, 1982. Designation not recommended. (22 miles)

(63) **Verde, Arizona.** (USFS) Forty point five miles added to the National System, Public Law 98-406, August 28, 1984. **Study Report & Environmental Assessment (/rivers/rivers/sites/rivers/files/2023-02/verde-study-eis.pdf)** (78 miles)

(64) **San Francisco, Arizona.** (USFS) Report transmitted to Congress on September 13, 1982. Designation not recommended. (29 miles)

(65) **Fish Creek, East Branch, New York.** (NPS) Report transmitted to Congress on April 26, 1985. Preservation of river by state and local action recommended. (49 miles)

(66) **Black Creek, Mississippi.** (USFS) Twenty-one miles added to the National System, Public Law 99-590, October 30, 1986. **Draft Study Report & Draft Environmental Impact Statement (/rivers/rivers/sites/rivers/files/2023-01/black-creek-study-deis.pdf)** (122.8 miles)

(67) **Allegheny, Pennsylvania.** (USFS) Eighty-five miles added to the National System, Public Law 102-271, April 20, 1992. Allegheny River Study Report & Draft Environmental Impact Statement (128 miles)

(68) **Cacapon, West Virginia.** (NPS) Report transmitted to Congress on April 26, 1985. Preservation of river by state and local action recommended. (114 miles)

(69) **Escatawpa, Alabama and Mississippi.** (NPS) Report transmitted to Congress on April 26, 1985. Preservation of river by state and local action recommended. (72 miles)

(70) **Myakka, Florida.** (NPS) Report transmitted to Congress on April 26, 1985. Preservation of river by state recommended. (37 miles)

(71) **Soldier Creek, Alabama.** (NPS) Report transmitted to Congress on April 26, 1985. River not qualified. (.2 miles)

(72) **Red, Kentucky.** (USFS) Nineteen point four miles added to the National System, Public Law 103-170, December 2, 1993. **Draft Study Report & Environmental Impact Statement (/rivers/rivers/sites/rivers/files/2023-02/red-draft-study-eis.pdf)** (19.4 miles)

(73) **Bluestone, West Virginia.** (NPS) Ten miles added to the National System, Public Law 100-534, October 26, 1988. **Study Report (/rivers/rivers/sites/rivers/files/2023-01/bluestone-study.pdf)** (40 miles)

(74) **Gauley, West Virginia.** (NPS) A 25-mile segment established as a National Recreation Area on October 26, 1988. (164 miles)

(75) **Greenbrier, West Virginia.** (USFS) Report transmitted to Congress on January 7, 1993. Preservation of river by state and local action recommended. (175 miles)

VI. Public Law 96-199 (March 5, 1980) — 1 River, Study Due October 1, 1984

(76) **Birch, West Virginia.** (NPS) Report transmitted to Congress on April 26, 1985. Preservation of river by state and local action recommended. (20 miles)

VII. Public Law 96-487 (December 2, 1980) — 12 Rivers, Studies Due October 1, 1984 (Sheenjek and Squirrel Rivers Due January 1, 1987)

(77) **Colville, Alaska.** (NPS) Study submitted to Congress on April 12, 1979, as part of 105(c) study mandated by Public Law 94-258. This was prior to passage of ANILCA. (428 miles)

(78) **Etivluk-Nigu, Alaska.** (NPS) Study submitted to Congress on April 12, 1979, as part of 105(c) study mandated by Public Law 94-258. This was prior to passage of ANILCA. (160 miles)

(79) **Utukok, Alaska.** (NPS) Study submitted to Congress on April 12, 1979, as part of 105(c) study mandated by Public Law 94-258. This was prior to passage of ANILCA. (250 miles)

(80) **Kanektok, Alaska.** (NPS) Report transmitted to Congress on April 26, 1985. Designation not recommended. (75 miles)

(81) **Kisaralik, Alaska.** (NPS) Report transmitted to Congress on April 26, 1985. Designation not recommended. (75 miles)

(82) **Melozitna, Alaska.** (NPS) Report transmitted to Congress on April 26, 1985. River not qualified. (270 miles)

(83) **Sheenjek (lower segment), Alaska.** (NPS) Report recommending congressional designation transmitted to Congress on January 19, 2001. **Study Report & Legislative Environmental Impact Statement (/rivers/rivers/sites/rivers/files/2023-02/sheenjek-study-leis.pdf)** (109 miles)

(84) **Situk, Alaska.** (USFS) Report transmitted to Congress on April 26, 1985. Designation not recommended. (21 miles)

(85) **Porcupine, Alaska.** (NPS) Report transmitted to Congress on April 26, 1985. Designation not recommended. (75 miles)

(86) **Yukon (Ramparts section), Alaska.** (NPS) Report transmitted to Congress on April 26, 1985. Designation not recommended. (128 miles)

(87) **Squirrel, Alaska.** (Initiated by NPS/Completed by BLM) Final report/EIS issued January 26, 1999. Designation not recommended. (72 miles)

(88) **Koyuk, Alaska.** (NPS) Report transmitted to Congress on April 26, 1985. River not qualified. (159 miles)

VIII. Public Law 98-323 (June 6, 1984) — 1 River, Study Due October 1, 1990

(89) **Wildcat Creek, New Hampshire.** (NPS) Fourteen point five miles added to the National System, Public Law 100-554, October 28, 1988. **Draft Study Report (/rivers/rivers/sites/rivers/files/2022-12/wildcat-brook-draft-study.pdf)** (21 miles)

IX. Public Law 98-484 (October 17, 1984) — 1 River, Study Due October 17, 1987

(90) **Horsepasture, North Carolina.** (USFS) Four point two miles added to the National System, Public Law 99-530, October 27, 1986. (4.2 miles)

X. Public Law 98-494 (October 19, 1984) — 1 River, Study Due October 1, 1988

(91) **North Umpqua, Oregon.** (USFS) Thirty-three point eight miles added to the National System, Public Law 100-557, October 28, 1988. (33.8 miles)

XI. Public Law 99-590 (October 30, 1986) — 2 Rivers, Studies Due October 30, 1989, For The Great Egg Harbor River, October 1, 1990, For The Farmington River

(92) **Farmington, West Branch, Connecticut and Massachusetts.** (NPS) Fourteen miles added to the National System, Public Law 103-313, August 26, 1994. Report transmitted to Congress on December 13, 1995. **Study Report (/rivers/rivers/sites/rivers/files/2023-01/farmington-study.pdf)** (25 miles)

(93) **Great Egg Harbor, New Jersey.** (NPS) One hundred twenty-nine miles added to the National System, Public Law 102-536, October 26, 1992. **Study Report (/rivers/rivers/sites/rivers/files/2023-01/great-egg-harbor-study.pdf)** (127 miles)

XII. Public Law 99-663 (November 17, 1986) — 2 Rivers, Studies Due October 1, 1990

(94) **Klickitat, Washington.** (USFS) Draft report issued June 1990. Final report completed, but not transmitted to Congress. (30 miles)

(95) **White Salmon, Washington.** (USFS) Twenty miles added to the National System, Public Law 109-44, August 2, 2005. The portion designated was added to the study by the USFS and is the headwaters above the segment authorized for study. (13.5 miles)

XIII. Public Law 100-33 (May 7, 1987) — 3 Rivers, Studies Due October 1, 1990

(96) **Maurice, New Jersey.** (NPS) Ten point five miles added to the National System, Public Law 103-162, December 1, 1993. **Eligibility & Classification Report (/rivers/rivers/sites/rivers/files/2023-01/maurice-eligibility-classification-report_0.pdf)**, **Study Report (/rivers/rivers/sites/rivers/files/2023-01/maurice-study.pdf)** (14 miles)

(97) **Manumuskin, New Jersey.** (NPS) Fourteen point three miles added to the National System, Public Law 103-162, December 1, 1993. (3.5 miles)

(98) **Menantico Creek, New Jersey.** (NPS) Seven point nine miles added to the National System, Public Law 103-162, December 1, 1993. (7 miles)

XIV. Public Law 100-149 (November 2, 1987) — 1 River, Study Due October 1, 1991

(99) **Merced, California.** (BLM) Eight miles added to the National System, Public Law 102-432, October 23, 1992. (8 miles)

XV. Public Law 100-557 (October 28, 1988) — 6 Rivers, Studies Due October 1, 1992

(100) **Blue, Oregon.** (USFS) Study initiated in 1989. River determined ineligible, but report not transmitted to Congress. (9 miles)

(101) **Chewaucan, Oregon.** (USFS) Study initiated in 1989. River determined ineligible, but report not transmitted to Congress. (23 miles)

(102) **North Fork Malheur, Oregon.** (BLM) River determined eligible, but report not transmitted to Congress. **Study Report (/rivers/rivers/sites/rivers/files/2023-01/malheur-nf-study.pdf)** (15 miles)

(103) **South Fork McKenzie, Oregon.** (USFS) Study initiated in 1989. River determined eligible, with plans to complete the study at revision of the Willamette National Forest Land and Resource Management Plan. (26 miles)

(104) **Steamboat Creek, Oregon.** (USFS) Final report completed in 1993. River determined eligible, but report not transmitted to Congress. (24 miles)

(105) **Wallowa, Oregon.** (USFS) Ten miles added to the National System by the Secretary of the Interior on July 25, 1996. (10 miles)

XVI. Public Law 101-356 (August 10, 1990) — 1 River, Study Due August 10, 1993

(106) **Merrimack, New Hampshire.** (NPS) Draft report issued October 7, 1999. River was determined eligible, but final report not transmitted to Congress. **Draft Study Report (/rivers/rivers/sites/rivers/files/2023-01/merrimack-draft-study.pdf)** (22 miles)

XVII. Public Law 101-357 (August 10, 1990) — 1 River, Study Due August 10, 1993

(107) **Pemigewasset, New Hampshire.** (NPS) Report transmitted to Congress on May 5, 1998. Designation not recommended. **Draft Study Report (/rivers/rivers/sites/rivers/files/2023-02/pemigewasset-draft-study.pdf)**, **Draft Study Report Appendices (/rivers/rivers/sites/rivers/files/2023-02/pemigewasset-draft-study-appendices.pdf)** (36 miles)

XVIII. Public Law 101-364 (August 15, 1990) — 1 River, Study Due August 15, 1993

(108) **St. Marys, Florida.** (NPS) Draft report issued on March 16, 1994. River was determined eligible, but final report not transmitted to Congress. **Study Report (/rivers/rivers/sites/rivers/files/2023-02/st-marys-study.pdf)** (120 miles)

XIX. Public Law 101-538 (November 8, 1990) — 1 River, Study Due September 30, 1994

(109) **Mills, North Carolina.** (USFS) Final report completed in 1996 but not transmitted to Congress. (33 miles)

XX. Public Law 101-628 (November 28, 1990) — 1 River, Study Due September 30, 1994

(110) **Concord, Assabet and Sudbury, Massachusetts.** (NPS) Twenty-nine miles added to the National System, Public Law 106-20, April 9, 1999. **Draft Study Report (/rivers/rivers/sites/rivers/files/2023-01/suasco-draft-study.pdf)** (29 miles)

XXI. Public Law 102-50 (May 24, 1991) — 1 River, Study Due September 30, 1994

(111) **Niobrara, Nebraska.** (NPS) Six miles added to the National System, Public Law 102-50, May 24, 1996. **Study Report (/rivers/rivers/sites/rivers/files/2023-02/niobrara-study.pdf)** (6 miles)

XXII. Public Law 102-214 (December 11, 1991) — 1 River, Study due December 11, 1994

(112) **Lamprey, New Hampshire.** (NPS) Eleven point five miles added to the National System, Public Law 104-333, November 12, 1996. Twelve miles added to the National System, Public Law 106-192, May 5, 2000. **Study Report (/rivers/rivers/sites/rivers/files/2023-01/lamprey-study.pdf)**, **Resource Assessment (/rivers/rivers/sites/rivers/files/2023-01/lamprey-resource-assessment.pdf)** (10 miles)

XXIII. Public Law 102-215 (December 11, 1991) — 1 River, Study Due December 11, 1994

(113) **White Clay Creek, Pennsylvania and Delaware.** (NPS) One hundred ninety miles added to the National System, Public Law 106-357, October 24, 2000. **Draft Study Report (/rivers/rivers/sites/rivers/files/2023-02/white-clay-creek-draft-study.pdf)** (23+ miles)

XXIV. Public Law 102-249 (March 3, 1992) — 11 Rivers, Studies due October 1, 1995

(114) **Brule, Michigan and Wisconsin.** (USFS) River determined eligible; suitability study not completed. (33 miles)

(115) **Carp, Michigan.** (USFS) River determined eligible; suitability study not completed. (7.6 miles)

(116) **Little Manistee, Michigan.** (USFS) River determined eligible; suitability study not completed. (42 miles)

(117) **White, Michigan.** (USFS) River determined eligible; suitability study not completed. (75.4 miles)

(118) **Ontonagon, Michigan.** (USFS) River determined eligible; suitability study not completed. (32 miles)

(119) **Paint, Michigan.** (USFS) River determined eligible; suitability study not completed. (70 miles)

(120) **Presque Isle, Michigan.** (USFS) River determined eligible; suitability study not completed. (13 miles)

(121) **Sturgeon (Ottawa National Forest), Michigan.** (USFS) River determined eligible; suitability study not completed. (36 miles)

(122) **Sturgeon (Hiawatha National Forest), Michigan.** (USFS) River determined eligible; suitability study not completed. (18.1 miles)

(123) **Tahquamenon, Michigan.** (USFS) River determined eligible; suitability study not completed. (103.5 miles)

(124) **Whitefish, Michigan.** (USFS) River determined eligible; suitability study not completed. (26 miles)

XXV. Public Law 102-271 (April 20, 1992) — 2 Rivers, Studies Due September 30, 1995

(125) **Clarion, Pennsylvania.** (USFS) Fifty-one point seven miles added to the National System, Public Law 104-333, October 19, 1996. **Study Report (/rivers/rivers/sites/rivers/files/2023-01/clarion-study.pdf)** (104 miles)

(126) **Mill Creek, Pennsylvania.** (USFS) River determined eligible, suitability study not completed. (18 miles)

XXVI. Public Law 102-301 (June 19, 1992) — 5 Rivers, Studies Due September 30, 1995

(127) **Piru Creek, California.** (USFS) Seven point three miles of area below Pyramid Lake added to the National System, Public Law 111-11, March 30, 2009. Two areas of river authorized for study—source to Pyramid Lake and 300 feet below Pyramid Lake to Lake Piru. Study of area above Pyramid Lake completed in revision of Los Padres National Forest Land and Resource Management Plan. (49 miles)

(128) **Little Sur, California.** (USFS) Study completed in revision of Los Padres National Forest Land and Resource Management Plan. River determined eligible, but report not transmitted to Congress. (23 miles)

(129) **Matilija Creek, California.** (USFS) Study completed in revision of Los Padres National Forest Land and Resource Management Plan. River determined ineligible, but report not transmitted to Congress. (16 miles)

(130) **Lopez Creek, California.** (USFS) Study completed in revision of Los Padres National Forest Land and Resource Management Plan. River determined ineligible, but report not transmitted to Congress. (11 miles)

(131) **Sespe Creek, California.** (USFS) Study completed in revision of Los Padres National Forest Land and Resource Management Plan. River determined eligible, but report not transmitted to Congress. (10.5 miles)

XXVII. Public Law 102-432 (October 23, 1992) — 1 River, Study Due September 30, 1995

(132) **North Fork Merced, California.** (BLM) Study has been completed through the Folsom Resource Management Plan. River determined ineligible, but report not transmitted to Congress. (15 miles)

XXVIII. Public Law 102-460 (October 23, 1992) — 1 River, Study Due October 23, 1993

(133) **Delaware, Pennsylvania and New Jersey.** (NPS) Sixty-seven point three miles added to the National System, Public Law 106-418, November 1, 2000. **Study Report (/rivers/rivers/sites/rivers/files/2023-01/lower-delaware-study.pdf)** (70 miles)

XXIX. Public Law 102-525 (October 26, 1992) — 1 River, Study Due October 26, 1993

(134) **New, Virginia and West Virginia.** (NPS) Report transmitted to Congress on April 8, 2011. Designation not recommended. (20 miles) **Study Report (/rivers/rivers/sites/rivers/files/2023-02/new-study.pdf)**, **Transmittal Memos (/rivers/rivers/sites/rivers/files/2023-02/new-study-memos.pdf)**

XXX. Public Law 103-242 (May 4, 1994) — 1 River, Study Due May 4, 1997

(135) **Rio Grande, New Mexico.** (BLM) Final report issued on January 4, 2000, but not transmitted to Congress. Seven point six miles determined eligible. (8 miles)

XXXI. Public Law 104-311 (October 19, 1996) — 1 River, Study Due October 19, 1998

(136) **Wekiva, Florida.** (NPS) Forty-one point six miles added to the National System, Public Law 106-299, October 13, 2000. **Study Report (/rivers/rivers/sites/rivers/files/2023-02/wekiva-study.pdf)** (27 miles)

XXXII. Public Law 106-318 (October 19, 2000) — 1 River, Study Due October 19, 2003

(137) **Taunton, Massachusetts.** (NPS) Forty point zero miles added to the National System, Public Law 111-11, March 30, 2009. **Draft Study Report & Environmental Assessment (/rivers/rivers/sites/rivers/files/2023-02/taunton-draft-study-ea.pdf)** (22 miles)

XXXIII. Public Law 107-65 (November 6, 2001) — 1 River, Study Due November 6, 2004

(138) **Eight Mile, Connecticut.** (NPS) Twenty-five point three miles added to the National System, Public Law 110-229, May 8, 2008. (15 miles)

XXXIV. Public Law 109-370 (November 27, 2006) — 1 River, Study Due November 27, 2009

(139) **Lower Farmington and Salmon Brook, Connecticut.** (NPS) Sixty-one point seven miles added to the National System, Public Law 116-9, March 12, 2019. **Study Report & Environmental Assessment (/rivers/rivers/sites/rivers/files/2023-01/lower-farmington-study-ea.pdf)** (70 miles)

XXXV. Public Law 111-11 (March 3, 2009) — 1 River, Study Due March 30, 2012

(140) **Missisquoi and Trout, Vermont.** (NPS) Forty-six point one miles added to the National System, Public Law 113-291, December 19, 2014. **Study Report & Environmental Assessment (/rivers/rivers/sites/rivers/files/2023-01/missisquoi-trout-study-ea.pdf)** (70 miles)

XXXVI. Public Law 113-291 (December 19, 2014) — 4 Rivers, Studies Due 3 years After Funding

(141) **Lake Creek, Lower Cave Creek, Lake Creek, No Name Creek, Panther Creek, and Upper Cave Creek, Oregon.** (NPS) Lake Creek and Upper Cave Creek found eligible and suitable for designation; No Name Creek, Panther Creek, and Upper Cave Creek found ineligible. Report transmitted to Congress April 7, 2020. (8.3 miles) Oregon Caves (Lower &

Upper Cave Creek, Lake Creek, No Name Creek, Panther Creek, & Waterfelt Creek) **Study Report (/rivers/rivers/sites/rivers/files/2022-12/oregon-caves-study.pdf)**, **Transmittal Letters (/rivers/rivers/sites/rivers/files/2023-02/oregon-caves-study-transmittal.pdf)**

(142) **Beaver, Chipuxet, Queen, Wood and Pawcatuck Rivers, Rhode Island and Connecticut.** (NPS) One hundred ten miles added to the National System, Public Law 116-9, March 12, 2019. **Study Report (/rivers/rivers/sites/rivers/files/2022-12/wood-pawcatuck-study.pdf)** (86 miles)

(143) **Nashua River, Massachusetts.** (NPS) Fifty-two point eight miles added to the National System, Public Law 116-9, March 12, 2019. **Study Report (/rivers/rivers/sites/rivers/files/2023-05/nashua_studyreport_full_2019.pdf)** (32.5 miles)

(144) **York River, Maine.** (NPS) Thirty point eight miles added to the National System, Public Law 117-328, December 29, 2022. **York River Study Report (/rivers/rivers/sites/rivers/files/2022-12/york-study.pdf)**, **Transmittal Letters (/rivers/rivers/sites/rivers/files/2023-01/york-congressional-letter.pdf)** (11.3 miles)

XXXVII. Public Law 117-328 (December 29, 2022) — 2 Rivers, Studies Due 3 years After Funding

(145) **Kissimmee River, Florida.** (NPS)

Study not yet initiated. (TBD miles)

(146) **Little Manatee River, Florida.** (NPS) Study not yet initiated. (50.0 miles)

Contact Us (/rivers/rivers/contact) |

National Awards (/rivers/rivers/national-awards) |

The Numbers (/rivers/rivers/numbers) |

Nationwide Rivers Inventory (/rivers/rivers/nri) |

Documents (/rivers/rivers/documents) |

Accessibility (/rivers/rivers/accessibility)

PARTNERS

Bureau of Land Management (https://blm.gov/programs/national-conservation-lands/wild-and-scenic-rivers)

National Park Service (https://www.nps.gov/orgs/1912/index.htm)

NPS Partnership Rivers (https://www.nps.gov/orgs/1912/partnership-wild-and-scenic-rivers.htm)

U.S. Fish & Wildlife Service (https://www.fws.gov/story/wild-and-scenic-rivers)

U.S. Forest Service (https://www.fs.usda.gov/managing-land/wild-scenic-rivers)

River Management Society (http://river-management.org/)

REFERENCES

Bibliography (/apps/bibliography)

Interagency Council (/apps/council)

Stewardship (/apps/stewardship)

News (/apps/news)

Videos (/apps/video)

Vulnerability Disclosure Policy (/apps/vulnerability-disclosure-policy)


NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT


FOREST SERVICE
US
DEPARTMENT OF AGRICULTURE


NATIONAL
PARK
SERVICE


U.S.
FISH & WILDLIFE
SERVICE
DEPARTMENT OF THE INTERIOR

Appendix A, Exhibit P

Environmental Justice (CEST and EA)

General requirements	Legislation	Regulation
Determine if the project creates adverse environmental impacts upon a low-income or minority community. If it does, engage the community in meaningful participation about mitigating the impacts or move the project.	Executive Order 12898	
References		
https://www.hudexchange.info/environmental-review/environmental-justice		

HUD strongly encourages starting the Environmental Justice analysis only after all other laws and authorities, including Environmental Assessment factors if necessary, have been completed.

1. **Were any adverse environmental impacts identified in any other compliance review portion of this project's total environmental review?**

   ☐Yes → *Continue to Question 2.*

   ☒No → *Based on the response, the review is in compliance with this section. Continue to the Worksheet Summary below.*

2. **Were these adverse environmental impacts disproportionately high for low-income and/or minority communities?**

   ☐Yes

   Explain:

   → *Continue to Question 3. Provide any supporting documentation.*

   ☐No

   Explain:

   → *Continue to the Worksheet Summary and provide any supporting documentation.*

3. **All adverse impacts should be mitigated. Explain in detail the proposed measures that must be implemented to mitigate for the impact or effect, including the timeline for implementation.**

☐Mitigation as follows will be implemented:

→ *Continue to Question 4.*

☐No mitigation is necessary.

Explain why mitigation will not be made here:

→ *Continue to Question 4.*

4. **Describe how the affected low-income or minority community was engaged or meaningfully involved in the decision on what mitigation actions, if any, will be taken.**

→ *Continue to the Worksheet Summary and provide any supporting documentation.*

Worksheet Summary

Compliance Determination

Provide a clear description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your region

No environmental impacts were identified that will disproportionately affect low-income and/or minority communities. All impacts will be mitigated through formal compliance and mitigation measures as necessary, prior to occupancy.

Are formal compliance steps or mitigation required?

☐ Yes

☒ No

Appendix A, Exhibit Q

Andy Beshear
Governor

OFFICE OF THE GOVERNOR
DEPARTMENT FOR LOCAL GOVERNMENT
100 AIRPORT ROAD, THIRD FLOOR
FRANKFORT, KENTUCKY 40601
PHONE (502) 573-2382, F 227-8691
dlg.ky.gov

Matt Sawyers
Commissioner

July 30, 2025

Mr. Eric Mills
Thrive Community Coalition
P.O. Box 2041
Inez, KY 41224

RE: Thrive CDBG-RHP Transitional Housing Project
SAI# KY202507240640
CFDA# 14.218

Dear Mr. Mills:

The Kentucky State e-Clearinghouse is the official designated Single Point of Contact (SPOC) for the Commonwealth pursuant to Presidential Executive Order 12372 and supported by Kentucky Statutes KRS 45.031. The primary function of the SPOC is to streamline the review process for the applicant and the funding agency. This process helps in vocalizing the statutory and regulatory requirements. Information in the form of comments, if any, will be attached to this correspondence.

This proposal has been reviewed by the appropriate state agencies in the e-Clearinghouse for conflicts with state or local plans, goals, and objectives. After receiving this letter, you should make it available to the funding agency and continue with the application process for that agency. This e-Clearinghouse SPOC letter signifies only that the project has followed the state reviewing requirements and is neither a commitment of funds from this agency, nor any other state or federal agency. Please remember if any federal reviews are required, the applicant must follow through with those federal agencies.

The results of this review are valid for **one year** from the date of this letter. If the project is not submitted to the funding agency or not approved within one year after the completion of this review, the applicant can request an extension through the **information request function**. If the project changes in any way after the review, the applicant must reapply through the e-Clearinghouse for a new review. There are no exceptions.

If you have any questions regarding this letter or the review process, please contact the e-Clearinghouse office at (502) 573-2382.

Respectfully,

Cindy Seip,
Program Coordinator (SPOC)
Kentucky State e-Clearinghouse

Attachment

TEAM KENTUCKY

An Equal Opportunity Employer M/F/D

Big Sandy Area Development District
Joseph Jacobs

This project is consistent with the goals and objectives of the Big Sandy Comprehensive Economic Development Strategy.

Department of Housing Buildings and Construction
Don Newberry

The Department of Housing Buildings and Construction, Division of Building Code Enforcement, has no comments concerning this proposed project.

Environment and Energy Cabinet - Department for Environmental Protection
Derek Bozzell

This review was based upon the information that was provided by the applicant through the Clearinghouse for this project. An endorsement of this project does not satisfy, or imply, the acceptance or issuance of any permits, certifications or approvals that may be required from this agency under Kentucky Revised Statutes or Kentucky Administrative Regulations. Such endorsement means this agency has found no major concerns from the review of the proposed project as presented other than those stated as conditions or comments.

Division for Air Quality
Kentucky Division for Air Quality Regulation 401 KAR 63:010 Fugitive Emissions states that no person shall cause, suffer, or allow any material to be handled, processed, transported, or stored without taking reasonable precaution to prevent particulate matter from becoming airborne. Additional requirements include the covering of open bodied trucks, operating outside the work area transporting materials likely to become airborne, and that no one shall allow earth or other material being transported by truck or earth moving equipment to be deposited onto a paved street or roadway. Please note the Fugitive Emissions Fact Sheet located at https://eec.ky.gov/Environmental-Protection/Air/Documents/Fugitive%20Dust%20Fact%20Sheet.pdf.

Regulation 401 KAR 63:005 states that open burning is prohibited. Open Burning is defined as the burning of any matter in such a manner that the products of combustion resulting from the burning are emitted directly into the atmosphere without passing through a stack or chimney. However, open burning may be utilized for the expressed purposes listed on the Open Burning Brochure located at https://eec.ky.gov/Environmental-Protection/Air/Pages/Open-Burning.aspx.

Kentucky Division for Air Quality Regulation 401 KAR 58:025, Asbestos Standards, apply to this project if any renovation or demolition occurs. If so, a Kentucky Accredited Asbestos Inspector must inspect the project. Asbestos that will be affected by this activity must be removed by a Kentucky accredited contractor before renovation or demolition begins. Written notification must be given on form DEP 7036 to the Division for Air Quality Regional Office at least 10 weekdays prior the start of demolition or renovation, whether or not asbestos has been identified to be present. Please note form available at https://eec.ky.gov/Environmental-Protection/Air/asbestos/Pages/default.aspx.

All solid waste generated by this project must be disposed at a permitted facility. If underground storage tanks are encountered they must be properly addressed. If asbestos, lead paint, and/or other contaminants are encountered during this project, they must be properly addressed.

If the proposed project site is in a designated flood hazard area, application must be made to the Division of Water for a floodplain construction permit. Permission, or exemption, depends upon design and the exact site.

If the construction area disturbed is equal to or greater than 1 acre, the applicant will need to apply for a Kentucky Pollutant Discharge Elimination System (KPDES) stormwater discharge permit from Division of Water.

Best Management Practices (BMPs) should be utilized to control storm water runoff and sediment damage to water quality and aquatic habitat. For technical assistance on the kinds of BMPs most appropriate for projects of this type and related construction, please contact the local Soil and Water Conservation District or the Division of Conservation.

Utility line projects that cross a stream will require a Section 404 permit from the US Army Corps of Engineers and a 401 Water Quality Certification from DOW.

WATER SUPPLY - If an existing water server is to be utilized for new water tap-ons (rehabilitations, new constructions), ascertain the capacity and operating condition of the originating water treatment plant and of the server (if different) in comparison to the water needs of the proposed housing. DOW cannot permit connections to water servers Agreed Orders, or Court Orders. DOW may not give approval to connections to water systems operating near, at, or over capacity. If a new water source is to be utilized, ascertain the source's (stream's or well's) low flow ability to serve the proposed housing. Prior approval from DOW is required for water withdrawals of over 10,000 gallons per day and for all public drinking water. Final plans and specifications are subject to review by DOW.

WASTEWATER TREATMENT - If an existing wastewater server is to be utilized for new wastewater tap-ons (rehabilitations, new construction), ascertain the capacity and operating conditions of the receiving wastewater treatment facility (wastewater treatment plant or package sewage treatment plant) and of the server (if different) in comparison to the wastewater needs of the proposed housing. DOW cannot permit connections to wastewater servers under tap-on bans, Agreed Orders, or Court Orders. DOW may not give approval to connections to wastewater systems at or over hydraulic capacity. If a new wastewater treatment, facility is to be utilized, ascertain the discharge stream's ability to absorb the proposed projects treated wastewater.

Prior approval from DOW is required for all discharges into streams and for all wastewater treatment facilities.

DOW notes the requirements of onsite sewage disposal statutes, KRS 211.350 to 211.380, and administrative regulations, 902 KAR 10:060 to 10:110, must be met. DOW requests provisions be made for future connections to a wastewater treatment system. A Groundwater Protection Plan, as required by 401 KAR 5:037, needs to be prepared by all onsite wastewater system owners. Contact the DOW regarding requirements.

Your project might have the potential of impacting federally or state listed species and natural communities. Go to the Kentucky Biological Assessment Tool (kynaturepreserves.org) to obtain a Standard Occurrence Report for information regarding listed species known within your project area. The report will also provide information on public and private conservation lands, areas of biodiversity significance, and other natural resources in your project area for which the Office of Kentucky Nature Preserves maintains data.

Kentucky Department of Fish & Wildlife
Emily Lawson

Due to the location and nature of the project, Kentucky Department of Fish & Wildlife Resources (KDFWR) does not have specific concerns regarding federal or state-listed threatened / endangered species, designated critical habitat, wildlife management areas, or other properties managed by KDFWR. The following recommendations are provided as general guidance for development of private and grant-funded projects submitted to KDFWR for review. In general, impacts to fish and wildlife resources might be avoided and minimized by following the guidance provided below:

- Wetlands, Waterways, and Floodplains: The KDFWR requests that you coordinate the proposed project with the U. S. Army Corps of Engineers (USACE) and the Kentucky Division of Water (KDOW) prior to any work within the waterways or wetland habitats of Kentucky (including encroachment and/or fill in floodplains and waterways). KDFWR recommends minimizing stream encroachment and maintaining forested riparian buffers around stream banks. Forested riparian zones along streams provide numerous functions beneficial to fish, wildlife, and water quality. Forested riparian zones reduces erosion and siltation, one of Kentucky’s leading causes of impairment in streams. Trees reinforce stream banks, slow runoff helping reduce flood peaks, and help to improve water quality. Trees provide important habitat along streams and serve as travel corridors for wildlife.

• USFWS Coordination for compliance with the Endangered Species Act: Please coordinate with the US Fish and Wildlife Service for compliance with the Endangered Species Act and for specific recommendations to minimize adverse effects to listed species. The USFWS may have seasonal requirements for removing trees, especially those greater than 3" in diameter-at-breast height. Limiting the removal of these trees to the period between October 15th through March 31st will minimize impacts to many species of bats, several of which are listed as threatened or endangered on the federal Endangered Species Act.

• Preventing fish kills: Avoid using wet concrete near waterways. Please refer to the KY Division of Water for recommended best management practices regarding concrete use near streams. Uncured (wet) concrete released into streams and waterways causes significant fish kills. If concrete is required, prevent its release into streams by using pre-formed concrete structures or separating work areas from stream water by coffer dam or other method. Construction water that contains concrete slurry should not be released into streams. It can be pumped into a containment in an upland area away from stream water to safely dispose of it or it can be aspirated with carbon dioxide to make it non-toxic.

• Erosion control to minimize impacts to the aquatic environment: KDFWR recommends that erosion control measures be developed and implemented prior to construction to reduce siltation into waterways located within/near 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 inspected regularly and repaired as needed. If blanket-style matting is used for erosion control, please avoid using the nylon monofilament netting as it can entangle and kill wildlife. An alternative blanket style control is organic coir matting, which degrades naturally and provides excellent soil protection and moisture retention for seed germination—as well as controlling erosion runoff without unnecessarily impacting wildlife.

Thank you for coordinating with KDFWR. Please contact Emily Lawson at 502-892-4472 or emilym.lawson@ky.gov if you have further questions or require additional information.

KY Heritage Council
Yvonne Sherrick

To receive a review from the KY Heritage Council/State Historical Preservation Office (SHPO) you must follow the instructions located on their website at https://heritage.ky.gov/compliance/Pages/overview.aspx. There you will find the required documents for the Section 106 Review and Compliance for 36 CFR Part 800. This Section 106 submission process to SHPO will assist applicants and agencies in providing the appropriate level of information to receive comments from SHPO. If you have any questions please contact Yvonne Sherrick, via email at yvonne.sherrick@ky.gov.

Please note: If your project is funded through Transportation Alternative (TAP), Transportation Enhancements (TE), Congestion, Mitigation, Air Quality (CMAQ), or Safe Routes to School (SRTS) you will need to send this information to Michael Jones, Historic Preservation Program Administrator with the Kentucky Transportation Cabinet via email to MichaelR.Jones2@ky.gov or hard copy to Michael Jones, Office of Local Programs, KY Transportation Cabinet, 200 Mero Street Frankfort, KY 40622. Do not send materials directly to SHPO if your project involves funding from these four sources as it will cause delays in the review process. Michael Jones will consult directly with the SHPO on projects with these funding sources to complete the Section 106 review.

KYTC District 12
Christopher James

For any proposed work along state highways, please notify the Permit Office of the Transportation Cabinet at 109 Loraine Street Pikeville, KY 41501 (606) 433-7791 before working on or near the highway right of way.

Appendix A, Exhibit R

SITE VISIT AND FIELD OBSERVATIONS Checklist

Instructions: It is recommended that this checklist be used by staff and/or consultants for HUD-assisted projects involving acquisition, rehabilitation, demolition, construction, and resale of properties acquired as part of a HUD-assisted project.

No matter what level of environmental expertise a reviewer has, the site visit is an effective method of gaining impressions of the physical characteristics of the project site and its surroundings. However, for certain categories of environmental impact (e.g., groundwater, soils suitability, seismic zones, and wetlands, endangered species habitat) a professional expert is required. The expert will gather the relevant information and conduct tests such as gathering soils samples or taking soil borings.

Prior to the site visit, review all background information about the project---it's location, a description of the project and all related activities, and any existing reports and documents associated with the project (e.g. environmental reviews completed for the same project by Federal, state or local entities; appraisal reports; special studies, such as a Phase I Environmental Site Assessment, biological assessment concerning endangered species, archival reports concerning archeological sites, soils and geological report, etc.) .

Also, several different types of maps will be useful in completing the field review, such as the project plan or plat map, a location map showing major features and facilities in the vicinity, the USGS topographic map and FEMA flood map for the site area (if applicable), as well as aerial photos. **Many of the site conditions can and should be recorded directly on the project plan.** Distances to major features and facilities (e.g. schools and fire stations, major roadways, etc.) and a description of the surrounding area are examples. This record of the site visit and documentation of field observations, as well as the project plan can then be used as evidence of "compliance documentation".

At times, these field observations will identify environmental conditions that require further investigation and reporting.

A digital camera should be used to photograph the project site, and any environmental conditions or structures that may provide additional information and/or support observations being made.

Project Address/Location:

1616 Rockcastle Road, Inez, Kentucky 41224 (37.884028, -82.552500)

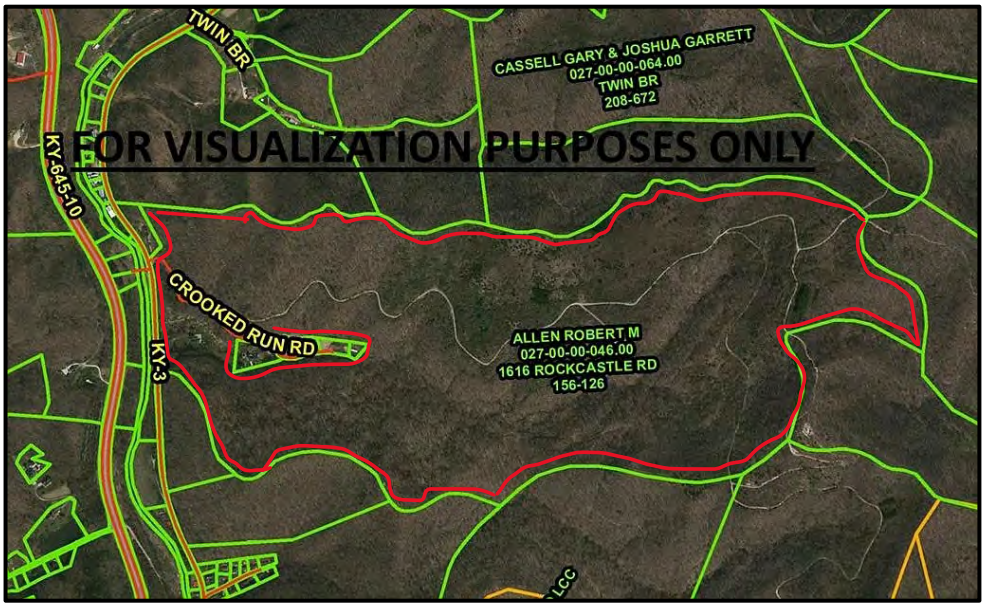
Brief Description of the Project:

Thrive Community Coalition (Thrive) is expected to receive $850,000 of CDBG-RHP funds for the acquisition and rehabilitation of a single-family property and the construction of up to two additional single-family housing units of approximately 1,000 sq. feet. The project site is located at 1616 Rockcastle Road, Inez, Kentucky (37.884028, -82.552500). The existing residence is a 2,348 square-foot, three-bedroom, two-and-a-half-bathroom home with a two-car garage, situated on 253.89 acres. The proposed new construction will add up to two 1,000-square-foot, two- to three-bedroom homes. Project activities for new construction include land clearing, driveway construction, and water line connection. Together, these homes will comprise the Thrive Recover Well Housing Community and will provide safe, affordable housing for up to 14 individuals with unrelated individuals sharing double-occupied bedrooms in a single-family dwelling or with a single family occupying one unit if family

reunification is appropriate and possible. Following rehabilitation, the existing structure will be able to house up to six individuals and each of the additional single-family housing units provides housing for up to four individuals or up to four-person families for a maximum of two years. With these additions to Martin County's housing stock, Thrive will be assisting individuals in recovery who are working toward independent, sober living with the option for family reunification.

