



1139 South Fourth Street
Louisville, KY 40203
502.625.3009
Corporate Headquarters
6575 West Loop South, Suite 300
Bellaire, TX 77401
Main: 713.520.5400

VIA EMAIL

February 22, 2022

Mr. Joseph Waldman
President
Highgates Development
119 Glen Park Avenue
Toronto, Ontario
M6B 2C6, Canada
joseph@highgates.com

**Subject: Water/Wetland Delineation Summary Report
Johnson Road
Jefferson County, Kentucky
Redwing Project No.: 105919**

Dear Mr. Waldman:

RES Kentucky, LLC dba Redwing Ecological Services (Redwing) is pleased to provide Highgates Development (Highgates) with this Water/Wetland Delineation Summary Report for the proposed Johnson Road development project Louisville, Jefferson County, Kentucky. The approximately 60-acre property has an address of 1614 Johnson Road and is located on the south side of Boone Trail, and north and east of Floyds Fork (Figure 1). 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 property to assist with preliminary project planning.

Based on the delineation, jurisdictional water/wetland features present on site include

- one perennial stream measuring 2,106 linear feet (0.363 acre)
- four intermittent streams totaling 2,241 linear feet (0.183 acre)
- eight ephemeral streams totaling 892 linear feet (0.050 acre)
- four wetlands totaling 0.440 acre
- one open water pond measuring 0.221 acre.

Non-jurisdictional features identified on site included two open water ponds totaling 0.655 acre. In addition, approximately 24 acres of the mixed age woods on the property is considered suitable summer roosting habitat for the Indiana bat (*Myotis sodalis*) and the northern long-eared bat (*Myotis septentrionalis*) and gray bat (*Myotis grisescens*) foraging habitat is present along the perennial stream.

METHODOLOGY

The water/wetland 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 field delineation on February 15, 2022, 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. The quality of the intermittent stream identified within the project boundary was evaluated using the Rapid Bioassessment Protocol developed by the USEPA. 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 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 presence of suitable habitat for T/E species known to occur in Jefferson County, including the Indiana bat, northern long-eared bat, and gray bat. Potential impacts to T/E species must be addressed in any federal permitting process.

RESULTS

Based on the delineation, jurisdictional waters present on site include one perennial stream, four intermittent streams, eight ephemeral streams, four emergent wetlands, and one open water pond located throughout the site. Non-jurisdictional features identified on site include two open water ponds. The results of the water/wetland delineation are depicted on Figure 2 and summarized in the table below.

Feature	Stream Length (feet)	Stream Width (feet)	Area (acres)	Status
Perennial Stream 1	2,106	7.5	0.363	Jurisdictional
Perennial Stream Total	2,106	--	0.363	--
Intermittent Stream 1	1,056	3.5	0.085	Jurisdictional
Intermittent Stream 2	198	3	0.014	Jurisdictional
Intermittent Stream 3	792	3.5	0.064	Jurisdictional
Intermittent Stream 4	195	4.5	0.020	Jurisdictional
Intermittent Stream Total	2,241	--	0.183	--
Ephemeral Stream 1	96	2.5	0.006	Jurisdictional
Ephemeral Stream 2	24	1.5	0.001	Jurisdictional
Ephemeral Stream 3	75	2	0.003	Jurisdictional
Ephemeral Stream 4	193	2	0.009	Jurisdictional
Ephemeral Stream 5	51	3	0.004	Jurisdictional
Ephemeral Stream 6	144	2.5	0.008	Jurisdictional
Ephemeral Stream 7	125	2	0.006	Jurisdictional
Ephemeral Stream 8	184	3	0.013	Jurisdictional
Ephemeral Stream Total	892	--	0.050	--
Wetland 1	--	--	0.004	Jurisdictional
Wetland 2	--	--	0.051	Jurisdictional
Wetland 3	--	--	0.383	Jurisdictional
Wetland 4	--	--	0.002	Jurisdictional
Jurisdictional Wetland Total	--	--	0.440	--
Open Water 1	--	--	0.553	Non-Jurisdictional
Open Water 2	--	--	0.221	Jurisdictional
Open Water 3	--	--	0.102	Non-Jurisdictional
Jurisdictional Open Water Total	--	--	0.221	--
Non-Jurisdictional Open Water Total	--	--	0.655	--
Jurisdictional Features Total	5,239	--	1.257	--

Habitat on site consists of mixed-age woods, crop land, and open field. The mixed-age woods habitat totaling approximately 24 acres is considered suitable summer roosting habitat for the federally endangered Indiana bat and the federally threatened northern long-eared bat. The perennial stream is considered gray bat foraging habitat due to its proximity to Floyds Fork where gray bats have been observed.

