



**REDWING**  
ECOLOGICAL SERVICES, INC.

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**VIA EMAIL**

August 1, 2019

Mr. Michael Gross  
LDG Development, LLC  
1469 South Fourth Street  
Louisville, Kentucky 40208  
mgross@ldgdevelopment.com

**Subject: Water/Wetland Delineation Summary Report  
Bohannon Property  
Jefferson County, Kentucky  
Redwing Project No.: 19-123**

Dear Mr. Gross:

Redwing Ecological Services, Inc. (Redwing) is pleased to provide LDG Development, LLC (LDG), with this Water/Wetland Delineation Summary Report for the approximately 99-acre Bohannon Property in Jefferson County, Kentucky. The goal of these services was to identify the location and extent of jurisdictional waters/wetlands and threatened/endangered (T/E) species habitat on the site to assist with preliminary project planning.

Based on the delineation, jurisdictional water/wetland features present on the site include two perennial streams totaling 3,515 linear feet (2.018 acre) and three wetlands measuring 3.735 acre. In addition, there is one isolated, non-jurisdictional wetland present on the site that measures 0.027 acre. A total of 5.3 acres of suitable summer roosting habitat for the federally-endangered Indiana bat (*Myotis sodalis*) and the federally-threatened northern long-eared bat (*Myotis septentrionalis*) is present within the wooded areas of the site. In addition, gray bat (*Myotis grisescens*) foraging habitat is present along the perennial streams and potential mussel habitat is present in Pond Creek. This report presents the study methodology, results, and a discussion of development-related issues.

**METHODOLOGY**

The delineation included in-house and field components. In-house research involved review of the USGS topographic quadrangle map, aerial photography, the Jefferson County soil survey, and Federal Emergency Management (FEMA) floodplain mapping. Following review of these materials,

Redwing conducted a delineation on July 24 and 25, 2019, to identify the location and extent of jurisdictional waters/wetlands on the site. During the field visit, the presence of jurisdictional streams and open water bodies was evaluated based on ordinary high water mark (OHWM), defined bed and bank features, and flow regimes. Potential wetland areas were investigated using the Routine On-Site Determination Method as defined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountain Piedmont Region – Version 2.0* (April 2012). This technique uses a multi-parameter approach that requires positive evidence of three criteria: wetland hydrology, hydric soils, and hydrophytic vegetation. This delineation has not been verified by the U.S. Army Corps of Engineers (USACE), who holds final authority over determinations of the location and extent of jurisdictional waters/wetlands.

The field assessment was also used to identify the potential presence of suitable habitat for threatened/endangered (T/E) species known to occur in Jefferson County, including the Indiana bat, northern long-eared bat, gray bat, running buffalo clover (*Trifolium stoloniferum*), and mussel species.

## RESULTS

The approximately 99-acre site is located at 14201 Bohannon Avenue, on the east side of Bohannon Avenue, approximately 0.5-mile south of the Pendleton Road in Louisville, Jefferson County Kentucky (Figure 1). The site consists primarily of old field with mixed-aged woods along the riparian corridors of the perennial streams. The water/wetland features identified on site are depicted on Figure 2 and summarized in the following table.

| Feature  | Stream Length (feet) | Stream Width (feet) | Area (acres) | Status         |
|--|----------------------|---------------------|--------------|----------------|
| Perennial Stream 1 (Pond Creek)                  | 1,120                | 25                  | 0.643        | Jurisdictional |
| Perennial Stream 2 (Weaver Run)                  | 2,395                | 25                  | 1.375        | Jurisdictional |
| <b>Jurisdictional Perennial Total</b>            | <b>3,515</b>         |                     | <b>2.018</b> |                |
| Wetland 1  | ---                  | ---                 | 2.028        | Jurisdictional |
| Wetland 2  | ---                  | ---                 | 0.027        | Isolated       |
| Wetland 3  | ---                  | ---                 | 1.592        | Jurisdictional |
| Wetland 4  | ---                  | ---                 | 0.115        | Jurisdictional |
| <b>Jurisdictional Wetland Total</b>              | ---                  | ---                 | <b>3.735</b> |                |
| <b>Isolated Wetland Total</b>                    |                      |                     | <b>0.027</b> |                |
| <b>Jurisdictional Features Total<sup>1</sup></b> | <b>3,515</b>         |                     | <b>5.753</b> |                |

<sup>1</sup>Note: Total includes jurisdictional features only.