1. Historic Preservation (36 CFR Part 800)

a) Describe the boundary of the *area of potential effects* (APE) and draw it on a site map. (NOTE: For rehabilitation of an existing building the APE is the property boundary. For reconstruction or new construction of single-family residential buildings it is the project site and immediately adjacent properties. For construction of multifamily residential buildings as well as nonresidential buildings the APE may be larger than this depending upon the mass and scale of the proposed building construction in comparison to the surrounding uses.)



b) Are there buildings present within the APE? ☒ YES ☐ NO
If **yes**, how many buildings are there and what type (e.g., homes, commercial/retail, etc.)?

One residential property is present on the site.

c) Are the buildings more than 50 years of age? ☐ YES ☒ NO
If **yes**, take a digital photo of the building(s) and record the location of the photos (by address, if any, as well as on a site map).
☐ INCLUDED ☒ N/A
Comments:

The residential property was built in the year 2000.

d) Have visible alterations been made to the building(s)? ☐ YES ☒ NO ☐N/A
If **yes**, describe these alterations.

Visible alterations have not been made to the existing structure.

Comments on Section 1:

N/A

2. Noise Abatement (24 CFR 51, Subpart B)

Does the project involve reconstruction or new construction of residential units or other land use that would be adversely impacted by high levels of noise (e.g., hospitals or clinics with overnight patients, community centers, etc.)? ☒ YES ☐ NO

*If **yes**, continue completing this section on noise abatement.*

a) Is the project located near a major noise source? ☒ YES ☐ NO

1. Is the project located within 1,000 feet of major highways or busy roads? ☒ YES ☐ NO

If **yes**, what is the name of the highway(s) and/or road(s)?

080-KY-0003 -000 (KY-3) and 080-KY-0645 -000 (Highway 645)

Is there a barrier (natural or constructed) of sufficient height and length to break the line-of-sight to the project? ***(NOTE**: Vegetation is not an effective barrier.)*☐ YES ☒ NO

If **yes**, provide a description of the barrier. If no, continue.

What is the *noise assessment location* (NAL) in feet?

***NOTE:** The NAL is 6.5 feet from the building façade or the proposed building setback. Refer to 50 of the HUD Noise Guidebook.)*

70.34 feet

Was **Worksheet C (Roadway Noise) in** the HUD Noise Assessment Guidelines (Page 76 of the HUD Guidebook) completed during the field visit? ☐ YES ☒ NO

If **no**, name what other source of information will be used to complete a noise calculation to determine whether roadway noise is ***Acceptable* (65 DNL)**, according to HUD standards---i.e., existing Federal or local roadway study, hire a consultant, etc.

HUD's DNL Calculator, https://www.hudexchange.info/programs/environmental-review/dnl-calculator/

2. Is the project located within 3,000 feet of a railroad? ☐ YES ☒ NO

If **yes**, what is the name of the railroad line(s)?

N/A

Is there a barrier (natural or constructed) of sufficient height and length to break the line-of-sight to the project? *(NOTE: Vegetation is not an effective barrier.)* ☐ YES ☒ NO

If **yes**, provide a description of the barrier. If **no**, continue.

N/A

What is the *noise assessment location* (NAL) in feet?

NOTE: *The NAL is 6.5 feet from the building façade or the proposed building setback. Refer to 50 of the HUD Noise Guidebook.*

N/A

3. Is the project located within 15 miles of an FAA-regulated civil airfield or military airfield?
☒ YES ☐ NO

If **yes**, what is the name of the airfield(s)?

Big Sandy Airport

Acquire a copy of the airfield map that shows the DNL noise contour lines around the airport(s). ☐ Included ☒ Not available (see comment on Section 2)

Comments on Section 2:

A Small Airport Noise Worksheet was completed for the airport; however, operations data was not available in the Big Sandy AMR report. To address this, Airport Manager Gary Cox was consulted and provided the necessary operations information. Based on the worksheet, the low number of annual air carrier operations ensures that airplane-related noise does not extend beyond the airport boundaries.

3. Hazardous Operations (24 CFR 51, Subpart C)

a) Are there stationary aboveground storage tanks containing more than 100 gallons of explosives or fire-prone materials (e.g., liquid propane, gasoline, or fuel oils, etc.) that are within 1 mile of the project?
☒ YES ☐ NO

If **yes**, identify the facility (e.g., commercial, industrial, residential), as well as its location and distance to the project:

The well and corresponding tank are maintained and leased by Diversified Energy. The tank is not under pressure and does not hold cryogenic liquefied gas. The container is diked 25'L x 22'W X 2'Deep. Utilizing the HUD Acceptable Separation Distance Electronic Assessment Tool, Fahe determined the Acceptable Separation Distance for Thermal Radiation for People (ASDPNPD) is 120.50 feet and the ASD for Thermal Radiation for Buildings (ASDBNPD) is 20.15 feet. The nearest point of the project site in which people, or buildings, will be situated is 3,202.98 feet from the gas well. This distance is well beyond the required separation distance recommended by HUD. This project is in compliance with Explosive and Flammable Facilities requirements.

Is there a barrier (natural or constructed) of sufficient height and length to break the line-of-sight to the project? (**NOTE:** Vegetation is not an effective barrier.)
☒ YES ☐ NO

If **yes**, provide a description of the barrier.

There is a ridge between the gas well and corresponding tank to break the line-of-sight to the project.

If **no**, you must determine whether the project is an acceptable distance (for both people and buildings) from the hazard using the HUD guidebook, "**Siting of HUD-Assisted Projects Near Hazardous Facilities**".
☒ Siting determination included ☐ N/A

Comments on Section 3:

Utilizing the HUD Acceptable Separation Distance Electronic Assessment Tool, Fahe determined the Acceptable Separation Distance for Thermal Radiation for People (ASDPNPD) is 120.50 feet and the ASD for Thermal Radiation for Buildings (ASDBNPD) is 20.15 feet. The nearest point of the project site in which people, or buildings, will be situated is 2,304.89 feet from the gas well. This distance is well beyond the required separation distance recommended by HUD. This project is in compliance with Explosive and Flammable Facilities requirements.

4. Airport Hazards (24 CFR 51, Subpart D)

a) Is the project within 2,500 feet of an FAA-regulated civil airfield? ☐ YES ☒ NO

b) Is the project within 15,000 (about 2.8 miles) feet of a military airfield? ☐ YES ☒ NO

If your answer is **YES** to either of these questions, contact the civil and/or military airfield for a map showing the location(s) of Runway Clear Zones (at civil airfields) and/or Clear Zones and Accident Protection Zones (at military airfields).

☐ Runway Clear Zones Map included ☒ N/A

☐ Clear Zones and Accident Protection Zones included ☒ N/A

Comments on Section 4:

N/A

5. Protection of Wetlands (Executive Order 11990)

a) Are there drainage ways, streams, rivers, or coastlines on or near the site? ☐ YES ☒ NO

b) Are there ponds, marshes, bogs, swamps or other wetlands on or near the site? ☐ YES ☒ NO

c) For projects proposing new construction and/or filling, grading and dredging, or expanding the existing building footprint, the following applies:

i) Is the project located within a wetland designated on a National Wetlands Inventory map maintained by the U.S. Fish and Wildlife Service? ☐ YES ☒ NO

ii) If your answer is **YES**, E.O. 11990, Protection of Wetlands, discourages Federal funding of these activities in wetlands and compliance with the wetlands decision-making process is required (Refer to 24 CFR 55, § 55.20).

☐ Wetlands decision-making process included ☒ N/A

Comments on Section 5:

N/A

6. Toxic Chemicals and Radioactive Materials [24 CFR 58, § 58.5(i)]

Has a Phase I Environmental Site Assessment been completed? ☐ YES ☒ NO

If **no**, answer the following questions:

a. Is the project site within 0.5 miles near an industry disposing, transporting, using or storing chemicals or hazardous wastes? ☐ YES ☒ NO

b. Is the project site within 1 mile of a U.S. EPA Superfund National Priorities List (NPL) site, or equivalent State listed site? ☐ YES ☒ NO

c. Is the project within 0.5 miles of a U.S. EPA regulated CERCLA site or equivalent state listed site?
☐ YES ☒ NO

d. Is the site located within 3,000 feet of a toxic or solid waste landfill site?
☐ YES ☒ NO

e. Does the project site have an underground storage tank?
☐ YES ☒ NO

If your answer is **YES**, then further investigation is necessary to determine whether these facilities could affect the health and safety of the project occupants or conflict with the intended use of the property. Use current techniques by qualified professions to undertake the investigations that are necessary.

☐ Further investigation needed (and documented) ☒ N/A

Comments on Section 6:

N/A

Other environmental conditions that could affect the health and safety of the occupants:

a. Lead-based paint (24 CFR 35)
Is there a residential building on-site that was constructed before 1978? ☐ YES ☒ NO

Will children 6 years of age or younger occupy the residential building? ☒ YES ☐ NO

If your answer is YES, testing is required? ☒ YES ☐ NO

b. Radon
Is the residential building in an area with High (Zone 1) or Moderate (Zone 2) potential for radon? ☒ YES ☐ NO
Does the building have a basement or crawl space?
☒ basement ☒ crawl space ☐ slab on grade
Has testing for radon been completed? ☒ YES ☐ NO ☐Unknown

c. Mold
Is the presence of mold or damage from mold visible? ☒ YES ☐ NO

Comments on Section 6, Other Environmental Conditions:

Following a site inspection, mold was indicated on the ceiling of the basement caused by water damage to the building. Photos of mold are attached.



7. Farmland Protection (7 CFR 658)

a) Is the project site now committed to a nonagricultural use? ☒ YES ☐ NO
If **yes**, describe the current use of the property.
The site is residential and will remain residential. There will be no conversion of use.

b) Is the site or area being farmed at the present time? ☐ YES ☒ NO
If your answer is **yes**, contact the U.S. Natural Resource Conservation Service to determine whether the project site is classified as prime or unique agricultural land.
☐ Contact made and documentation included ☒ N/A

8. Unique and Natural Features and Areas

a) Is the site near natural features (i.e., bluffs or cliffs) or near public or private scenic areas?
☐ YES ☒ NO

b) Are other natural resources visible on the site or in the vicinity? Will any such resources be adversely affected or will they adversely affect the project? ☐ YES ☒ NO

Comments on Section 8:

N/A

9. Site Suitability, Access, and Compatibility with Surrounding Development

a) Has the site been used as a dump, sanitary landfill, or mine waste disposal area?
☐ YES ☒ NO

b) Is there paved access to the site?
☐ YES ☒ NO

c) Are there other unusual conditions on site?
☐ YES ☒ NO

d) Is there indication of any of the following?
i) distressed vegetation ☐ YES ☒ NO
ii) waste material/containers ☐ YES ☒ NO
iii) soil staining, pools of liquid ☐ YES ☒ NO
iv) loose/empty drums, barrels ☐ YES ☒ NO
v) oil/chemical spills ☐ YES ☒ NO

vi) abandoned machinery, cars, refrigerators, etc. ☐ YES ☒ NO
vii) transformers, fill/vent pipes ☐ YES ☒ NO
viii) pipelines, drainage structures ☐ YES ☒ NO

e) Is the project compatible with the surrounding area in terms of the following?
i) Land use ☒ YES ☐ NO
ii) Height, bulk, mass ☒ YES ☐ NO
iii) Building type (low/high rise) ☒ YES ☐ NO
iv) Building density ☒ YES ☐ NO

f) Will the project be unduly influenced by:
i) Building deterioration ☐ YES ☒ NO
ii) Postponed maintenance ☐ YES ☒ NO
iii) Obsolete public facilities ☐ YES ☒ NO
iv) Transition of land uses ☐ YES ☒ NO
v) Incompatible land uses ☐ YES ☒ NO
vi) Inadequate off-street parking ☐ YES ☒ NO

g) Are there air pollution generators nearby which would adversely affect the site?
i) Heavy industry ☐ YES ☒ NO
ii) Incinerators ☐ YES ☒ NO
iii) Power generating plants ☐ YES ☒ NO
iv) Oil refineries ☐ YES ☒ NO
v) Cement plants ☐ YES ☒ NO
vi) Large parking facilities (1000 or more cars) ☐ YES ☒ NO
vii) Heavy travelled highway (6 or more lanes) ☐ YES ☒ NO
viii) Other (describe below) ☐ YES ☒ NO

Comments on Section 9:

N/A

10. Soil Stability, Erosion, and Drainage

Slopes: ☒ Not applicable ☐ Steep ☐ Moderate ☐ Slight

a) Is there evidence of slope erosion or unstable slope conditions on or near the site? ☐ YES ☒ NO

b) Is there evidence of ground subsidence (i.e., settling, buckling, depressions), high water table, or other unusual conditions on the site? ☐ YES ☒ NO

c) Is there any visible evidence of soil problems (foundations cracking or settling, basement flooding, etc.) in the neighborhood of the site? ☒ YES ☐ NO

d) Is there indication of cross-lot runoff, drainage flows on the property? ☐ YES ☒ NO

e) Are there visual indications of filled ground? ☐ YES ☒ NO

f) Are there active rills and gullies on site? ☐ YES ☒ NO

g) If the answer is **YES** to one or more of these questions, a soils report is likely needed for the following reasons (check applicable items):
☐ Indicators are that marginal or unsatisfactory soil conditions may be present.

☐ Site drainage appears to be poor.

☒ On-site water pooling appears to be a problem.

☐ Off-site and/or on-site erosion or slope stability is a concern.

☐The site is not to be served by a municipal waste water disposal system and a determination needs to be made whether soil conditions are suitable for on-site septic system(s).

Comments on Section 10:

N/A

11. Nuisances and Hazards

a) Will the project be affected by natural hazards?

i) Faults, fractures	☐ YES	☒ NO
ii) Cliffs, bluffs, crevices	☐ YES	☒ NO
iii) Slope-failures from rains	☐ YES	☒ NO
iv) Unprotected water bodies	☐ YES	☒ NO
v) Fire hazard materials	☐ YES	☒ NO
vi) Wind/sand storm concerns	☐ YES	☒ NO
vii) Poisonous plants, insects, animals	☐ YES	☒ NO
viii) Hazardous terrain features	☐ YES	☒ NO

b) Will the project be affected by built hazards and nuisances?

i) Hazardous streets	☐ YES	☒ NO
ii) Dangerous intersections	☐ YES	☒ NO
iii) Through traffic	☐ YES	☒ NO
iv) Inadequate separation of pedestrian/vehicle traffic	☐ YES	☒ NO
v) Inadequate screened drainage catchments	☐ YES	☒ NO
vi) Hazards in vacant lots	☐ YES	☒ NO
vii) Chemical tank-car terminals	☐ YES	☒ NO
viii) Other hazardous chemical storage	☐ YES	☒ NO
ix) Children's play areas located next to freeway or other high traffic way	☐ YES	☒ NO
x) Inadequate street lighting	☐ YES	☒ NO
xi) Quarries or other excavations	☐ YES	☒ NO
xii) Dumps/sanitary landfills or mining	☐ YES	☒ NO
xiii) Railroad crossing	☐ YES	☒ NO
xiv) High-pressure gas or liquid petroleum transmission lines on site	☐ YES	☒ NO
xv) Overhead transmission lines	☐ YES	☒ NO
xvi) Oil or gas wells	☒ YES	☐ NO
xvii) Industrial operations	☐ YES	☒ NO

c) Will the project be affected by nuisances?

i) Gas, smoke, fumes	☐ YES	☒ NO
ii) Odors	☐ YES	☒ NO
iii) Vibration	☐ YES	☒ NO
iv) Glare from parking area	☐ YES	☒ NO
v) Vacant/boarded-up buildings	☐ YES	☒ NO

vi) Unsightly land uses ☐ YES ☒ NO
vii) Abandoned vehicle ☐ YES ☒ NO
viii) Vermin infestation ☐ YES ☒ NO
ix) Industrial nuisances ☐ YES ☒ NO
x) Other (Identify in Comments below) ☐ YES ☒ NO

Comments on 11:

N/A

12. Schools, Parks, Recreation, and Social Services

a) Areas school nearby? ☒ YES ☐ NO

If **yes**, identify the schools and their distances from the project.

1. Eden Elementary School is located 2.8 miles, and a 7-minute drive from the project site.
2. The Inez Elementary School is located 4.3 miles and a 9-minute drive from the project site
3. The Martin County High School is located 6.5 miles and a 10-minute drive from the project site.
4. The Martin County Middle School is located 11.1 miles and an 18-minute drive from the project site.

b) Are parks and play spaces available on site or nearby? ☒ YES ☐ NO

If **yes**, what are the names and distances from the project.

1. Grassy Park is located 4.9 miles and an 8-minute drive from the project site.
2. The Frank Horn Ballfield is located 1.8 miles and a 3-minute drive from the project site.
3. Warfield Park is located 12.3 miles and a 21-minute drive from the project site.

c) Will social services be available on site or nearby for residents of the proposed project? ☒ YES ☐ NO

If **yes**, what services are available and the distances from the project.

1. The Martin County Health Department is 2.0 miles and a 4 minutes drive from the project site.
2. Appalachia Reach out is 1.2 miles and a 2 minute drive from the project site.

Comments on Section 12:

N/A

13. Emergency Health Care, Fire and Police Services

a) Are emergency health care providers located within reasonable proximity to the proposed project?

Approximate response time: ☒ YES ☐ NO

The Mountain Comprehensive Care Center is located 2.0 miles and a 4-minute drive from the project site.
The Paintsville ARH Hospital is located 25.6 miles and a 31-minute drive from the project site.

b) Are police services located within reasonable proximity to the proposed project? ☒ YES ☐ NO
Approximate response time:

The Martin County Sheriff's Department is located 2.3 miles and a 4- minute drive from the project site.

c) What type of fire protection service is available?
☐ municipal ☒ volunteer

d) Is the fire protection service adequate and equipped to service the project? ☒ YES ☐ NO
Approximate response time:

The Inez Volunteer Fire Department is located 2.7 miles and a 5- minute drive from the project site.

Comments on Section 13:

N/A

14. Commercial/Retail and Transportation

a) Are commercial/retail shopping services nearby? ☒ YES ☐ NO
If **yes**, what is the approximate distance to these services?

1. The Mayo Plaza is located 24.6 miles and a 31-minute drive from the project site.
2. The Prestonsburg Village is located 27.8 miles and a 34-minute drive from the project site.

b) Is the project accessible to employment, shopping and services? ☒ YES ☐ NO
If **yes**, by which modality/modalities?
☐ public transportation ☒ private vehicle ☐walking

c) Are the approaches to the project convenient, safe and attractive? ☒ YES ☐ NO

Comments on Section 14:

N/A

Field Inspection completed on: (date)

12/16/2025

Field Inspection completed by:

Ruby Smith, Project Manager, Fahe

Print name, title and organization

Signature

Appendix A, Exhibit S

Andy Beshear
Governor

Energy and Environment Cabinet

Office of Kentucky Nature Preserves

300 Sower Boulevard
Frankfort, Kentucky 40601
Telephone: 502-782-7828
EEC.KYBAT@ky.gov

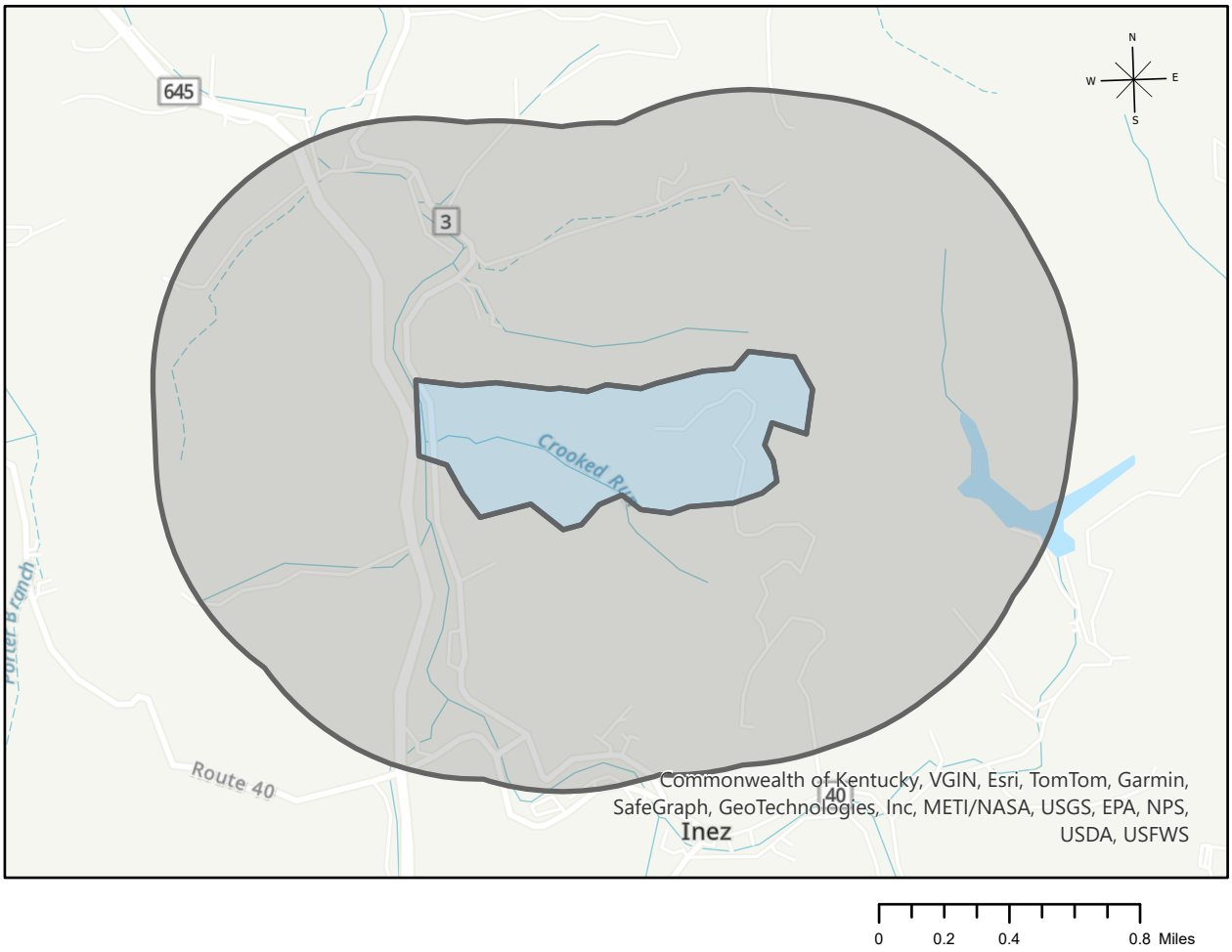
Rebecca W. Goodman
Secretary

Zack Couch
Executive Director

Requested on Wednesday, February 18, 2026 by *Ruby Smith, Fahe*

Re: Kentucky Biological Assessment Data Request 260218R01
Thrive Community Coalition - Thrive Recover Well Housing Development (Within Municipalities), 1 mile buffer.
MARTIN County, Kentucky

This letter is in response to your data request for the project referenced above. We have reviewed our Natural Heritage Program Database to determine if any of the endangered, threatened, or special concern plants, animals, features, or exemplary natural communities monitored by the Office of Kentucky Nature Preserves are noted within your submitted project area.



Andy Beshear
Governor

Energy and Environment Cabinet

Office of Kentucky Nature Preserves

300 Sower Boulevard
Frankfort, Kentucky 40601
Telephone: 502-782-7828
EEC.KYBAT@ky.gov

Rebecca W. Goodman
Secretary

Zack Couch
Executive Director

Thank you for using the Office of Kentucky Nature Preserves' Biological Assessment Tool.

This report provides site-specific biological data for the proposed project area, offering documented occurrences of rare, threatened, and endangered species. Unlike other tools which may model potential species presence, this tool delivers verified field data collected by biologists, ensuring an accurate understanding of site conditions. Some regulatory processes request this information for project siting, permitting, and conservation planning. Understanding the presence of endangered, threatened, or special concern plants, animals or exemplary natural communities may help avoid delays, mitigate risks, and support compliance with environmental guidelines.

Key Findings included in the report:

A - Occurrences which intersect the project area
B - Occurrences which intersect the buffer around the project area
C - References and Recommendations relevant to occurrences near to or within the project area

We 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. Data and data products received from the Office of Kentucky Nature Preserves, including any portion thereof, may not be reproduced in any form or by any means without the express written authorization of the Office of Kentucky Nature Preserves. 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 Office of Kentucky Nature Preserves.

Please note that the quantity and quality of data 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, we cannot provide a definitive statement on the presence, absence, or condition of biological elements in any part of Kentucky. These reports summarize the existing information known to the Kentucky Natural Heritage Database at the time of the request. They should never be regarded as final statements on the occurrences being considered, nor should they be substituted for on-site surveys required for environmental assessments. Please note that certain sensitive occurrences may be listed in this table but are not represented in the accompanying map.

If you have any questions, or if we can be of further assistance, please do not hesitate to contact our office by email at EEC.KYBAT@ky.gov.

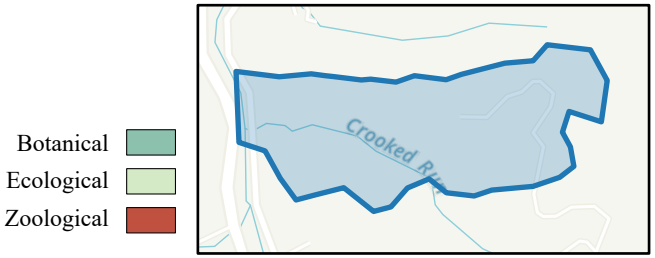
Sincerely,

Alexis R. Sheehan
Database Administrator
Office of Kentucky Nature Preserves

Sydnie Hansen
GIS Analyst
Office of Kentucky Nature Preserves

A. Project Area - Occurrence Report

This section details occurrences that have been documented within the project footprint through direct field surveys. Presence is based on confirmed biological observations. The table below includes the species' status at state and federal levels, as well as the dates each occurrence was last observed. Please review Precision, as it is indicative of the location uncertainty of the individual records.



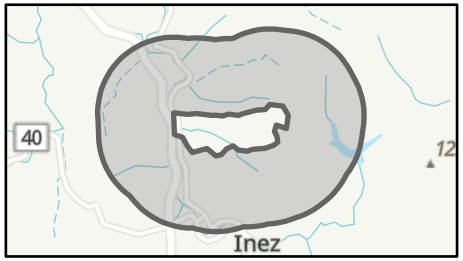
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
7544	*Insects*	*Polygonia progne*	**Gray Comma**	*Min.*		*Historic*	*G5*	*SH*		*1977-08-23*		INEZ.

Map Credits: Commonwealth of Kentucky, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

B. Buffer Area - Occurrence Report (1 of 58)

This section details occurrences recorded within the project footprint, as well as the designated buffer area surrounding the project site. While these species are not directly within the project footprint, their proximity may influence project planning due to habitat connectivity or regulatory considerations.

Botanical
Ecological
Zoological



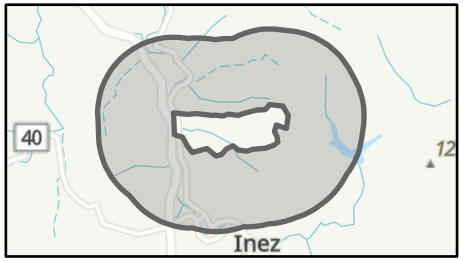
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
271	Mosses	Abietinella abietina	**Wire Fern Moss**	Sec.		Threatened	G5	S1		1991-07-09	A calciphile, on dry, exposed rocks, soil, or turf on sand of partially stabilized dunes, among talus at the base of cliffs, or on humus in open coniferous stands.	WILSON HILL BETW LONG BRANCH AND HAM BRANCH.
346	Vascular Plants	Acer spicatum	**Mountain Maple**	Min.		Endangered	G5	S1S2		1998-07	Cool, moist, mesic woods. often associated with cool air drainages from caves, or at high elevations.	LION CAVE BRANCH, NEAR A 40-FT WATERFALL AT THE HEAD OF THE GORGE.
428	Breeding Birds	Accipiter striatus	**Sharp-shinned Hawk**	Min.		Special Concern	G5	S3B,S4N	Yes	1991-06-20		S side of Tuggle Hollow, ca 2.2 air mi SW of Powersburg.
638	Communities	Acidic mesophytic forest	**Acidic mesophytic forest**	Sec.			GNR	S5		1999-01-20		NW-facing slope of ravine ca 1 air mi SSE of Buckhorn
695	Breeding Birds	Accipiter striatus	**Sharp-shinned Hawk**	Min.		Special Concern	G5	S3B,S4N	Yes	1990		NW block of quadrangle.
746	Breeding Birds	Accipiter striatus	**Sharp-shinned Hawk**	Min.		Special Concern	G5	S3B,S4N	Yes	1987-06		Beaver Creek WMA (017A) and S of Mt. Victory above Addison Branch (017B).
764	Fishes	Acipenser fulvescens	**Lake Sturgeon**	Min.		Endangered	G3G4	S1	Yes	1886-03		Falls of Ohio.
957	Breeding Birds	Accipiter striatus	**Sharp-shinned Hawk**	Min.		Special Concern	G5	S3B,S4N	Yes	1985		CW Block of quadrangle.
1097	Communities	Acidic sub-xeric forest	**Acidic sub-xeric forest**	Sec.			GNR	S5		1995-09-22		Between Dale Hollow Lake and mouth of Hufaken Fork, ca 0.5 air mi W of Skull Bluff, on S-facing slope.
1123	Breeding Birds	Accipiter striatus	**Sharp-shinned Hawk**	Gen.		Special Concern	G5	S3B,S4N	Yes	1986		At or near Quiet Trails State Nature Preserve.
1193	Communities	Acer saccharum - Carya cordiformis / Asimina triloba Floodplain Forest	**Bottomland ridge/ terrace forest**	Sec.		Endangered	G2	S1		1991-06		West KY Wildlife Management Area, Bayou Creek Woods, ca 2.0 air mi NW of Shawnee Steam Plant.
1457	Communities	Acer rubrum var. trilobum - Nyssa sylvatica / Osmunda cinnamomea - Carex intumescens / Sphagnum lescurii Seep Forest	**Cumberland Plateau forested acid seep**	Sec.		Threatened	G3?	S2		1998-08-05		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1544	Communities	Acidic sub-xeric forest	**Acidic sub-xeric forest**	Sec.			GNR	S5		1995-05-02		Staples Woods, ca 1.0 air mi NNE of Twyford Point (011A, Old MN 20) to ca 1.3 air mi ENE of Twyford Point (011B, Old MN 21).
1729	Breeding Birds	Accipiter striatus	**Sharp-shinned Hawk**	Min.		Special Concern	G5	S3B,S4N	Yes	1980s-mid		Just NW of jct KY 444 and Blood River Church Road.
1743	Breeding Birds	Accipiter striatus	**Sharp-shinned Hawk**	Gen.			G5	S3B,S4N	Yes	1990-07-19		CW Block of quadrangle.

Map Credits: Commonwealth of Kentucky, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

B. Buffer Area - Occurrence Report (2 of 58)

This section details occurrences recorded within the project footprint, as well as the designated buffer area surrounding the project site. While these species are not directly within the project footprint, their proximity may influence project planning due to habitat connectivity or regulatory considerations.

Botanical
Ecological
Zoological



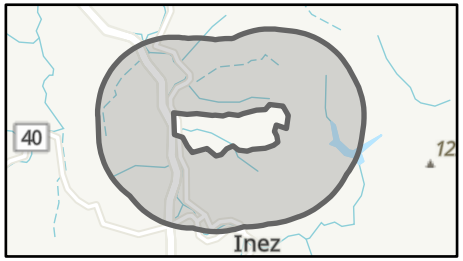
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
67	Vascular Plants	Ageratina lucy-brauniae	**Lucy Braun's White Snakeroot**	Sec.		Special Concern	G3	S3	Yes	1989-08-25	Moist areas near the dripline of sandstone rockhouses.	HOLLOW TO N OF RAILROAD FORK, S STREAMHEAD, CA 0.6 MI NNW OF BARREN FORK CEMETERY.
68	Vascular Plants	Ageratina lucy-brauniae	**Lucy Braun's White Snakeroot**	Min.		Special Concern	G3	S3	Yes	1989-10-18	Moist areas near the dripline of sandstone rockhouses.	MILL CREEK HOLLOW, CA 0.75 MI SSE OF MOUTH ON SW-FACING CLIFFLINE.
103	Vascular Plants	Ageratina lucy-brauniae	**Lucy Braun's White Snakeroot**	Sec.		Special Concern	G3	S3	Yes	1996-04-26	Moist areas near the dripline of sandstone rockhouses.	N side of the extreme W end of Step-up Rock, N side of the point (007A), and SE-facing side of west end of Step-up Rock (007B).
217	Freshwater Mussels	Alasmidonta marginata	**Elktoe**	Gen.		Threatened	G4	S2	Yes	1908-12-26		Green River, Green County: at Greensburg (040A).
262	Vascular Plants	Ageratina lucy-brauniae	**Lucy Braun's White Snakeroot**	Sec.		Special Concern	G3	S3	Yes	1995-09-21	Moist areas near the dripline of sandstone rockhouses.	Just to E of and across Cumberland River from Sawyer Boat Ramp (077A). Approx. 139m N of Lake Side S and 115m S of end of Campbell Ridge W (077B). Approx. 114m N of Lake Side S and 341m SE of end of Campbell Ridge W (077C). Approx. 72m NE of Lake Side S a
299	Vascular Plants	Adiantum capillus-veneris	**Southern Maidenhair-fern**	Sec.		Threatened	G5	S2S3	Yes	1995-09-14	Moist to wet limestone seeps. reported on shale, often in association with waterfalls or near travertine deposits..	DRIPPING LIMESTONE SEEPS ALONG S-FACING CLIFF OF RED RIVER JUST N OF KY/TN LINE W OF KY 102.
397	Vascular Plants	Ageratina lucy-brauniae	**Lucy Braun's White Snakeroot**	Sec.		Special Concern	G3	S3	Yes	1992	Moist areas near the dripline of sandstone rockhouses.	CANE CREEK RAVINE, CA 0.45 AIR MI NE OF MOUTH OF CANE CR.
498	Vascular Plants	Adiantum capillus-veneris	**Southern Maidenhair-fern**	Cnty.		Threatened	G5	S2S3	Yes	1968-Pre	Moist to wet limestone seeps. reported on shale, often in association with waterfalls or near travertine deposits..	Powell County
504	Vascular Plants	Ageratina lucy-brauniae	**Lucy Braun's White Snakeroot**	Sec.		Special Concern	G3	S3	Yes	1989-07-11	Moist areas near the dripline of sandstone rockhouses.	Head of unnamed hollow to W of Franklin Hollow ca 1.0 air mi SSW of Flat Rock Cemetery (024A). Approx. 583m SW of end of George Dick Rd (024B).
637	Vascular Plants	Ageratina lucy-brauniae	**Lucy Braun's White Snakeroot**	Sec.		Special Concern	G3	S3	Yes	1991	Moist areas near the dripline of sandstone rockhouses.	WEST OF TOM HEATH RIDGE, CA 1.0 RD MI SE ON WHITLEY RD FROM ITS JCT W/ CUMBERLAND RIVER RD, THEN CA 0.15 AIR MI W.
696	Vascular Plants	Ageratina lucy-brauniae	**Lucy Braun's White Snakeroot**	Sec.		Special Concern	G3	S3	Yes	1995-09-19	Moist areas near the dripline of sandstone rockhouses.	

Map Credits: Commonwealth of Kentucky, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

B. Buffer Area - Occurrence Report (3 of 58)

This section details occurrences recorded within the project footprint, as well as the designated buffer area surrounding the project site. While these species are not directly within the project footprint, their proximity may influence project planning due to habitat connectivity or regulatory considerations.

Botanical
Ecological
Zoological



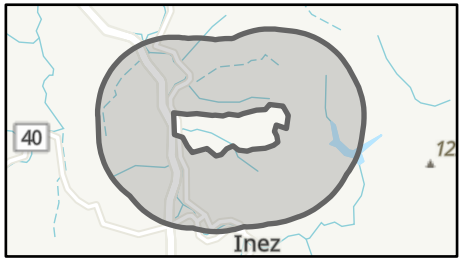
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
13	Fishes	Amblyopsis spelaea	**Northern Cavefish**	Sec.		Special Concern	G2G3	S3	Yes	1966		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
181	Fishes	Allohistium maydeni	**Redlips Darter**	Sec.		Special Concern	G2	S3	Yes	2009-08-26		Big South Fork Cumberland River, at Blue Heron canoe access.
198	Fishes	Allohistium maydeni	**Redlips Darter**	Min.		Special Concern	G2	S3	Yes	2011-08-11		Buck Creek, at confluence with Brushy Creek, 0.2 mi W of SR-461 bridge.
311	Freshwater Mussels	Alasmidonta marginata	**Elktoe**	Min.		Threatened	G4	S2	Yes	1993-06		Horse Lick Creek, Jackson/ Rockcastle County: between Dry Fork confluence and second ford downstream of Dry Fork (plotted at center of 1.9 km segment) (074A).
462	Fishes	Allohistium maydeni	**Redlips Darter**	Sec.		Special Concern	G2	S3	Yes	2010-09-01		Rockcastle River, ca 0.9 stream km upstream from Roundstone Creek, at unnamed tributary (Site 11).
677	Freshwater Mussels	Alasmidonta marginata	**Elktoe**	Min.		Threatened	G4	S2	Yes	1988-12-20-pre		Drakes Creek, Warren County: 5 mi SE of Bowling Green (058A).
684	Freshwater Mussels	Alasmidonta marginata	**Elktoe**	Min.		Threatened	G4	S2	Yes	1927-08-26		Drakes Creek, Warren County: 7.0 mi S of Bowling Green (023A).
747	Fishes	Allohistium maydeni	**Redlips Darter**	Sec.		Special Concern	G2	S3	Yes	2010-08-01		Horse Lick Creek, from confluence with Rockcastle River to 1 mile upstream. One mile above confluence with Rockcastle River (026A), ca 300 meters upstream of confluence with Rockcastle River (026B), and ca 400 yards upstream from KY 89 bridge (026C).
771	Fishes	Allohistium maydeni	**Redlips Darter**	Sec.		Special Concern	G2	S3	Yes	1992-03-27		ROCKCASTLE RIVER AT US HWY 25, 2.0 MI NW OF HAZEL PATCH, 4.0 MI S OF LIVINGSTON.
896	Fishes	Amblyopsis spelaea	**Northern Cavefish**	Gen.		Special Concern	G2G3	S3	Yes	1957-09-21		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1063	Fishes	Amblyopsis spelaea	**Northern Cavefish**	Sec.		Special Concern	G2G3	S3	Yes	1994		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1064	Fishes	Amblyopsis spelaea	**Northern Cavefish**	Sec.		Special Concern	G2G3	S3	Yes	1993-09-01		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1128	Freshwater Mussels	Alasmidonta marginata	**Elktoe**	Sec.		Threatened	G4	S2	Yes	1993-06		Horse Lick Creek, Jackson/ Rockcastle County: 100 m downstream of Daugherty Ford (HLC KM 6.8) (063A).
1317	Fishes	Amblyopsis spelaea	**Northern Cavefish**	Sec.		Special Concern	G2G3	S3	Yes	1970s		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov

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B. Buffer Area - Occurrence Report (4 of 58)

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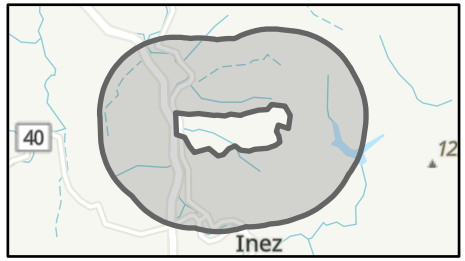
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
134	Communities	Appalachian mesophytic forest	**Appalachian mesophytic forest**	Sec.			GNR	S4S5		1980s		Unnamed gorge across from mouth of Hawk Creek.
142	Communities	Appalachian mesophytic forest	**Appalachian mesophytic forest**	Sec.			GNR	S4S5		1989-07-26		Circa 0.6 air mi NW of end of Proctor Hollow Rd, which is ca 1.5 rd mi WNW of Doolin Cemetery.
162	Snails	Anguispira rugoderma	**Pine Mountain Tigersnail**	Min.		Endangered	G3	S2		1996-SP		PINE MOUNTAIN STATE RESORT PARK NEAR LIMESTONE GAP.
319	Freshwater Mussels	Anodontoides denigrata	**Cumberland Papershell**	Sec.		Endangered	G1	S1	Yes	1997-05-20		Unnamed tributary of Indian Creek, Knox County: in Demps Hollow, ca 1.3 stream km above mouth; ca 8.4 air km NW of Heidrick (002A).
334	Communities	Appalachian mesophytic forest	**Appalachian mesophytic forest**	Sec.			GNR	S4S5		1988-07-22		Dry Fork and Lower Josie Branch, extending N along Dry Fork ca 0.9 air mi.
493	Snails	Antroselates spiralis	**Shaggy Cavesnail**	Min.		Special Concern	G3	S2		1963-pre		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
570	Snails	Anguispira rugoderma	**Pine Mountain Tigersnail**	Min.		Endangered	G3	S2		1996-01-03		DILL CAMP FORK OF ELISHA CREEK, ABOUT 2000 FT SSE OF DILL CAMP FORK AND RIGHT FORK ELISHA CREEK CONFLUENCE, JUST DOWNSLOPE OF FOREST SERVICE ROAD 1701.
590	Communities	Appalachian mesophytic forest	**Appalachian mesophytic forest**	Sec.			GNR	S4S5		1985		Circa 0.7 air mi S of Shirley Branch and Red Lick Cr conf.
591	Communities	Appalachian mesophytic forest	**Appalachian mesophytic forest**	Sec.			GNR	S4S5		1990-09-08		West-facing slope above Long Branch, ca 0.6 stream mi S of confl of Long Br and Red Lick Cr. .
606	Communities	Appalachian mesophytic forest	**Appalachian mesophytic forest**	Sec.			GNR	S4S5		2002-09-23		Circa 0.6 air mi SSE of the JCT KY 728 and KY 259, ca 1.0 air mi NNE JCT KY 259 and the Grassland-Block Gold Road.
648	Freshwater Mussels	Anodontoides denigrata	**Cumberland Papershell**	Sec.		Endangered	G1	S1	Yes	2011-09-15		Marsh Creek, McCreary County: at KY 1044 bridge (021A).
671	Amphibians	Amphiuma tridactylum	**Three-toed Amphiuma**	Min.		Endangered	G5	S1		2003		Murphy's Pond (002A) and KY 307 at Obion Creek, near Murphy's Pond (002B).
692	Reptiles	Apalone mutica mutica	**Midland Smooth Softshell**	Sec.			G5T5	S3		1994-06-28		Ohio River, on small sandbar near KY shoreline, ca 1.5 air mi SW (downstream) of Shawneetown Bridge.
768	Reptiles	Apalone mutica mutica	**Midland Smooth Softshell**	Gen.			G5T5	S3		1985		Blood River embayment of Kentucky Lake.