DISCUSSION

Potential development-related issues are discussed below in terms of waters/wetlands, federally threatened/endangered species, and cultural-historic and archaeological resources.

WATERS/WETLANDS

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:

- Avoidance of the jurisdictional water/wetland features would require no permits from, or coordination with, the USACE or KDOW. A formal Jurisdictional Determination (JD) can be obtained from the USACE, if desired.
- Impacts to less than 0.5 acre of waters can be authorized under the federal Nationwide Permit (NWP) program with the USACE
- Impacts to greater than 0.5 acre of waters require an Individual Section 404 Permit (IP) from the USACE
- Impacts to greater than 300 feet of intermittent/perennial stream or 0.5 acre of wetland or an in-line stream basin 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.
- Impacts to 0.1 acre or more of jurisdictional wetlands or 0.03 acre or more of jurisdictional stream will require compensatory mitigation. Mitigation ratios for impacts to poor quality perennial, intermittent, and ephemeral streams are 1.5:1, 1:1 and 0.5:1, respectively, with ratios increasing with stream quality. Wetland mitigation must be provided at a ratio of 2:1. If required, mitigation credits can be purchased from either a private mitigation bank or the Kentucky In-Lieu Fee program, which requires a 20% markup to cover temporal losses. The Kentucky In-Lieu Fee program currently charges \$415 per stream credit, and \$61,500 per wetland credit.

If the jurisdictional perennial stream, intermittent streams, ephemeral streams, wetlands, and open water pond can be avoided, no permits from, or coordination with, the USACE or KDOW will be required.

THREATENED/ENDANGERED SPECIES

Under the Section 404 permitting process, the USACE determines if consultation with the U.S. Fish and Wildlife Service (USFWS) is required to address potential impacts to T/E species. The major T/E species issue of concern at this site is the clearing of suitable Indiana and northern long-eared bat summer habitat. Based on maps released by the USFWS, the project is located in a “Potential” Habitat Zone for the Indiana bat and the northern long-eared bat. Under the 404 permitting process, impacts to this habitat will require consultation with the USFWS. Consultation generally results in a combination of seasonal tree clearing restrictions, presence/absence surveys, and/or mitigation through payments into the Imperiled Bat Conservation Fund (IBCF). Current rates for tree clearing in a “Potential” Habitat Zone are \$2,000/acre in the unoccupied period (October 15 through March 31),

\$4,000/acre for clearing in the occupied period (April 1 through October 15, excluding June/July), and \$8,000/acre for clearing during the non-volant period (June 1 through July 31). Suitable summer foraging habitat for the gray bat is also present in the wooded perennial stream corridor.

CULTURAL HISTORIC AND ARCHAEOLOGICAL RESOURCES


Under the Section 404 permitting process, the USACE determines if consultation with the State Historic Preservation Office (SHPO) is required to address potential impacts to significant archaeological/historic features. We are not aware of any archaeological features or studies that have been done on the site. We can obtain a quote for these surveys, if required.


CONCLUSION

In conclusion, based on Redwing's delineation, jurisdictional waters present on the site are limited to one perennial stream measuring 2,106 linear feet (0.363 acre), four intermittent streams totaling 2,241 linear feet (0.183 acre), eight ephemeral streams totaling 892 linear feet (0.050 acre), four wetlands totaling 0.440 acre, and one open water pond measuring 0.221 acre. If the jurisdictional perennial stream, intermittent streams, wetland, and open water ponds can be avoided, no permits from, or coordination with, the USACE or KDOW will be required, unless you require a formal Jurisdictional Determination from the USACE to verify the delineation. If the jurisdictional features will be impacted, the project will require authorization from the USACE and possibly the KDOW. Permitting and mitigation scenarios will depend on the final site development plan.

We appreciate the opportunity to assist you on this important project. Please call Ron Thomas at (502) 625-3009 with any questions on this report or the overall project.