Perennial Stream 1 (Pond Creek) flows south along the northeastern project boundary and Perennial Stream 2 (Weaver Run) flows south along the western project boundary. Wetland 1 is an emergent wetland located in a defined drainage in the central portion of the site that bisects the property east and west. Wetland 1 drains to an off-site connection with Pond Creek. Wetland 2 is a man-made, wetland with no outlet located in the southern portion of the site. Wetland 3 is an emergent wetland located in the northeastern portion of the site that drains to an erosional gully that connects to Wetland 1. Wetland 4 is an emergent wetland in the northeastern portion of the site that drains to an erosional gully that connects to Pond Creek. Therefore, Wetlands 1, 3, and 4 are considered jurisdictional and Wetland 2 is considered isolated, non-jurisdictional.

The site contains 5.3 acres of suitable summer habitat for the federally-endangered Indiana bat and the federally-threatened northern long-eared bat within mixed-aged woods near the perennial streams and scattered trees throughout the site (Figure 2). In addition, gray bat foraging habitat is present along the perennial streams and potential mussel habitat is present in Pond Creek. No suitable habitat for running buffalo clover is present on the site.

## **DISCUSSION**

The presence of jurisdictional waters of the U.S. and T/E species habitat, as documented in the results of the site assessment, may affect future development of the site in terms permitting and mitigation, and additional coordination.

## **WATER/WETLAND PERMITTING AND MITIGATION**

Jurisdictional waters of the U.S., including wetlands, are defined by 33 CFR Part 328.3 and are protected by Section 404 of the Clean Water Act (33 USC 1344), which is administered and enforced by the USACE. Many water/wetland impacts are also regulated by the Kentucky Division of Water (KDOW) – Water Quality Certification (WQC) Section. Current permitting thresholds are as follows:

- Impacts to 0.5 acre or less of waters/wetlands or 300 feet or less of stream can be authorized under the federal Nationwide Permit (NWP) program with the USACE
- Impacts to greater than 0.5 acre of waters/wetlands or 300 feet of stream require an Individual Section 404 Permit from the USACE (unless the USACE issues a waiver to allow impacts to greater than 300 feet of stream to be handled under a NWP).
- Impacts to greater than 300 feet of intermittent/perennial stream or 0.5 acre of wetland require an Individual Section 401 WQC from the KDOW.

- Impacts to less than 300 feet of intermittent/perennial stream or 0.5 acre of wetland meet the conditions of a General WQC and do not require coordination with the KDOW. Ephemeral streams are not regulated by the KDOW.
- Impacts to 0.1 acre or more of waters/wetlands and 300 feet or more of stream require compensatory mitigation.
- Impacts to isolated, non-jurisdictional waters/wetlands are not regulated by the USACE or KDOW and therefore, do not require a permit from, or coordination with, either agency.

A NWP generally takes three to six months to obtain, depending on agency backlog, while an Individual Section 404 Permit with the USACE often require 6 to 12 months to complete. Individual Section 401 WQCs from the KDOW can generally be obtained within the federal timeframes. We assume that both Perennial Streams will be avoided for the development. If wetland mitigation is required (impacts greater than 0.1 acre), it can generally be provided through the purchase of credits from an approved mitigation bank or the Kentucky In-Lieu Fee (ILF) program. Wetland mitigation requires a 3.0 multiplier within the Pond Creek watershed and current rates at mitigation banks or ILF programs are approximately \$60,000 per acre/credit.