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B. Buffer Area - Occurrence Report (5 of 58)

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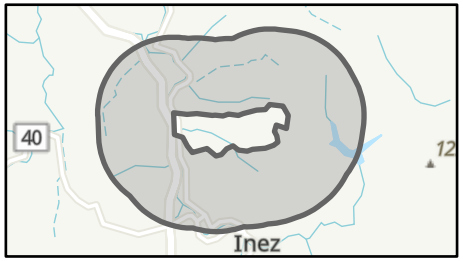
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
57	Fishes	Atractosteus spatula	**Alligator Gar**	Min.		Endangered	G3G4	S1	Yes	1977-04-18		Kentucky Lake, Cypress Cr embayment in vicinity of the TN/KY state line.
147	Snails	Appalachina chilhoweensis	**Queen Crater**	Min.		Special Concern	G4	S2		1954-05-01		CIRCA 0.5 MI E OF NEVELSVILLE.
175	Vascular Plants	Baptisia aberrans	**Eastern Prairie Blue Wild Indigo**	Sec.		Endangered	G2	S1	Yes	2008-05-07		E SIDE OF KY 181 AT JCT W/ HALL RD, CA 0.9 RD MI S OF JCT W/ KY 181 AND BLUE HOLE RD.
247	Vascular Plants	Aureolaria patula	**Spreading False Foxglove**	Sec.		Special Concern	G3	S3	Yes	1995-09-19	Canopy openings in mixed hardwood forests on limestone slopes associated with large streams and rivers..	WESTERN BANK OF LAKE CUMBERLAND NEAR RIVER MI 1, W OF GENERAL BURNSIDE ISLAND STATE PARK.
294	Vascular Plants	Avenella flexuosa	**Crinkled Hairgrass**	Sec.		Threatened	G5	S2		2002-06-05	Dry, open or partially shaded sandy or rocky soil in mesic forests and cracks in sandstone cliffs and cliff bases.	Along ca a 2 mi stretch of the summit of Cumberland Mt from Cumberland Gap National Park boundary to the NE.
362	Vascular Plants	Aureolaria patula	**Spreading False Foxglove**	Sec.		Special Concern	G3	S3	Yes	1987	Canopy openings in mixed hardwood forests on limestone slopes associated with large streams and rivers..	Mammoth Cave National Park, E-facing bluff above Green River, immediately in front of entrance to Dossey Cave.
564	Vascular Plants	Aureolaria patula	**Spreading False Foxglove**	Sec.		Special Concern	G3	S3	Yes	1995-09-14	Canopy openings in mixed hardwood forests on limestone slopes associated with large streams and rivers..	JUST UPSTREAM OF JAMES ROSE RD (KY 2375) BRIDGE OVER WHIPPOORWILL CR, ON E SIDE OF CR, CA 1.5 MI N OF DOT.
721	Vascular Plants	Baptisia leucophaea var. leucophaea	**Cream Wild Indigo**	Sec.		Threatened	G4G5T4	S2		1966-06-16	Prairies and open dry or upland woods; sandhills.	LAND BETWEEN THE LAKES; MARKER 6G3 IS AT JCT OF RD 336 AND RD 141.
765	Vascular Plants	Baptisia leucophaea var. leucophaea	**Cream Wild Indigo**	Min.		Threatened	G4G5T4	S2		1986-09-08	Prairies and open dry or upland woods; sandhills.	LAND BETWEEN THE LAKES, SOUTH SHORE OF HIGGINS BAY.
776	Vascular Plants	Baptisia leucophaea var. leucophaea	**Cream Wild Indigo**	Sec.		Threatened	G4G5T4	S2		1997-SU	Prairies and open dry or upland woods; sandhills.	LAND BETWEEN THE LAKES; W SIDE OF UNNAMED TRIB OF PISGAH CREEK CA 0.15 AIR MI S OF DIRT RD OFF OF LEE CEMETERY RD.
955	Vascular Plants	Aureolaria patula	**Spreading False Foxglove**	Sec.		Special Concern	G3	S3	Yes	1988-08-22	Canopy openings in mixed hardwood forests on limestone slopes associated with large streams and rivers..	COOPER CREEK, NEAR MOUTH ON W-FACING SLOPE ABOUT 1500 FT S OF BIG BRANCH.
1115	Vascular Plants	Baptisia leucophaea var. leucophaea	**Cream Wild Indigo**	Sec.		Threatened	G4G5T4	S2		1999-08-28	Prairies and open dry or upland woods; sandhills.	

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B. Buffer Area - Occurrence Report (6 of 58)

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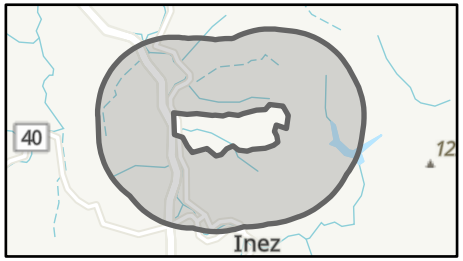
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
55	Communities	Betula alleghaniensis - Acer saccharum - Aesculus flava / Acer pensylvanicum / Trillium undulatum Forest	**Cumberland Highlands Mesophytic Forest**	Sec.		Endangered	G2G3	S1		2013-06-03		Black Mountain, unnamed knob ca 1.5 air mi SW of Clover.
344	Crustacean	Barbicambarus cornutus	**Bottlebrush Crayfish**	Min.		Special Concern	G4	S2S3	Yes	1998-09-16		WEST FORK DRAKES CREEK O.2 AIR MI ABOVE SADDLERS FORD.
455	Vascular Plants	Bartonia virginica	**Yellow Screwstem**	Sec.		Threatened	G5	S2		1996-08-14	Bogs, swamps, savannas (Weakley 2011); dry or wet acid soil; in KY, mossy seeps.	CA 1.6 AIR MI SE OF MT VICTORY CHURCH, IN POWERLINE CORRIDOR ATOP HINDSFIELD RIDGE.
456	Vascular Plants	Bartonia virginica	**Yellow Screwstem**	Sec.		Threatened	G5	S2		1996-07-18	Bogs, swamps, savannas (Weakley 2011); dry or wet acid soil; in KY, mossy seeps.	CA 1.0 AIR MI SW OF HAYS CROSSING, IN POWERLINE CORRIDOR ALONG RIDGETOP.
512	Crustacean	Barbicambarus cornutus	**Bottlebrush Crayfish**	Sec.		Special Concern	G4	S2S3	Yes	1984-07-12		WEST FORK DRAKES CREEK AT HAYDEN-SNYDER RD BRIDGE (364147,863208).
583	Breeding Birds	Botaurus exilis	**Least Bittern**	Min.		Threatened	G4	S1S2B	Yes	1985-07-21		Oxbow Lake on Minor E. Clark Fish Hatchery.
588	Vascular Plants	Bartonia virginica	**Yellow Screwstem**	Sec.		Threatened	G5	S2		1996-04	Bogs, swamps, savannas (Weakley 2011); dry or wet acid soil; in KY, mossy seeps.	CA 1.8 AIR MI NE OF JONES CHURCH, IN POWERLINE R.O.W. JUST W OF STEP-UP ROCK RIDGE.
804	Vascular Plants	Bartonia virginica	**Yellow Screwstem**	Sec.		Threatened	G5	S2		1993-07-21	Bogs, swamps, savannas (Weakley 2011); dry or wet acid soil; in KY, mossy seeps.	POWERLINE ROW CA 0.5 AIR MI SSE OF YOUNG CHAPEL, 800 FT SE OF FS 191 (008A) AND CA 0.5 AIR MI SSE OF YOUNG CHAPEL, 500 FT SE OF FS 191 (008B, 365424N, 841511W).
866	Vascular Plants	Bolboschoenus fluviatilis	**River Bulrush**	Sec.		Endangered	G5	S1S2		2010-06-07	Marshes, standing water, and fresh-tidal or freshwater shores, tolerant of alkali (Weakley 2011); riverbanks.	Ballard WMA, ca 0.5 mi inland from Turner Landing on the Ohio River and 0.6 mi SW of Goose Pond [on NE side of Turner Landing Road out in ag field].
892	Vascular Plants	Bartonia virginica	**Yellow Screwstem**	Min.		Threatened	G5	S2		1972-08-12	Bogs, swamps, savannas (Weakley 2011); dry or wet acid soil; in KY, mossy seeps.	KY 614 [KY-280 = old KY-614], 2.3 mi from jct of KY 121.
985	Breeding Birds	Botaurus exilis	**Least Bittern**	Sec.		Threatened	G4	S1S2B	Yes	2001-06-20		Sinclair Unit, Peabody Wildlife Management Area, marsh on E side of Pond Creek, ca 0.75 air mi E of Nonnell.
1159	Vascular Plants	Baptisia tinctoria	**Yellow Wild Indigo**	Sec.		Threatened	G5	S1S2	Yes	1996-08-17		

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B. Buffer Area - Occurrence Report (7 of 58)

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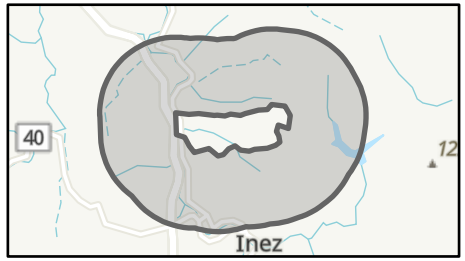
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
234	Vascular Plants	Calopogon tuberosus var. tuberosus	**Grass-pink**	Min.		Endangered	G5T5	S1	Yes	1908-06-29		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
300	Communities	Bottomland hardwood forest	**Bottomland hardwood forest**	Sec.		Special Concern	GNR	S3		1989-10		Circa 2.4 rd mi SE JCT KY 84 and KY 247 in Howardstown, to Beech Grove Church, then N ca 0.2 rd mi.
500	Communities	Bottomland hardwood forest	**Bottomland hardwood forest**	Sec.		Special Concern	GNR	S3		1990-09		Reelfoot Lake National Wildlife Refuge, extends ca 1.0 air mi S of KY 94 from JCT KY 1282 to ca 0.7 air mi SW of Miller. (Margnum 106, 363100N, 892020W).
525	Insects	Calopteryx dimidiata	**Sparkling Jewelwing**	Min.		Endangered	G5	S1S2	Yes	1991-07-07		Clear Creek at Olcott.
545	Communities	Calcareous sub-xeric forest	**Calcareous sub-xeric forest**	Sec.			GNR	S5		1992-03-03		My Old Kentucky Home State Park, ca 0.9 RD mi SE on US 150 from Bardstown Courthouse to KY 49, then ca 0.5 rd mi to picnic area.
610	Vascular Plants	Bouteloua curtipendula var. curtipendula	**Side-oats Grama**	Sec.		Special Concern	G5T5	S3?		1988-08-15		KNOB N OF US 68 AND DUE N OF SUGARLOAF KNOB.
653	Communities	Calcareous mesophytic forest	**Calcareous mesophytic forest**	Sec.			GNR	S5		2005-05-16		Gregory Woods, ca 1.0 rd mi N of high school in Peaks Mill to KY 1707, then 0.7 rd mi NE to Gregory Rd, ca 1.4 rd mi N then 0.4 air mi E.
728	Communities	Bottomland marsh	**Bottomland marsh**	Sec.		Threatened	GNR	S1S2		1991-10-14		Sloughs Wildlife Management Area, Sauerheber Unit, S of KY 268, ca 2.5 air mi ESE of Alzey.
762	Communities	Calcareous mesophytic forest	**Calcareous mesophytic forest**	Sec.			GNR	S5		1989-06-23		Bon Jellico Mountain, ca 0.4 air mi ENE of Jane Gap (009A, old MN 18); and ca 0.8 Rd mi on Bon Hollow Rd W from KY 92 JCT, then 0.3 air mi S to near summit (009B, old MN 19, 364253N, 841205W).
860	Insects	Calephelis muticum	**Swamp Metalmark**	Sec.		Endangered	G3	S1	Yes	1976-09-11		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
890	Communities	Calcareous mesophytic forest	**Calcareous mesophytic forest**	Sec.			GNR	S5		2024-04-10		Ca 1.1 air m ESE of Tousey, at head Tousey, at head of intermittent unnamed trib of Dry Fork.
1011	Mosses	Bryum miniatum	**Glossy red bryum moss**	Sec.		Endangered	G4G5	S1		1989-06-30	On wet rocks, esp. in or near brooks or on cliffs (Crum and Anderson).	WEST BANK OF CUMBERLAND RIVER AT PITCH RAPIDS.
1019	Communities	Bottomland hardwood forest	**Bottomland hardwood forest**	Sec.		Special Concern	GNR	S3		1988-09-22		Circa 0.9 air mi SW of Clay City on both sides of the mountain parkway.
1101	Vascular Plants	Calamagrostis insperata	**Bent Reedgrass**	Sec.		Endangered	G4T3	S1S2	Yes	1988-10-06		

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B. Buffer Area - Occurrence Report (8 of 58)

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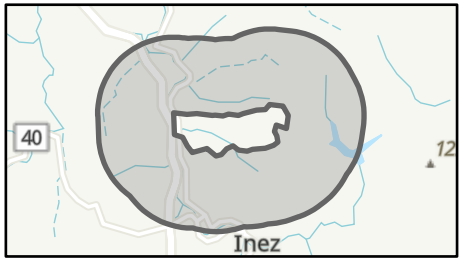
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
63	*Vascular Plants*	*Carex joorii*	**Cypress-swamp Sedge**	*Sec.*		*Endangered*	*G4G5*	*S1S2*	*Yes*	*2011-09-12*	*Wet woods and swamps, seasonal ponds and pond edges.*	*Grassy Gap Ridge, approx 0.6 mi from Goodin Ridge Road in seasonal pond 700 ft SW of logging road.*
66	*Crustacean*	*Cambarus parvoculus*	**Mountain Midget Crayfish**	*Min.*		*Special Concern*	*G5*	*S2*		*1978-03-19*		*Youngs Creek, 1 mi W Clio.*
80	*Vascular Plants*	*Carex fraseriana*	**Fraser's Sedge**	*Sec.*		*Endangered*	*G4*	*S1*	*Yes*	*2007-05-30*	*Rich mountain woods; cove forests, mostly rather acidic and associated with rhododendron maximum, at moderate elevations (Weakley 2011); in KY, reported along streams at the base of mnt slopes (Medley 1993).*	*Along N and S side of Poor Fork of the Cumberland River, just upstream from confluence of Bad Branch.*
126	*Vascular Plants*	*Carex crawei*	**Crawe's Sedge**	*Sec.*		*Special Concern*	*G5*	*S3*		*2022-05-11*	*Cedar glades and prairies.*	*Thompson Creek Glades, on Spalding Glade State Natural Area.*
464	*Vascular Plants*	*Carex howei*	**Prickly Bog Sedge**	*Sec.*		*Endangered*	*G5T5*	*S1S2*		*1990-04-19*	*Bogs and seepages (Weakley 2011); in KY, wooded acid seeps.*	*OFF KY 280, CA 0.6 MI N OF HWY 121 AND SE OF MURRAY.*
519	*Vascular Plants*	*Carex alata*	**Broadwing Sedge**	*Sec.*		*Threatened*	*G5?*	*S1S2*		*1994-05-25*	*Generally known from wet soil mostly near the coast (Gleason & Cronquist 1991); marshes (KY)*	*EAST FROM GUTHRIE, ON KY 346 TO WINN PROPERTY LAKES, ON S SIDE OF GUTHRIE SWAMP.*
717	*Vascular Plants*	*Capnoides sempervirens*	**Rock Harlequin**	*Sec.*		*Special Concern*	*G5*	*S3*		*2020-10-15*	*Dry rocky woods, and usually associated with rock outcrops, on ridge summits.*	*Bad Branch, along High Rock, ca 0.3 air mi NE of Ran Polly Gap.*
773	*Communities*	*Carex (atlantica, echinata, leptalea, lurida) - Solidago patula Herbaceous Seep*	**Cumberland Mountains headwater seep**	*Sec.*		*Endangered*	*G1*	*S2*		*2009-07-01*		*Pine Mountain WMA, at the head of Horseshoe Branch.*
858	*Vascular Plants*	*Carex juniperorum*	**Juniper Sedge**	*Sec.*		*Endangered*	*G3*	*S1S2*	*Yes*	*2020-05-07*	*Clayey soils over crumbling limestone or shale in open to partially open areas associated with glades or shale barrens.*	*Hymes Knob Prairie, N side of Chalk Ridge Road, 1.25 mi E of Trinity School, S side of knob (004A), N side of knob (004B), NW side of knob (004C), NE side of knob (004D), on roadside just west of ephemeral stream (004E), and in grassy area around pond nex*
993	*Vascular Plants*	*Carex joorii*	**Cypress-swamp Sedge**	*Sec.*		*Endangered*	*G4G5*	*S1S2*	*Yes*	*1999-08-21*	*Wet woods and swamps, seasonal ponds and pond edges.*	*Ridge E of Skullbones Knob, 700 ft W of lookout tower.*
1007	*Vascular Plants*	*Carex gigantea*	**Large Sedge**	*Sec.*		*Threatened*	*G4*	*S2S3*		*1991-06-10*	*Bottomland forests and floodplain swamps; also cypress depressions (Weakley 2011).*	*APPROX. 9.6 MI E OF LONDON, ABOUT 0.3 MI W OF LIDA, IN FLOODPLAIN OF LAUREL RIVER.*
1098	*Vascular Plants*	*Castilleja coccinea*	**Scarlet Indian Paintbrush**	*Sec.*		*Endangered*	*G5*	*S1*	*Yes*	*2022-04-12*		*CORINTH CHURCH CEMETARY, ALONG FSR 469 CA 0.7 RD MI N OF COOKSBURG.*

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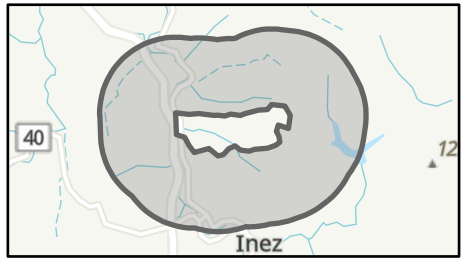
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
29	*Breeding Birds*	*Centronyx henslowii*	**Henslow's Sparrow**	*Min.*		*Special Concern*	*G4*	*S3B*	*Yes*	*1988-06-10*		*Ca 1.7 mi SE of Clarkson, on NE side of KY 1264 (004A) and 2.0 mi SW of this site at Grayson Springs (004B).*
31	*Vascular Plants*	*Chelone obliqua var. speciosa*	**Rose Turtlehead**	*Sec.*		*Special Concern*	*G4T3*	*S3*	*Yes*	*2011-09-20*	*Flooplain and alluvial forests, swamps and sloughs.*	*TERRAPIN CREEK SNP 021A: KEN HAWKINS TRACT, Ca 1.25 mi south of Bell City, Ca 700 FT west of KY 97. 021B: Ca 1 mi south of Bell City, 200 yds east of Terrapin Creek ditch (BDY 2012).*
33	*Breeding Birds*	*Chondestes grammacus*	**Lark Sparrow**	*Min.*		*Special Concern*	*G5*	*S2S3B*		*1967-06-24*		*Near Tatham Springs, along KY 1796 ca 0.7 rd mi S of bridge over Glens Creek (Johnsonville BBS Route, Stop 16).*
199	*Breeding Birds*	*Centronyx henslowii*	**Henslow's Sparrow**	*Min.*		*Special Concern*	*G4*	*S3B*	*Yes*	*1991-06-25*		*S side of Callahan Road, at jct w/ KY 1228, which is 1.7 rd mi N of jct w/ KY 490.*
475	*Breeding Birds*	*Centronyx henslowii*	**Henslow's Sparrow**	*Min.*		*Special Concern*	*G4*	*S3B*	*Yes*	*2000-05-01*		*W side KY 672, just SW of Flat Knob (064A) and just N of jct KY 91 (064B).*
749	*Breeding Birds*	*Chondestes grammacus*	**Lark Sparrow**	*Min.*		*Special Concern*	*G5*	*S2S3B*		*1937-05-15*		*At Solitude.*
754	*Breeding Birds*	*Centronyx henslowii*	**Henslow's Sparrow**	*Min.*		*Special Concern*	*G4*	*S3B*	*Yes*	*1994-06-04*		*Roanoke, W side of Dan Dunn-River Road, 0.5 mi N of jct KY 567 (Gray Road).*
857	*Communities*	*Cephalanthus occidentalis / Hibiscus moscheutos Wet Shrubland*	**Buttonbush shrub swamp**	*Sec.*		*Special Concern*	*G3?*	*S2S3*		*1999-06-15*		*Ca 0.9 air mi SW of the intersection of KY 218 and KY 314 in N Shady Grove.*
875	*Breeding Birds*	*Chondestes grammacus*	**Lark Sparrow**	*Gen.*		*Special Concern*	*G5*	*S2S3B*		*1925-circa*		*Nelson Co (incl at Bardstown).*
997	*Breeding Birds*	*Centronyx henslowii*	**Henslow's Sparrow**	*Min.*		*Special Concern*	*G4*	*S3B*	*Yes*	*1988-07-26*		*S side of KY 1198, ca 2.0 rd mi W of jct w/ KY 11 S of Sharpesburg.*
999	*Communities*	*Cephalanthus occidentalis / Hibiscus moscheutos Wet Shrubland*	**Buttonbush shrub swamp**	*Sec.*		*Special Concern*	*G3?*	*S2S3*		*2002-07-10*		*Circa 3.0 rd mi SE of Allensville.*
1183	*Breeding Birds*	*Chondestes grammacus*	**Lark Sparrow**	*Cnty.*		*Special Concern*	*G5*	*S2S3B*		*1950-07-19*		*Pendleton Co.*
1313	*Breeding Birds*	*Chondestes grammacus*	**Lark Sparrow**	*Min.*		*Special Concern*	*G5*	*S2S3B*		*1973-06-01*		*Shiloh, in general vicinity along KY 1551 (Shiloh BBS Route, at one of Stops 1-10).*

Map Credits: Commonwealth of Kentucky, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

B. Buffer Area - Occurrence Report (10 of 58)

This section details occurrences recorded within the project footprint, as well as the designated buffer area surrounding the project site. While these species are not directly within the project footprint, their proximity may influence project planning due to habitat connectivity or regulatory considerations.

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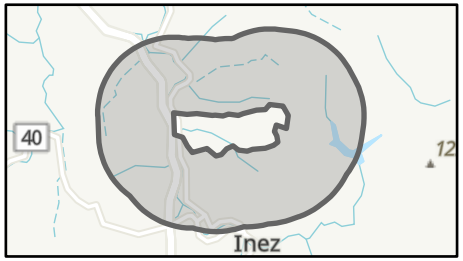
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
283	Breeding Birds	Cistothorus stellaris	**Sedge Wren**	Sec.		Special Concern	G5	S3B	Yes	1988-08-11		W side of Open Fork Road, ca 1.4 rd mi [plotted 1.0 rd mi] S of jct KY 172.
359	Vascular Plants	Clematis crispa	**Blue Jasmine Leather-flower**	Sec.		Threatened	G5	S2		1999-05-28	Wet woods, swamps, and slough margins.	REELFOOT NATIONAL WILDLIFE REFUGE, CA 0.9 MI SSE OF JCT KY 94 AND KY 1282.
541	Breeding Birds	Cistothorus stellaris	**Sedge Wren**	Sec.		Special Concern	G5	S3B	Yes	1984-06		Along W side of Ira Wright Road, 0.2 mi S of KY 569.
571	Vascular Plants	Chrysosplenium americanum	**American Golden-saxifrage**	Sec.		Threatened	G5	S2		1996-08-31	Springy or muddy soil, usually in shade (Gleason & Cronquist 1991); springheads, open wooded seeps, seepage banks of spring-fed streams, seasonally wet sandstone rocks, rills, cool wet areas.	UNNAMED TRIBUTARY OF MINOR CREEK, 1.3 AIR MI NE OF MINOR CR/CRANEY CR JCT, AT HEAD OF GORGE.
691	Reptiles	Chrysemys dorsalis	**Southern Painted Turtle**	Sec.		Threatened	G5	S2		1990-06-20		Sewage treatment plant, ca 1.8 mi ENE of Hickman.
701	Breeding Birds	Circus hudsonius	**Northern Harrier**	Min.		Threatened	G5	S1S2B,S4	Yes	1990-06-26		Ca 2.0 mi WSW of Maxwell.
706	Breeding Birds	Cistothorus stellaris	**Sedge Wren**	Sec.		Special Concern	G5	S3B	Yes	1980-07-27		Thurstons Pond, W side of KY 1275 N of KY 90.
756	Vascular Plants	Circaea alpina ssp. alpina	**Small Enchanter's Nightshade**	Sec.		Special Concern	G5T5	S3		1988-09-14		RED RIVER GORGE, ROCKHOUSE ON ROUGH TRAIL; 0.3 MI E OF CHIMNEY TOP ROAD IN SE-FACING RAVINE; ALONG TRAIL FROM LARGE UPPER TO SMALL LOWER ROCKHOUSE.
865	Mosses	Cirriphyllum piliferum	**Hair pointed Feather-moss**	Sec.		Special Concern	G5	S3?		1992-03-01	On soil, humus, and decayed wood, in moist, shady places; Probably a calciphile. In KY, on sandstone, moist soil on forested slope, fallen branches, rotten log (Crum and Anderson).	LAUREL CREEK, 1.2 AIR MI S OF ORDINARY.
870	Vascular Plants	Circaea alpina ssp. alpina	**Small Enchanter's Nightshade**	Sec.		Special Concern	G5T5	S3		1991-08-08		NEAR HEAD OF BEAR BRANCH, CA 2.2 AIR MI SE OF KY 1274 BRIDGE OVER LICKING RIVER.
1046	Breeding Birds	Cistothorus stellaris	**Sedge Wren**	Sec.		Special Concern	G5	S3B	Yes	1996-08-24		Reelfoot NWR, along S side of KY 1282 (001A and 001B).
1275	Breeding Birds	Cistothorus stellaris	**Sedge Wren**	Sec.		Special Concern	G5	S3B	Yes	1973-06-16		Along KY 1375, ca 1.0 rd mi N jct KY 86 at Franklin Cross Roads (Eastview BBS Route, Stop 12) (025A) and along KY 220, ca 0.6 rd mi E jct Salt River Road at Four Corners (Eastview BBS Route, Stop 26) (025B).

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B. Buffer Area - Occurrence Report (11 of 58)

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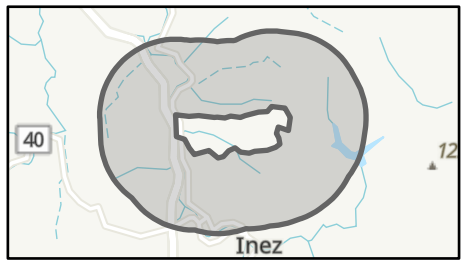
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
17	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Min.		Special Concern	G3	S3	Yes	1992-07		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
48	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	2010-01-14		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
153	Vascular Plants	Coreopsis pubescens var. pubescens	**Star Tickseed**	Sec.		Special Concern	G5? T4T5	S2S3		1989-08-11		BIG SOUTH FORK CUMBERLAND RIVER ON LOW COBBLE BAR ON W BANK 1.8 MI N OF KY-TN STATE LINE, 0.3 MI SW OF TROUBLESOME CK MOUTH.
169	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Min.		Special Concern	G3	S3	Yes	1989-03-25		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
170	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Min.		Special Concern	G3	S3	Yes	1991-09-06		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
245	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	1991-10-22		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
403	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	1981-01-17		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
452	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	1991-07-18		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
483	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	1989-12-06		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
484	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	1990-03-26		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
555	Breeding Birds	Corvus ossifragus	**Fish Crow**	Min.		Special Concern	G5	S3B		1989-04-08		Little Bayou de Chien at KY 94.
630	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Gen.		Special Concern	G3	S3	Yes	1990s-Early		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
683	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Min.		Special Concern	G3	S3	Yes	1996-02-07		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
688	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	2015-10-10		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
876	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	1983-02-17		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
899	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	1996-04-19		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
954	Breeding Birds	Corvus corax	**Common Raven**	Sec.		Threatened	G5	S1S2	Yes	1989-06-23		Big Black Mt, nr head of Trace Branch, ca 4.0 air mi S of Cumberland.
961	Mammals	Corynorhinus rafinesquii		Sec.			G3	S3	Yes	1997-08-07		

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B. Buffer Area - Occurrence Report (12 of 58)

This section details occurrences recorded within the project footprint, as well as the designated buffer area surrounding the project site. While these species are not directly within the project footprint, their proximity may influence project planning due to habitat connectivity or regulatory considerations.

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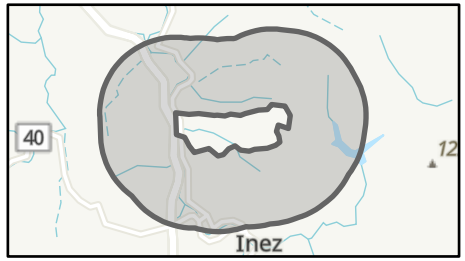
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
1111	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	2019-02-15		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1321	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	1996-08-14		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1343	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	2001-06-24		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1463	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	1996-07-12		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1490	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	1991-06-12		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1547	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	2010-02-02		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1561	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Min.		Special Concern	G3	S3	Yes	1989-01-25		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1562	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	2003-01-17		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1632	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Min.		Special Concern	G3	S3	Yes	1973-04-06		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1660	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	2001-07-16		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1813	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	1988-12-01		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1910	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	1991-07-18		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1911	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	2012-07-14		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1935	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	1999-02-09		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1953	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	1990-02-18		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1954	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	1990-11-28		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1961	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	1983-02-17		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
2092	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	1992-03-18		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
2127	Mammals	Corynorhinus rafinesquii	**Rafinesque's Big-eared Bat**	Sec.		Special Concern	G3	S3	Yes	1993-07-15		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov

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B. Buffer Area - Occurrence Report (13 of 58)

This section details occurrences recorded within the project footprint, as well as the designated buffer area surrounding the project site. While these species are not directly within the project footprint, their proximity may influence project planning due to habitat connectivity or regulatory considerations.

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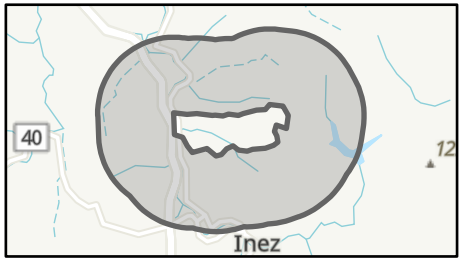
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
3	Vascular Plants	Dalea purpurea	**Purple Prairie-clover**	Sec.		Threatened	G5	S2		2020-05-20	Prairie patches and cedar glades in limestone regions.	RAYMOND ATHEY BARRENS SNP; THE FIRST LARGE LIMESTONE GLADE DIRECTLY E OF THE "Y" IN THE RD (STEVENSON MILL RD AND DENNIS RD) AND CA 250FT OFF THE RD.
255	Vascular Plants	Delphinium carolinianum ssp. calciphilum	**Carolina Larkspur**	Min.		Threatened	G5T2T4	S1S2	Yes	1963-05-12		ALONG US-68, 9.5 MI W OF ST. MAURS BENEDICTINE MONESTARY.
318	Vascular Plants	Dryopteris carthusiana	**Spinulose Wood Fern**	Min.		Special Concern	G5	S3		1982-08-06	Acidic, organic-rich bogs, swamps, less frequently in moist rocky ravines and rich forests (Weakley, 2011).	EDGE OF THICKET AT BASE OF BLUFF ABOVE RIVER. ALONG OHIO RIVER CA 4.0 RIVER MI E OF CONCORD.
336	Insects	Dryobius sexnotatus	**Six-banded Longhorn Beetle**	Sec.		Threatened	GNR	S2		1988-06-18		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
627	Vascular Plants	Cypripedium parviflorum var. parviflorum	**Small Yellow Lady's-slipper**	Min.		Threatened	G5T5?	S2		1922-05	Wet openings in mesic forests.	Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
663	Fishes	Cyprinella venusta	**Blacktail Shiner**	Sec.		Special Concern	G5	S3	Yes	1985-09-01		MISSISSIPPI RIVER AT MILE 942, WEST OF BERKLEY.
740	Vascular Plants	Cypripedium kentuckiense	**Kentucky Lady's-slipper**	Sec.		Endangered	G3	S1S2	Yes	1989-05-29	Mesophytic forests on annually inundated floodplains of mid-sized or rarely large streams in sandy alluvium.	Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
770	Breeding Birds	Dolichonyx oryzivorus	**Bobolink**	Min.		Special Concern	G5	S2S3B	Yes	1988-06-16		N side of Clore-Jackson Road, ca 0.7 mi W of jct w/ KY 55, on either side of driveway to large farmhouse, 1.5 mi NNW of Pleasant View Church (004A); along Cropper Road, ca 0.4 mi N of jct w/ Belleview Road (Pleasureville BBS rt, stop 7) (004B), and Pleasu
880	Vascular Plants	Cypripedium kentuckiense	**Kentucky Lady's-slipper**	Min.		Endangered	G3	S1S2	Yes	1948-11-25	Mesophytic forests on annually inundated floodplains of mid-sized or rarely large streams in sandy alluvium.	Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
900	Vascular Plants	Didiplis diandra	**Water-purslane**	Gen.		Endangered	G3G4	S1S2		1975-06-10	Shallow waters, margins of sloughs, ponds, and slow streams. In Ky., it appears to be associated with large old mature oxbow lakes and ponds, which may draw down substantially in the summer.	ALONG E SIDE OF KY 121 NEAR THE CARLISLE-BALLARD CO LINE, ABOUT 8 MI SW OF WICKLIFFE, ON FLOODPLAIN OF MAYFIELD CREEK (PLOTTED SE).
921	Vascular Plants	Cypripedium candidum	**Small White Lady's-slipper**	Sec.		Endangered	G3G4	S1	Yes	2023-05-18		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov

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B. Buffer Area - Occurrence Report (14 of 58)

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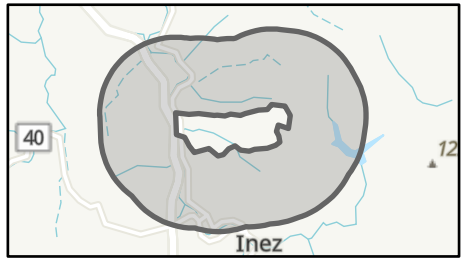
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
157	Fishes	Etheostoma lynceum	**Brighteye Darter**	Sec.		Endangered	G5	S1	Yes	2007-10-02		TERRAPIN CREEK, 0.4 MI W KY 97 ON CARL BROWN RD.
202	Fishes	Etheostoma proeliare	**Cypress Darter**	Sec.		Threatened	G5	S2	Yes	1994-03-23		RUNNING SLOUGH AT KY 1282 BRDG S OF LEDFORD; CA 11.3 AIR KM WSW OF HICKMAN.
270	Fishes	Etheostoma lynceum	**Brighteye Darter**	Sec.		Endangered	G5	S1	Yes	2001-09-05		004A: TRIBUTARY TO TERRAPIN CREEK EXTENDING THROUGH THE SPRING-FED WETLAND ADJ TO TERRAPIN CREEK; CA 1.4 KM S OF KY 97 - KY 1485 JCT AT BELL CITY. 004B: Terrapin Creek UT off KY 97; wetland and tributary 0.8 mi SE of Bell City
320	Vascular Plants	Edrastima uniflora	**Clustered Bluets**	Min.		Threatened	G5	S2?		1988-09-13	Moist sandy soils, swampy ground, shallow water and mud flats of sloughs and reservoirs, and along creeks.	Hickman Rd at Three Ponds.
328	Fishes	Etheostoma parvipinne	**Goldstripe Darter**	Min.		Endangered	G4G5	S1	Yes	1978-07-21		Sugar Creek, 3.2 km NE Pottertown.
329	Fishes	Erimyzon sucetta	**Lake Chubsucker**	Sec.		Threatened	G5	S2	Yes	1986-08		MURPHY'S POND NEAR CLINTON.
427	Vascular Plants	Edrastima uniflora	**Clustered Bluets**	Sec.		Threatened	G5	S2?		2022-07-20	Moist sandy soils, swampy ground, shallow water and mud flats of sloughs and reservoirs, and along creeks.	LAND BETWEEN THE LAKES, NEAR MOUTH OF JONES CR (005A).
631	Fishes	Etheostoma proeliare	**Cypress Darter**	Min.		Threatened	G5	S2	Yes	1973-10-20		RUNNING SLOUGH, 3.0 KM W HICKMAN.
810	Fishes	Etheostoma proeliare	**Cypress Darter**	Sec.		Threatened	G5	S2	Yes	1982-05-07		SHAWNEE CREEK AT FISH LAKE ROAD, 4.5 KM WSW OF KY 60-KY 1105 JCT AT BARLOW.
912	Vascular Plants	Erythronium rostratum	**Yellow Troutlily**	Sec.		Special Concern	G5	S3		1990-04-18	Mesic ravine forests.	SLOPES ABOVE KY 1428, 0.5 MI S OF CITY LIMITS OF PAINTSVILLE, N OF KY 302 AT HAGERHILL.
1076	Fishes	Esox niger	**Chain Pickerel**	Min.		Special Concern	G5	S3	Yes	1972-05-28		METROPOLIS LAKE, 4.8 KM N GRAHAMVILLE.
1099	Fishes	Esox niger	**Chain Pickerel**	Gen.		Special Concern	G5	S3	Yes	1987-10		OHIO RIVER, SMITHLAND TAILWATERS NEAR MILE 919.0.
1114	Vascular Plants	Echinodorus berteroi	**Burhead**	Sec.		Threatened	G5	S2		2000-07-16	Ponds, swamps, sloughs and ditches.	WILLOW SLOUGH, IN AG FIELD 0.75 AIR MI WNW OF MILLER.
1125	Mosses	Entodon brevisetus	**Short-stalk Shiny Moss**	Min.		Endangered	G4?	S1		1987-07-25		South side of Poor Fork across from the mouth of Bad Branch.