Sincerely,


Valerie J. Jones (Feb 22, 2022 16:10 EST)
Valerie J. Jones
Ecologist I

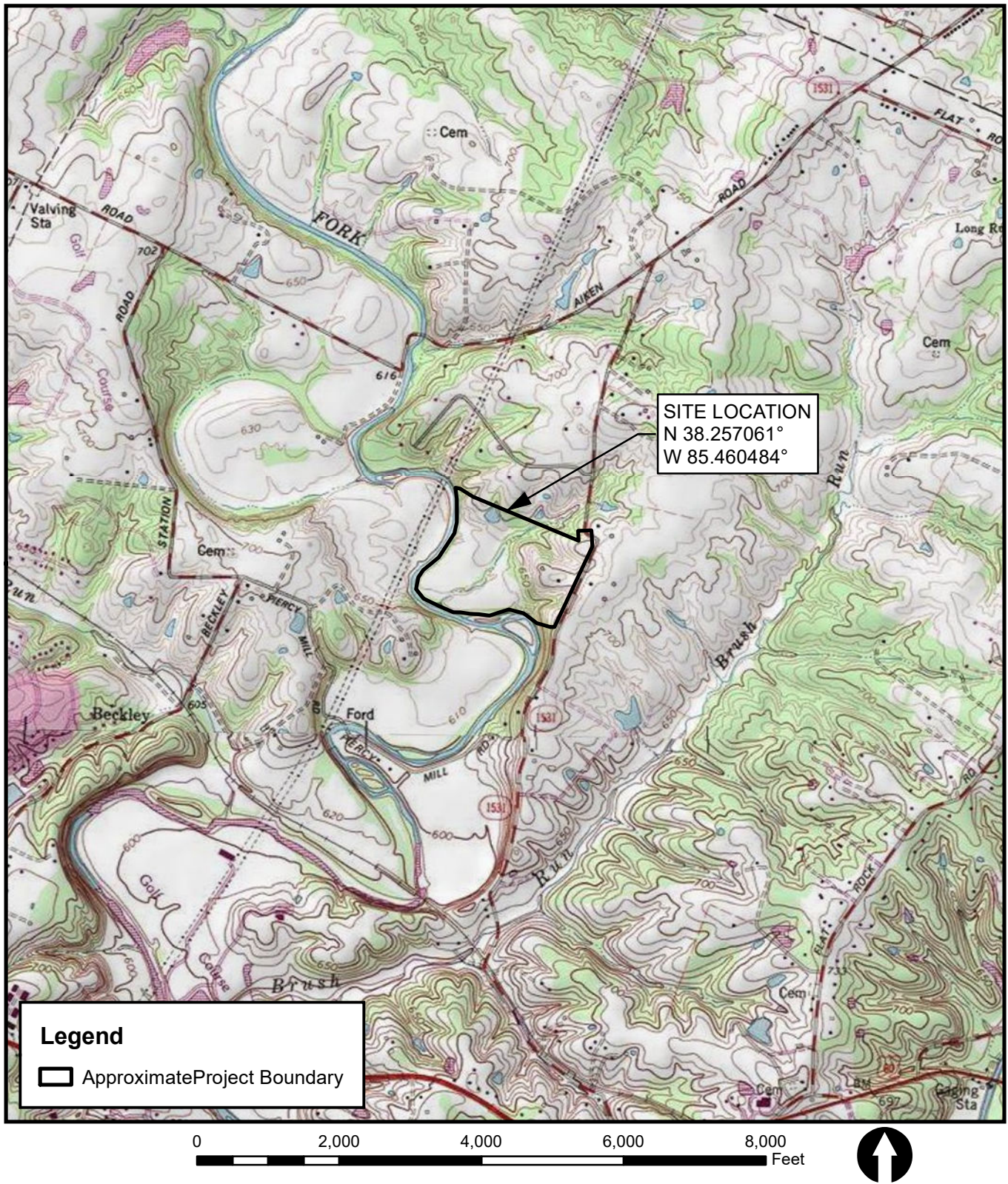

Ronald L. Thomas (Feb 22, 2022 16:12 EST)
Ronald L. Thomas
Senior Project Manager

R:\Projects\105919-Johnson Road\Report\Johnson Rd_Summary Report

Attachments: Figures

FIGURES

Source: USA Topo Maps, (2013) National Geographic Society, USGS 7.5-minute Topographic Map - Crestwood, Kentucky Quadrangle.



R:\Resgis\lentgis\Projects\105919_Johnson Road\MXD\Site Location.mxd, 02-21-2022, temp