#### **ADDITIONAL COORDINATION**

If permitting is required, under the 404 permitting process, the USACE determines if consultation with the U.S. Fish and Wildlife Service (USFWS) or the State Historic Preservation Office (SHPO) is required to address potential impacts to T/E species or significant archaeological/historic features, respectively. We are not aware of any archaeological features or studies that have been done on the site; however, a survey may be required during the permitting process. The major T/E species issue of concern is the clearing of suitable summer habitat for the Indiana bat and northern long-eared bat. Based on maps released by the USFWS, the project is located within a "Known Swarming 1" and "Known Summer 1" habitat zone for the Indiana bat and "Potential" habitat zone for the northern long-eared bat. Impacts to Indiana and northern long-eared bat habitat will likely require consultation with the USFWS, which may require conducting presence/absence surveys or the preparation of a Biological Assessment with a potential fee payment of \$8,600 to \$13,760 per acre of habitat cleared depending on the time of year. No impacts to other T/E species are anticipated. We assume that the marginally suitable habitat for the gray bat along the perennial streams and mussel habitat within Pond Creek will be avoided for the development.

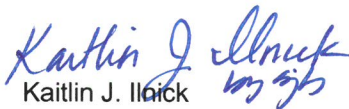
## CONCLUSION

In conclusion, based on Redwing's delineation, jurisdictional water/wetland features include two perennial streams and three wetlands. In addition, there is one isolated, non-jurisdictional wetland present on the site. These features have not been verified by the USACE who holds final authority over determinations of the location and extent of jurisdictional waters/wetlands and jurisdictional status of the features. Specific permit and mitigation requirements can be determined based on a final site development plan.

Assuming that perennial streams are avoided by the project, permit requirements will be driven by wetland impacts. Impacts to less than 0.5 acre of wetland can be authorized under a NWP with the USACE and no coordination with KDOW is required. Impacts to greater than 0.5 acre will require both an Individual 404 Permit from the USACE and Individual WQC from KDOW. Any impacts to greater than 0.1 acre of wetland will require compensatory mitigation at a 3:1 ratio and a cost of \$60,000 per credit.

We would be glad to discuss development and related permitting options with you further as the site planning process proceeds. We appreciate the opportunity to assist you on this important project. Please call Ron Thomas or Kaitlin Ilnick at (502) 625-3009 with any questions on this report or the overall project.

Sincerely,

  
Kaitlin J. Ilnick  
Project Ecologist



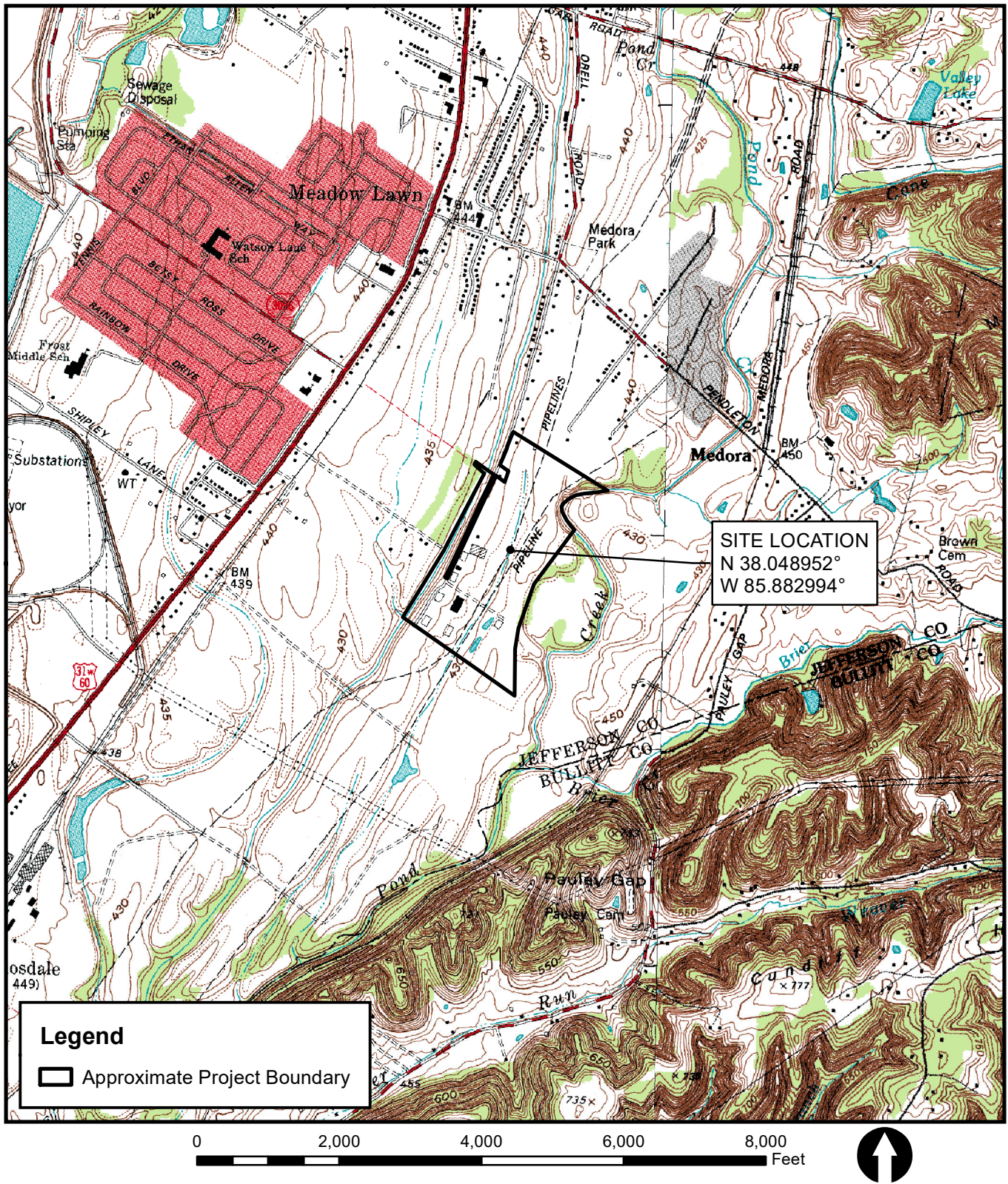
Ronald L. Thomas  
Principal  
Senior Ecologist