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B. Buffer Area - Occurrence Report (15 of 58)

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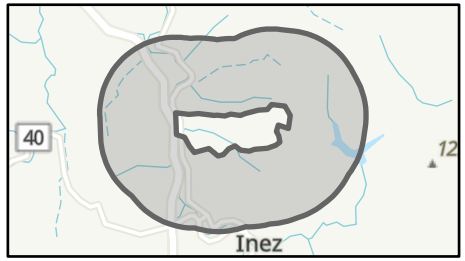
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
77	Reptiles	Farancia abacura reinwardtii	**Western Mudsnake**	Sec.		Special Concern	G5T5	S3	Yes	2013-06-10		Terrapin Creek SNP, Bellville Rd between KY 97 and Terrapin Creek bridge (closer to creek) (013A) and tree farm S of Alderdice Road and W of KY 97 (013B).
278	Fishes	Etheostoma tecumsehi	**Shawnee Darter**	Sec.		Special Concern	G2G3	S2S3	Yes	2001-08-14		BUCK FORK POND RIVER AT KY 107, 15.3 KM ABOVE CONFL W/ POND RIVER AND 3.5 RD MI W OF KIRKMANSVILLE.
324	Crustacean	Faxonius bisectus	**Crittenden Crayfish**	Sec.		Threatened	G1	S1	Yes	1973-03-03		Bob Branch, 3 mi N Marion.
470	Vascular Plants	Fimbristylis puberula var. puberula	**Hairy Fimbristylis**	Min.		Threatened	G5T5	S2		2021-05-26		Pine Creek Barrens, ca 0.8 mi N of jct KY 480 and KY 1604.
495	Vascular Plants	Eubotrys recurvus	**Red-twig Doghobble**	Sec.		Endangered	G4G5	S1		2019-06-27	Moist areas in mountain woods.	Bad Branch, ca 1.0 stream km NE of the mouth of branch (001A); Bad Branch, ca 0.2 air mi N of Crawford's Pond; Right side of trail, just past second opening along edge of cliff (001B); Bad Branch, ca 0.2 air mi NNW of falls, top of W-facing sandstone clif
505	Crustacean	Faxonius burri	**Blood River Crayfish**	Sec.		Threatened	G2	S2	Yes	1999-Pre		PANTHER CREEK AT KY 280.
612	Crustacean	Faxonius burri	**Blood River Crayfish**	Sec.		Threatened	G2	S2	Yes	2008-04-29		WILDCAT CREEK AT KY 280, 12.6 AIR KM E OF MURRAY.
647	Fishes	Etheostoma proeliare	**Cypress Darter**	Gen.		Threatened	G5	S2	Yes	1979-05-14		CREEK [LYLE BRANCH?], 4.0 MI W OF PURCHASE PARKWAY ON I-24.
660	Crustacean	Faxonius lancifer	**Shrimp Crayfish**	Min.		Endangered	G5	S1		1978-07-19		FISH LAKE, 1.0 MI W OF BERKLEY.
767	Vascular Plants	Eurybia saxicastelli	**Rockcastle Aster**	Sec.		Threatened	G3	S2	Yes	2019-08-16	Thickets in transition from open boulder-cobble bars to adjacent slope forest.	Big South Fork River, S bank ca. 1.2 stream mi downstream from mouth of Huling Branch, w/in 10 ft of existing trail at base of slope (015A). Along Big South Fork of the Cumberland River, 0.91mi E of mouth of Huling Branch (015B). On banks of Big South For
883	Vascular Plants	Forestiera ligustrina	**Upland Privet**	Min.		Special Concern	G4G5	S3		1984-10-01	Woods near/on rocky slopes and along streams, in barrens and glades.	US 31W 0.25 mi S of Simpson-Warren County line, roadside on E and W sides of rd (011A)
950	Vascular Plants	Eutrochium steelei	**Steele's Joe-pye-weed**	Sec.		Special Concern	G4	S3		2021-05-12	Cove hardwood and northern hardwood forests, up to at least 1600 m.	LITTLE SHEPHERD TRAIL, 0.4 MI W OF SHELL GAP.
986	Fishes	Etheostoma tecumsehi	**Shawnee Darter**	Sec.			G2G3	S2S3	Yes	2001-06-20		

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B. Buffer Area - Occurrence Report (16 of 58)

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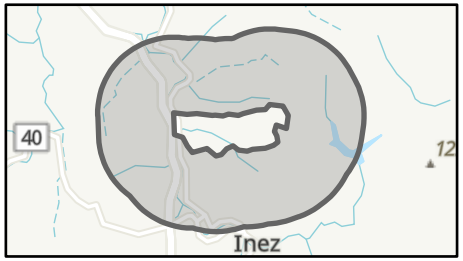
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
2	Snails	Fumonelix wetherbyi	**Clifty Covert**	Sec.		Special Concern	G2G3	S2		1996-11-26		CA 0.4 MI S OF KY 92/KY 1363 JCT ON W SIDE OF KY 1363.
35	Vascular Plants	Gentiana flavida	**Yellow Gentian**	Sec.		Threatened	G4	S2	Yes	1987-10-22	Reported in meadows and damp woods; in KY, prairies and open woodlands.	EAST SIDE OF SR 165 ABOUT 0.2-0.3 MI N OF JCT WITH US 68.
168	Vascular Plants	Gratiola viscidula	**Short's Hedgehyssop**	Sec.		Threatened	G4G5	S2		1991-05-19	Open wetlands, alluvial forests, wet streambanks.	CHARLEY CHEEKS SWAMP, CA 0.75 RD MI E OF JCT KY 488 AND KY 80. CA 0.15 AIR MI S OF KY 80.
171	Vascular Plants	Glyceria acutiflora	**Sharp-scaled Manna-grass**	Sec.		Endangered	G5	S1S2		1989-10-02	Shallow water and wet mucky soils in mountain ponds, wet pastures (Weakley 1998); muddy pools and pond margins.	MCCLOWN MTN, CA 0.75 MI SW OF PEAK IN POND ON NW SIDE OF KY 90 CA 4.1 RD MI SW OF BEAVER CK.
187	Vascular Plants	Gentiana flavida	**Yellow Gentian**	Min.		Threatened	G4	S2	Yes	1892-09-10	Reported in meadows and damp woods; in KY, prairies and open woodlands.	CIRCA 0.25 MI FROM YOUNGS FERRY, 13 MI N OF BOWLING GREEN.
533	Vascular Plants	Gymnopogon ambiguus	**Bearded Skeleton-grass**	Min.		Threatened	G4	S2		1982-09-29	Dry sandy openings, prairies, glades, barrens, dry woodlands.	CRAPPIE HOLLOW DEVELOPMENT, INC. ON KY 614.
602	Snails	Fumonelix wetherbyi	**Clifty Covert**	Min.		Special Concern	G2G3	S2		1996-03-29		PINE MOUNTAIN STATE RESORT PARK NEAR LIMESTONE GAP.
621	Fishes	Fundulus dispar	**Starhead Topminnow**	Min.		Endangered	G4	S1	Yes	1982-04-25		Reelfoot Lake, northern end at KY 1282.
727	Vascular Plants	Gentiana decora	**Showy Gentian**	Sec.			G4?	S3S4		1951-09-10	Moist woods and openings on mountain summits.	BLACK MOUNTAIN.
818	Vascular Plants	Gymnopogon ambiguus	**Bearded Skeleton-grass**	Sec.		Threatened	G4	S2		2023-09-22	Dry sandy openings, prairies, glades, barrens, dry woodlands.	WEST SIDE OF RT 751, APPROX 0.25 MI N OF THE RAILROAD CROSSING.(008A); East side of Rt 751, along roadcut and scattered in powerline.(008B);
942	Breeding Birds	Gallinula galeata	**Common Gallinule**	Min.		Threatened	G5	S1S2B		1935-08-06		McElroy Lake, approx. 1 mi S of Rich Pond.
1003	Vascular Plants	Gentiana puberulenta	**Prairie Gentian**	Sec.		Endangered	G4G5	S1	Yes	1997-10	Dry calcareous prairies (cedar glades), barrens and sandy ridges.	CA 0.6 RD MI SW OF OLD STEPHENSBURG, IN POWERLINE ROW ON N AND S SIDE OF EASTVIEW ROAD.
1194	Snails	Glyphyalinia rhoadsi	**Sculpted Glyph**	Sec.		Threatened	G5	S2		1981-07-30		BIG BLACK MOUNTAIN ALONG KY 160 AT LYNCH RECREATION CENTER, FLOODPLAIN OF LOONEY CR (STN 29).
1309	Vascular Plants	Gentiana puberulenta	**Prairie Gentian**	Sec.		Endangered	G4G5	S1	Yes	2022-10-04	Dry calcareous prairies (cedar glades), barrens and sandy ridges.	Eastview Barrens, ca 0.8 mi NNE of Eastview.
1405	Vascular Plants	Glyceria acutiflora		Gen.		Endangered	G5	S1S2		No Date		CAVE CITY.

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B. Buffer Area - Occurrence Report (17 of 58)

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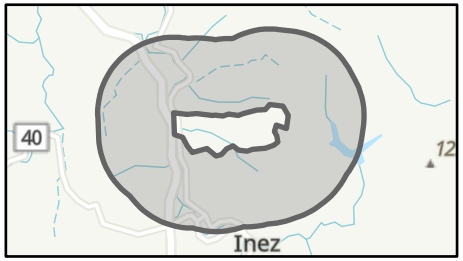
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
135	Amphibians	Hyla avivoca	**Bird-voiced Treefrog**	Sec.			G5	S3S4	Yes	2001-05-02		Southeast end of floodplain slough, just N of Ky Dam Village State Park next to Ky Div of Forestry nursery.
222	Vascular Plants	Halesia tetraptera	**Common Silverbell**	Sec.		Special Concern	G5	S3		2024-04-08		METROPOLIS LAKE SNP; SW END OF METROPOLIS LAKE, CA 0.3 AIR MI E OF POWERPLANT LOCATED OFF OF KY 996.
244	Amphibians	Hyla avivoca	**Bird-voiced Treefrog**	Sec.			G5	S3S4	Yes	1991-05-22		Pond Bayou, from E end at KY 268 (006B) to W end nr St Johns Church (006A) and at least one point in between nr Clay Cemetery (006C).
251	Fishes	Hybognathus hayi	**Cypress Minnow**	Min.		Endangered	G4G5	S1	Yes	1979-03-09		BAYOU DE CHIEN, 3 MI S OF FOLGHOM (FULGHAM) ON KY 307.
273	Fishes	Hybognathus hayi	**Cypress Minnow**	Min.		Endangered	G4G5	S1	Yes	1973-06-19		Mud Creek at SR 94, 6.4 km E of Hickman.
275	Fishes	Hybognathus hayi	**Cypress Minnow**	Min.		Endangered	G4G5	S1	Yes	1966-06-14		OBION CREEK AT US 51, 3 MI S OF ARLINGTON.
370	Fishes	Hybognathus hayi	**Cypress Minnow**	Min.		Endangered	G4G5	S1	Yes	1972-09-09		Samson Creek at SR 1129, 4.8 km NW of Cayce.
828	Fishes	Hybopsis amnis	**Pallid Shiner**	Gen.		Endangered	G4	S1	Yes	1986-pre		GREEN RIVER (UPSTREAM FROM THE ROUGH RIVER CONFLUENCE).
842	Snails	Helicodiscus notius specus	**A Terrestrial Snail**	Sec.		Threatened	G5T2	S1		1956-11-18		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1013	Vascular Plants	Hydrophyllum virginianum var. virginianum	**Eastern Waterleaf**	Min.		Threatened	G5T5	S2		1979-05-10	Moist or wet woods, open wet places.	CANE CREEK WILDLIFE MANAGEMENT AREA, OFF RT 192, LAUREL-PULASKI CO LINE ALONG ROCKCASTLE RIVER. DROVE ALONG RIVER, THEN BECOMES PATH [CANE CREEK TRAIL], WALK UP CANE CR.
1047	Vascular Plants	Halesia tetraptera	**Common Silverbell**	Sec.		Special Concern	G5	S3		1974		BEAVER CREEK WMA, CANE BRANCH BASIN, CA 1.3 MI W OF PLEASANT KNOB CHURCH IN UPLANDS ABOVE OLD STRIP MINE.
1112	Vascular Plants	Hydrocotyle americana	**American Water-pennywort**	Sec.		Endangered	G5	S1		1987-07-07	Bogs, marshes, seepages, cliffs and ledges where wet by seepage or spray from waterfalls (Weakley 1998); meadows, damp woods.	Natural Arch (Braun). in seepy areas along banks of small feeder stream of Spruce Creek between two unnamed ridges to west and north of Natural Arch (Medley and Campbell, 1987).

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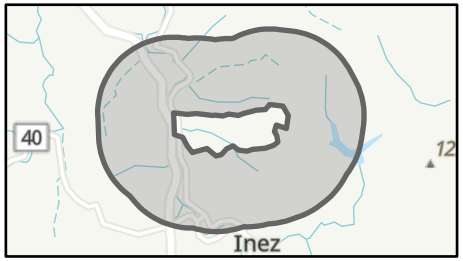
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
52	*Amphibians*	*Hyla gratiosa*	**Barking Treefrog**	*Sec.*			*G5*	*S3S4*	*Yes*	*1997-06-17*		*Oakville, S side of KY 2371 [KY 739 on topo map], 0.3 rd mi W of US 431 [KY 75 on topo].*
81	*Amphibians*	*Hyla gratiosa*	**Barking Treefrog**	*Sec.*			*G5*	*S3S4*	*Yes*	*2008-06-04*		*South side of Lonnie Walker Rd, ca 1.0 air mi E jct KY 287 (009A & 009B) and several other ponds w/i 1.0-1.5 mi to the S, SW, and W (unmapped).*
82	*Amphibians*	*Hyla gratiosa*	**Barking Treefrog**	*Sec.*			*G5*	*S3S4*	*Yes*	*1997-06-18*		*Zion Hope-Herndon Rd [Lonnie Walker Rd on county map], 5.0 km W of its jct w/ KY 107 [117] (010A) and S side of Zion Hope-Herndon Rd, w/i 0.75 mi of jct w/ Jago Thomas Rd (010B and 010C).*
159	*Fishes*	*Ichthyomyzon fossor*	**Northern Brook Lamprey**	*Gen.*		*Threatened*	*G4*	*S2*	*Yes*	*1956-04-13*		*Johns Creek below Dewey Dam.*
429	*Amphibians*	*Hyla versicolor*	**Gray Treefrog**	*Sec.*		*Special Concern*	*G5*	*S2S3*	*Yes*	*1998-06-25*		*Big Spring, E side KY 333 ca 0.5 rd mi N of jct KY 220 (022A), S side KY 333, ca. 0.5 rd mi W of jct KY 2199 (022B), and N side KY 333, 1.1 rd mi W of jct KY 2199 (022C).*
472	*Fishes*	*Ichthyomyzon fossor*	**Northern Brook Lamprey**	*Sec.*		*Threatened*	*G4*	*S2*	*Yes*	*1998-11-09*		*MIDDLE FORK RED RIVER JUST ABOVE COW CREEK (SITE 49).*
518	*Fishes*	*Ichthyomyzon fossor*	**Northern Brook Lamprey**	*Sec.*		*Threatened*	*G4*	*S2*	*Yes*	*1999-04-25*		*SOUTH FORK STATION CAMP CREEK AT UNNAMED TRIB CA 1.0 R KM ABOVE MOUTH.*
534	*Amphibians*	*Hyla gratiosa*	**Barking Treefrog**	*Sec.*			*G5*	*S3S4*	*Yes*	*1983-06-21*		*East corner of the jct of Snaden Mill Rd and US 79.*
556	*Fishes*	*Ichthyomyzon fossor*	**Northern Brook Lamprey**	*Sec.*		*Threatened*	*G4*	*S2*	*Yes*	*1986-04-17*		*Middle Fork Red River at Mountain Parkway at Slade.*
863	*Amphibians*	*Hyla gratiosa*	**Barking Treefrog**	*Sec.*			*G5*	*S3S4*	*Yes*	*2000-05-27*		*Circa 190 m S of KY 730, 0.8 km W of KY 903 (033A), just W of jct KY 903 and KY 730 (033B, 033C, 033D, 033E), and Eddy Creek Rd at Oliver Cemetery Rd (033F).*
1086	*Amphibians*	*Hyla versicolor*	**Gray Treefrog**	*Sec.*		*Special Concern*	*G5*	*S2S3*	*Yes*	*1989-06-08*		*Four Corners, on W side of KY 920, just S of jct KY 220.*
1138	*Amphibians*	*Hyla gratiosa*	**Barking Treefrog**	*Sec.*			*G5*	*S3S4*	*Yes*	*1980s*		*Circa 0.25 mi W of KY 139, ca 2.0 rd mi S of jct KY 293 in Princeton (040A) and ca 0.2 air mi NW of 040A (040B).*
1250	*Fishes*	*Ichthyomyzon castaneus*	**Chestnut Lamprey**	*Min.*		*Special Concern*	*G4*	*S2*	*Yes*	*1960-pre*		*Ohio River at Joppa, Illinois.*

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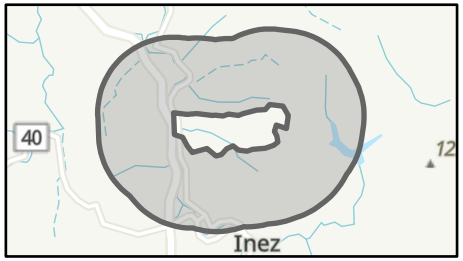
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
74	*Vascular Plants*	*Juniperus communis var. depressa*	**Ground Juniper**	*Sec.*		*Endangered*	*G5T5*	*S1*		*1992-09-26*	*Sandy cliff edges and in adjacent pine-oak woodlands (Medley 1993).*	*BOLTHOUSE RIDGE BETWEEN LAUREL FK AND DRY FK, CA 0.9 AIR MI NW OF MOUTH OF CLIFTY CR.*
87	*Communities*	*Kalmia latifolia - Rhododendron catawbiense - (Gaylussacia baccata, Pieris floribunda, Vaccinium corymbosum) Shrubland*	**Cumberland Mountains xeric pine outcrop**	*Sec.*		*Special Concern*	*G2G3*	*S3*		*1999-10-21*		*Pine Mountain, at the headwaters of Nolan Branch.*
92	*Fishes*	*Ictiobus niger*	**Black Buffalo**	*Sec.*		*Special Concern*	*G5*	*S3*		*1982-06-24*		*UNNAMED LAKE ON KENTUCKY POINT, 5.65 KM N OF MADRID BEND CHURCH, 8.0 KM N ON KY 313 FROM FULTON-LAKE CO LINE.*
223	*Fishes*	*Ictiobus niger*	**Black Buffalo**	*Min.*		*Special Concern*	*G5*	*S3*		*1997-09-30*		*Ohio River near Golconda.*
310	*Fishes*	*Ictiobus niger*	**Black Buffalo**	*Sec.*		*Special Concern*	*G5*	*S3*		*1992-09-22*		*OHIO RIVER NEAR TANNERS CREEK GENERATING STATION BETWEEN CA ORM 494.2 AND 493.2.*
576	*Fishes*	*Ichthyomyzon fossor*	**Northern Brook Lamprey**	*Sec.*		*Threatened*	*G4*	*S2*	*Yes*	*1998-05-20*		*LITTLE FORK LITTLE SANDY RIVER CA 1.4 STREAM KM UPSTREAM FROM JOHNS RUN AT FORD.*
676	*Fishes*	*Ictiobus niger*	**Black Buffalo**	*Min.*		*Special Concern*	*G5*	*S3*		*1997-09-07*		*MISSISSIPPI RIVER NEAR COLUMBUS BELMONT STATE PARK.*
761	*Fishes*	*Ictiobus niger*	**Black Buffalo**	*Min.*		*Special Concern*	*G5*	*S3*		*1976*		*Ohio River Lock #50.*
785	*Breeding Birds*	*Ictinia mississippiensis*	**Mississippi Kite**	*Min.*		*Special Concern*	*G5*	*S2S3B*		*1990-06-28*		*CW BLOCK OF QUADRANGLE.*
787	*Breeding Birds*	*Ictinia mississippiensis*	**Mississippi Kite**	*Min.*		*Special Concern*	*G5*	*S2S3B*		*1990-06*		*CW BLOCK OF QUADRANGLE.*
956	*Communities*	*Juniperus virginiana / Schizachyrium scoparium - Silphium terebinthinaceum var. luciae-brauniae - Carex juniperorum - Castilleja coccinea Wooded Grassland*	**Bluegrass Cat Prairie**	*Sec.*		*Endangered*	*G1Q*	*S1*		*2020-05-07*		*Hughes Knob, ca 0.7 air mi NNE of East Fork Church (007A). ca 1.01 mi NE of East Fork Church (007B). ca 0.99 mi N of East Fork Church (007C). ca 1.09 mi N of East Fork Church (007D). ca 1.14 mi NW of East Fork Church (007E).*
1085	*Reptiles*	*Lampropeltis elapsoides*	**Scarlet Kingsnake**	*Sec.*		*Endangered*	*G5*	*S1*		*2003-pre*		

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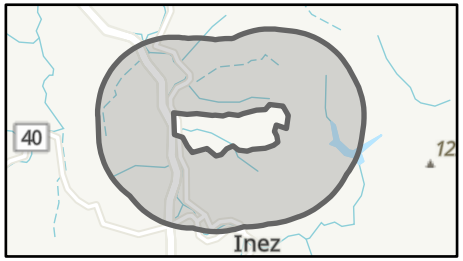
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
44	Freshwater Mussels	Leaunio lienosus	**Little Spectaclecase**	Gen.		Threatened	G5	S2S3	Yes	1966-07-04		Licking River, 5.3 km WNW of Index.
99	Freshwater Mussels	Leaunio lienosus	**Little Spectaclecase**	Min.		Threatened	G5	S2S3	Yes	1983-10-06		DIX RIVER CA 3.2 KM DOWNSTREAM FROM KY 39 BRIDGE AT ISLAND.
107	Vascular Plants	Lathyrus palustris	**Vetchling Peavine**	Sec.		Threatened	G5	S2		2010-07-15	Wet meadows, swamps, wet woods; in KY, boulder cobble bars along creeks and rivers, and known from a roadside near a railroad (Medley).	SOUTH-FACING BANK OF TYGARTS CREEK ACROSS FROM CASCADE CAVERNS STATE NATURE PRESERVE, JUST UPSTREAM FROM FORD.
289	Freshwater Mussels	Leaunio lienosus	**Little Spectaclecase**	Sec.		Threatened	G5	S2S3	Yes	1988-09-23		STATION CAMP CREEK AT FORD AT ALMBAUGH, 7.8 MI S OF IRVINE.
325	Freshwater Mussels	Lampsilis ovata	**Pocketbook**	Min.		Endangered	G5	S1	Yes	1981-07-28		GREEN RIVER AT RIO.
399	Freshwater Mussels	Lampsilis ovata	**Pocketbook**	Sec.		Endangered	G5	S1	Yes	2014-07-29		Green River: mile 211.5, at and around island ca 600 meters downstream of WKU Bioreserve canoe launch (102A); shoal above island ca 1 km upstream of WKU Bioreserve canoe launch (102B).
530	Freshwater Mussels	Lasmigona compressa	**Creek Heelsplitter**	Min.		Endangered	G5	S1	Yes	1977-06		Tygarts Creek, Greenup County: co road 1215, 1.12 km SE of covered bridge connecting KY 1215 with KY 7 (001A).
563	Freshwater Mussels	Leaunio lienosus	**Little Spectaclecase**	Min.		Threatened	G5	S2S3	Yes	1959-09-12		NORTH FORK OF KENTUCKY RIVER, FROZEN CREEK POST OFFICE.
669	Freshwater Mussels	Leaunio lienosus	**Little Spectaclecase**	Cnty.		Threatened	G5	S2S3	Yes	1900-Pre		NO SPECIFIC LOCALITY DATA GIVEN, HOWEVER MOST SHELLS COLLECTED BY PRICE ARE FROM WARREN CO.
741	Freshwater Mussels	Leaunio lienosus	**Little Spectaclecase**	Sec.		Threatened	G5	S2S3	Yes	2007-07-31		SOUTH FORK LITTLE BARREN RIVER AT KY 543.
797	Vascular Plants	Lathyrus venosus	**Smooth Veiny Peavine**	Sec.		Special Concern	G5	S2S3		1991-04-19	Dry to mesic slopes, especially in base-rich soils.	RIDGE AT HEAD OF SPRING BRANCH CA 1.9 AIR MI W OF BRECKINRIDGE MEMORIAL PARK (009A). RIDGE AT HEAD OF SPRING BRANCH CA 1.9 AIR MI W OF BRECKINRIDGE MEMORIAL PARK. (009B, 371608N, 832512W; 009C, 371606N, 832505W). Approx. 275m NW of end of Trace Branch (00

Map Credits: Commonwealth of Kentucky, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

B. Buffer Area - Occurrence Report (21 of 58)

This section details occurrences recorded within the project footprint, as well as the designated buffer area surrounding the project site. While these species are not directly within the project footprint, their proximity may influence project planning due to habitat connectivity or regulatory considerations.

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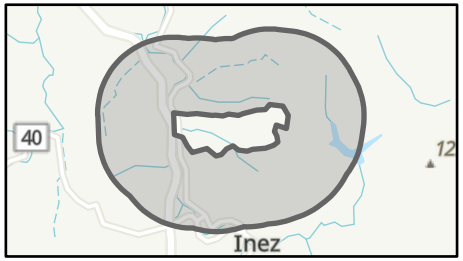
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
95	Freshwater Mussels	Leaunio vanuxemensis	**Mountain Creekshell**	Sec.		Endangered	G4	S1S2	Yes	2003-04-29		Rock Bridge Branch, Christian County: at US 41A (030A).
125	Fishes	Lepomis miniatus	**Redspotted Sunfish**	Min.		Threatened	G5	S2	Yes	1979-06-13		STRAIGHT SLOUGH/BACK SLOUGH AT LAKETON.
298	Freshwater Mussels	Leaunio vanuxemensis	**Mountain Creekshell**	Cnty.		Endangered	G4	S1S2	Yes	1900-Pre		Kentucky, possibly Lexington or Warren County (025A).
441	Freshwater Mussels	Leaunio vanuxemensis	**Mountain Creekshell**	Sec.		Endangered	G4	S1S2	Yes	No date		Red River, Logan County: at Mason-Emmanuel Road bridge, 1.1 mi E DOT, 1.0 mi SW Schley, ca 11.5 mi S Russellville (019A).
442	Freshwater Mussels	Leaunio vanuxemensis	**Mountain Creekshell**	Sec.		Endangered	G4	S1S2	Yes	1988-06-14		Red River, Logan County: below remains of Mill Dam, 1.75 mi SSW of DOT (020A).
474	Freshwater Mussels	Leaunio vanuxemensis	**Mountain Creekshell**	Sec.		Endangered	G4	S1S2	Yes	1982-08-13		Red River, Logan County: at SR 1041 bridge at DOT (011A).
598	Vascular Plants	Leavenworthia torulosa	**Necklace Gladecress**	Sec.		Threatened	G4	S2	Yes	1987-11-24	Limestone glades and other thin-soil areas where limestone bedrock is at or near surface, holding water in spring.	WEST SIDE OF SR 1435 (BARREN RIVER ROAD), APPROX. 0.2 MI N OF POSEY LANE (BILL DEDMAN ROAD).
699	Fishes	Lepomis miniatus	**Redspotted Sunfish**	Sec.		Threatened	G5	S2	Yes	2001-06-20		WEST FORK POND RIVER 0.1 MI ABOVE RALSTON RD- J.P. GRACE RD.
715	Fishes	Lepomis miniatus	**Redspotted Sunfish**	Sec.		Threatened	G5	S2	Yes	1997-03		LITTLE BAYOU CK AT KY 358 (SITE 12).
930	Fishes	Lepomis marginatus	**Dollar Sunfish**	Min.		Endangered	G5	S1	Yes	1984-08-25		EAST FORK CLARKS RIVER BETWEEN ELVA-SHARPE AND BRYANT (BRYAN) FORD ROAD BRIDGES.
1091	Fishes	Lepomis miniatus	**Redspotted Sunfish**	Min.		Threatened	G5	S2	Yes	1974-10-04		Hurricane Creek, 3.0 air mi SE of Blandville.
1133	Vascular Plants	Leavenworthia torulosa	**Necklace Gladecress**	Sec.		Threatened	G4	S2	Yes	1987-11-24	Limestone glades and other thin-soil areas where limestone bedrock is at or near surface, holding water in spring.	WEST SIDE OF BRUSH CREEK, APPROX. 0.5 MI S OF SR 1083.
1328	Vascular Plants	Leavenworthia torulosa	**Necklace Gladecress**	Gen.		Threatened	G4	S2	Yes	1970-04-13	Limestone glades and other thin-soil areas where limestone bedrock is at or near surface, holding water in spring.	About 15 km SW of Bowling Green on US-31W.
1443	Freshwater Mussels	Leaunio lienosus	**Little Spectaclecase**	Sec.		Threatened	G5	S2S3	Yes	1993-09-17		ROUGH RIVER AT KY 84.
1502	Freshwater Mussels	Leaunio lienosus	**Little Spectaclecase**	Min.		Threatened	G5	S2S3	Yes	1983-09-01		

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B. Buffer Area - Occurrence Report (22 of 58)

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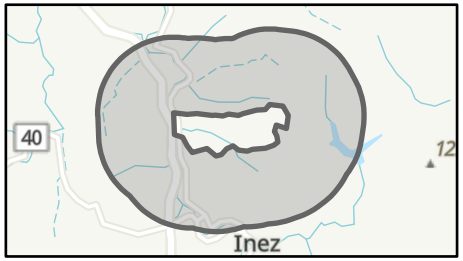
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
70	Fishes	Lethenteron appendix	**American Brook Lamprey**	Sec.		Threatened	G4	S2	Yes	1998-10-23		STURGEON CREEK 4.8 KM W OF STURGEON AT KY 1071 BRDG.
243	Fishes	Lethenteron appendix	**American Brook Lamprey**	Gen.		Threatened	G4	S2	Yes	1956-04-13		Johns Creek below Dewey Dam.
268	Snails	Lithasia armigera	**Armored Rocksnail**	Sec.		Special Concern	G3G4	S3S4		1981		CUMBERLAND RIVER AT MILE 26.9.
345	Vascular Plants	Lilium superbum	**Turk's Cap Lily**	Sec.		Threatened	G5	S1S2		1999-10-01	Moist meadows, moist/wet woods including floodplains and coves	Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
410	Vascular Plants	Lilium superbum	**Turk's Cap Lily**	Min.		Threatened	G5	S1S2		2013-06-05	Moist meadows, moist/wet woods including floodplains and coves	Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
457	Vascular Plants	Lilium philadelphicum var. philadelphicum	**Wood Lily**	Sec.		Threatened	G5T4T5	S2S3	Yes	2017-06-15		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
593	Fishes	Lethenteron appendix	**American Brook Lamprey**	Min.		Threatened	G4	S2	Yes	1956-10-24		LEWIS FORK AT MOUTH OF RUSSELL FORK NEAR MILLARD (MAPPED AT LEVISA FORK).
597	Vascular Plants	Lilium philadelphicum var. philadelphicum	**Wood Lily**	Min.		Threatened	G5T4T5	S2S3	Yes	1940-06-23		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
615	Vascular Plants	Lespedeza capitata	**Round-head Bush-clover**	Gen.		Special Concern	G5	S3		1988-10-13	Prairie patches on limestone.	SOMERSET BYPASS.
813	Vascular Plants	Lilium superbum	**Turk's Cap Lily**	Sec.		Threatened	G5	S1S2		1995-07-26	Moist meadows, moist/wet woods including floodplains and coves	Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
982	Fishes	Lethenteron appendix	**American Brook Lamprey**	Sec.		Threatened	G4	S2	Yes	1998-10-17		RED RIVER AT SHORT CREEK (SITE 70).
984	Fishes	Lethenteron appendix	**American Brook Lamprey**	Sec.		Threatened	G4	S2	Yes	2002-03-15		Green River mile 231.8.
1020	Vascular Plants	Lilium philadelphicum var. philadelphicum	**Wood Lily**	Sec.		Threatened	G5T4T5	S2S3	Yes	2018-06-20		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1105	Snails	Lithasia armigera	**Armored Rocksnail**	Sec.		Special Concern	G3G4	S3S4		1978		TENNESSEE RIVER MILE 17.8.
1230	Vascular Plants	Lilium superbum	**Turk's Cap Lily**	Sec.		Threatened	G5	S1S2		1995-07-26	Moist meadows, moist/wet woods including floodplains and coves	Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1415	Vascular Plants	Lilium philadelphicum var. philadelphicum	**Wood Lily**	Sec.		Threatened	G5T4T5	S2S3	Yes	2010-06		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1653	Vascular Plants	Lilium philadelphicum var. philadelphicum	**Wood Lily**	Sec.		Threatened	G5T4T5	S2S3	Yes	1998-06-09		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1694	Vascular Plants	Limnobium spongia	**American Frog's-bit**	Min.		Threatened	G4	S2S3		1962-07-14	Ponds, bayous, stagnant water.	SWAN LAKE (POND).
1892	Vascular Plants	Lilium philadelphicum var. philadelphicum	**Wood Lily**	Sec.		Threatened	G5T4T5	S2S3	Yes	2010		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov

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B. Buffer Area - Occurrence Report (23 of 58)

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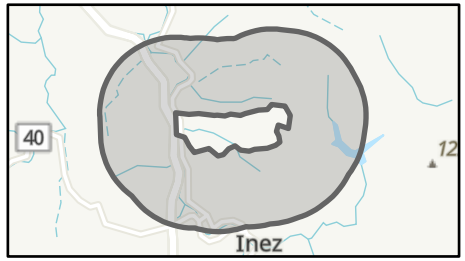
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
51	Amphibians	Lithobates pipiens	**Northern Leopard Frog**	Sec.		Special Concern	G5	S3		1998-04-07		Kentucky River floodplain terrace, ca 200 yds E of KY 389 at county line.
339	Amphibians	Lithobates areolatus circulosus	**Northern Crawfish Frog**	Sec.		Special Concern	G4T4	S3		1991-03-21		East side KY 1684, ca 1.7 rd mi S of Hardmoney.
423	Amphibians	Lithobates areolatus circulosus	**Northern Crawfish Frog**	Min.		Special Concern	G4T4	S3		1963-03-18		4.0 mi N of Fulgham.
550	Snails	Lithasia verrucosa	**Varicose Rocksnail**	Sec.		Special Concern	G4	S3S4		1978		TENNESSEE RIVER MILE 15.0.
574	Snails	Lithasia geniculata	**Ornate Rocksnail**	Sec.		Special Concern	GNR	S1		1978		TENNESSEE RIVER MILE 8.2.
682	Amphibians	Lithobates pipiens	**Northern Leopard Frog**	Sec.		Special Concern	G5	S3		2000-03-23		Catalpa Loop Rd, 0.6 rd mi SW jct KY 52.
832	Amphibians	Lithobates pipiens	**Northern Leopard Frog**	Sec.		Special Concern	G5	S3		1999-04-04		West side of Lloyd Rd, 1.4 rd mi NE of jct KY 227 at Great Crossing (035A) and farther N (up to 1/4 mi?) of Lloyd Rd from 381420.7N/ 843552.6W (035B).
847	Snails	Lithasia verrucosa	**Varicose Rocksnail**	Sec.		Special Concern	G4	S3S4		1988-06-02		OHIO RIVER IMMEDIATELY DOWNSTREAM FROM DAM NO 53, CA 200 YDS FROM THE KENTUCKY SHORE, 2.9 MI ENE OF OLMSTED, ILL.
1012	Amphibians	Lithobates areolatus circulosus	**Northern Crawfish Frog**	Sec.		Special Concern	G4T4	S3		1991-03-22		Back of Mt Zion Church Cemetery, ca 0.3 rd mi W of jct KY 724 and US 62.
1043	Amphibians	Lithobates pipiens	**Northern Leopard Frog**	Sec.		Special Concern	G5	S3		1999-pre		Tates Creek Pike
1089	Amphibians	Lithobates areolatus circulosus	**Northern Crawfish Frog**	Min.		Special Concern	G4T4	S3		1965-04-15		5 mi SW of Murray City limits, slough nr Clark's River.
1164	Amphibians	Lithobates areolatus circulosus	**Northern Crawfish Frog**	Sec.		Special Concern	G4T4	S3		1967-05-04		2 mi E of Lynnville on gravel rd.
1267	Snails	Lithasia geniculata	**Ornate Rocksnail**	Min.		Special Concern	GNR	S1		1978		TENNESSEE RIVER MI 7.0.
1269	Snails	Lithasia salebrosa	**Muddy Rocksnail**	Sec.		Special Concern	G2G3	S2S4		1978		TENNESSEE RIVER, MILE 17.7-17.8.
1271	Snails	Lithasia verrucosa	**Varicose Rocksnail**	Sec.		Special Concern	G4	S3S4		2001-09-15		MISSISSIPPI RIVER MILE 947.5; POOLS ALONG KY SHORE.
1454	Amphibians	Lithobates pipiens	**Northern Leopard Frog**	Sec.		Special Concern	G5	S3		1998-04-03		

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B. Buffer Area - Occurrence Report (24 of 58)

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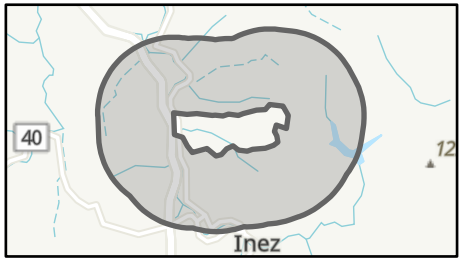
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
322	Vascular Plants	Lonicera dioica var. orientalis	**Wild Honeysuckle**	Sec.		Endangered	G5TNRQ	S1		1998-04-27	Moist woods and thickets, associated with limestone derived soils.	CARTER CAVES STATE RESORT PARK ON ROCKY SLOPES ABOVE SMOKY VALLEY LAKE, ABOUT IN MIDDLE OF SOUTHERN BOUNDARY OF TRACT ALONG FOOT TRAIL.
535	Vascular Plants	Maianthemum canadense	**Wild Lily-of-the-valley**	Sec.		Threatened	G5	S2		1989-05-06	Moist mesophytic woods, mountain and stream terraces, mesic rock faces, and recent clearings.	RED RIVER GORGE, CA 0.2 MI UP FROM MOUTH OF CLIFTY CREEK NEAR MOUTH OF OSBORNE BRANCH (008A). Along Clifty Creek, approx. 381m E of where Clifty Creeks splits from Sarges Branch (008B).
636	Insects	Litobrancha recurvata	**A Burrowing Mayfly**	Min.		Special Concern	G4	S1	Yes	1991-09-28		Bad Branch from KY 932 upstream to the falls.
652	Insects	Maccaffertium bednariki	**A Heptageniid Mayfly**	Sec.		Special Concern	G2G4	S2	Yes	1983-08-01		ROLLING FORK AT GADDYS FORK BRIDGE.
745	Vascular Plants	Lobelia nuttallii	**Nuttall's Lobelia**	Sec.		Threatened	G4G5	S2		1991-08-23	Damp to dry sandy soil, wet meadows, sandy swamps.	CHARLEY CHEEK SWAMP, S OF LAUREL RIVER, CA 0.4 RD MI NE OF JCT SARGENT BR RD AND KY 830, THEN CA 0.2 AIR MI N.
769	Vascular Plants	Lonicera reticulata	**Grape Honeysuckle**	Min.		Threatened	G5	S2		1957-06-11	Rocky woods and banks.	BLUFF ABOVE ELKHORN CREEK, STEADMANTOWN LANE.
886	Insects	Maccaffertium bednariki	**A Heptageniid Mayfly**	Sec.		Special Concern	G2G4	S2	Yes	1998-08-26		MIDDLE FORK KY RIVER AT STINNETT-WENDOVER RD.
904	Vascular Plants	Lobelia gattingeri	**Gattinger's Lobelia**	Sec.		Endangered	G4G5T4	S1	Yes	2007-05-21	Limestone glades and prairies.	WOODBURN GLADE STATE NATURE PRESERVE, E OF US-31W, 0.2 MI N OF WARREN-SIMPSON COUNTY LINE.
946	Vascular Plants	Malus angustifolia	**Southern Crabapple**	Min.			G5?	S3S4		1989-06-27	OPEN DRY - MESIC WOODS AND THICKETS.	RIDGE ABOVE KOGER SPRING CA 2/3 OF THE WAY UP BACKBONE.
947	Vascular Plants	Malus angustifolia	**Southern Crabapple**	Sec.			G5?	S3S4		1989-07-07	OPEN DRY - MESIC WOODS AND THICKETS.	KY-TN STATE LINE, CA 0.1 MI E OF US 27 AND 0.1 MI N OF STATELINE.
975	Vascular Plants	Lithospermum parviflorum	**Hairy False Gromwell**	Gen.		Threatened	G4G5T4	S2		1955-06-13	Dry calcareous rocky or gravelly prairies, banks, glades. dry hills, woods, fields.	SW OF PINCKARD.
1030	Vascular Plants	Malus angustifolia	**Southern Crabapple**	Sec.			G5?	S3S4		1994-06-14	OPEN DRY - MESIC WOODS AND THICKETS.	FORT CAMPBELL MILITARY RESERVATION, CA 1.2 MI N OF LAFAYETTE RD ON E SIDE OF PATTON RD.
1208	Vascular Plants	Lonicera reticulata	**Grape Honeysuckle**	Gen.		Threatened	G5	S2		1991-pre	Rocky woods and banks.	Muldraugh's Hill, Hardin Co.