JOHNSON ROAD
JEFFERSON COUNTY, KENTUCKY

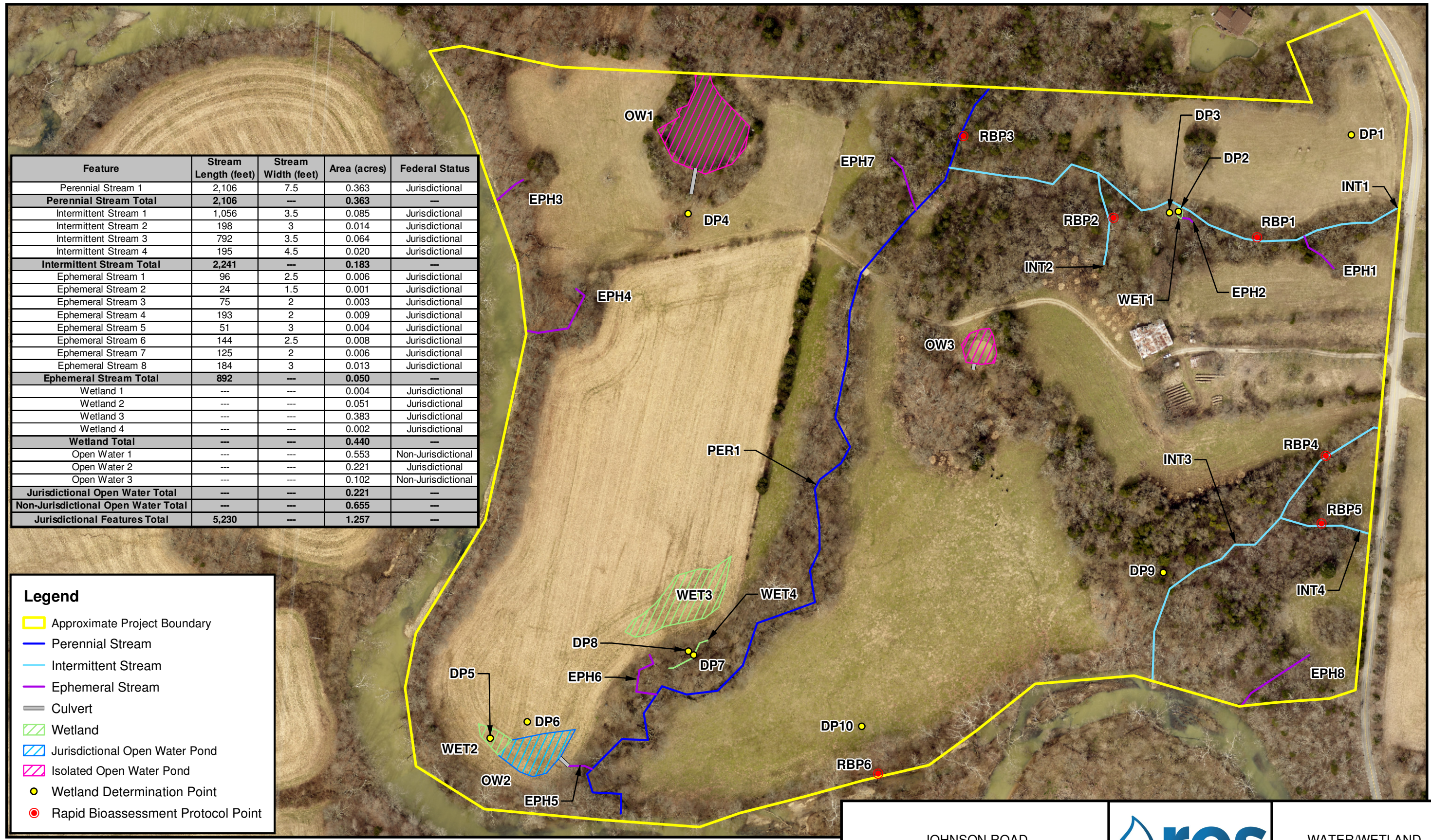


PROJECT LOCATION MAP

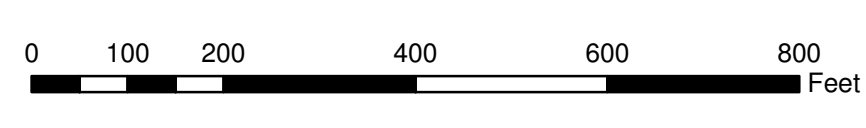
REVISED DATE: 02-17-22

DRAWN BY: VJJ

FIGURE 1



R:\Res\gis\Projects\105919 Johnson Road\MXD\WVW map.mxd, 02-22-2022, ebowman



NOTE: JURISDICTIONAL WATER/WETLAND BOUNDARIES WERE DELINEATED AND SURVEYED BY RES WETLAND SCIENTISTS ON FEBRUARY 15, 2022. THESE BOUNDARIES HAVE NOT BEEN VERIFIED BY THE U.S. ARMY CORPS OF ENGINEERS. USE OF THIS MAP IS FOR PRELIMINARY PLANNING PURPOSES ONLY.



JOHNSON ROAD
JEFFERSON COUNTY, KENTUCKY

REVISED DATE:02-22-22 | DRAWN BY: VJJ/EDB



WATER/WETLAND
LOCATION MAP

FIGURE 2