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Attachments: Figure 1 – Site Location Map  
Figure 2 – Ecological Resources Map

## FIGURES

Source: USGS 7.5-minute Topographic Map - Kosmosdale and Valley Station, Kentucky Quadrangles.



BOHANNON PROPERTY  
JEFFERSON COUNTY, KENTUCKY



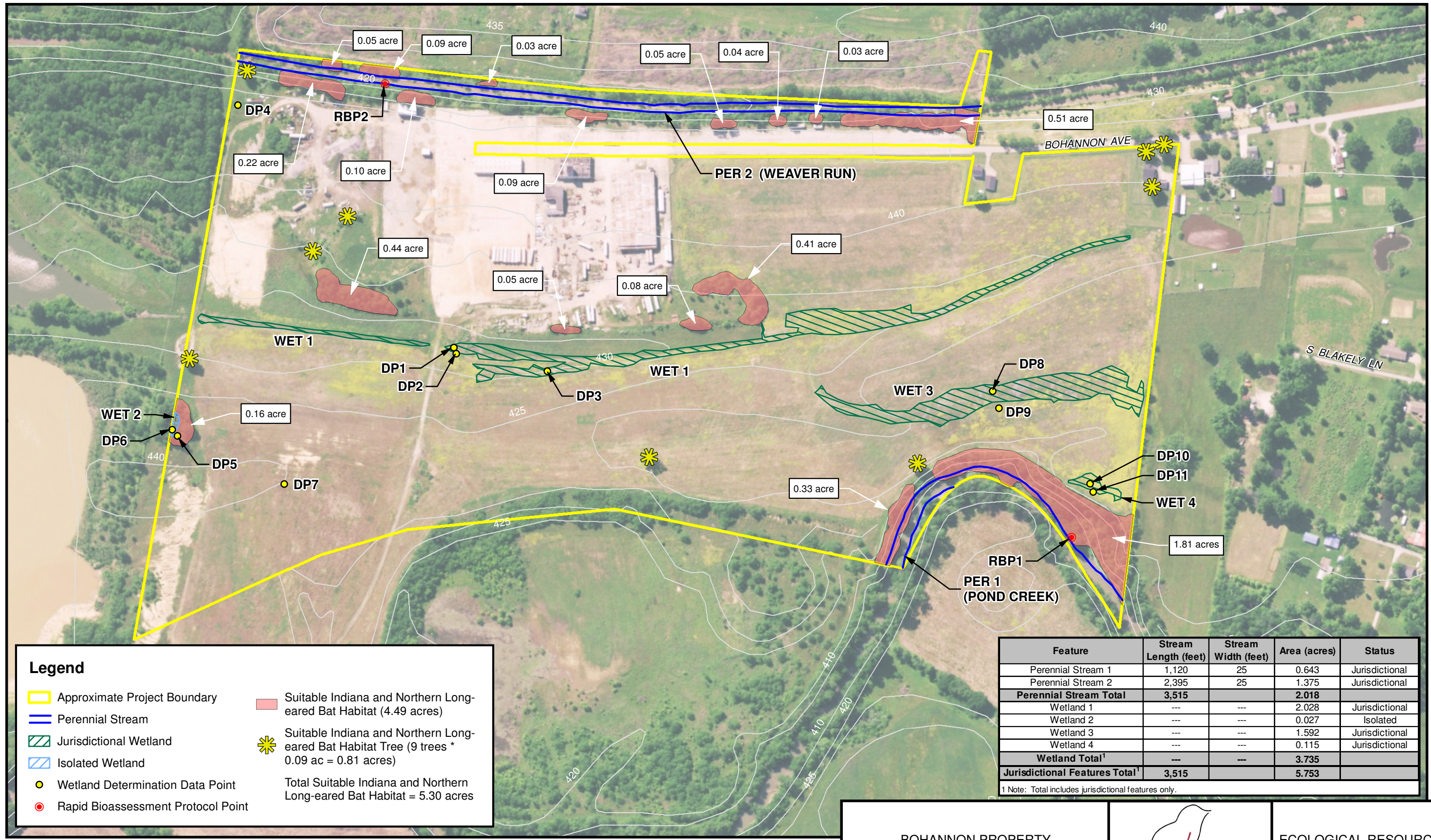
SITE LOCATION MAP

REVISED DATE: 07-31-19

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FIGURE 1

Source: Aerial - kyraster.ky.gov (2016).; Kentucky Tagged Vector Contour (TVC) by Kentucky Division of Geographic Information.

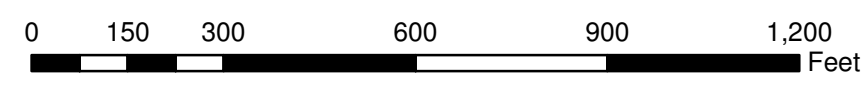


**Legend**

- Approximate Project Boundary
- Perennial Stream
- Jurisdictional Wetland
- Isolated Wetland
- Wetland Determination Data Point
- Rapid Bioassessment Protocol Point
- Suitable Indiana and Northern Long-eared Bat Habitat (4.49 acres)
- ✱ Suitable Indiana and Northern Long-eared Bat Habitat Tree (9 trees \* 0.09 ac = 0.81 acres)
- Total Suitable Indiana and Northern Long-eared Bat Habitat = 5.30 acres

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| <b>Wetland Total<sup>1</sup></b>                 |                      |                     | <b>3.735</b> |                |
| <b>Jurisdictional Features Total<sup>1</sup></b> | <b>3,515</b>         |                     | <b>5.753</b> |                |

<sup>1</sup> Note: Total includes jurisdictional features only.



NOTE: JURISDICTIONAL WATER/WETLAND BOUNDARIES WERE DELINEATED AND SURVEYED BY REDWING WETLAND SCIENTISTS ON JULY 24 AND 25, 2019. THESE BOUNDARIES HAVE NOT BEEN VERIFIED BY THE U.S. ARMY CORPS OF ENGINEERS. USE OF THIS MAP IS FOR PRELIMINARY PLANNING PURPOSES ONLY.



**BOHANNON PROPERTY**  
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**ECOLOGICAL RESOURCES**  
MAP

FIGURE 2

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