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B. Buffer Area - Occurrence Report (25 of 58)

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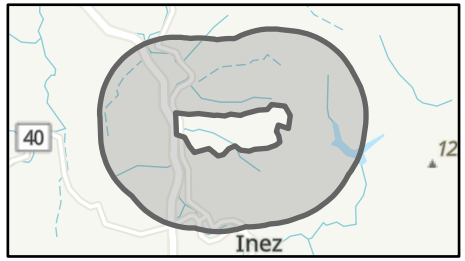
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
23	Fishes	Menidia audens	**Mississippi Silverside**	Min.		Threatened	G5	S2		1990-07-23		CUMBERLAND RIVER MI 74.5, BARKLEY RESERVOIR, KY/TN BORDER.
116	Insects	Manophylax butleri	**Bottle Cap Caddisfly**	Sec.		Special Concern	G2	S2	Yes	1989		CUMBERLAND FALLS STATE PARK NATURE PRESERVE, ALONG UNNAMED TRIB TO THE CUMBERLAND R BETW EAGLE CR AND FALLS BR UPSTREAM OF WHERE TRAIL 9 CROSSES THE TRIB; CA 0.4 AIR KM NW OF CUMBERLAND FALLS.
166	Vascular Plants	Malvastrum hispidum	**Hispid Falsemallow**	Min.		Threatened	G3G5	S2		1990-ca	Dry open non-wooded areas such as prairies, both limestone and sandstone, glades, edges of bluffs, and barrens, sometimes open alluvial ground in valleys and along gravel bars (Steyermark 1963 in part); in KY, old fields.	Raven Run Nature Sanctuary.
191	Vascular Plants	Micranthes micranthidifolia	**Lettuce-leaf Saxifrage**	Min.		Endangered	G5	S1		1982-pre	Wet banks and rocks in mountain streams.	SPRING-FED CR ALONG WAR FORK NEAR TURKEY FOOT CAMPGROUND.
286	Insects	Manophylax butleri	**Bottle Cap Caddisfly**	Sec.		Special Concern	G2	S2	Yes	1995		MILL SEAT BRANCH WATERSHED CA 0.7 STREAM KM UPSTREAM FROM LEATHERWOOD FORK CONFLUENCE ON N SIDE OF THE STREAM.
391	Vascular Plants	Micranthes micranthidifolia	**Lettuce-leaf Saxifrage**	Min.		Endangered	G5	S1		1999-FA	Wet banks and rocks in mountain streams.	LITTLE BLACK MOUNTAIN; CA 1.0 AIR MI W OF MORRIS GAP (MARGNUM 4), AND CA 0.6 AIR MI W OF DARTY GAP (MARGNUM 5).
448	Vascular Plants	Melanthium woodii	**Wood's Bunchflower**	Sec.		Threatened	G5	S2		2009-05-09	Rich dry or mesic woods.	Sand Ripple Creek, both sides, immediately upstream of Lecompte Bottom Road and bridge of over creek.
461	Insects	Mesamia straminea	**Helianthus Leafhopper**	Sec.		Endangered	GNR	S1	Yes	2000		Eastview Barrens State Nature Preserve.
463	Vascular Plants	Malvastrum hispidum	**Hispid Falsemallow**	Min.		Threatened	G3G5	S2		1982-pre	Dry open non-wooded areas such as prairies, both limestone and sandstone, glades, edges of bluffs, and barrens, sometimes open alluvial ground in valleys and along gravel bars (Steyermark 1963 in part); in KY, old fields.	HWY 33, 0.8 MI W OF JESSAMINE CO LINE.
511	Fishes	Menidia audens	**Mississippi Silverside**	Min.		Threatened	G5	S2				

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B. Buffer Area - Occurrence Report (26 of 58)

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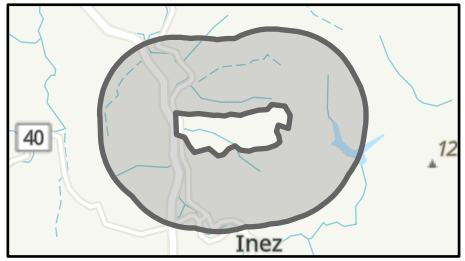
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
190	Mammals	Myodes gapperi maurus	**Kentucky Red-backed Vole**	Sec.		Special Concern	G5T3T4	S3	Yes	1992-09-24		PINE MOUNTAIN, CA 1.3 RD MI E OF JCT KY 2010 AND KY 221, JUST E OF HAIRPIN CURVE IN KY 2010.
274	Mammals	Myotis leibii	**Eastern Small-footed Myotis**	Sec.		Threatened	G4	S2	Yes	1978-08-02		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
585	Mammals	Mustela nivalis	**Least Weasel**	Min.		Special Concern	G5	S2S3		1995-pre		Near the Clay Lick boat ramp.
596	Mammals	Myotis leibii	**Eastern Small-footed Myotis**	Sec.		Threatened	G4	S2	Yes	2003-01-29		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
796	Mammals	Myotis leibii	**Eastern Small-footed Myotis**	Sec.		Threatened	G4	S2	Yes	2018-09-09		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
824	Vascular Plants	Monotropsis odorata	**Sweet Pinesap**	Min.		Threatened	G3	S2	Yes	1953-05-02	Sandstone ridgetops, chiefly pine woods but also mesophytic woods.	SKY BRIDGE SPUR RD.
840	Vascular Plants	Monotropsis odorata	**Sweet Pinesap**	Sec.		Threatened	G3	S2	Yes	1992-01-20	Sandstone ridgetops, chiefly pine woods but also mesophytic woods.	CHESTNUT CLIFFS, 1.5 MI SW OF TATER KNOB, WEST SIDE OF SANDSTONE ARCH.
931	Vascular Plants	Muhlenbergia bushii	**Bush's Muhly**	Gen.		Endangered	G5	S1S2		1971-09-08	Moist woods.	BALLARD COUNTY WILDLIFE MANAGEMENT AREA.
1010	Mammals	Myodes gapperi maurus	**Kentucky Red-backed Vole**	Sec.		Special Concern	G5T3T4	S3	Yes	1978-10-05		1 MI N OF ELK POND, RIVER RIDGE. Also Big Black Mountain (Letcher Co) (unmapped).
1109	Vascular Plants	Myriophyllum heterophyllum	**Broadleaf Water-milfoil**	Min.		Special Concern	G5	S3?		1986-10-08	Ponds, ditches and sluggish streams.	INLAND FROM TENNESSEE RIVER OXBOW, IN SIGHT OF CLARK MEMORIAL BRIDGE, ON US-60.
1242	Mammals	Myotis leibii	**Eastern Small-footed Myotis**	Sec.		Threatened	G4	S2	Yes	1996-09-14		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1290	Vascular Plants	Muhlenbergia cuspidata	**Plains Muhly**	Min.		Threatened	G5	S2		1995-07-24	Barrens.	BLUFF ABOVE LAKE CUMBERLAND, BETWEEN DRY BRANCH AND CUB CREEK (ACCESS BY BOAT).
1371	Vascular Plants	Mirabilis albida	**Pale Umbrella-wort**	Min.		Endangered	G5	S1		1970-06-17	Meadows, grassy openings; In KY, sandy banks of Mississippi River and roadsides.	NEXT TO THE OHIO RIVER ON GAR CREEK ROAD, 0.4[?] MI OFF SR-473.
1398	Mammals	Myotis austroriparius	**Southeastern Myotis**	Sec.		Special Concern	G4	S3	Yes	1999-07-14		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1444	Vascular Plants	Mononeuria glabra	**Appalachian Sandwort**	Sec.		Threatened	G4	S1S2		1989-06-26	Sandstone outcrops associated with mesophytic forest.	RAILROAD FORK, CA 0.9 (AIR) MI S OF FLAT ROCK.
1445	Vascular Plants	Mononeuria glabra	**Appalachian Sandwort**	Sec.		Threatened	G4	S1S2		1989-10-10	Sandstone outcrops associated with mesophytic forest.	

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B. Buffer Area - Occurrence Report (27 of 58)

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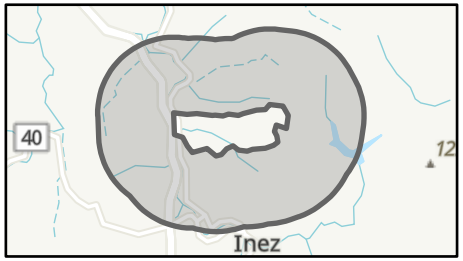
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
151	*Vascular Plants*	*Neottia smallii*	**Kidney-leaf Twayblade**	*Gen.*		*Threatened*	*G4*	*S2*	*Yes*	*1932-06-27*	*Humus of damp woods and thickets, bogs or shaded, weed-free humus below rhododendron on mountain slopes and stream heads.*	*COLLIER'S CR.*
233	*Vascular Plants*	*Myzorrhiza riparia*	**Louisiana Broomrape**	*Min.*		*Historic*	*G4?*	*SH*		*1942-11-27*	*Pastures (Weakley 1998); Chiefly in Sandy Soil (Gleason & Cronquist 1991); In KY, a River Bank.*	*BANKS OF THE OHIO RIVER AT IVOR.*
335	*Mosses*	*Neckera pennata*		*Sec.*		*Threatened*	*G5*	*S2*		*1999-01-29*	*On vertical substances, most commonly on the trunks of trees, sometimes on rock, rarely on logs or stumps, in coniferous forests, often in coves and wind gaps in the mountains (Crum and Anderson). In KY, all in sandstone ravines, usually noted as narrow,*	*Ezel Quad, 1.1 miles north of Dan, Spaws Cr., Rough Branch (001B); Spaws Creek; Rough Branch, 1.1 air mi N of Dan. (001A)*
379	*Fishes*	*Nocomis biguttatus*	**Hornyhead Chub**	*Gen.*		*Special Concern*	*G5*	*S2*		*1961*		*ELKHORN CREEK, about two miles downstream from Fork of Elkhorn.*
436	*Fishes*	*Nothonotus maculatus*	**Spotted Darter**	*Sec.*		*Threatened*	*G3?*	*S2*	*Yes*	*1999-07-23*		*BIG PITMAN CREEK AT BRDG AT THE NARROWS OF PITMAN.*
643	*Snails*	*Neohelix dentifera*	**Big-tooth Whitelip**	*Sec.*		*Threatened*	*G4G5*	*S2*		*1981-07-30*		*BIG BLACK MOUNTAIN ALONG KY 160, 3.9 MI UP MOUNTAIN FROM TRACE BRANCH (STN 34).*
665	*Reptiles*	*Nerodia fasciata confluens*	**Broad-banded Watersnake**	*Sec.*		*Endangered*	*G5T5*	*S1*	*Yes*	*2007-05-21*		*Fish Pond, along shoreline near road (002A) and 0.9 mi W of Sycamore Road at Fish Pond (002B).*
718	*Snails*	*Neohelix dentifera*	**Big-tooth Whitelip**	*Sec.*		*Threatened*	*G4G5*	*S2*		*1981-07-30*		*BIG BLACK MOUNTAIN ALONG TRAIL THAT BEGINS 0.3 MI W RADAR STN, 0.2 MI N OF TRAIL JCT W/ RADAR STN RD (STN 4).*
953	*Fishes*	*Nothonotus maculatus*	**Spotted Darter**	*Sec.*		*Threatened*	*G3?*	*S2*	*Yes*	*2000-06-05*		*LITTLE BARREN RIVER AT SULPHUR WELL.*
1108	*Vascular Plants*	*Nabalus crepidineus*	**Nodding Rattlesnake-root**	*Sec.*			*G4*	*S4*		*1994-08-26*	*Calcareous forests and thickets usually in alluvial areas.*	*1.6 AIR MI SSE OF COXS CREEK ON S BANK OF SULLIVANS RD 0.1 AIR KM E OF FROMAN CREEK.*
1249	*Mosses*	*Neckera pennata*		*Sec.*		*Threatened*	*G5*	*S2*		*1998-02-27*	*On vertical substances, most commonly on the trunks of trees, sometimes on rock, rarely on logs or stumps, in coniferous forests, often in coves and wind gaps in the mountains (Crum and Anderson). In KY, all in sandstone ravines, usually noted as narrow,*	*Upper end of Spaws Creek, 0.7 air mi NW of Dan.*

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B. Buffer Area - Occurrence Report (28 of 58)

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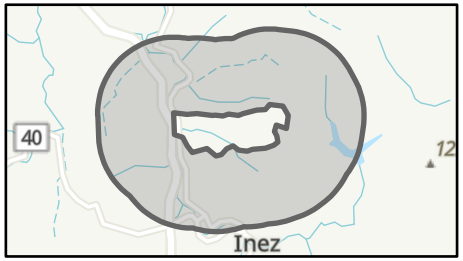
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
102	Fishes	Noturus hildebrandi	**Least Madtom**	Sec.		Endangered	G5	S1	Yes	1994-03-25		TERRAPIN CREEK AT KY-TN LINE.
127	Fishes	Notropis maculatus	**Taillight Shiner**	Min.		Threatened	G5	S2S3	Yes	1973-10-20		RUNNING SLOUGH, NEAR LEDFORD ON KY 1282.
128	Fishes	Notropis maculatus	**Taillight Shiner**	Min.		Threatened	G5	S2S3	Yes	1973-10-12		POND SLOUGH, 4 KM NE OF OPEN POND AND 2 KM SW OF FISH POND. (CITED AS 15 KM SW OF HICKMAN AND 4 MI NE OF OPEN POND).
267	Fishes	Notropis sp. cf. spectrunculus	**Sawfin Shiner**	Sec.		Endangered	G4	S1	Yes	2000-03-14		PITMAN CREEK AT KY 692.
292	Fishes	Noturus stigmosus	**Northern Madtom**	Min.		Special Concern	G3	S2S3	Yes	1959-08-27		Ohio River, at Mound City, Pulaski Co, Illinois.
408	Fishes	Notropis sp. cf. spectrunculus	**Sawfin Shiner**	Sec.		Endangered	G4	S1	Yes	2009-03-07		ROCK CREEK, 4.0 MI SW OF BELL FARM, AT GREAT MEADOWS CAMP SITE ON ROCK CREEK-BELL FARM ROAD.
425	Fishes	Notropis maculatus	**Taillight Shiner**	Min.		Threatened	G5	S2S3	Yes	1970-08-30		PRAIRIE LAKE, 5 KM W OF GUM CORNERS.
437	Fishes	Noturus stigmosus	**Northern Madtom**	Sec.		Special Concern	G3	S2S3	Yes	1998-07-25		RUSSELL FORK AT DRAFFIN; POND CREEK RD BRDG.
629	Mammals	Nycticeius humeralis	**Evening Bat**	Sec.			G5	S4		2016-08-27		Reelfoot NWR, at Rittenhouse Slough drainage crossing beneath E-W gravel rd S of main entrance.
664	Mammals	Nycticeius humeralis	**Evening Bat**	Min.			G5	S4		1951-06-08		Over a county road, 3 mi E of Miller.
705	Fishes	Noturus exilis	**Slender Madtom**	Min.		Endangered	G5	S1	Yes	1961-08-09		MUDDY FORK LITTLE RIVER AT WALLONIA.
774	Mammals	Nycticeius humeralis	**Evening Bat**	Sec.			G5	S4		2001-07-11		Barlow Bottoms, along Fish Lake Rd, just N of old RR grade (046A) and nr NE end of Fish Lake (046B).
815	Fishes	Noturus exilis	**Slender Madtom**	Sec.		Endangered	G5	S1	Yes	1962-08-07		GREEN RIVER AT HWY 55.
841	Breeding Birds	Nyctanassa violacea	**Yellow-crowned Night-heron**	Sec.		Threatened	G5	S2B	Yes	1985-07		Near upstream end of Shippingport Island on the Ohio River.
958	Mammals	Nycticeius humeralis	**Evening Bat**	Min.			G5	S4		1934-07-14		Mammoth Cave Camp 2.
1024	Fishes	Noturus stigmosus	**Northern Madtom**	Sec.		Special Concern	G3	S2S3	Yes	1999-06-11		ROWAN CREEK, CA 50 M UPSTREAM FROM BEECH FORK.
1025	Fishes	Noturus stigmosus	**Northern Madtom**	Sec.		Special Concern	G3	S2S3	Yes	1980-07-10		

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B. Buffer Area - Occurrence Report (29 of 58)

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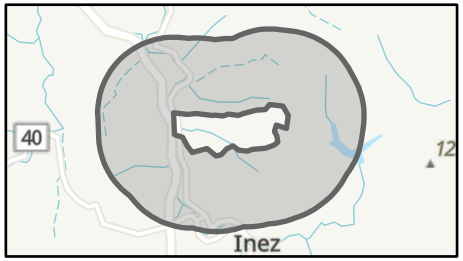
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
130	*Mosses*	*Oncophorus raui*	**Grout Oncophorus Moss**	*Sec.*		*Threatened*	*G3*	*S2*		*2001-06-10*	*On damp or wet acid rocks, mostly on cliffs and often near waterfalls in the mountains (Crum and Anderson).*	*Pine Mt., Blanton Forest State Nature Preserve, unnamed tributary of Watts Cr. (004C).; Pine Mt., Blanton Forest State Nature Preserve, unnamed tributary of Watts Creek ('Radula Branch,' near 'The Rock') (004B).; Blanton Forest State Nature Preserve, Watt*
184	*Crustacean*	*Orconectes inermis inermis*	**Ghost Crayfish**	*Min.*		*Special Concern*	*G5T4*	*S3*	*Yes*	*1994-01-16*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
306	*Reptiles*	*Ophisaurus attenuatus longicaudus*	**Eastern Slender Glass Lizard**	*Min.*		*Threatened*	*G5T5*	*S2*		*1992-10*		*East of Cumberland Falls, at parking area for Moonbow Lake off KY 90 SE of Dry Bridge.*
314	*Crustacean*	*Orconectes inermis inermis*	**Ghost Crayfish**	*Sec.*		*Special Concern*	*G5T4*	*S3*	*Yes*	*1993-08-03*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
468	*Vascular Plants*	*Oenothera perennis*	**Small Sundrops**	*Sec.*			*G5*	*S2?*		*1988-03*	*Dry to moist open ground, open woods, fields, and meadows.*	*CYPRESS CREEK AREA 0.75 MI E OF I-24 ON US 62, BOTH SIDES OF SMALL SWAMPY WOODLOT ON N SIDE OF ROAD (002A). Approx. 267m E of Cypress Creek, along US-62 (002B).*
527	*Crustacean*	*Orconectes inermis inermis*	**Ghost Crayfish**	*Sec.*		*Special Concern*	*G5T4*	*S3*	*Yes*	*1993-08-03*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
915	*Crustacean*	*Orconectes inermis inermis*	**Ghost Crayfish**	*Min.*		*Special Concern*	*G5T4*	*S3*	*Yes*	*1961-12-02*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
1197	*Vascular Plants*	*Oenothera triloba*	**Stemless Evening-primrose**	*Cnty.*		*Threatened*	*G4*	*S1S2*			*Dry woods, barrens, and prairies, often calcareous; in KY, glades, dry limestone soil, rock outcrops in fields.*	*SAMUELS.*
1225	*Crustacean*	*Orconectes inermis inermis*	**Ghost Crayfish**	*Sec.*		*Special Concern*	*G5T4*	*S3*	*Yes*	*2006-02-22*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
1252	*Crustacean*	*Orconectes inermis inermis*	**Ghost Crayfish**	*Sec.*		*Special Concern*	*G5T4*	*S3*	*Yes*	*1994-02-04*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
1304	*Vascular Plants*	*Oclemena acuminata*	**Whorled Aster**	*Sec.*		*Threatened*	*G5*	*S2S3*		*1984*	*Moist sand in mesophytic forest, wet openings along stream on dip slope.*	*ALONG A STREAM ON THE DIP SLOPE OF PINE MOUNTAIN.*
1473	*Reptiles*	*Ophisaurus attenuatus longicaudus*	**Eastern Slender Glass Lizard**	*Sec.*		*Threatened*	*G5T5*	*S2*		*1987-06-12*		*KY 700, 1.5 mi S of jct KY 700 and KY 1045.*
1583	*Crustacean*	*Orconectes inermis inermis*	**Ghost Crayfish**	*Min.*		*Special Concern*	*G5T4*	*S3*	*Yes*	*1963-08-25*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
1596	*Mammals*	*Nycticeius humeralis*	**Evening Bat**	*Sec.*			*G5*	*S4*		*1998-07-13*		*US 62 crossing of Southards Creek, 1.6 rd mi E of KY 85.*

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B. Buffer Area - Occurrence Report (30 of 58)

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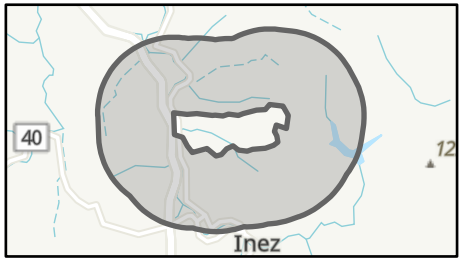
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
25	*Crustacean*	*Orconectes packardi*	**Appalachian Cave Crayfish**	*Sec.*		*Threatened*	*G2*	*S2S3*	*Yes*	*1964-06-10*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
303	*Crustacean*	*Orconectes packardi*	**Appalachian Cave Crayfish**	*Min.*		*Threatened*	*G2*	*S2S3*	*Yes*	*1969-02-08*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
381	*Crustacean*	*Orconectes pellucidus*	**Mammoth Cave Crayfish**	*Min.*		*Special Concern*	*G4*	*S3*	*Yes*	*1964-04*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
641	*Reptiles*	*Pantherophis guttatus*	**Red Cornsnake**	*Sec.*		*Special Concern*	*G5*	*S3*		*2002-05-02*		*KY 728 nr Bacon Creek bridge (014A) and KY 728, 0.5 mi S of Wheelersville Rd (014B).*
753	*Crustacean*	*Orconectes pellucidus*	**Mammoth Cave Crayfish**	*Sec.*		*Special Concern*	*G4*	*S3*	*Yes*	*1996-11*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
793	*Crustacean*	*Orconectes pellucidus*	**Mammoth Cave Crayfish**	*Min.*		*Special Concern*	*G4*	*S3*	*Yes*	*1964-07-25*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
838	*Crustacean*	*Orconectes pellucidus*	**Mammoth Cave Crayfish**	*Sec.*		*Special Concern*	*G4*	*S3*	*Yes*	*1991-04-12*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
846	*Reptiles*	*Pantherophis guttatus*	**Red Cornsnake**	*Min.*		*Special Concern*	*G5*	*S3*		*1992-05*		*Upton (037B) and Pleasant Valley [Pleasant Hill] Rd, 1 mi S [plotted 1 mi SW] of Upton (037A).*
881	*Reptiles*	*Pantherophis guttatus*	**Red Cornsnake**	*Min.*		*Special Concern*	*G5*	*S3*		*1948-04-22*		*On Preston's Ridge, 2 mi W of Park City, within the Mammoth Cave National Park confines.*
1084	*Snails*	*Patera panselenus*	**Virginia Bladetooth**	*Sec.*		*Special Concern*	*G3*	*S2*		*1986-04-09*		*BREAKS INTERSTATE PARK BETWEEN KY 80 AND FORD OF RUSSELL FK NEAR POTTER FLATS; CA 1.2 STREAM KM DOWNSTREAM FROM KY-VA LINE.*
1117	*Reptiles*	*Pantherophis guttatus*	**Red Cornsnake**	*Sec.*		*Special Concern*	*G5*	*S3*		*1983*		*Natural Bridge State Park, 0.25 mi upstream from the mouth of Upper Hood Branch.*
1295	*Vascular Plants*	*Parnassia asarifolia*	**Kidneyleaf Grass-of-parnassus**	*Sec.*		*Endangered*	*G4*	*S1*	*Yes*	*2024-08-01*	*Streambanks and springy or boggy soil, chiefly in the mountains (Gleason & Cronquist 1991); bogs, wet woods, rocky banks (Fernald 1970).*	*CHESTNUT RIDGE, IN HEAD OF BRANCH OF ROCK CK CA 0.9 MI E OF MOUTH OF BIG BRANCH.*
1318	*Crustacean*	*Orconectes packardi*	**Appalachian Cave Crayfish**	*Sec.*		*Threatened*	*G2*	*S2S3*	*Yes*	*1988-01-14*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
1460	*Breeding Birds*	*Passerculus sandwichensis*	**Savannah Sparrow**	*Sec.*		*Special Concern*	*G5*	*S2S3B,S2*	*Yes*	*1991-06-30*		*E side of KY 227, just S of jct w/ KY 368.*
1579	*Reptiles*	*Pantherophis guttatus*	**Red Cornsnake**	*Sec.*		*Special Concern*	*G5*	*S3*		*2001-pre*		*Along the E bank of Red River, 0.5 air km W of the mouth of Bell Branch.*

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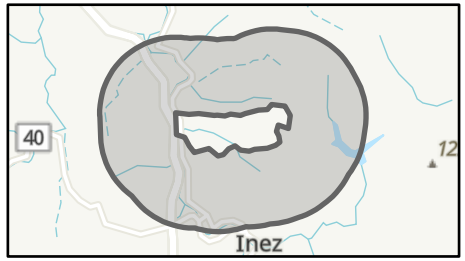
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
14	*Vascular Plants*	*Perideridia americana*	**Eastern Yampah**	*Sec.*		*Threatened*	*G4*	*S2*	*Yes*	*1988-04-29*	*Low grounds, prairies, and rich woods.*	*Flat Rock Glade, 1.7 mi N of Pilot Knob Church on SR 73 and 0.5 mi E of SR 73.*
79	*Fishes*	*Percopsis omiscomaycus*	**Trout-perch**	*Sec.*		*Special Concern*	*G5*	*S3*	*Yes*	*1981-11-03*		*TYGARTS CREEK AT THE MOUTH OF LEATHERWOOD BRANCH.*
89	*Vascular Plants*	*Perideridia americana*	**Eastern Yampah**	*Min.*		*Threatened*	*G4*	*S2*	*Yes*	*2020-04-24*	*Low grounds, prairies, and rich woods.*	*CA 1.5 AIR MI SW OF ALLENSVILLE, IN FOREST E OF US 79, S OF ELK FORK. (010A); Bluffs of the Elk Fork, south of Allensville, north of Snardon Road crossing. (010B);*
155	*Vascular Plants*	*Paxistima canbyi*	**Canby's Mountain-lover**	*Sec.*		*Endangered*	*G2?*	*S1*	*Yes*	*2008-01-09*	*Calcareous rocks and slopes (generally near the top of cliffs or bluffs), rocky woods in the mountains, usually above major streams.*	*CARTER CAVES STATE PARK, NARROWEST PLACE IN DEVIL'S BACKBONE.*
174	*Fishes*	*Percina squamata*	**Olive Darter**	*Sec.*		*Endangered*	*G3*	*S1*	*Yes*	*2005-06-15*		*Middle Fork Rockcastle River, 4.5 km west of Jct KY 89 and KY 2002 at Ford on Black Lick Road.*
402	*Fishes*	*Percopsis omiscomaycus*	**Trout-perch**	*Sec.*		*Special Concern*	*G5*	*S3*	*Yes*	*1981-11-12*		*CURRYS FORK AT KY 1408 BRIDGE, RMI 0.4.*
417	*Fishes*	*Percina macrocephala*	**Longhead Darter**	*Sec.*		*Endangered*	*G3*	*S1*	*Yes*	*1996-04-19*		*GREEN RIVER ADJACENT ISLAND CA 0.5 RIVER KM DOWNSTREAM OF KY 417.*
634	*Fishes*	*Percopsis omiscomaycus*	**Trout-perch**	*Sec.*		*Special Concern*	*G5*	*S3*	*Yes*	*1978-05*		*RIGHT FORK OF BEAVER CREEK, 762 M E OF EASTERN.*
639	*Fishes*	*Percina macrocephala*	**Longhead Darter**	*Min.*		*Endangered*	*G3*	*S1*	*Yes*	*1959-07-13*		*Barren River, Port Oliver Ford.*
730	*Fishes*	*Percopsis omiscomaycus*	**Trout-perch**	*Min.*		*Special Concern*	*G5*	*S3*	*Yes*	*1941-pre*		*Whiteoak Creek near mouth.*
1079	*Fishes*	*Percopsis omiscomaycus*	**Trout-perch**	*Sec.*		*Special Concern*	*G5*	*S3*	*Yes*	*1998-08-06*		*TYGARTS CREEK AT KY 1215.*
1281	*Fishes*	*Percina squamata*	**Olive Darter**	*Sec.*		*Endangered*	*G3*	*S1*	*Yes*	*2002-07-22*		*Rockcastle River ca 0.25 mi below Horse Lick Creek.*
1298	*Fishes*	*Percina macrocephala*	**Longhead Darter**	*Sec.*		*Endangered*	*G3*	*S1*	*Yes*	*1981-05-05*		*Kinniconick Creek 2.1 km upstream from the mouth of Pine Branch.*
1820	*Fishes*	*Percopsis omiscomaycus*	**Trout-perch**	*Sec.*		*Special Concern*	*G5*	*S3*	*Yes*	*1995-09-17*		*LAUREL CREEK IN THE VICINITY OF [CARTER SCHOOL RD] FORD LOCATED JUST DOWNSTREAM OF ROCKY CR.*
1982	*Fishes*	*Percopsis omiscomaycus*	**Trout-perch**	*Sec.*		*Special Concern*	*G5*	*S3*	*Yes*	*1998-07-07*		*WHETSTONE CREEK AT KY 3307.*

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B. Buffer Area - Occurrence Report (32 of 58)

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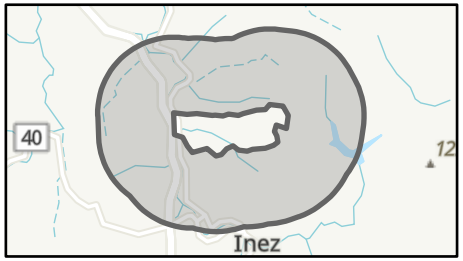
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
78	Fishes	Phenacobius uranops	**Stargazing Minnow**	Sec.		Special Concern	G4	S2S3	Yes	1962-08-26		PETER CREEK AT FORD ON HWY 219 (PLOTTED AT HWY 249).
263	Communities	Pinus echinata - Quercus alba / Vaccinium pallidum / Hexastylis arifolia - Chimaphila maculata Forest	**Cumberland Plateau shortleaf pine-oak forest**	Sec.		Threatened	G3G4	S3?		1993-07		Ca 0.6 air mi WNW of Bald Rock Cemetary, just N of mouth of unnamed trib to Rockcastle River.
282	Communities	Pinus rigida / Schizachyrium scoparium - Sorghastrum nutans - Baptisia tinctoria Woodland	**Cumberland Mountains pitch pine barrens**	Sec.		Endangered	G2?	S1		2020-06-23		S-facing mid-slope of Pine Mtn ca 1.0 air mi W of Hurricane Gap (001A, 001C), Bordering Little Shepherd's Trail, Hi Lewis SNP (001B).
431	Fishes	Phenacobius uranops	**Stargazing Minnow**	Min.		Special Concern	G4	S2S3	Yes	1960-08-16		Green River near Gabe.
479	Vascular Plants	Phlox bifida ssp. stellaria	**Starry-cleft Phlox**	Sec.		Endangered	G5?T3	S2	Yes	1986-05-30	Dry cliffs, bluffs, sandhills, dunes, dry sandy soil and rock ledges, cedar glades.	JESSAMINE CREEK GORGE, ON POINT E OF MOUTH OF JESSAMINE CREEK JUST BELOW MURPHYS HOUSE.
482	Vascular Plants	Phacelia ranunculacea	**Blue Scorpion-weed**	Sec.		Special Concern	G4	S3		2000-04-22	Alluvial and rich slope forests, often associated with loess soils.	REELFOOT NWR, WOODS ALONG NE EDGE OF SLOUGH AT DUCK BANDING BLIND.
506	Breeding Birds	Phalacrocorax auritus	**Double-crested Cormorant**	Sec.		Special Concern	G5	S2B		2002-07-06		Kentucky Lake, narrow island ca 2.0 air mi SE of Hamlin.
509	Fishes	Phenacobius uranops	**Stargazing Minnow**	Sec.		Special Concern	G4	S2S3	Yes	2002-07-29		GREEN RIVER AT KY 88 (MILE 269.1).
510	Fishes	Phenacobius uranops	**Stargazing Minnow**	Sec.		Special Concern	G4	S2S3	Yes	2002-08-13		GREEN RIVER MILE 268.2.
624	Fishes	Phenacobius uranops	**Stargazing Minnow**	Min.		Special Concern	G4	S2S3	Yes	1955-08-11		SULPHUR CREEK JUST ABOVE CONFLUENCE WITH RUSSELL CREEK, 1 MI E OF COLOMBIA, NEAR KY 206.
760	Reptiles	Pituophis melanoleucus melanoleucus	**Northern Pinesnake**	Min.		Endangered	G4T4	S1		1949-pre		Near Cub Run.
909	Vascular Plants	Philadelphus pubescens	**Hoary Mock Orange**	Min.		Endangered	G5?	S2		1982-05-30	Sandstone and limestone bluffs and riverbanks.	FORT KNOX, TIOGA SPRINGS.
939	Breeding Birds	Peucaea aestivalis	**Bachman's Sparrow**	Cnty.		Endangered	G3	S1B	Yes	1925-pre		Fulton Co.
1052	Fishes	Phenacobius uranops	**Stargazing Minnow**	Sec.		Special Concern	G4	S2S3	Yes	1990-08-16		GREEN RIVER AT UPSTREAM END OF UNNAMED ISLAND ON W SIDE LAWLER BEND (SITE 3).
1176	Fishes	Phenacobius uranops	**Stargazing Minnow**	Min.		Special Concern	G4	S2S3	Yes	1961-07-11		

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B. Buffer Area - Occurrence Report (33 of 58)

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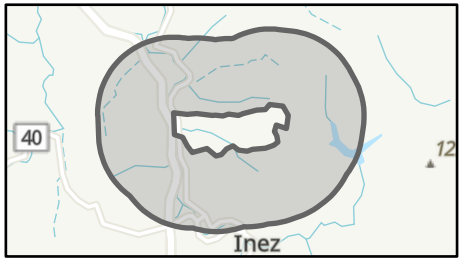
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
486	Vascular Plants	Platanthera cristata	**Yellow-crested Orchid**	Sec.		Endangered	G5	S1		1991-07-26	Dry to moist open soil, thickets, woods, and bogs, moist open ephemeral streamheads, pond margins.	Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
487	Vascular Plants	Platanthera cristata	**Yellow-crested Orchid**	Sec.		Endangered	G5	S1		1991-07-26	Dry to moist open soil, thickets, woods, and bogs, moist open ephemeral streamheads, pond margins.	Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
649	Freshwater Mussels	Pleurobema rubrum	**Pyramid Pigtoe**	Sec.		Endangered	G2	S1	Yes	1988-08-18		GREEN RIVER AT DENNISON FERRY, 4.4 MI W OF NORTHTOWN, 5.6 MI NE OF THE TOWN OF MAMMOTH CAVE.
702	Freshwater Mussels	Pleurobema rubrum	**Pyramid Pigtoe**	Gen.		Endangered	G2	S1	Yes	1964		KENTUCKY RESERVOIR (TENNESSEE RIVER).
833	Reptiles	Plestiodon inexpectatus	**Southeastern Five-lined Skink**	Sec.		Special Concern	G5	S2S3		1991-05-12		Circa 0.95 rd mi W of Pleasant Knob Church, S side of KY 90, 0.6 mi E of FS 128.
922	Freshwater Mussels	Pleurobema rubrum	**Pyramid Pigtoe**	Sec.		Endangered	G2	S1	Yes	1981-11-08		CUMBERLAND RIVER, BED BELOW PINCKNEYVILLE.
928	Freshwater Mussels	Pleurobema rubrum	**Pyramid Pigtoe**	Sec.		Endangered	G2	S1	Yes	2001-09-17		GREEN RIVER CA 300 M DOWNSTREAM FROM LOST CREEK.
969	Freshwater Mussels	Pleurobema rubrum	**Pyramid Pigtoe**	Min.		Endangered	G2	S1	Yes	1996-09-06		Green River at Munfordville (vicinity of KY 31 bridge).
978	Vascular Plants	Platanthera psycodes	**Small Purple-fringed Orchid**	Sec.		Endangered	G5	S1	Yes	1988-07-08	Wet meadows, damp thickets, alluvial or springy shores, low woods, wet roadsides.	Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
989	Freshwater Mussels	Pleurobema rubrum	**Pyramid Pigtoe**	Sec.		Endangered	G2	S1	Yes	1993-08-13		GREEN RIVER IMMEDIATELY OPPOSITE THE BOAT RAMP NEAR MORGANTOWN.
1143	Amphibians	Plethodon cinereus	**Eastern Red-backed Salamander**	Sec.		Special Concern	G5	S2S3	Yes	1982-03-23		Between Doe Run Creek and KY 1829, 0.15 mi W of Narrows Road (Site 10).
1211	Reptiles	Plestiodon inexpectatus	**Southeastern Five-lined Skink**	Sec.		Special Concern	G5	S2S3		1980-07-23		Sandhill Rd (KY 700) 10.9 km SW of jct KY 1045 and KY 700.
1266	Amphibians	Plethodon cinereus	**Eastern Red-backed Salamander**	Sec.		Special Concern	G5	S2S3	Yes	1982-04-01		Along W slope of Fowler Creek, from Pelly Road bridge to 100 yds upstream, about 3/4 of the way up the slope (Site #13).
1399	Freshwater Mussels	Pleurobema rubrum	**Pyramid Pigtoe**	Sec.		Endangered	G2	S1	Yes	1988-08-18		GREEN RIVER, W BANK ALONG NAPPERS ROLLOVER, MILE 200.4.

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B. Buffer Area - Occurrence Report (34 of 58)

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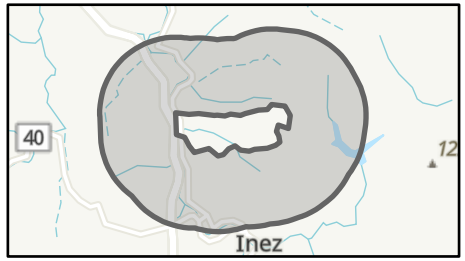
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
132	Freshwater Mussels	Potamilus purpuratus	**Bleufer**	Gen.		Endangered	G5	S1	Yes	1973-06		Small lake in Ballard County Wildlife Management Area, Ballard County: 1-3 mi NNW of Oscar (002A).
355	Vascular Plants	Polygala polygama	**Racemed Milkwort**	Sec.		Threatened	G5	S2		2021-06-15	Dry sandy pine-oak woods and openings on mountain ridgetops.	In powerline 100 yds NE of jct of KY 700/FSR 6054 on knob (013A), and 0.2 rd mi NE of jct of KY 700/ FSR 6054 in powerline on N side of KY 700 (013B), and on both sides of route 700 at Sand Hill Church btwn parking lot and woods (013C).
372	Insects	Polygonia progne	**Gray Comma**	Min.		Historic	G5	SH		1977-09-03		JOHNNIE [JOHNNY] HOLLOW, NEAR ROCKHOLDS.
443	Breeding Birds	Pooecetes gramineus	**Vesper Sparrow**	Min.		Endangered	G5	S1B		1968-07-25		Off Pea Ridge Road, 4.5 mi SW of downtown Frankfort.
733	Vascular Plants	Podostemum ceratophyllum	**Threadfoot**	Min.		Threatened	G4	S2S3		1978-07-09	Swiftly flowing water, associated with good water quality.	BIG SOUTH FORK, JUST UPSTREAM FROM GAGING STATION.
783	Vascular Plants	Podostemum ceratophyllum	**Threadfoot**	Sec.		Threatened	G4	S2S3		1991-09-01	Swiftly flowing water, associated with good water quality.	LICKING RIVER, CA 0.1 RIVER MI UPSTREAM FROM MOUTH OF TRIPLETT CREEK.
856	Vascular Plants	Polygala nuttallii	**Nuttall's Milkwort**	Gen.		Historic	G4	SH		1941-08-20	Dry sandy soil and barrens (Gleason and Cronquist 1991); also, pine savannas (Weakley 1998).	WEST OF KNOB LICK.
968	Freshwater Mussels	Potamilus purpuratus	**Bleufer**	Min.		Endangered	G5	S1	Yes	2002-08-15		Ohio River, Ballard County: near river mile 970 along IL shoreline (004A).
1162	Mosses	Polytrichum pallidisetum	**A Hair Cap Moss**	Min.		Threatened	G5	S2?		1989-10-28	On soil humus and rocks in moist conditions or hardwood forests.	Bad Branch.
1166	Vascular Plants	Podostemum ceratophyllum	**Threadfoot**	Sec.		Threatened	G4	S2S3		1992-07-16	Swiftly flowing water, associated with good water quality.	SOUTH FORK KENTUCKY RIVER, JUST W OF ONEIDA, ALONG KY 11, CA 0.2 RD MI NW OF JCT W/ KY 66.
1333	Vascular Plants	Polymnia laevigata	**Tennessee Leafcup**	Min.		Endangered	G3	S1S2	Yes	1986	Deep loess or alluvial soils in light to dense shade of rich mesic wooded slopes possibly associated with large river valleys.	HICKMAN, S OF KY 1099 CA 1 MI W OF KY 125.
1359	Vascular Plants	Podostemum ceratophyllum	**Threadfoot**	Sec.		Threatened	G4	S2S3		1992-07-16	Swiftly flowing water, associated with good water quality.	SOUTH FORK KENTUCKY RIVER, JUST UPSTREAM FROM TRIXIE. (031B, 372000N, 834015W).
1391	Breeding Birds	Pooecetes gramineus	**Vesper Sparrow**	Min.		Endangered	G5	S1B		1991-06-22		

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B. Buffer Area - Occurrence Report (35 of 58)

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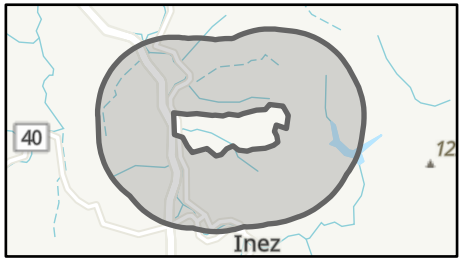
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
58	Vascular Plants	Pseudognaphalium micradenium	**Small Rabbit-tobacco**	Min.		Historic	G4G5T3	SH		1938-09-27	Oak, oak-pine, pine woodlands; also sandhills (Weakley 1998).	NEAR SKY BRIDGE.
100	Vascular Plants	Potamogeton illinoensis	**Illinois Pondweed**	Sec.		Threatened	G5	S2		1996	Calcareous waters of lower gradient streams, lakes, and ponds.	Little South Fork Cumberland River, ca 1.3 RM downstream from mouth of Full Hollow (014C), ca 1.45 RM downstream from mouth of Full Hollow (014A), and ca 1.7 RM downstream from mouth of Full Hollow (014B).
139	Vascular Plants	Primula frenchii	**French's Shooting Star**	Min.		Special Concern	G3?	S3	Yes	1980-06-11	Sandstone rockhouses and overhangs.	GORGE AREA ALONG LAKE MALONE, 2 AIR KM NNW OF JCT KY 1293 AND KY 107, 0.75 KM E OF TODD-LOGAN CO LINE.
194	Vascular Plants	Potamogeton pulcher	**Spotted Pondweed**	Min.		Threatened	G5	S2S3		2023-06-25	Peaty or muddy acid waters or shores, ponds (especially sinkhole), slow streams, and swamps.	MAMMOTH CAVE NATIONAL PARK, SLOAN'S CROSSING POND.
343	Insects	Pseudanophthalmus puteanus	**Old Well Cave Beetle**	Sec.		Threatened	G1G2	S1S2	Yes	1995-08-18		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
451	Insects	Pseudanophthalmus abditus	**Concealed Cave Beetle**	Sec.		Historic	G3	SH		1961-09-17		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
816	Crustacean	Procambarus viaeviridis	**Vernal Crayfish**	Sec.		Threatened	G5	S1S2		1982-04-28		BURKHOLDER DEADENING 0.25 KM SSW OF EAST FORK CLARKS RIVER MILE 19 ON SECONDARY ROAD.
924	Insects	Pseudosinella espanita	**A Cave Obligate Springtail**	Min.		Special Concern	G1	S1S2	Yes	1980-02-09		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1009	Vascular Plants	Ptilimnium costatum	**Eastern Mock Bishop's-weed**	Sec.		Endangered	G4	S1	Yes	2021-06-16	Swamps and wet woods.	Forested wet depression along east side of US-31E, ca 0.1 mi south of jct with Petroleum Rd (011A).
1056	Insects	Pseudanophthalmus transfluvialis	**A Cave Obligate Beetle**	Min.		Historic	G1G2	SH		1985-pre		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1147	Vascular Plants	Primula frenchii	**French's Shooting Star**	Sec.		Special Concern	G3?	S3	Yes	1979-05-13	Sandstone rockhouses and overhangs.	MEETING CREEK, BETWEEN SR-347 AND GREEN ROCK HOLLOW.
1169	Vascular Plants	Primula frenchii	**French's Shooting Star**	Sec.		Special Concern	G3?	S3	Yes	1989-03-24	Sandstone rockhouses and overhangs.	WARREN CO, COVE OFF LITTLE BEAVERDAM CREEK CA 1.8 MI SW OF WINGFIELD CHURCH.
1256	Vascular Plants	Potamogeton illinoensis	**Illinois Pondweed**	Min.		Threatened	G5	S2		1996	Calcareous waters of lower gradient streams, lakes, and ponds.	

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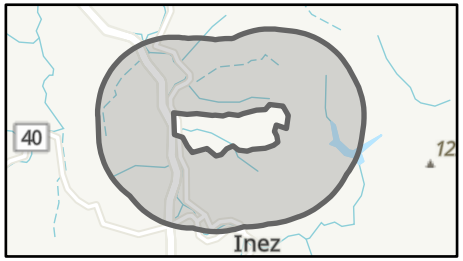
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124	Vascular Plants	Ptilimnium nuttallii	**Nuttall's Mock Bishop's-weed**	Sec.		Threatened	G5?	S2		1990-07-16	Damp prairies, glades, and shores, wet soil.	CA 0.25 MI NNE OF KY 307 CROSSING OVER BAYOU DE CHIEN.
138	Vascular Plants	Rubus canadensis	**Smooth Blackberry**	Min.		Endangered	G5	S1		1986-06-15	Forests, woodlands, grassy balds (Weakley 1998); woodland edges and openings.	BIG BLACK MT, AREAS ALONG RD NR TOP, JUST E OF THE FIRE TOWER.
205	Breeding Birds	Riparia riparia	**Bank Swallow**	Sec.		Special Concern	G5	S3B	Yes	1995-06		Head of Manchester Island No 2.
210	Vascular Plants	Rorippa aquatica	**Lakecress**	Sec.		Threatened	G4?	S1S2		2007-05-24	Quiet shores or muddy waters of sloughs, cypress swamps, seasonal sloughs, or slow water.	Reelfoot National Wildlife Refuge, ca 0.7 mi WSW of Ledford on both sides of KY 94 [1282].
394	Communities	Quercus phellos - (Quercus lyrata) / Carex spp. - Leersia spp. Pond Forest	**Wet flatwoods**	Sec.		Endangered	G3G4Q	S3S4		1999-06-01		1.5 air mi N of Bonayr on RT 255, less than .25 mi into woods on the E side of rd.
539	Breeding Birds	Riparia riparia	**Bank Swallow**	Sec.		Special Concern	G5	S3B	Yes	1980-06-14		Chalk Bluff on the Mississippi River, S of Columbus.
618	Snails	Rabdotus dealbatus	**Whitewashed Rabdotus**	Min.		Threatened	G5	S1S2		1958-05-04		CIRCA 3.0 MI NE OF RUSSELLVILLE.
674	Communities	Quercus montana / Juniperus virginiana / Vaccinium arboreum / Taenidia integerrima Kentucky Siltstone Woodland	**Kentucky Knobs siltstone barrens**	Sec.		Threatened	G2?	S2		2001-09-18		Dividing Ridge, three south-facing points in head of Reed Hollow, ca 7.5 air miles NW of Peytons Store.
778	Vascular Plants	Rhynchospora cymosa	**Globe Beaked-rush**	Sec.			G5?	S3S4		1993-06-16	Open wet soils.	POWERLINE RIGHT-OF-WAY BETWEEN SEMINARY BRANCH AND KY 90; CA 1000 FT SE OF JCT W/ FS 195.
779	Vascular Plants	Rhynchospora cymosa	**Globe Beaked-rush**	Sec.			G5?	S3S4		1995-07-18	Open wet soils.	POWERLINE RIGHT-OFF-WAY SW OF WHITEHOUSE HOLLOW, CA 2.0 AIR MI NNW OF WHITE OAK JUNCTION.
781	Vascular Plants	Rhynchospora cymosa	**Globe Beaked-rush**	Sec.			G5?	S3S4		2023-09-14	Open wet soils.	CIRCA 0.2 AIR MI NW OF HAZELDELL CHURCH.
920	Vascular Plants	Ranunculus ambigens	**Waterplantain Spearwort**	Gen.		Special Concern	G2	S3		1974-07-08	Sloughs, swamps and pond margins.	On KY 1722, 1.0 mi E of KY 801.
1031	Vascular Plants	Rhynchospora macrostachya	**Tall Beaked-rush**	Sec.		Endangered	G4	S1		1995-07-27	Marshes, swamps, upland depression ponds, other wetlands (Weakley 1998).. in KY, mud at edge of sinkhole pond.	MURL SWAMP, CA 0.8 AIR MI SSW OF MURL; IN WET MEADOW NE OF COOLEY'S TOBACCO FIELD AND E OF HACK DENNY'S CORNFIELD.
1168	Communities		**Limestone Slope Glade**	Sec.		Endangered	G2G3	S1		1997-08-05		

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B. Buffer Area - Occurrence Report (37 of 58)

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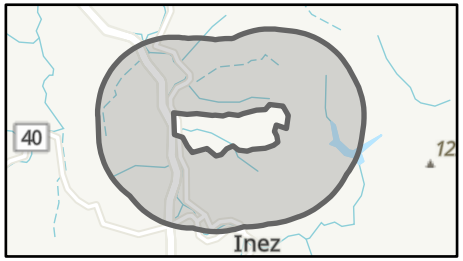
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
69	*Vascular Plants*	*Sabatia campanulata*	**Slender Marsh Pink**	*Sec.*		*Endangered*	*G4*	*S1*		*2006-08-02*	*Salt or brackish marshes, deep sands and peat. also pinelands, swamps, and meadows.*	*About a mile NE of Jeffersonville, Compton Farm, in all 3 of the pipelines that traverse the swamp forest as well as the edge of an open field.*
257	*Vascular Plants*	*Sambucus racemosa var. pubens*	**Red Elderberry**	*Sec.*		*Endangered*	*G5T5*	*S1S2*		*2021-05-12*	*Edges and openings in rich woods.*	*SR-160 NEAR KY-VA LINE.*
327	*Vascular Plants*	*Silene ovata*	**Ovate Catchfly**	*Min.*		*Endangered*	*G3*	*S1*	*Yes*	*1977-07-11*	*Dry - mesic forest, mountain summits. In IL found in calcareous sandstone woods, exposures on the side of slopes below a cap of sandstone.*	*Cumberland Mountain, below White Rocks overlook along trail to Sand Cave, Cumberland Gap National Historical Park.*
476	*Vascular Plants*	*Silphium laciniatum*	**Compassplant**	*Sec.*		*Threatened*	*G5*	*S2*		*1990-06-26*	*Prairies and barrens.*	*EAST SIDE KY 440, 2.1 MI NW OF JCT KY 121 AND KY 440.*
477	*Vascular Plants*	*Silphium laciniatum*	**Compassplant**	*Sec.*		*Threatened*	*G5*	*S2*		*2005-07-11*	*Prairies and barrens.*	*Leitchfield, Roadside right-of-way (and interior) on N. side of US 62 at quarry, 0.75 mi W of US 62 JCT w/ SR 259.*
569	*Breeding Birds*	*Setophaga fusca*	**Blackburnian Warbler**	*Min.*		*Threatened*	*G5*	*S1S2B*		*2010-06-05*		*On Big Black Mountain, above 2800 ft, especially 2800-3800 ft.*
580	*Vascular Plants*	*Silphium pinnatifidum*	**Tansy Rosinweed**	*Sec.*		*Special Concern*	*G3Q*	*S3*		*2020-07-02*	*Barrens and prairies.*	*Ca 0.5 air mi W of Peter Cave Hill, along KY 2800 (Melrose-Star Mills Road), scattered along roadside (013A and 013B).*
632	*Vascular Plants*	*Silene ovata*	**Ovate Catchfly**	*Min.*		*Endangered*	*G3*	*S1*	*Yes*	*1941-09-20*	*Dry - mesic forest, mountain summits. In IL found in calcareous sandstone woods, exposures on the side of slopes below a cap of sandstone.*	*IN WOODS BY ANVIL ROCK.*
807	*Vascular Plants*	*Silphium laciniatum*	**Compassplant**	*Sec.*		*Threatened*	*G5*	*S2*		*1994-05-24*	*Prairies and barrens.*	*FORT CAMPBELL MILITARY RESERVATION, ANGELS RD, CA 2 [2.0 AIR] MI E [ENE] OF JCT MABRY RD.*
1005	*Vascular Plants*	*Sagittaria graminea*	**Grassleaf Arrowhead**	*Sec.*		*Threatened*	*G5*	*S2S3*		*2021-06-08*	*Swamps, mud, or shallow water of lakeshores, ponds & sloughs.*	*SR 1282, SW OF HICKMAN. Wet ditch between road and railroad.*
1155	*Vascular Plants*	*Rubus whartoniae*	**Wharton's Dewberry**	*Min.*			*G2Q*	*S3?*		*1984-06-13*	*Dry, shaly soil, often in disturbed sites or the edges of dry woodlands; also open oak-hickory woods (Gleason & Cronquist 1991).*	*ON I-75, ABOUT 0.2 AND 0.5 MI S OF BEREA EXIT ON E SIDE OF HIGHWAY, ABOUT 2 MI N OF ROCKCASTLE COUNTY LINE.*
1157	*Vascular Plants*	*Sambucus racemosa var. pubens*	**Red Elderberry**	*Min.*		*Endangered*	*G5T5*	*S1S2*		*2014-06-17*	*Edges and openings in rich woods.*	

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B. Buffer Area - Occurrence Report (38 of 58)

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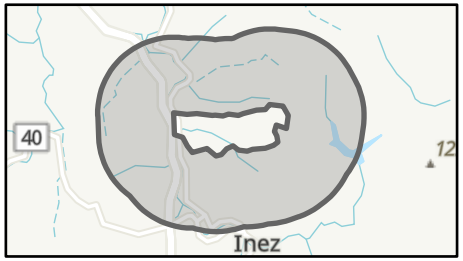
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
232	Vascular Plants	Solidago curtisii	**Curtis' Goldenrod**	Sec.		Special Concern	G5	S3		1999-10-01	Mountain woods.	Black Mountain; ca 0.6 air mi NE of Stonega Gap (016B); ca 0.2 rd mi S of jct w/ co/state line (016C); ca 0.7 air mi NE of Stonega Gap (016A); ca 0.85 air mi NE of Stonega Gap (016D); N side of rd ca 0.1 air mi NE of sharp turn in rd (016E); and N side of
554	Breeding Birds	Spatula discors	**Blue-winged Teal**	Sec.		Threatened	G5	S1S2B		1993-06-13		Flooded field ca 500 ft S of the Mississippi River levee, ca 3.5 rd mi E of the levee where it is opposite the NE corner of Fish Pond.
565	Vascular Plants	Silphium wasiotense	**Appalachian Rosinweed**	Sec.		Threatened	G3	S2	Yes	2001-08-01	Dry-mesic forest, usually somewhat open due to disturbance.	ALONG W/N SIDE OF KY 687, 1.1 RD MI (034B) AND 1.3 RD MI (034A) SW OF GRAY'S FORK CHURCH.
650	Breeding Birds	Sitta canadensis	**Red-breasted Nuthatch**	Sec.		Endangered	G5	S1B		2009-04-18		Red River Gorge Geological Area, along Swift Camp Creek, from nr Rock Bridge downstream to mouth of Bearpen Branch.
654	Vascular Plants	Sophronanthe pilosa	**Shaggy Hedgehyssop**	Min.		Threatened	G5?	S2		1941-08-30	Wet meadows, riverbank seeps, pond margins, pine barrens; also sandy woods, clearings and roadsides (Fernald 1970).	2.5 MI N OF WHITLEY CITY. (PLOTTED 3.0 MI N WHITLEY CITY).
662	Reptiles	Sistrurus miliarius streckeri	**Western Pygmy Rattlesnake**	Min.		Endangered	G5T5	S1		1966-09-03		Eastern shore of Kentucky Lake, about 6 mi N of the TN border and 0.8 mi S of US 68 (cove N of TVA coll sta 5H3).
670	Reptiles	Sistrurus miliarius streckeri	**Western Pygmy Rattlesnake**	Min.		Endangered	G5T5	S1		1967-07-21		Land Between the Lakes, Section G-26 [plotted along S side of Blockhouse Creek].
744	Vascular Plants	Solidago austrina	**Southern Bog Goldenrod**	Min.		Endangered	GNR	S1	Yes	2013-08-29		Banks of Laurel River from Dam to 0.5 mi dwnstrm and along rd to dam at the base of the rock wall.
795	Mosses	Sphagnum quinquefarium	**Five-ranked Bogmoss**	Sec.		Endangered	G5	S2		1996-10-23	In KY, seeping sandstone outcrops.	Bad Branch SNP, sandstone outcrops around Bad Branch Falls.
845	Vascular Plants	Silphium wasiotense	**Appalachian Rosinweed**	Sec.		Threatened	G3	S2	Yes	2001-08-01	Dry-mesic forest, usually somewhat open due to disturbance.	SLOPE ABOVE N SIDE OF HELL FOR CERTAIN CREEK, CA O.3 AIR MI SW OF JCT AT KY 257 (004A). Slope above S Side of Hell for Certain Creek CA O.4 AIR MI SW OF JCT AT KY 257 (004B).
889	Breeding Birds	Spatula discors	**Blue-winged Teal**	Sec.		Threatened	G5	S1S2B		1997-06-24		Hopson Lake, just SE of Hopson.
905	Vascular Plants	Silphium wasiotense	**Appalachian Rosinweed**	Sec.		Threatened	G3	S2	Yes	2001-07-31		

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B. Buffer Area - Occurrence Report (39 of 58)

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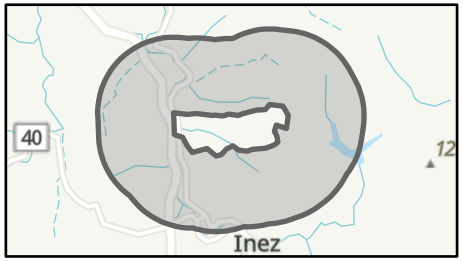
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
16	Mammals	Spilogale putorius	**Eastern Spotted Skunk**	Min.		Special Concern	G4	S2S3	Yes	1995		Bad Branch, Upper Gorge.
50	Vascular Plants	Sporobolus clandestinus	**Rough Dropseed**	Sec.		Threatened	G4G5	S2S3		2013-10	Prairies, limestone glades, limestone cliff edges, along railroads.	ON KY 1668, 2.0 MI FROM US 60, W OF MARION.
109	Vascular Plants	Spiranthes ochroleuca	**Yellow Nodding Ladies'-tresses**	Min.		Threatened	G5	S2		1986-09-26	Damp (although sometimes seasonally only) acid soil of open woods and grassy openings.	Valley of Schultz Creek, N of KY 784 at Letitia.
225	Vascular Plants	Symphyotrichum concolor var. concolor	**Eastern Silvery Aster**	Gen.		Threatened	G5T5	S2		1940-10-12		Pine Knot.
240	Vascular Plants	Spiranthes magnicamporum	**Great Plains Ladies'-tresses**	Sec.		Threatened	G3G4	S2	Yes	2024-10-19	Calcareous soil in prairies, and glades.	Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
353	Mammals	Spilogale putorius	**Eastern Spotted Skunk**	Gen.		Special Concern	G4	S2S3	Yes	1983-02-05		REDBIRD WILDLIFE MANAGEMENT AREA.
392	Vascular Plants	Streptopus lanceolatus var. lanceolatus	**Rosy Twisted-stalk**	Min.		Endangered	G5T5	S1		1936		CINCINNATI HOLLOW.
398	Vascular Plants	Sphenopholis pensylvanica	**Swamp Wedgescale**	Sec.		Endangered	G4	S1		1996-05-17	Swamps and wet woods (Gleason & Cronquist 1991).	E OF MARSHES SIDING, CA 0.5 AIR MI E OF US 27, CA 0.6 AIR MI N OF CROSSING OF POWERLINE ROW W/ JENNYS BRANCH.
471	Vascular Plants	Spiranthes magnicamporum	**Great Plains Ladies'-tresses**	Sec.		Threatened	G3G4	S2	Yes	1997-09-18	Calcareous soil in prairies, and glades.	Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
481	Vascular Plants	Symphyotrichum concolor var. concolor	**Eastern Silvery Aster**	Sec.		Threatened	G5T5	S2		1996-08-22		IN POWERLINE AT JCT OF RATTLESNAKE RIDGE RD AND MINE TEN RIDGE RD, IN HEAD OF POPLAR SPRING HOLLOW NEAR RIDGE.
551	Vascular Plants	Sphenopholis pensylvanica	**Swamp Wedgescale**	Min.		Endangered	G4	S1		1973-05-21	Swamps and wet woods (Gleason & Cronquist 1991).	On KY 614 (KY 280), 2.1 mi E of KY 121.
752	Vascular Plants	Symphyotrichum concolor var. concolor	**Eastern Silvery Aster**	Min.		Threatened	G5T5	S2		2020-08-13		STEP-UP ROCK, N SIDE OF GRAVEL RD ON S SIDE OF W END OF RIDGE, 1.2 MI NW OF MOUTH OF STALLION FORK.
844	Vascular Plants	Stellaria longifolia	**Longleaf Stitchwort**	Sec.		Special Concern	G5	S2S3		1990-05-13	Wet woods and meadows.	CA 0.05 MI NNE OF CONFLUENCE OF LITTLE SUGAR CREEK AND UNNAMED TRIBUTARY. E ON GRAVEL RD OFF BOATWRIGHT RD (=SWIPT RD).
893	Vascular Plants	Sporobolus clandestinus	**Rough Dropseed**	Sec.		Threatened	G4G5	S2S3		2006-06-23	Prairies, limestone glades, limestone cliff edges, along railroads.	DOBBS HILL AREA NEAR JCT OF RATTLESNAKE RIDGE RD AND KY 1363, MOSTLY N SIDE OF RD.

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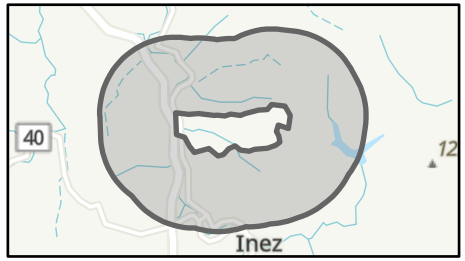
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
11	Reptiles	Thamnophis saurita saurita	**Eastern Ribbonsnake**	Sec.		Special Concern	G5T5	S3		1992-06-05		Jackson Pond, E edge ca 1.3 air mi SE of Magnolia.
149	Vascular Plants	Tephrosia spicata	**Spiked Hoary-pea**	Sec.		Endangered	G4G5	S1S2		1999-07-21	Sandy fields, open woods, and barrens.	ALONG THE SHELTOWEE TRACE OPPOSITE THE MOUTH OF BIG BRANCH (007A) AND CA 0.25 R MI UPSTREAM FROM MOUTH OF BIG BRANCH (007B, 365151N, 841919W).
193	Reptiles	Thamnophis saurita saurita	**Eastern Ribbonsnake**	Sec.		Special Concern	G5T5	S3		1998-06-09		Terrapin Creek State Nature Preserve, on KY 97 ca 0.8 rd mi S of Bellville Rd.
224	Breeding Birds	Thryomanes bewickii	**Bewick's Wren**	Sec.		Historic	G5	SHB	Yes	1990-06-12		Near Sherwood Shores, W side of KY 963 ca 0.25 air mi NE of head of Buckhorn Creek embayment.
301	Vascular Plants	Tephrosia spicata	**Spiked Hoary-pea**	Sec.		Endangered	G4G5	S1S2		1980-07-31	Sandy fields, open woods, and barrens.	RIDGE TOP RUNNING ROUGHLY FROM BARTHELL TO HEAD OF NATURAL BRIDGE HOLLOW, CA 0.25 MI SE OF BARTHELL.
376	Breeding Birds	Thryomanes bewickii	**Bewick's Wren**	Sec.		Historic	G5	SHB	Yes	1986-05-24		Circa 2.5 mi S of Wheatley, at the intersection of KY 325 and KY 1669.
492	Reptiles	Thamnophis saurita saurita	**Eastern Ribbonsnake**	Sec.		Special Concern	G5T5	S3		2020-10-10		Sauerheber Unit Sloughs WMA, in and around Hardy Slough (011A, 011B, 011C).
528	Vascular Plants	Thermopsis mollis	**Soft-haired Thermopsis**	Sec.		Endangered	G3G4	S1	Yes	1992-06-03	Dry wood slopes and ridges.	TOWN MOUNTAIN, SIDE RIDGE N OF TOWN BRANCH, EXTENDING CA 0.3 MI ALONG RIDGE.
829	Fishes	Thoburnia atripinnis	**Blackfin Sucker**	Min.		Special Concern	G3	S2	Yes	1953-04-06		East Fork trib to the Barren River, just below new bridge on SR 63, 5 air mi NW of Tompkinsville.
848	Breeding Birds	Thryomanes bewickii	**Bewick's Wren**	Sec.		Historic	G5	SHB	Yes	1989-06-04		Goshen BBS Route, Stop 20.
1038	Fishes	Thoburnia atripinnis	**Blackfin Sucker**	Sec.		Special Concern	G3	S2	Yes	1983-06-30		MILL CREEK, WEST OF KY 63/100, AT GULLEY CREEK CHURCH ROAD.
1087	Vascular Plants	Thaspium pinnatifidum	**Cutleaf Meadow-parsnip**	Cnty.		Threatened	G2G3	S2S3	Yes	1974-07	Dry mesic forests with limestone outcropping.	Along Ravens Road.
1202	Vascular Plants	Symphyotrichum kentuckiense	**Price's Aster**	Sec.		Threatened	G3G5	S2	Yes	2003-10-19	Rocky, gravelly or sandy soil.	ON BOTH SIDES OF BROWNING-PETROS ROAD, 1.4 MI N OF US-80, APPROX. 10 AIR MI SW OF DOWNTOWN BOWLING GREEN.

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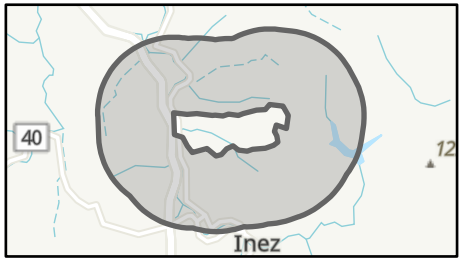
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7	Vascular Plants	Trepocarpus aethusae	**Trepocarpus**	Sec.			G4G5	S3S4		1999-08-09	Margins of swamp forests and sandy river bottoms.	KENTUCKY LAKE DRIVE SCENIC VISTAS PROJECT, PARALLELING THE CANAL BETW LAKE BARKLEY AND KY RESERVOIR. PULL OUT #2, HALF WAY BETW THE TRACE AND KY RESERVOIR.
86	Freshwater Mussels	Toxolasma lividum	**Purple Lilliput**	Min.		Endangered	G3	S1	Yes	No Date		Buck Creek, Pulaski County: at KY 461 crossing, Site 8 (044A).
131	Vascular Plants	Thuja occidentalis	**Northern White Cedar**	Sec.		Threatened	G5	S2S3		2000-03-20	Limestone bluffs and ledges along streams.	EAST SIDE OF WHITE OAK CREEK; CA 0.5 AIR MI W OF KY 235 (018A).
435	Freshwater Mussels	Toxolasma lividum	**Purple Lilliput**	Sec.		Endangered	G3	S1	Yes	No Date		Buck Creek, Pulaski County: 4.2 mi SE of Shopville, 2.1 mi SSW of Stab (probably km not mi) (028A).
465	Freshwater Mussels	Toxolasma lividum	**Purple Lilliput**	Gen.		Endangered	G3	S1	Yes	1959-05-17		Pitman Creek, Pulaski County: ca 3 mi E of Somerset (020A).
466	Freshwater Mussels	Toxolasma lividum	**Purple Lilliput**	Min.		Endangered	G3	S1	Yes	1983-07-26		Middle Fork Rockcastle River, Jackson County: at SR 89, 4.6 km above mouth of Horse Lick Creek at ford on Black Lick Road (Site 4) (019A).
640	Freshwater Mussels	Toxolasma lividum	**Purple Lilliput**	Sec.		Endangered	G3	S1	Yes	1980-06-10		Buck Creek, Pulaski County: at KY 1677 bridge (010A).
642	Freshwater Mussels	Toxolasma lividum	**Purple Lilliput**	Sec.		Endangered	G3	S1	Yes	1983-Summer		Horse Lick Creek, Jackson County: 0.3 mi below mouth of Raccoon Creek, at bridge at Dango, 7.6 mi SW of McKee (009A).
739	Freshwater Mussels	Toxolasma lividum	**Purple Lilliput**	Min.		Endangered	G3	S1	Yes	1995		Horse Lick Creek, Jackson/ Rockcastle County: at HLC km 5.9, in 2.9 km segment immediately downstream of Daugherty Road ford (063A).
820	Freshwater Mussels	Toxolasma lividum	**Purple Lilliput**	Sec.		Endangered	G3	S1	Yes	1927-08-27		West Fork Drakes Creek, Warren County: Massey Mill (015A).
825	Vascular Plants	Toxicodendron vernix	**Poison Sumac**	Sec.		Endangered	G5	S1		2022-07-25	Wet forests or thickets such as bottomland hardwood forests but also possible in peaty seepage areas.	South of Whitley City, ca 0.45 air mile NE of junction of US 27 and KY 92, along margin of pond.
826	Vascular Plants	Thuja occidentalis	**Northern White Cedar**	Sec.		Threatened	G5	S2S3		2018-07-26	Limestone bluffs and ledges along streams.	

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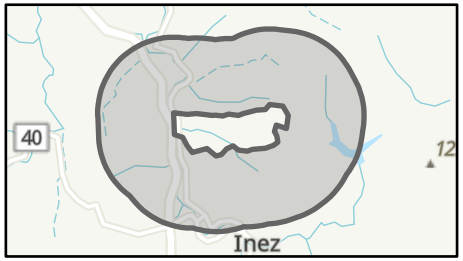
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85	Breeding Birds	Tyto furcata	**Barn Owl**	Gen.		Special Concern	G5	S3	Yes	1985		SW block of quad.
133	Vascular Plants	Trifolium reflexum	**Buffalo Clover**	Gen.		Endangered	G3G4	S1S2	Yes	1897-06-08	Prairies and disturbed openings either associated with forests or opportunistically in fields or well-drained sites.	GREENVILLE.
188	Fishes	Umbra limi	**Central Mudminnow**	Sec.		Threatened	G5	S2S3	Yes	1998-04-02		OBION CREEK, SOUTHERN-MOST CROSSING OF KY 51; CA 9.7 AIR KM NNW OF CLINTON.
214	Vascular Plants	Trichostema setaceum	**Narrowleaved Bluecurls**	Min.		Endangered	G5	S1		1939-09-09	Dry upland woods (oak-hickory), dry-moist old fields, and disturbed areas; also thin soils around rock outcrops and dry sandy soils of the coastal plain (Weakley 1998).	ONE MI SE OF HARGETT.
284	Vascular Plants	Trifolium reflexum	**Buffalo Clover**	Gen.		Endangered	G3G4	S1S2	Yes	1977	Prairies and disturbed openings either associated with forests or opportunistically in fields or well-drained sites.	ALONG DIRT ROAD BETWEEN WOODS AND FIELDS NEAR MAMOTH CAVE NATIONAL PARK.
287	Vascular Plants	Ulmus serotina	**September Elm**	Sec.		Special Concern	G4	S3		1987-09-18	Upland and mesic forests associated with limestone bluffs and slopes, alluvial forests.	BANK OF SOUTH FORK OF CUMBERLAND RIVER AT RM 6.8, NW SIDE OF RIVER.
293	Vascular Plants	Trillidium undulatum	**Painted Trillium**	Gen.		Threatened	G5	S2		2016-05-04	Mesic ravine forests, upper elevaton mesic hemlock forests, seeps in mesic forests and an oak-chesnut forest.	Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
385	Breeding Birds	Tyto furcata	**Barn Owl**	Sec.		Special Concern	G5	S3	Yes	1997-04		Kentucky River WMA.
478	Breeding Birds	Tyto furcata	**Barn Owl**	Gen.		Special Concern	G5	S3	Yes	1990		CE block of quad.
524	Vascular Plants	Trillidium undulatum	**Painted Trillium**	Sec.		Threatened	G5	S2		1980-06-12	Mesic ravine forests, upper elevaton mesic hemlock forests, seeps in mesic forests and an oak-chesnut forest.	Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
529	Vascular Plants	Trillium pusillum var. ozarkanum	**Ozark Least Trillium**	Sec.		Endangered	G4T3	S1	Yes	1997-04-18	UPLAND HARDWOOD FORESTS IN ACID SOILS OF SHALLOW DRAWS IN CHERTY-FLINTY SOILS OF OAK-TYPE WOODS (KRAL, 1983); IN KY, PERSISTING IN AN OPEN LOT.	Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
759	Breeding Birds	Tyto furcata	**Barn Owl**	Min.		Special Concern	G5	S3	Yes	1981-05-20		Bardwell, on edge of town along KY 123.
808	Breeding Birds	Tyto furcata	**Barn Owl**	Min.		Special Concern	G5	S3	Yes	1998-03		Woodsonville, McCombs farm at 699 Dowling Road.

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B. Buffer Area - Occurrence Report (43 of 58)

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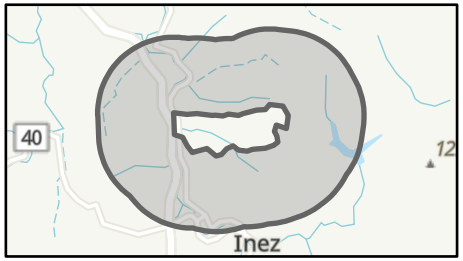
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
19	Fishes	Umbra limi	**Central Mudminnow**	Sec.		Threatened	G5	S2S3	Yes	1989		TRIBUTARY TO TERRAPIN CREEK, 1.45 KM S OF KY 97-KY 1485 JCT AT BELL CITY, 4.55 KM E OF FAIRBANKS.
28	Fishes	Umbra limi	**Central Mudminnow**	Sec.		Threatened	G5	S2S3	Yes	1978-08-24		RITTENHOUSE SLOUGH, 5000 FT S OF KY 94 AND BONDURANT, IN REELFOOT NATIONAL WILDLIFE REFUGE.
120	Vascular Plants	Viola egglestonii	**Eggleston's Violet**	Sec.		Special Concern	G4	S3		1992-06-03	Calcareous barrens, glades and dry prairies associated with silurean and Mississippian limestones.	THROUGHOUT MT. WASHINGTON CEDAR GLADE.
230	Vascular Plants	Viola egglestonii	**Eggleston's Violet**	Min.		Special Concern	G4	S3		1972-04-23	Calcareous barrens, glades and dry prairies associated with silurean and Mississippian limestones.	BELLS MILL ROAD, 2.6 MI E OF US-61; [SR-61?].
260	Breeding Birds	Vireo bellii	**Bell's Vireo**	Sec.		Special Concern	G5	S2S3B	Yes	1994-06-10		Ohio River bank, ca 0.5 mi upstream from boat ramp at Blackburn.
290	Vascular Plants	Viburnum molle	**Kentucky Arrow-wood**	Min.		Threatened	G3	S2		1995-05-14	Rocky dry to somewhat dry woods usually at about mid-slope.	IDLEWILD CREEK AT THE KENTUCKY RIVER, NEAR END OF KY 326 (NINEVAH RD) SW OF CLIFTON (MARGNUM 8), AND GRIER'S CREEK RAVINE INTO KENTUCKY RIVER, NEAR CLIFTON (MARGNUM 14).
369	Fishes	Umbra limi	**Central Mudminnow**	Min.		Threatened	G5	S2S3	Yes	2009-05-19		UNNAMED SLOUGH ADJACENT TO RUNNING SLOUGH, 1.6 KM S OF LEDFORD.
447	Vascular Plants	Utricularia macrorhiza	**Greater Bladderwort**	Min.		Endangered	G5	S1		1986-04	Deep or shallow quiet waters.	FISH LAKE, E OF BERKLEY, ON KY 877.
460	Fishes	Umbra limi	**Central Mudminnow**	Sec.		Threatened	G5	S2S3	Yes	2000-06-28		UNNAMED WETLAND ADJ TO WEST FORK CLARKS RIVER, 1.1 KM SSW OF SPRING CREEK AND WEST FORK CLARKS RIVER CONFL.
515	Breeding Birds	Vireo bellii	**Bell's Vireo**	Min.		Special Concern	G5	S2S3B	Yes	1980-06-27		Along Little Bayou Creed, adj to the W side of the Ash Settling Pond at the Shawnee Steam Plant, 6 mi NNW of Grahamville.
572	Vascular Plants	Vitis rupestris	**Sand Grape**	Min.		Threatened	G3	S2	Yes	1987-05-19	Sandy deposits of rocky river shores.	Rockcastle River on N bank of Long Point near the central, northern most position of the point.
579	Vascular Plants	Vallisneria americana	**Eelgrass**	Min.		Special Concern	G5	S2S3		1991-06	Shallow quiet waters and shores.	KENTUCKY SHORE NEAR EIGHTEEN MILE ISLAND.

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B. Buffer Area - Occurrence Report (44 of 58)

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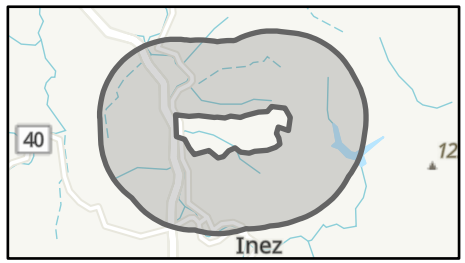
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
467	Vascular Plants	Xerophyllum asphodeloides	**Eastern Turkeybeard**	Gen.		Extirpated	G4	SX		1903	Sandy pinelands, mountain woods, oak-hickory woods, usually xeric.	BOWLING GREEN.
734	Vascular Plants	Zizaniopsis miliacea	**Southern Wild Rice**	Sec.		Threatened	G5	S1S2		1991-06-14	Swamps and stream margins.	CIRCA 1.75 AIR MI E OF BENNETTSTOWN, CA 0.3 AIR MI E OF S END OF FARM LANE, S OF TAYLOR RD.
2273	Snails	Vitrinizonites latissimus	**Glassy Grapeskin**	Sec.		Threatened	G4	S2		1981-07-30		BIG BLACK MOUNTAIN ALONG RADAR STN RD, 0.3 MI FROM JCT KY 160 (STN 26).
2565	Snails	Webbhelix multilineata	**Striped Whitelip**	Min.		Threatened	G5	S2		1992-12		LOUISVILLE, CA 0.2 AIR KM E OF I-65; CA 1.2 ROAD KM N OF JCT I-65 AND OUTER LOOP.
2989	Vascular Plants	Zizaniopsis miliacea	**Southern Wild Rice**	Sec.		Threatened	G5	S1S2		2023-09-27	Swamps and stream margins.	CYPRESS CREEK SNP, CA 200 M E OF CREEK IN SWAMP, CA 0.75 MI N OF HWY 81 (MARGNUM 12, 007A) AND CYPRESS CREEK, W BANK ON N SIDE OF HWY 81 BRIDGE (MARGNUM 15, 007B).
37	Breeding Birds	Vermivora chrysoptera	**Golden-winged Warbler**	Sec.	At-risk	Endangered	G4	S1B	Yes	1989-06-23		Big Black Mt, along KY 179, ca 2.5 air mi SW of Cumberland and NNW of head of Pounding Mill Branch.
261	Amphibians	Cryptobranchus alleganiensis alleganiensis	**Eastern Hellbender**	Min.	At-risk	Special Concern	G3T2	S2S3	Yes	1961-07-11		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
393	Amphibians	Cryptobranchus alleganiensis alleganiensis	**Eastern Hellbender**	Min.	At-risk	Special Concern	G3T2	S2S3	Yes	1957-07-09		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
617	Insects	Allocapnia cunninghami	**Karst Snowfly**	Min.	At-risk	Threatened	G1G2	S1S2	Yes	1964-12-30		CASH CREEK (BEAR CREEK?) AT BOW.
644	Reptiles	Clonophis kirtlandii	**Kirtland's Snake**	Min.	At-risk	Threatened	G2	S2		1999-09-14		McCawley Road, W of Jefferson Mall, E of Preston Hwy, N of Outer Loop (013A), Newburg area (013B), and Minors Lane, Okolona (013C).
714	Amphibians	Cryptobranchus alleganiensis alleganiensis	**Eastern Hellbender**	Sec.	At-risk	Special Concern	G3T2	S2S3	Yes	1990-09-17		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
720	Amphibians	Cryptobranchus alleganiensis alleganiensis	**Eastern Hellbender**	Min.	At-risk	Special Concern	G3T2	S2S3	Yes	1970-05-23		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1037	Reptiles	Clonophis kirtlandii	**Kirtland's Snake**	Cnty.	At-risk	Threatened	G2	S2		1959-05		Campbell Co.
1131	Breeding Birds	Vermivora chrysoptera	**Golden-winged Warbler**	Gen.	At-risk	Endangered	G4	S1B	Yes	1967-06-12		Pine Mountain at scattered localities about 2800 ft. between Whitesburg and Harlan.

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B. Buffer Area - Occurrence Report (45 of 58)

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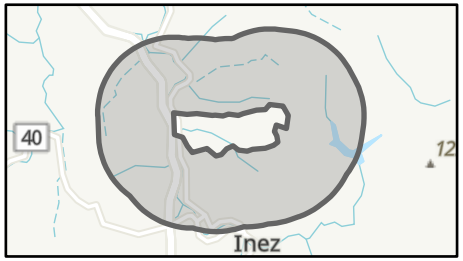
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
178	*Breeding Birds*	*Sternula antillarum athalassos*	**Interior Least Tern**	*Sec.*	Delisted	*Endangered*	*G4T3Q*	*S1S2B*	*Yes*	*2001-07-02*		*Ohio River, small sandbar N of W end of Livingston Point, ca RM 932.5.*
666	*Breeding Birds*	*Sternula antillarum athalassos*	**Interior Least Tern**	*Sec.*	Delisted	*Endangered*	*G4T3Q*	*S1S2B*	*Yes*	*2001-06-25*		*Swan Lake WMA, field to W of slough W of entrance rd W of Swan Lake (021A) and field to E of entrance rd, ca 0.4 air mi N of US 51 (021B).*
719	*Vascular Plants*	*Trifolium stoloniferum*	**Running Buffalo Clover**	*Gen.*	Delisted	*Threatened*	*G3*	*S2S3*	*Yes*	*1902-05-11*	*Old trails, traces, and roads; grazed bottomlands, streambanks, lawns, shoals, and cemeteries with native vegetation, prairies, well-drained and mesic soils, and filtered to partial light.*	*FIELDS ABOUT LEXINGTON.*
1235	*Vascular Plants*	*Solidago albopilosa*	**White-haired Goldenrod**	*Sec.*	Delisted	*Threatened*	*G2*	*S2*	*Yes*	*2008-11-19*	*Sandstone rockhouses and ledges along clifflines.*	*Red River Gorge, ca 0.6 air mi SW of Grays Arch picnic area on Tunnel Ridge off Tunnel Ridge Rd.*
1628	*Vascular Plants*	*Solidago albopilosa*	**White-haired Goldenrod**	*Cnty.*	Delisted	*Threatened*	*G2*	*S2*	*Yes*	*1957-10*	*Sandstone rockhouses and ledges along clifflines.*	*Collected from rock- houses, exposed to the south or west, on very fine sand, Menifee Co., Ky*
2037	*Vascular Plants*	*Solidago albopilosa*	**White-haired Goldenrod**	*Sec.*	Delisted	*Threatened*	*G2*	*S2*	*Yes*	*2008-11-03*	*Sandstone rockhouses and ledges along clifflines.*	*Red River Gorge, 0.4 air mi N of KY 715, along cliff line E of Wolf Pen Creek.*
2068	*Vascular Plants*	*Trifolium stoloniferum*	**Running Buffalo Clover**	*Sec.*	Delisted	*Threatened*	*G3*	*S2S3*	*Yes*	*2019-06-06*	*Old trails, traces, and roads; grazed bottomlands, streambanks, lawns, shoals, and cemeteries with native vegetation, prairies, well-drained and mesic soils, and filtered to partial light.*	*Along Ashbys Fork, ca 1.0 mi SW of Idlewild.*
2664	*Breeding Birds*	*Sternula antillarum athalassos*	**Interior Least Tern**	*Sec.*	Delisted	*Endangered*	*G4T3Q*	*S1S2B*	*Yes*	*1994-07-20*		*Sandbar opposite New Madrid, MO, ca Miss River mi 889.5.*
2879	*Vascular Plants*	*Solidago albopilosa*	**White-haired Goldenrod**	*Sec.*	Delisted	*Threatened*	*G2*	*S2*	*Yes*	*2009-10-16*	*Sandstone rockhouses and ledges along clifflines.*	*Red River Gorge, ca 2540 (air) M ESE of Slade interchange (033A); and ca 1.5 air mi ESE of Slade interchange on S trib of Clear Creek (033B).*
2934	*Vascular Plants*	*Trifolium stoloniferum*	**Running Buffalo Clover**	*Sec.*	Delisted	*Threatened*	*G3*	*S2S3*	*Yes*	*2008-05-13*	*Old trails, traces, and roads; grazed bottomlands, streambanks, lawns, shoals, and cemeteries with native vegetation, prairies, well-drained and mesic soils, and filtered to partial light.*	*Presbyterian cemetery, NW corner around middle tree of 3 mulberry trees in a row (one tree lost 2006).*
3069	*Breeding Birds*	*Sternula antillarum athalassos*	**Interior Least Tern**	*Sec.*	Delisted	*Endangered*	*G4T3Q*	*S1S2B*	*Yes*	*1988-06-03*		*Ohio River immediately downstream from Dam #53.*

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B. Buffer Area - Occurrence Report (46 of 58)

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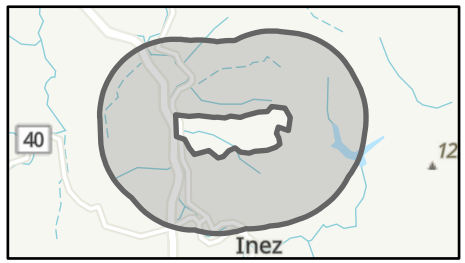
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
43	Freshwater Mussels	Cyprogenia stegaria	**Fanshell**	Min.	Endangered	Endangered	G1	S1	Yes	1989-01-16-pre		Barren River at Bowling Green.
799	Freshwater Mussels	Cyprogenia stegaria	**Fanshell**	Sec.	Endangered	Endangered	G1	S1	Yes	1999-08-26		LICKING RIVER AT NORTH FORK LICKING RIVER.
888	Freshwater Mussels	Cyprogenia stegaria	**Fanshell**	Sec.	Endangered	Endangered	G1	S1	Yes	No date		GREEN RIVER MILE 198.9.
1179	Mammals	Corynorhinus townsendii virginianus	**Virginia Big-eared Bat**	Sec.	Endangered	Endangered	G4T3	S1	Yes	1990-05-18		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1192	Freshwater Mussels	Cyprogenia stegaria	**Fanshell**	Sec.	Endangered	Endangered	G1	S1	Yes	1993-08-18		GREEN RIVER AT VANCE ISLAND, CA 1.3 STREAM KM UPSTREAM FROM LITTLE BARREN RIVER.
1232	Freshwater Mussels	Cyprogenia stegaria	**Fanshell**	Sec.	Endangered	Endangered	G1	S1	Yes	1982-07-05		GREEN RIVER AT DENNISON FERRY, 4.4 MI N OF NORTHTOWN, 5.6 MI NE OF THE TOWN OF MAMMOTH CAVE.
1427	Freshwater Mussels	Cyprogenia stegaria	**Fanshell**	Sec.	Endangered	Endangered	G1	S1	Yes	1989-08-31		GREEN RIVER AT MOUTH OF BIG HOLLOW, MILE 199.8.
1545	Freshwater Mussels	Cyprogenia stegaria	**Fanshell**	Sec.	Endangered	Endangered	G1	S1	Yes	1996-09-11		GREEN RIVER AT UNNAMED TRIB CA 4.3 RIVER KM DOWNSTREAM FROM RUSSELL CR.
1705	Mammals	Corynorhinus townsendii virginianus	**Virginia Big-eared Bat**	Sec.	Endangered	Endangered	G4T3	S1	Yes	2007-09-28		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1787	Mammals	Corynorhinus townsendii virginianus	**Virginia Big-eared Bat**	Sec.	Endangered	Endangered	G4T3	S1	Yes	1996-09-17		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1788	Mammals	Corynorhinus townsendii virginianus	**Virginia Big-eared Bat**	Sec.	Endangered	Endangered	G4T3	S1	Yes	1990-11-01		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1812	Mammals	Corynorhinus townsendii virginianus	**Virginia Big-eared Bat**	Sec.	Endangered	Endangered	G4T3	S1	Yes	2021-07-29		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
1843	Freshwater Mussels	Cyprogenia stegaria	**Fanshell**	Sec.	Endangered	Endangered	G1	S1	Yes	2007-07-26		Green River mile 206, 2.4 mi NW of Northtown, 1.0 mi NNE of Dennison Ferry.
1869	Freshwater Mussels	Cyprogenia stegaria	**Fanshell**	Sec.	Endangered	Endangered	G1	S1	Yes	1993-08-04		BARREN RIVER BELOW LOCK AND DAM 1.
2062	Freshwater Mussels	Cyprogenia stegaria	**Fanshell**	Sec.	Endangered	Endangered	G1	S1	Yes	1997-09-04		GREEN RIVER MILE 233.8.
2065	Freshwater Mussels	Cyprogenia stegaria	**Fanshell**	Sec.	Endangered	Endangered	G1	S1	Yes	2002-09-11		GREEN RIVER MILE 247.8.
2233	Mammals		**Virginia Big-eared Bat**	Sec.	Endangered	Endangered	G4T3	S1	Yes	2019-02-08		

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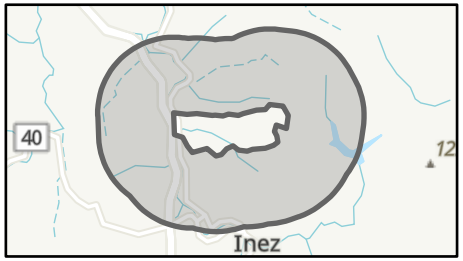
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
26	Freshwater Mussels	Epioblasma triquetra	**Snuffbox**	Sec.	Endangered	Endangered	G2G3	S1	Yes	1996-06-25		MIDDLE FORK KENTUCKY RIVER AT LAST RIFFLE DOWNSTREAM FROM OWLSNEST BRANCH; 1.3 AIR KM NE OF HYDEN.
38	Freshwater Mussels	Epioblasma triquetra	**Snuffbox**	Sec.	Endangered	Endangered	G2G3	S1	Yes	1990-08-16		MAMMOTH CAVE.
93	Freshwater Mussels	Epioblasma rangiana	**Northern Riffleshell**	Sec.	Endangered	Endangered	G1	S1	Yes	1988-06-16		BARREN RIVER MILE 13.5, AT MOUTH OF STALL CREEK, 1.0 MI W GREENCASTLE, 2.5 MI WSW RICHARDSVILLE.
201	Freshwater Mussels	Epioblasma rangiana	**Northern Riffleshell**	Sec.	Endangered	Endangered	G1	S1	Yes	1982-07-04		GREEN RIVER, 4.4 MI NW OF NORTHTOWN, 9.1 MI NE OF TOWN OF MAMMOTH CAVE, FIRST ISLAND INSIDE NATIONAL PARK.
206	Freshwater Mussels	Epioblasma triquetra	**Snuffbox**	Min.	Endangered	Endangered	G2G3	S1	Yes	1981-08-28		SLATE CREEK AT I-64, 480 KM(M) E OF OWINGSVILLE-FRENCHBURG EXIT ON ROUTE 36.
338	Freshwater Mussels	Epioblasma triquetra	**Snuffbox**	Sec.	Endangered	Endangered	G2G3	S1	Yes	1988-09-30		ROLLING FORK SALT RIVER AT RAYWICK, KY-527.
389	Freshwater Mussels	Epioblasma triquetra	**Snuffbox**	Sec.	Endangered	Endangered	G2G3	S1	Yes	1982-07-04		GREEN RIVER 4.4 MI NW OF NORTHTOWN, 9.1 MI NE OF TOWN OF MAMMOTH CAVE. FIRST ISLAND INSIDE NATIONAL PARK.
445	Freshwater Mussels	Epioblasma rangiana	**Northern Riffleshell**	Min.	Endangered	Endangered	G1	S1	Yes	1921-09-06		GREEN RIVER, 0.75 MI ABOVE MAMMOTH CAVE STEAMBOAT LANDING.
560	Freshwater Mussels	Epioblasma brevidens	**Cumberlandian Combshell**	Sec.	Endangered	Endangered	G1	S1	Yes	2008-09-12		Big South Fork at Oil Well Branch.
707	Freshwater Mussels	Epioblasma triquetra	**Snuffbox**	Sec.	Endangered	Endangered	G2G3	S1	Yes	1988-10-06		ROLLING FORK AT NEW HWY 412 BRDG; CA 0.1 MI UPSTREAM FROM CONFLUENCE W/ STEWART CREEK (SITE 8).
709	Freshwater Mussels	Epioblasma triquetra	**Snuffbox**	Sec.	Endangered	Endangered	G2G3	S1	Yes	No Date		BUCK CREEK, 1.9 MI ENE OF BENT AND 4.4 MI NW OF WHETSTONE.
735	Freshwater Mussels	Epioblasma rangiana	**Northern Riffleshell**	Sec.	Endangered	Endangered	G1	S1	Yes	1989-08-31		GREEN RIVER MILE 200.8.
736	Freshwater Mussels	Epioblasma brevidens	**Cumberlandian Combshell**	Min.	Endangered	Endangered	G1	S1	Yes	No date		

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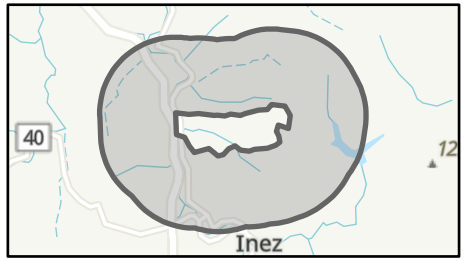
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
84	*Mammals*	*Myotis grisescens*	**Gray Myotis**	*Sec.*	Endangered	*Threatened*	*G3G4*	*S2*	*Yes*	*2000-09-22*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
113	*Mammals*	*Myotis grisescens*	**Gray Myotis**	*Sec.*	Endangered	*Threatened*	*G3G4*	*S2*	*Yes*	*2010-06-02*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
246	*Mammals*	*Myotis grisescens*	**Gray Myotis**	*Sec.*	Endangered	*Threatened*	*G3G4*	*S2*	*Yes*	*2009-06-08*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
249	*Mammals*	*Myotis grisescens*	**Gray Myotis**	*Sec.*	Endangered	*Threatened*	*G3G4*	*S2*	*Yes*	*1969-06*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
543	*Mammals*	*Myotis grisescens*	**Gray Myotis**	*Sec.*	Endangered	*Threatened*	*G3G4*	*S2*	*Yes*	*2009-06-04*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
566	*Mammals*	*Myotis grisescens*	**Gray Myotis**	*Sec.*	Endangered	*Threatened*	*G3G4*	*S2*	*Yes*	*1990-07-14*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
687	*Fishes*	*Etheostoma susanae*	**Cumberland Darter**	*Sec.*	Endangered	*Endangered*	*G1G2*	*S1*	*Yes*	*2005-06-09*		*Bunches Creek, ca 1.5 km above mouth.*
823	*Fishes*	*Etheostoma susanae*	**Cumberland Darter**	*Sec.*	Endangered	*Endangered*	*G1G2*	*S1*	*Yes*	*1994-08-02*		*Calf Pen Fork downstream from Buck Creek.*
855	*Mammals*	*Myotis grisescens*	**Gray Myotis**	*Sec.*	Endangered	*Threatened*	*G3G4*	*S2*	*Yes*	*1995-07-21*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
932	*Freshwater Mussels*	*Lampsilis abrupta*	**Pink Mucket**	*Gen.*	Endangered	*Endangered*	*G1G2*	*S1*	*Yes*	*1980-pre*		*Ohio River, at Portsmouth, OH, Scioto Co.*
962	*Fishes*	*Etheostoma susanae*	**Cumberland Darter**	*Sec.*	Endangered	*Endangered*	*G1G2*	*S1*	*Yes*	*2005-06-09*		*Bunches Creek, from Calf Pen Fork confluence upstream ca 0.8 stream km*
1035	*Freshwater Mussels*	*Lampsilis abrupta*	**Pink Mucket**	*Sec.*	Endangered	*Endangered*	*G1G2*	*S1*	*Yes*	*1987-09-16*		*GREEN RIVER AT ISLAND 3.2 MI NE OF NORTHTOWN, 5.3 MI NNW OF HORSE CAVE.*
1149	*Mammals*	*Myotis grisescens*	**Gray Myotis**	*Sec.*	Endangered	*Threatened*	*G3G4*	*S2*	*Yes*	*2001-08-05*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
1384	*Fishes*	*Etheostoma susanae*	**Cumberland Darter**	*Min.*	Endangered	*Endangered*	*G1G2*	*S1*	*Yes*	*1987-09-10*		*BRIER CREEK AT KY 92.*
1617	*Mammals*	*Myotis grisescens*	**Gray Myotis**	*Sec.*	Endangered	*Threatened*	*G3G4*	*S2*	*Yes*	*2009-06-06*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
1619	*Mammals*	*Myotis grisescens*	**Gray Myotis**	*Sec.*	Endangered	*Threatened*	*G3G4*	*S2*	*Yes*	*2009-06-02*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
1637	*Mammals*	*Myotis grisescens*	**Gray Myotis**	*Sec.*	Endangered	*Threatened*	*G3G4*	*S2*	*Yes*	*1995-07-11*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
1638	*Fishes*	*Etheostoma lemniscatum*	**Tuxedo Darter**	*Sec.*	Endangered	*Endangered*	*G1*	*S1*	*Yes*	*2005-11-21*		*Big South Fork Cumberland River at Blue Heron.*
1739	*Mammals*	*Myotis grisescens*	**Gray Myotis**	*Sec.*	Endangered	*Threatened*	*G3G4*	*S2*	*Yes*	*2005-02-03*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*

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B. Buffer Area - Occurrence Report (49 of 58)

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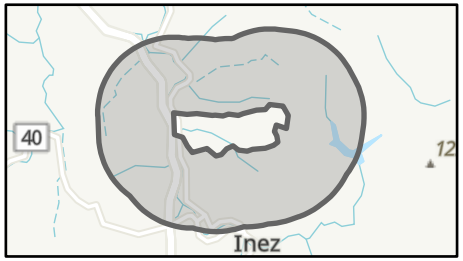
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
4	*Mammals*	*Myotis sodalis*	**Indiana Bat**	*Sec.*	Endangered	*Endangered*	*G2*	*S1S2*	*Yes*	*1988-11-29*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
239	*Mammals*	*Myotis sodalis*	**Indiana Bat**	*Sec.*	Endangered	*Endangered*	*G2*	*S1S2*	*Yes*	*2019-02-05*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
375	*Mammals*	*Myotis sodalis*	**Indiana Bat**	*Sec.*	Endangered	*Endangered*	*G2*	*S1S2*	*Yes*	*2001-08-04*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
382	*Mammals*	*Myotis sodalis*	**Indiana Bat**	*Sec.*	Endangered	*Endangered*	*G2*	*S1S2*	*Yes*	*1996-07-09*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
601	*Mammals*	*Myotis sodalis*	**Indiana Bat**	*Sec.*	Endangered	*Endangered*	*G2*	*S1S2*	*Yes*	*2010-02-02*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
679	*Mammals*	*Myotis sodalis*	**Indiana Bat**	*Sec.*	Endangered	*Endangered*	*G2*	*S1S2*	*Yes*	*1981-09-18*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
743	*Mammals*	*Myotis sodalis*	**Indiana Bat**	*Sec.*	Endangered	*Endangered*	*G2*	*S1S2*	*Yes*	*2007-07-31*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
792	*Mammals*	*Myotis sodalis*	**Indiana Bat**	*Sec.*	Endangered	*Endangered*	*G2*	*S1S2*	*Yes*	*2016-01-26*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
944	*Mammals*	*Myotis sodalis*	**Indiana Bat**	*Sec.*	Endangered	*Endangered*	*G2*	*S1S2*	*Yes*	*2009-03-05*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
1004	*Mammals*	*Myotis sodalis*	**Indiana Bat**	*Sec.*	Endangered	*Endangered*	*G2*	*S1S2*	*Yes*	*2019-02-12*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
1039	*Mammals*	*Myotis sodalis*	**Indiana Bat**	*Sec.*	Endangered	*Endangered*	*G2*	*S1S2*	*Yes*	*1979-05-24*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
1068	*Mammals*	*Myotis sodalis*	**Indiana Bat**	*Sec.*	Endangered	*Endangered*	*G2*	*S1S2*	*Yes*	*2008-01-25*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
1070	*Mammals*	*Myotis sodalis*	**Indiana Bat**	*Sec.*	Endangered	*Endangered*	*G2*	*S1S2*	*Yes*	*2010-02-11*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
1396	*Mammals*	*Myotis sodalis*	**Indiana Bat**	*Sec.*	Endangered	*Endangered*	*G2*	*S1S2*	*Yes*	*1992-02-19*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
1482	*Mammals*	*Myotis sodalis*	**Indiana Bat**	*Sec.*	Endangered	*Endangered*	*G2*	*S1S2*	*Yes*	*2016-01-29*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
1654	*Mammals*	*Myotis sodalis*	**Indiana Bat**	*Sec.*	Endangered	*Endangered*	*G2*	*S1S2*	*Yes*	*1995-08-07*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
1656	*Mammals*	*Myotis sodalis*	**Indiana Bat**	*Sec.*	Endangered	*Endangered*	*G2*	*S1S2*	*Yes*	*1980-08-14*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
1657	*Mammals*	*Myotis sodalis*	**Indiana Bat**	*Sec.*	Endangered	*Endangered*	*G2*	*S1S2*	*Yes*	*2019-02-08*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*
1844	*Mammals*	*Myotis sodalis*	**Indiana Bat**	*Sec.*	Endangered	*Endangered*	*G2*	*S1S2*	*Yes*	*1990-02-22*		*Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov*

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B. Buffer Area - Occurrence Report (50 of 58)

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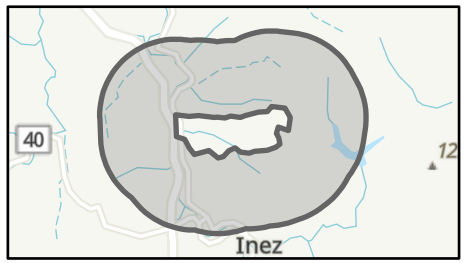
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
39	Freshwater Mussels	Plethobasus cyphyus	**Sheepnose**	Min.	Endangered	Endangered	G2G3	S1	Yes	2019-09-08		GREEN RIVER BELOW LOCK 5 DAM AT GLENMORE.
110	Freshwater Mussels	Plethobasus cyphyus	**Sheepnose**	Sec.	Endangered	Endangered	G2G3	S1	Yes	1971-10-12		LICKING RIVER AT RT 111 BRIDGE AT WYOMING.
111	Freshwater Mussels	Plethobasus cyphyus	**Sheepnose**	Sec.	Endangered	Endangered	G2G3	S1	Yes	1988-08-16		GREEN RIVER NEAR WILSONS PARK BETWEEN RIO AND MUNFORDVILLE.
117	Freshwater Mussels	Pegias fabula	**Littlewing Pearlymussel**	Sec.	Endangered	Endangered	G1	S1	Yes	1993-06		HORSE LICK CREEK 100 M DOWNSTREAM OF DAUGHTERY FORD (HLC KM 6.8).
154	Freshwater Mussels	Plethobasus cooperianus	**Orangefoot Pimpleback**	Sec.	Endangered	Endangered	G1	S1	Yes	1984-08		OHIO RIVER MI 969.7, JUST UPSTREAM OF MOUND CITY, IL.
185	Freshwater Mussels	Obovaria retusa	**Ring Pink**	Sec.	Endangered	Endangered	G1	S1	Yes	1985-07-17		TENNESSEE RIVER AT MILE 12.5, SITE 44.
265	Crustacean	Palaemonias ganteri	**Mammoth Cave Shrimp**	Min.	Endangered	Endangered	G1	S1	Yes	1985-09		Sensitive Element - Contact OKNP at EEC.KYBAT@ky.gov
277	Fishes	Notropis albizonatus	**Palezone Shiner**	Sec.	Endangered	Endangered	G1	S1	Yes	1990-08-07		LITTLE SOUTH FORK CUMBERLAND RIVER AT KY 92 BRDG.
317	Freshwater Mussels	Plethobasus cyphyus	**Sheepnose**	Sec.	Endangered	Endangered	G2G3	S1	Yes	1987-12-10		Ohio River mile ca 922.7 between Cumberland Island Towhead and the Kentucky shoreline.
390	Freshwater Mussels	Plethobasus cyphyus	**Sheepnose**	Gen.	Endangered	Endangered	G2G3	S1	Yes	1994		Ohio River, 5 mi NW of Owensboro.
496	Vascular Plants	Physaria globosa	**Globe Bladderpod**	Sec.	Endangered	Endangered	G2	S1	Yes	1992-05-12	Calcareous rocks and barrens, wooded cliff edges.	NORTH OF BENSON CREEK, CA 1.6 RD MI NW OF CHOATVILLE CHURCH ON KY 1005, N SIDE OF RD AND JUST N OF BRIGHTON BRANCH, MIDWAY UP THE SLOPE NEAR A FENCEROW AND W OF THE POWERLINE AND THE BARN.
614	Freshwater Mussels	Plethobasus cyphyus	**Sheepnose**	Sec.	Endangered	Endangered	G2G3	S1	Yes	1995-08-21		GREEN RIVER AT HEAD OF ISLAND 0.2 MI UPSTREAM FROM UGLY CREEK, MILE 201.4.
659	Vascular Plants	Physaria globosa	**Globe Bladderpod**	Sec.	Endangered	Endangered	G2	S1	Yes	2003-06-01	Calcareous rocks and barrens, wooded cliff edges.	PEAKS MILL, CA 0.25 KM W OF JCT OF KY 1262 AND KY 2919. PLS ARE ON THE E SIDE OF A RAVINE THAT IS ON THE N SIDE OF THE RD.
811	Vascular Plants	Physaria globosa	**Globe Bladderpod**	Gen.	Endangered	Endangered	G2	S1	Yes	1900-05-09	Calcareous rocks and barrens, wooded cliff edges.	LEXINGTON.

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B. Buffer Area - Occurrence Report (51 of 58)

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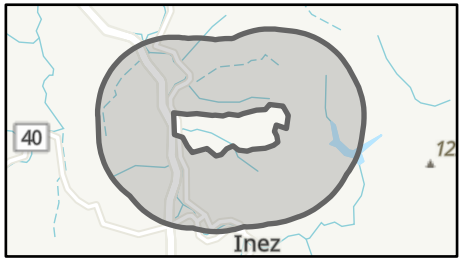
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
60	Freshwater Mussels	Pleurobema plenum	**Rough Pigtoe**	Sec.	Endangered	Endangered	G1	S1	Yes	1992-08-27		BARREN RIVER CA 2.8 KM DOWNSTREAM OF LOCK AND DAM 1 (SITES 1 & 2).
118	Freshwater Mussels	Pleurobema clava	**Clubshell**	Sec.	Endangered	Endangered	G1G2	S1	Yes	1994		OHIO RIVER MI 650.9, 1.5 MI NW OF MAUCKPORT AND 0.1 MI BELOW HAUNTED HOLLOW.
121	Freshwater Mussels	Pleurobema clava	**Clubshell**	Sec.	Endangered	Endangered	G1G2	S1	Yes	1999-09-25		GREEN RIVER MI 198.6
297	Freshwater Mussels	Potamilus capax	**Fat Pocketbook**	Sec.	Endangered	Threatened	G3	S2	Yes	1997-08-08		OHIO RIVER MI 866.7, SERIES OF SAND AND GRAVEL BARS, 0.25 (MARGNUM 3) TO 0.7 (MARGNUM 2) MI UPSTREAM FROM MOUTH OF SALINE RIVER.
513	Freshwater Mussels	Pleurobema plenum	**Rough Pigtoe**	Sec.	Endangered	Endangered	G1	S1	Yes	1993-08-20		GREEN RIVER AT WILSON PARK.
821	Freshwater Mussels	Potamilus capax	**Fat Pocketbook**	Sec.	Endangered	Threatened	G3	S2	Yes	1999-09-07		OHIO RIVER AT CA R MI 945.6; BAR AT POWERLINE CROSSING.
862	Freshwater Mussels	Pleurobema clava	**Clubshell**	Cnty.	Endangered	Endangered	G1G2	S1	Yes	No Date		OHIO RIVER, ALONG INDIANA BORDER.
884	Freshwater Mussels	Pleurobema clava	**Clubshell**	Gen.	Endangered	Endangered	G1G2	S1	Yes	1966-06-02		Ohio River at Louisville.
1044	Freshwater Mussels	Potamilus capax	**Fat Pocketbook**	Sec.	Endangered	Threatened	G3	S2	Yes	2021-08-06		Ohio River mile 937.8 at Brookport, IL. (014A) slightly west of town, ca 950 m w of 014A (014B) Site 3 of study area. Slightly Downstream of small drainage mouth. Near Brookport, Illinois (014C)
1186	Freshwater Mussels	Pleurobema clava	**Clubshell**	Min.	Endangered	Endangered	G1G2	S1	Yes	1924-08-11		BARREN RIVER AT EWINGS FORD, ABOUT 3 MI W OF AND ABOVE BOWLING GREEN.
1229	Freshwater Mussels	Plethobasus cyphyus	**Sheepnose**	Sec.	Endangered	Endangered	G2G3	S1	Yes	2000-09-22		OHIO RIVER MILE 746.0
1297	Freshwater Mussels	Plethobasus cyphyus	**Sheepnose**	Min.	Endangered	Endangered	G2G3	S1	Yes	1999-05		Ohio River mi 340.5 - 342.
1306	Freshwater Mussels	Plethobasus cyphyus	**Sheepnose**	Gen.	Endangered	Endangered	G2G3	S1	Yes	1954-06-29		Ohio River at Shawneetown.
1307	Freshwater Mussels	Plethobasus cyphyus	**Sheepnose**	Gen.	Endangered	Endangered	G2G3	S1	Yes	1954-06-30		Ohio River between Metropolis and Joppa.
1312	Freshwater Mussels	Pleurobema plenum	**Rough Pigtoe**	Sec.	Endangered	Endangered	G1	S1	Yes	2002-08-27		

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B. Buffer Area - Occurrence Report (52 of 58)

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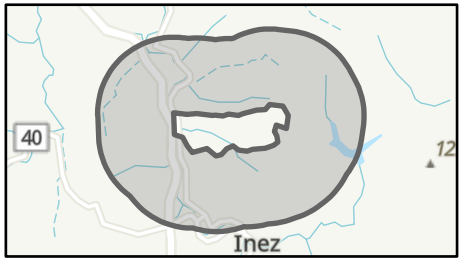
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
136	Freshwater Mussels	Ptychobranchus subtentus	**Fluted Kidneyshell**	Sec.	Endangered	Endangered	G2?	S1	Yes	1982-06-19		BUCK CREEK 1.9 MI ENE OF BENT AND 4.4 MI NW OF WHETSTONE.
360	Freshwater Mussels	Venustaconcha troostensis	**Cumberland Bean**	Min.	Endangered	Endangered	G1	S1	Yes	No date		Buck Creek, Pulaski County: 2.4 km downstream from the KY 192 crossing, Site 22 (093A).
424	Freshwater Mussels	Venustaconcha troostensis	**Cumberland Bean**	Sec.	Endangered	Endangered	G1	S1	Yes	1980-05-09		ROCKCASTLE RIVER, 3.1 KM BELOW SR-80 BRIDGE. SITE IS AT ROC-LAU CO LINE.
453	Freshwater Mussels	Ptychobranchus subtentus	**Fluted Kidneyshell**	Min.	Endangered	Endangered	G2?	S1	Yes	1998		LITTLE SOUTH FORK CUMBERLAND RIVER NEAR BURKES CREEK (PB-172 & 173).
558	Freshwater Mussels	Ptychobranchus subtentus	**Fluted Kidneyshell**	Sec.	Endangered	Endangered	G2?	S1	Yes	2017-09-14		ROCK CREEK UPSTREAM FROM TRACE BRANCH; 12.7 AIR KM WSW OF WHITLEY CITY.
694	Freshwater Mussels	Venustaconcha troostensis	**Cumberland Bean**	Min.	Endangered	Endangered	G1	S1	Yes	No date		BUCK CREEK 1.0 KM SW OF STAB, 3.5 KM ESE OF SHOPVILLE, SITE 12.
872	Freshwater Mussels	Ptychobranchus subtentus	**Fluted Kidneyshell**	Min.	Endangered	Endangered	G2?	S1	Yes	1995		HORSE LICK CREEK AT HLC KM 5.9; IN 2.0 KM SEGMENT IMMEDIATELY DOWNSTREAM OF DAUGHERTY ROAD FORD.
898	Freshwater Mussels	Venustaconcha troostensis	**Cumberland Bean**	Sec.	Endangered	Endangered	G1	S1	Yes	2005-06-29		ROCKCASTLE RIVER AT MOUTH OF BIG TRACE BRANCH (SITE 23).
1055	Freshwater Mussels	Venustaconcha troostensis	**Cumberland Bean**	Sec.	Endangered	Endangered	G1	S1	Yes	1984-08-14		BUCK CREEK 1.0 KM E OF SR 192 CROSSING, 2.0 KM ESE OF DYKES, SITE 20.
1103	Freshwater Mussels	Ptychobranchus subtentus	**Fluted Kidneyshell**	Sec.	Endangered	Endangered	G2?	S1	Yes	1995-09-13		ROCK CR, CA 6.0 ROAD KM UPSTREAM FROM WHITE OAK CREEK BRIDGE; 14.4 AIR KM WSW OF WHITLEY CITY.
1146	Freshwater Mussels	Ptychobranchus subtentus	**Fluted Kidneyshell**	Min.	Endangered	Endangered	G2?	S1	Yes	No Date		PITMAN CREEK 2 KM UPSTREAM FROM HWY 1247 BRDG, 6.5 KM SSE OF SOMERSET.
1151	Freshwater Mussels	Venustaconcha troostensis	**Cumberland Bean**	Sec.	Endangered	Endangered	G1	S1	Yes	1994-07-13		BUCK CREEK, BELOW HWY 70 BRIDGE CROSSING AT BRIARY CREEK.
1175	Freshwater Mussels	Potamilus capax	**Fat Pocketbook**	Gen.	Endangered	Threatened	G3	S2	Yes	1988-04-14-pre		(Ohio River) at Jeffersonville, Ind.
1213	Freshwater Mussels	Venustaconcha troostensis	**Cumberland Bean**	Sec.	Endangered	Endangered	G1	S1	Yes	No date		

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B. Buffer Area - Occurrence Report (53 of 58)

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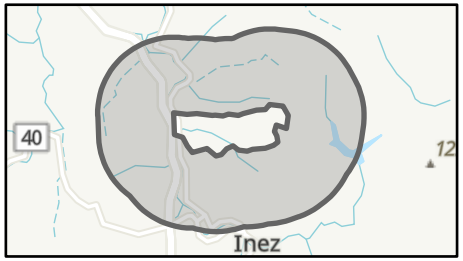
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
2247	Freshwater Mussels	Venustaconcha troostensis	**Cumberland Bean**	Min.	Endangered	Endangered	G1	S1	Yes	1985-09-24		Roundstone Creek below RR bridge at Hummel.
2534	Freshwater Mussels	Venustaconcha troostensis	**Cumberland Bean**	Gen.	Endangered	Endangered	G1	S1	Yes	1961-09-18		CUMBERLAND RIVER, WHITLEY-MCCREARY CO LINE. [McCreary County]
2836	Freshwater Mussels	Venustaconcha troostensis	**Cumberland Bean**	Sec.	Endangered	Endangered	G1	S1	Yes	2005-05-10		Laurel Fork 2.75 km upstream from Indian Creek; ca 6.4 air km SSW McKee.
2845	Freshwater Mussels	Venustaconcha troostensis	**Cumberland Bean**	Min.	Endangered	Endangered	G1	S1	Yes	No date		BUCK CREEK 1.5 KM NNE OF BENT, 3.0 KM S OF STAB, SITE 15.
2846	Freshwater Mussels	Venustaconcha troostensis	**Cumberland Bean**	Min.	Endangered	Endangered	G1	S1	Yes	No date		BUCK CREEK 4.0 KM NW OF WHETSTONE, 1.8 KM ENE OF BENT, SITE 17.
3136	Freshwater Mussels	Venustaconcha troostensis	**Cumberland Bean**	Sec.	Endangered	Endangered	G1	S1	Yes	1992-09-16		ROCKCASTLE RIVER AT MOUTH OF UNNAMED E TRIB CA 2 STREAM KM DOWNSTREAM FROM FORD AT FORD HOLLOW (SITE 15).
3137	Freshwater Mussels	Venustaconcha troostensis	**Cumberland Bean**	Sec.	Endangered	Endangered	G1	S1	Yes	1992-09-16		ROCKCASTLE RIVER AT ISLAND CA 4.25 STREAM KM S OF LIVINGSTON (SITE 17).
36	Freshwater Mussels	Leaunio ortmanni	**Kentucky Creekshell**	Sec.	Pot. Endangered	Endangered	G2	S1S2	Yes	No date		Green River, Edmonson County: at head of island 0.2 mi upstream from Ugly Creek, Mile 201.5 (037A).
114	Freshwater Mussels	Pleurobema oviforme	**Tennessee Clubshell**	Sec.	Pot. Endangered	Endangered	G2G3	S1	Yes	1988-06-14		RED RIVER ALONG SR 102 AT TENNESSEE BORDER, 1.5 MI ESE KEYSBURG, 2.8 MI SW DOT.
141	Freshwater Mussels	Leaunio ortmanni	**Kentucky Creekshell**	Sec.	Pot. Endangered	Endangered	G2	S1S2	Yes	2000-08-24		Green River, Hart County: mile 231.8 (073A).
237	Freshwater Mussels	Leaunio ortmanni	**Kentucky Creekshell**	Sec.	Pot. Endangered	Endangered	G2	S1S2	Yes	No date		Beaver Creek, Barren County: at Old Lexington Road (Old Glasgow - Munfordville Road) (056A).
342	Freshwater Mussels	Leaunio ortmanni	**Kentucky Creekshell**	Gen.	Pot. Endangered	Endangered	G2	S1S2	Yes	1927-08-25		Drakes Creek, Warren County: 7 mi S of Bowling Green (003A).
407	Freshwater Mussels	Leaunio ortmanni	**Kentucky Creekshell**	Min.	Pot. Endangered	Endangered	G2	S1S2	Yes	1964-07-17		Barren River, Warren County: at RT 31W bridge at Bowling Green (032A).
562	Freshwater Mussels	Pleurobema oviforme	**Tennessee Clubshell**	Min.	Pot. Endangered	Endangered	G2G3	S1	Yes	No date		ROCKCASTLE RIVER 2 MI ABOVE LIVINGSTON.
738	Freshwater Mussels	Simpsonaias ambigua	**Salamander Mussel**	Sec.	Pot. Endangered	Threatened	G1G2	S2S3	Yes	1978-07-09		

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B. Buffer Area - Occurrence Report (54 of 58)

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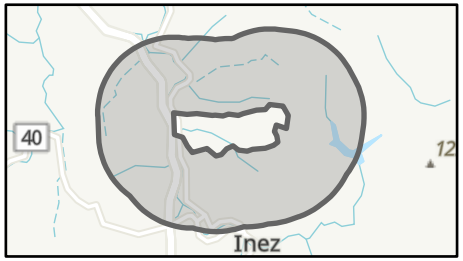
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
672	Freshwater Mussels	Simpsonaias ambigua	**Salamander Mussel**	Min.	Pot. Endangered	Threatened	G1G2	S2S3	Yes	1961-10-22		GREEN RIVER AT MUNFORDVILLE.
854	Freshwater Mussels	Simpsonaias ambigua	**Salamander Mussel**	Gen.	Pot. Endangered	Threatened	G1G2	S2S3	Yes	1959-09-12		Troublesome Creek (River) 2.3 mi above Lost Creek (town).
897	Freshwater Mussels	Simpsonaias ambigua	**Salamander Mussel**	Min.	Pot. Endangered	Threatened	G1G2	S2S3	Yes	1985-pre		Ohio River, Louisville.
1120	Freshwater Mussels	Simpsonaias ambigua	**Salamander Mussel**	Min.	Pot. Endangered	Threatened	G1G2	S2S3	Yes	1982-09-05		SOUTH FORK LICKING RIVER, APPROX. 1 MI DOWNSTREAM FROM FORK LICK CREEK.
1121	Freshwater Mussels	Simpsonaias ambigua	**Salamander Mussel**	Sec.	Pot. Endangered	Threatened	G1G2	S2S3	Yes	1982-06-07		SALT RIVER AT MOUTH OF GOOSE CREEK.
1496	Freshwater Mussels	Simpsonaias ambigua	**Salamander Mussel**	Sec.	Pot. Endangered	Threatened	G1G2	S2S3	Yes	1988-07-10		SOUTH FORK LICKING RIVER, 1.5 MI N SHAWHAN, 2.6 MI SE JCT US 27 AND SR 675 IN LAIR.
1524	Freshwater Mussels	Simpsonaias ambigua	**Salamander Mussel**	Sec.	Pot. Endangered	Threatened	G1G2	S2S3	Yes	1998-05-14		GRASSY CREEK AT LOWER LONG BRANCH.
1525	Freshwater Mussels	Simpsonaias ambigua	**Salamander Mussel**	Sec.	Pot. Endangered	Threatened	G1G2	S2S3	Yes	1999-08-24		LICKING RIVER AT KENTON.
1696	Freshwater Mussels	Simpsonaias ambigua	**Salamander Mussel**	Min.	Pot. Endangered	Threatened	G1G2	S2S3	Yes	1996-11		RED RIVER IN THE VICINITY OF KY 77.
1713	Freshwater Mussels	Simpsonaias ambigua	**Salamander Mussel**	Sec.	Pot. Endangered	Threatened	G1G2	S2S3	Yes	1982-09-16		Licking River at mouth of Slate Creek.
2094	Freshwater Mussels	Simpsonaias ambigua	**Salamander Mussel**	Min.	Pot. Endangered	Threatened	G1G2	S2S3	Yes	1981-08-01		LITTLE SANDY RIVER, BELOW GRAYSON DAM.
2270	Freshwater Mussels	Simpsonaias ambigua	**Salamander Mussel**	Sec.	Pot. Endangered	Threatened	G1G2	S2S3	Yes	1996-07-31		RED RIVER 0.6 MI UPSTREAM OF SR 715 BRIDGE, 0.55 AIR MI NE SR 715 BRIDGE.
3017	Freshwater Mussels	Simpsonaias ambigua	**Salamander Mussel**	Sec.	Pot. Endangered	Threatened	G1G2	S2S3	Yes	1992-09-03		SOUTH FORK LITTLE BARREN RIVER DOWNSTREAM FROM KY 70 BRDG.
3119	Freshwater Mussels	Simpsonaias ambigua	**Salamander Mussel**	Min.	Pot. Endangered	Threatened	G1G2	S2S3	Yes	1980-08-12		EAGLE CREEK OFF SR-467, 4.2 MI E OF VILLAGE OF SPARTA, 1.2 MI W OF GLENCOE. (002A)
42	Fishes	Chrosomus cumberlandensis	**Blackside Dace**	Sec.	Threatened	Threatened	G2	S2	Yes	2010-07-15		FREEMAN FORK OF BEAVER CREEK JUST ABOVE THE MOUTH.
59	Fishes	Chrosomus cumberlandensis	**Blackside Dace**	Sec.	Threatened	Threatened	G2	S2	Yes	1993-06-02		UNNAMED TRIBUTARY TO RYANS CR IN MEADORS HOLLOW AT RYANS CREEK RD.
209	Fishes	Chrosomus cumberlandensis	**Blackside Dace**	Sec.	Threatened	Threatened	G2	S2	Yes	2008-10-25		

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B. Buffer Area - Occurrence Report (55 of 58)

This section details occurrences recorded within the project footprint, as well as the designated buffer area surrounding the project site. While these species are not directly within the project footprint, their proximity may influence project planning due to habitat connectivity or regulatory considerations.

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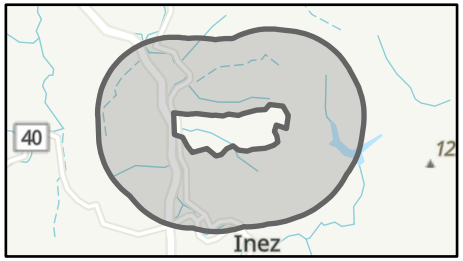
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
45	Freshwater Mussels	Fusconaia subrotunda	**Longsolid**	Min.	Threatened	Threatened	G3	S3	Yes	1985-08-22		Tennessee River at mile 17.8, Site 22.
106	Freshwater Mussels	Fusconaia subrotunda	**Longsolid**	Sec.	Threatened	Threatened	G3	S3	Yes	2017-10-03 to 04		GREEN RIVER MILE 200.8. (094A) Green River Mile 201.6 (094B).
163	Freshwater Mussels	Fusconaia subrotunda	**Longsolid**	Sec.	Threatened	Threatened	G3	S3	Yes	2017-10-02		GREEN RIVER AT MAMMOTH CAVE, IN RIFFLES AT LOWER END OF AN ISLAND, ABOUT 0.75 MI ABOVE STEAMBOAT LANDING. (005A) Green River Mile 198.6 (005B)
204	Freshwater Mussels	Fusconaia subrotunda	**Longsolid**	Sec.	Threatened	Threatened	G3	S3	Yes	1989-09-06		GREEN R MILE 195.4-195.5.
235	Freshwater Mussels	Fusconaia subrotunda	**Longsolid**	Sec.	Threatened	Threatened	G3	S3	Yes	2005-10-07		GREEN RIVER AT HEAD END OF THREE SISTERS ISLAND, MILE 204.
250	Fishes	Etheostoma chienense	**Relict Darter**	Sec.	Threatened	Endangered	G1	S1	Yes	2010-10-20		Bayou de Chien, Hickman County: 4.8 km SW Fulgham at Davis (= Moultrie) Rd (STA 14) (007A).
459	Freshwater Mussels	Fusconaia subrotunda	**Longsolid**	Sec.	Threatened	Threatened	G3	S3	Yes	1991-08-04		LICKING RIVER CA 1.7 STREAM KM UPSTREAM FROM FORGE CR CONFLUENCE.
689	Freshwater Mussels	Fusconaia subrotunda	**Longsolid**	Sec.	Threatened	Threatened	G3	S3	Yes	1997-08-28		NORTH FORK KENTUCKY RIVER AT WAR CREEK.
938	Freshwater Mussels	Fusconaia subrotunda	**Longsolid**	Sec.	Threatened	Threatened	G3	S3	Yes	2007-08-02		LICKING RIVER AT STONY CREEK CONFLUENCE.
951	Freshwater Mussels	Fusconaia subrotunda	**Longsolid**	Sec.	Threatened	Threatened	G3	S3	Yes	2019-09-12		GREEN RIVER NR MOUTH OF UNNAMED TRIB CA 1.5 STREAM MI DOWNSTREAM FROM KY 185. (115A) Green River Mile Marker 167.0 (115B) ~230 m downstream from tributary (115C)
1041	Freshwater Mussels	Fusconaia subrotunda	**Longsolid**	Sec.	Threatened	Threatened	G3	S3	Yes	1999-07-20		GREEN R MI 131.7; CA 13.9 AIR KM NW OF MORGANTOWN.
1042	Freshwater Mussels	Fusconaia subrotunda	**Longsolid**	Sec.	Threatened	Threatened	G3	S3	Yes	1999-08-24		LICKING RIVER AT KENTON.
1058	Freshwater Mussels	Fusconaia subrotunda	**Longsolid**	Sec.	Threatened	Threatened	G3	S3	Yes	2002-09-04		GREEN RIVER NEAR WILLIAMS CEMETERY; CA 7.5 RIVER KM DOWNSTREAM FROM LYNN CAMP CR.
1163	Fishes	Etheostoma chienense	**Relict Darter**	Sec.	Threatened	Endangered	G1	S1	Yes	2010-10-19		Bayou de Chien, Graves County: 1.6 km NW (NE) Water Valley at KY 45 (STA 18) (003A).

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B. Buffer Area - Occurrence Report (56 of 58)

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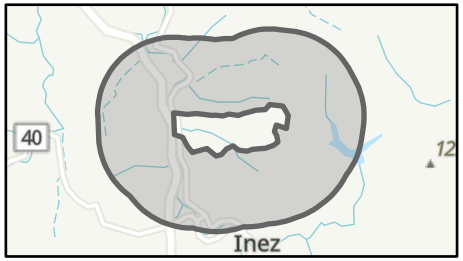
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
196	*Reptiles*	*Nerodia erythrogaster neglecta*	**Copperbelly Watersnake**	*Sec.*	Threatened	*Threatened*	*G5T3*	*S3*	*Yes*	*2000-04-19*		*Maple Swamp, N side of RR tracks; ca 0.5 air mi E of Huddleston [Hodlesen] Rd.*
351	*Vascular Plants*	*Leavenworthia exigua var. laciniata*	**Kentucky Gladecress**	*Sec.*	Threatened	*Endangered*	*G4T1T2*	*S1S2*	*Yes*	*2023-03-23*	*In full sun on flat-bedded outcrops of Silurian limestone or dolomite in shallow soils of glades, rock outcrops, pastures and lawns.*	*Fairmount, lawn and adj horse pasture of home on E side of Kingdom Way Road, just S of jct with Fairmount (Farmers) Road.*
438	*Vascular Plants*	*Leavenworthia exigua var. laciniata*	**Kentucky Gladecress**	*Sec.*	Threatened	*Endangered*	*G4T1T2*	*S1S2*	*Yes*	*2020-05-15*	*In full sun on flat-bedded outcrops of Silurian limestone or dolomite in shallow soils of glades, rock outcrops, pastures and lawns.*	*South side of KY 480 ca 0.1 mi W of Knight Ln (Country Manor Farm Subdivision).*
725	*Reptiles*	*Nerodia erythrogaster neglecta*	**Copperbelly Watersnake**	*Sec.*	Threatened	*Threatened*	*G5T3*	*S3*	*Yes*	*2000-05-02*		*Wetland S of UK 4-H Camp just NW of Dawson Springs.*
830	*Reptiles*	*Nerodia erythrogaster neglecta*	**Copperbelly Watersnake**	*Sec.*	Threatened	*Threatened*	*G5T3*	*S3*	*Yes*	*2000-05-27*		*Richland Slough, 0.2 air mi SE of Bluff City Rd (005A), Bluff City Rd 200 ft SW of Richland Slough (005B), Reed Bluff City Rd, 100 ft E of jct w/ Peters Rd (005C), and Peters Rd 0.15 mi W of Peters-London Rd (005D).*
907	*Reptiles*	*Nerodia erythrogaster neglecta*	**Copperbelly Watersnake**	*Sec.*	Threatened	*Threatened*	*G5T3*	*S3*	*Yes*	*1986*		*Deer Creek at Pennyrile Parkway.*
1026	*Vascular Plants*	*Leavenworthia exigua var. laciniata*	**Kentucky Gladecress**	*Sec.*	Threatened	*Endangered*	*G4T1T2*	*S1S2*	*Yes*	*2024-04-03*	*In full sun on flat-bedded outcrops of Silurian limestone or dolomite in shallow soils of glades, rock outcrops, pastures and lawns.*	*Ca 1000 ft S of Hall Cemetery along headwaters of McCullough Run, E side of the creek. Along exposed bedrock around barn, west edge of field, and east edge of property open to neighbors.*
1028	*Vascular Plants*	*Leavenworthia exigua var. laciniata*	**Kentucky Gladecress**	*Sec.*	Threatened	*Endangered*	*G4T1T2*	*S1S2*	*Yes*	*2015-04-16*	*In full sun on flat-bedded outcrops of Silurian limestone or dolomite in shallow soils of glades, rock outcrops, pastures and lawns.*	*E of US 31 E about 200 ft and ca 0.3 mi S of SR 44, W of subdivision; (formerly St. Francis Cemetery?).*
1255	*Reptiles*	*Nerodia erythrogaster neglecta*	**Copperbelly Watersnake**	*Sec.*	Threatened	*Threatened*	*G5T3*	*S3*	*Yes*	*1999-05-25*		*SE of Masonville, on US 231 ca 0.8 mi S of jct w/ Lashbrook Rd (014B) and S Fork Panther Creek, old meander N of Old Hatford Rd w/in 0.25 mi E of US 231 (014A).*
1586	*Vascular Plants*	*Leavenworthia exigua var. laciniata*	**Kentucky Gladecress**	*Sec.*	Threatened	*Endangered*	*G4T1T2*	*S1S2*	*Yes*	*2024-05-07*	*In full sun on flat-bedded outcrops of Silurian limestone or dolomite in shallow soils of glades, rock outcrops, pastures and lawns.*	*West side Ridge Road, 0.4 mi N KY 480 (023A), East side of KY 1442, in ditch and near mailboxes stretching 0.2mi north to 0.3 North of junction with KY 480 (023B), under powerline ROW on west side of KY 1442, 0.2mi North of junction with KY 480. Pop in in*

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B. Buffer Area - Occurrence Report (57 of 58)

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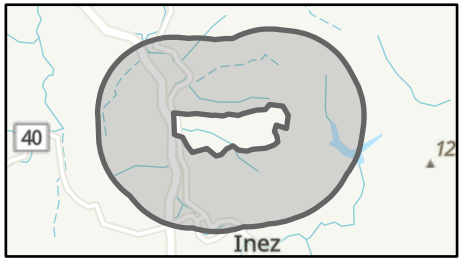
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
156	Freshwater Mussels	Theliderma cylindrica	**Rabbitsfoot**	Sec.	Threatened	Endangered	G3	S2	Yes	1988-06-14		RED RIVER AT HEAD OF ISLAND AT MOUTH OF WHIPPOORWILL CREEK, 0.8 MI SW DOT, 1.9 MI SSW MILLERTOWN CHURCH.
189	Vascular Plants	Spiraea virginiana	**Virginia Spiraea**	Sec.	Threatened	Endangered	G2?	S1	Yes	2023-09-21	Riverbanks and boulder/cobble bars that periodically flood, creating scoured banks.	Marsh Creek, NE bank ca 0.36 (017B), 0.69 (017A), 0.89 mi (017C), upstream from mouth, 1.15 mi upstream of confluence with Cumberland River (017D), 0.9 mi upstream of confluence with Hen's Nest Creek.
220	Freshwater Mussels	Theliderma cylindrica	**Rabbitsfoot**	Sec.	Threatened	Endangered	G3	S2	Yes	2007-08-10		GREEN RIVER NEAR WILSONS PARK BETWEEN MUNFORDVILLE AND RIO.
229	Freshwater Mussels	Theliderma cylindrica	**Rabbitsfoot**	Sec.	Threatened	Endangered	G3	S2	Yes	1995-09-07		GREEN RIVER MI 198.6.
341	Freshwater Mussels	Theliderma cylindrica	**Rabbitsfoot**	Min.	Threatened	Endangered	G3	S2	Yes	2006-12-04		Green River, Shelvan Rock, Greensburg.
501	Freshwater Mussels	Theliderma cylindrica	**Rabbitsfoot**	Sec.	Threatened	Endangered	G3	S2	Yes	1985-08-22		TENNESSEE RIVER AT MILE 13.8, SITE 38.
537	Freshwater Mussels	Theliderma cylindrica	**Rabbitsfoot**	Gen.	Threatened	Endangered	G3	S2	Yes	1967-Pre		OHIO RIVER, LOWER PORTION OF OHIO ALONG ILLINOIS BORDER.
1119	Freshwater Mussels	Theliderma cylindrica	**Rabbitsfoot**	Cnty.	Threatened	Endangered	G3	S2	Yes	1900-Pre		NO SPECIFIC LOCALITY DATA GIVEN, HOWEVER MOST SHELLS COLLECTED BY PRICE ARE FROM WARREN CO.
1130	Freshwater Mussels	Theliderma cylindrica	**Rabbitsfoot**	Sec.	Threatened	Endangered	G3	S2	Yes	1988-08-16		GREEN RIVER 0.6 MI DOWNSTREAM FROM MOUTH OF MILL CREEK, 1.3 MI ENE SR 487-US 68 JCT IN GREENSBURG.
1167	Reptiles	Nerodia erythrogaster neglecta	**Copperbelly Watersnake**	Min.	Threatened	Threatened	G5T3	S3	Yes	1985-05-31		Livingston Co bottoms, along Ohio River 2.8 mi N of Bayou.
1389	Freshwater Mussels	Theliderma cylindrica	**Rabbitsfoot**	Sec.	Threatened	Endangered	G3	S2	Yes	2008-06-26		Green River, Hart County: vicinity of Munfordville KY 31 bridge, above and below (006A); at railroad crossing, ca 1.4 km SW of crossing with US-31W (006B); ca 1 km SW of where Goren Mill Rd crosses railroad tracks (006C).
1521	Freshwater Mussels	Theliderma cylindrica	**Rabbitsfoot**	Sec.	Threatened	Endangered	G3	S2	Yes	2002-09-04		GREEN RIVER MILE 241.9.
1522		Theliderma cylindrica	**Rabbitsfoot**	Sec.	Threatened	Endangered	G3	S2	Yes	2002-09-05		GREEN RIVER MILE 230.4.

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B. Buffer Area - Occurrence Report (58 of 58)

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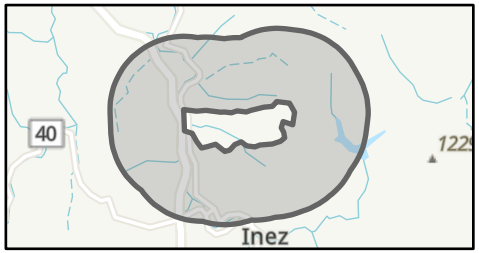
ID	Classification	Scientific Name	Common Name	Precision	Fed. Status	State Status	G Rank	S Rank	SWAP	Last Obs. Date	Habitat	Location
2246	*Freshwater Mussels*	*Theliderma cylindrica*	**Rabbitsfoot**	*Sec.*	Threatened	*Endangered*	*G3*	*S2*	*Yes*	*1985-08-22*		*TENNESSEE RIVER AT MILE 13.5, SITE 41.*
2278	*Freshwater Mussels*	*Theliderma cylindrica*	**Rabbitsfoot**	*Min.*	Threatened	*Endangered*	*G3*	*S2*	*Yes*	*1924-08-11*		*BARREN RIVER AT EWINGS FORD ABOUT 3 MI W OF AND ABOVE BOWLING GREEN.*
2522	*Freshwater Mussels*	*Theliderma cylindrica*	**Rabbitsfoot**	*Min.*	Threatened	*Endangered*	*G3*	*S2*	*Yes*	*2005-11-10*		*Ohio River at Olmsted, Ill.*
2619	*Freshwater Mussels*	*Theliderma cylindrica*	**Rabbitsfoot**	*Sec.*	Threatened	*Endangered*	*G3*	*S2*	*Yes*	*1988-06-16*		*BARREN RIVER MILE 14.0, 0.6 MI WNW GREENCASTLE, 2.0 MI WSW RICHARDSVILLE.*
2816	*Freshwater Mussels*	*Theliderma cylindrica*	**Rabbitsfoot**	*Sec.*	Threatened	*Endangered*	*G3*	*S2*	*Yes*	*2022-11-07*		*Tennessee River, Livingston County: downstream from KY dam at mile 17.8-17.9 (plotted at mile 17.8 in Livingston County) (008A).; ca 250 meters downstream from Cooper Creek, RDB (008B).*

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C. References and Recommendations (1 of 7)

OKNP references the following references and recommendations regarding this project's potential impacts to natural resources within or surrounding the project area. These recommendations are based on state and federal conservation guidelines and may help proactively address potential constraints. Please contact the applicable office should you have further questions with regard to these references and recommendations related to the project area.

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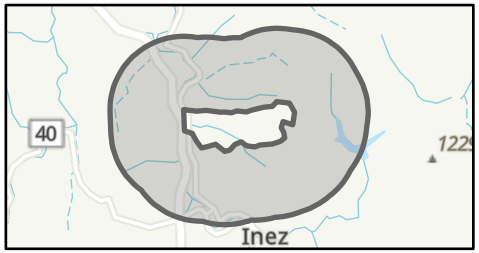
This project and/or buffer area overlaps with known occourences of the recently (2021) delisted Running buffalo clover (Trifolium stoloniferum). If the proposed project requires alteration of habitat suitable for the species, surveys and habitat assessments should be conducted by qualified personnel during the appropriate time of year during the plant's growing season, preferably around April and May when the plants are usually flowering, to determine if the species is present. A survey for running buffalo clover is not necessary if sufficient site-specific information is available that shows there is no suitable habitat within the action area of the project, or that the species is not present due to site-specific factors.
This project and/or buffer area overlaps with known occourences of the federally listed Cumberland elktoe (Alasmidonta atropurpurea). Per U.S. Fish and Wildlife Service, development near streams in the species range may directly or indirectly impact federally listed mussel species. Even upland disturbances can degrade habitats by increasing sedimentation, introducing pollutants, or altering riparian areas. To minimize these impacts, projects should avoid direct impacts when possible, use horizontal directional drilling or clear span bridges, implement Best Management Practices to control erosion, limit vegetation removal, restore riparian areas with native vegetation, install sediment basins and detention structures, and reduce impervious surfaces in the watershed. Coordniate with USFWS Kentucky Field Office at (502) 695-0468 or KentuckyES@fws.gov
This project and/or buffer area overlaps with known occourences of federally listed fish species. Per U.S. Fish and Wildlife Service, siting projects should avoid impacting streams and rivers that contain listed fish species due to direct/indirect impacts on the species and its habitat. Development may directly or indirectly impact listed fish species and their habitats. Even upland disturbances can degrade habitats by increasing sedimentation, introducing pollutants, or altering riparian areas. To minimize these impacts, projects should avoid direct impacts when possible, use horizontal directional drilling or clear span bridges, implement Best Management Practices to control erosion, limit vegetation removal, restore riparian areas with native vegetation, install sediment basins and detention structures, and reduce impervious surfaces in the watershed. Coordniate with USFWS Kentucky Field Office at (502) 695-0468 or KentuckyES@fws.gov
This project and/or buffer area overlaps with known occourences of the federally listed Snuffbox (Epioblasma triquetra). Per U.S. Fish and Wildlife Service, development near streams in the species range may directly or indirectly impact federally listed mussel species. Even upland disturbances can degrade habitats by increasing sedimentation, introducing pollutants, or altering riparian areas. To minimize these impacts, projects should avoid direct impacts when possible, use horizontal directional drilling or clear span bridges, implement Best Management Practices to control erosion, limit vegetation removal, restore riparian areas with native vegetation, install sediment basins and detention structures, and reduce impervious surfaces in the watershed. Coordniate with USFWS Kentucky Field Office at (502) 695-0468 or KentuckyES@fws.gov
A record of the federally protected Indiana bat (Myotis sodalis), the northern long-eared bat (Myotis septentrionalis), the gray bat (Myotis grisescens), and/ or the Virginia big-eared bat (Corynorhinus townsendii virginianus) is located in your project aoi or buffer. Per U.S. Fish and Wildlife Service, under the Endangered Species Act (ESA) and National Environmental Policy Act (NEPA), projects must assess and avoid impacts to caves, mines, rock shelters, bridges, culverts, forested habitats, and water bodies that serve as roosting, foraging, or commuting areas. To comply with federal law and minimize harm, proponents should conduct habitat assessments, follow survey guidelines, implement conservation measures, and coordinate with the Service as needed; more details can be found at http://www.fws.gov. Coordniate with USFWS Kentucky Field Office at (502) 695-0468 or KentuckyES@fws.gov
This project area overlaps with one or more wetlands recorded in the NWI. Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes. Visit https://www.fws.gov/program/national-wetlands-inventory

Map Credits: Commonwealth of Kentucky, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

C. References and Recommendations (2 of 7)

OKNP references the following references and recommendations regarding this project's potential impacts to natural resources within or surrounding the project area. These recommendations are based on state and federal conservation guidelines and may help proactively address potential constraints. Please contact the applicable office should you have further questions with regard to these references and recommendations related to the project area.

Botanical
Ecological
Zoological



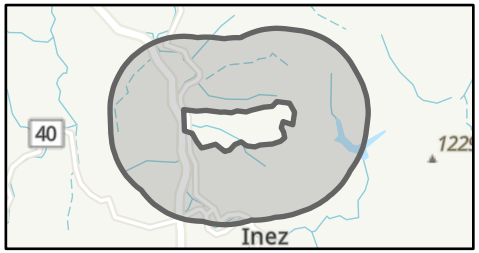
The proposed project area overlaps with the species range for Cryptobranchus alleganiensis alleganiensis, Eastern Hellbender. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Aneides aeneus, Green Salamander. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Desmognathus fuscus, Northern Dusky Salamander. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Desmognathus ochrophaeus, Allegheny Mountain Dusky Salamander. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Podilymbus podiceps, Pied-billed Grebe. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Podiceps auritus, Horned Grebe. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Botaurus lentiginosus, American Bittern. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Butorides virescens, Green Heron. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Nycticorax nycticorax, Black-crowned Night-heron. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Anas rubripes, American Black Duck. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Aythya marila, Greater Scaup. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Aythya affinis, Lesser Scaup. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Lophodytes cucullatus, Hooded Merganser. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Pandion haliaetus, Osprey. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.

Map Credits: Commonwealth of Kentucky, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

C. References and Recommendations (3 of 7)

OKNP references the following references and recommendations regarding this project's potential impacts to natural resources within or surrounding the project area. These recommendations are based on state and federal conservation guidelines and may help proactively address potential constraints. Please contact the applicable office should you have further questions with regard to these references and recommendations related to the project area.

Botanical
Ecological
Zoological



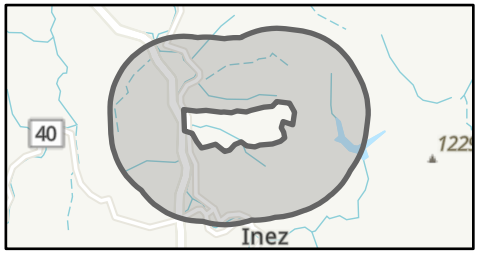
The proposed project area overlaps with the species range for Haliaeetus leucocephalus, Bald Eagle. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Circus hudsonius, Northern Harrier. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Accipiter striatus, Sharp-shinned Hawk. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Falco sparverius, American Kestrel. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Falco peregrinus, Peregrine Falcon. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Bonasa umbellus, Ruffed Grouse. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Colinus virginianus, Northern Bobwhite. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Tringa flavipes, Lesser Yellowlegs. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Tringa solitaria, Solitary Sandpiper. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Actitis macularius, Spotted Sandpiper. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Calidris pusilla, Semipalmated Sandpiper. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Gallinago delicata, Wilson's Snipe. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.

Map Credits: Commonwealth of Kentucky, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

C. References and Recommendations (4 of 7)

OKNP references the following references and recommendations regarding this project's potential impacts to natural resources within or surrounding the project area. These recommendations are based on state and federal conservation guidelines and may help proactively address potential constraints. Please contact the applicable office should you have further questions with regard to these references and recommendations related to the project area.

Botanical
Ecological
Zoological



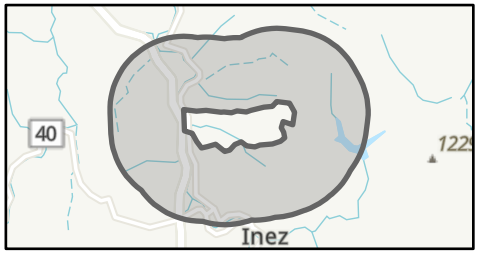
The proposed project area overlaps with the species range for Scolopax minor, American Woodcock. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Chlidonias niger, Black Tern. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Coccyzus americanus, Yellow-billed Cuckoo. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Asio flammeus, Short-eared Owl. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Antrostomus vociferus, Whip-poor-will. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Melanerpes erythrocephalus, Red-headed Woodpecker. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Empidonax traillii, Willow Flycatcher. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Empidonax minimus, Least Flycatcher. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Riparia riparia, Bank Swallow. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Corvus corax, Common Raven. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Cistothorus stellaris, Sedge Wren. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Hylocichla mustelina, Wood Thrush. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Vermivora cyanoptera, Blue-winged Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.

Map Credits: Commonwealth of Kentucky, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

C. References and Recommendations (5 of 7)

OKNP references the following references and recommendations regarding this project's potential impacts to natural resources within or surrounding the project area. These recommendations are based on state and federal conservation guidelines and may help proactively address potential constraints. Please contact the applicable office should you have further questions with regard to these references and recommendations related to the project area.

Botanical
Ecological
Zoological



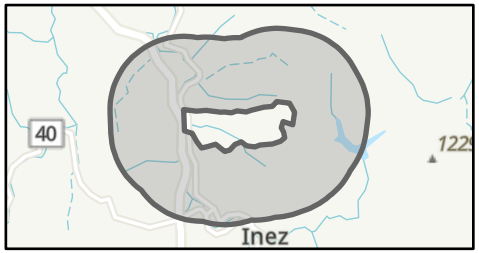
The proposed project area overlaps with the species range for Vermivora chrysoptera, Golden-winged Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Setophaga tigrina, Cape May Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Setophaga virens, Black-throated Green Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Setophaga discolor, Prairie Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Setophaga striata, Blackpoll Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Setophaga cerulea, Cerulean Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Protonotaria citrea, Prothonotary Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Limnothlypis swainsonii, Swainson's Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Parkesia motacilla, Louisiana Waterthrush. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Geothlypis formosa, Kentucky Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Cardellina canadensis, Canada Warbler. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Spiza americana, Dickcissel. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Spizella pusilla, Field Sparrow. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.

Map Credits: Commonwealth of Kentucky, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

C. References and Recommendations (6 of 7)

OKNP references the following references and recommendations regarding this project's potential impacts to natural resources within or surrounding the project area. These recommendations are based on state and federal conservation guidelines and may help proactively address potential constraints. Please contact the applicable office should you have further questions with regard to these references and recommendations related to the project area.

Botanical
Ecological
Zoological



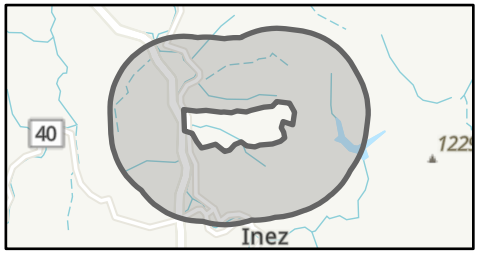
The proposed project area overlaps with the species range for Passerculus sandwichensis, Savannah Sparrow. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Ammodramus savannarum, Grasshopper Sparrow. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Centronyx henslowii, Henslow's Sparrow. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Dolichonyx oryzivorus, Bobolink. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Sturnella magna, Eastern Meadowlark. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Euphagus carolinus, Rusty Blackbird. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Myotis lucifugus, Little Brown Bat. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Myotis grisescens, Gray Myotis. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Myotis sodalis, Indiana Bat. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Myotis leibii, Eastern Small-footed Myotis. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Myotis septentrionalis, Northern Long-Eared Bat. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Perimyotis subflavus, Tricolored Bat. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Corynorhinus rafinesquii, Rafinesque's Big-eared Bat. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.

Map Credits: Commonwealth of Kentucky, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

C. References and Recommendations (7 of 7)

OKNP references the following references and recommendations regarding this project's potential impacts to natural resources within or surrounding the project area. These recommendations are based on state and federal conservation guidelines and may help proactively address potential constraints. Please contact the applicable office should you have further questions with regard to these references and recommendations related to the project area.

Botanical
Ecological
Zoological



The proposed project area overlaps with the species range for Sylvilagus obscurus, Appalachian Cottontail. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Neotoma magister, Allegheny Woodrat. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Spilogale putorius, Eastern Spotted Skunk. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Crotalus horridus, Timber Rattlesnake. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Cambarus hatfieldi, Tug Valley Crayfish. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Cambarus callainus, Big Sandy Crayfish. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Anodontoides ferussacianus, Cylindrical Papershell. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.
The proposed project area overlaps with the species range for Fusconaia subrotunda, Longsolid. This species is noted as a Species of Greatest Conservation Need in Kentucky's State Wildlife Action Plan. Review the Action Plan at https://app.fw.ky.gov/kyswap/ for information on possible management, research and habitat restoration efforts.

Map Credits: Commonwealth of Kentucky, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

Thank you for using the Office of Kentucky Nature Preserves Biological Assessment Tool.

OKNP's species dataset relies on continuous monitoring and surveying for species of concern throughout the state. Any records of species of concern found within this project area would greatly benefit the quality and comprehensiveness of the statewide dataset for rare, threatened and endangered species. If you would like to contribute any additional species information, please do not hesitate to contact our office by e-mail at EEC.KYBAT@ky.gov or by phone at 502-782-7828.

Quick Key

For a full report key, visit naturepreserves.org

Global Rank (GRANK) - Estimate of species abundance on a global scale

GX	Presumed extinct
GH	Possibly extinct; Missing
G1	Extremely Rare
G2	Rare
G3	Uncommon
G4	Common
G5	Very Common
GNR	Not ranked
GU	Unrankable due to lack of information
?	Indicates Uncertainty
T #	Appended for infraspecific taxa
Q	Indicates Questionable

State Rank (SRANK) - Estimate of species abundance in Kentucky

SX	Presumed extirpated
SH	Possibly extirpated
S2	Rare
S3	Uncommon
S4	Many Occurrences
S5	Very Common
SNR	Not ranked
SU	Unrankable due to lack of information
SNA	Not Applicable
?	Indicates Uncertainty
B	Indicates breeding population
N	Indicates non-breeding population

Precision - The precision of a record

Sec.	Seconds; Can be accurately mapped within a 3-second radius (approximately 100 ft)
Min.	Minutes; Can be mapped within a 1-minute radius (approximately 1.5 miles)
Gen.	General; Only known to a place name (within about 5 miles)
Cnty.	County; Only known to the county
Quad.	Quad; Only known to the county

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