



REDWING
ECOLOGICAL SERVICES, INC.

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VIA EMAIL

December 30, 2019

Ms. Ramona Vasta
LDG Development, LLC
1469 South Fourth Street
Louisville, Kentucky 40208
RVasta@ldgdevelopment.com

**Subject: Water/Wetland Delineation Summary Report
8300 Cooper Chapel Road Property
Jefferson County, Kentucky
Redwing Proposal No.: 19-213**

Dear Ms. Vasta:

Redwing Ecological Services, Inc. (Redwing) is pleased to provide LDG Development, LLC (LDG) with this Water/Wetland Delineation Summary Report for the 8300 Cooper Chapel Road Property located in southern Jefferson County, Kentucky. The goal of these services was to identify the location and extent of jurisdictional water/wetland features within the project boundary in order to assist LDG with development planning for this project.

Based on the delineation, jurisdictional water/wetland features present within the project boundary include:

- two perennial streams totaling 2,167 linear feet (0.497 acre)
- one intermittent stream totaling 1,091 linear feet (0.150 acre)
- nine ephemeral streams totaling 2,041 linear feet (0.113 acres)

In addition, the mature wooded portions of the site represent suitable summer roosting habitat for the federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened northern long-eared bat (*Myotis septentrionalis*). There are several cedar/limestone glades along Perennial Stream 1 and Intermittent Stream 1, which represent potential habitat for Kentucky glade cress (*Leavenworthia exigua* var. *laciniata*). 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 Agency (FEMA) floodplain mapping. Following review of these materials, Redwing conducted a field delineation on December 10, 2019 to identify the location and extent of jurisdictional waters/wetlands on the project site. 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 perennial and intermittent streams within the project area was evaluated using the Rapid Bioassessment Protocol developed by the U.S. Environmental Protection Agency. 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 Mountains and 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. Additionally, Redwing assessed the site for the presence of suitable habitat for federally threatened/endangered (T/E) species.

RESULTS

The approximately 75-acre site is located immediately west of the Cedar Creek Road and Cooper Chapel Road intersection in Jefferson County, Kentucky. This site consists primarily of wooded areas, old fields, and stream corridors. The streams within the project boundary are tributaries to McNeely Lake and Pennsylvania Run, which are located just downstream. The water/wetland features delineated within the project boundary are depicted on Figure 1 and summarized in the following table.

Feature	Length (feet)	Stream Width (feet)	Area (acres)	Status
Perennial Stream 1	1,090	9	0.225	Jurisdictional
Perennial Stream 2	1,077	11	0.272	Jurisdictional
Perennial Stream Total	2,167		0.497	
Intermittent Stream 1	1,091	6	0.150	Jurisdictional
Intermittent Stream Total	1,091		0.150	
Ephemeral Stream 1	106	2	0.005	Jurisdictional
Ephemeral Stream 2	82	2	0.004	Jurisdictional
Ephemeral Stream 3	36	3.5	0.003	Jurisdictional
Ephemeral Stream 4	90	1.5	0.003	Jurisdictional
Ephemeral Stream 5	374	1.5	0.013	Jurisdictional
Ephemeral Stream 6	825	3	0.057	Jurisdictional
Ephemeral Stream 7	188	2.5	0.011	Jurisdictional
Ephemeral Stream 8	136	2.5	0.008	Jurisdictional
Ephemeral Stream 9	204	2	0.009	Jurisdictional
Ephemeral Stream Total	2,041		0.113	
Jurisdictional Features Total	5,299		0.760	

DISCUSSION

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 less than 0.5 acre of waters/wetlands and 300 feet of stream can be authorized under a Nationwide Permit (NWP). This requires submittal of a Preconstruction Notification to the USACE. The USACE can issue a waiver for greater than 300 feet of stream impacts to be authorized under the NWP program.
- Impacts to greater than 0.5 acre of waters or significantly greater than 300 feet of stream require an Individual Section 404 Permit from the USACE.
- Impacts to less than 0.5 acre of wetland and 300 feet of intermittent/perennial stream will qualify for a General WQC and no coordination with KDOW-WQC Section is required.
- Impacts to greater than 0.5 acre of wetland or 300 feet of intermittent/perennial stream will require Individual WQC from the KDOW.
- Impacts to greater than 300 feet of stream and/or 0.1 acre of waters will require compensatory mitigation.

A NWP generally requires three to six months to obtain, depending on agency backlog, while an Individual Section 404 Permit with the USACE often requires six to 12 months to complete. Individual

Section 401 WQCs with the KDOW can generally be completed within the federal time frames. Mitigation for poor quality perennial, intermittent and ephemeral streams require multipliers of 1.5, 1.0 and 0.5, respectively. Current stream mitigation rates in the Salt River Service Area for mitigation banks or the ILF program are approximately \$325 to \$400 per foot/credit, respectively.

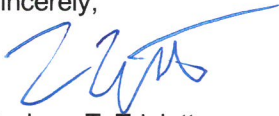
Under the Section 404 permitting process, the USACE determines if consultation with the U.S. Fish and Wildlife Service (USFWS) or the State Historic Preservation Office (SHPO) is required to address potential impacts to T/E species or significant archaeological/historic features, respectively. We are not aware of any archaeological features or studies that have been done on the site; however, a survey may be required during review of the permit application. The major T/E issues of concern are the clearing of suitable Indiana bat and northern long-eared bat summer habitat and impacting Kentucky glade cress habitat. Based on maps released by the USFWS, the project is located in a Known Habitat Zone for the Indiana bat. Suitable summer habitat for the Indiana and northern long-eared bats is represented within the mature woods through the site. Impacts to this habitat will likely require consultation with the USFWS and could include a Biological Assessment, limiting clearing to the unoccupied period (October 15 to March 31), conducting presence/absence surveys, and/or paying a per-acre fee. Kentucky glade cress potential habitat within the project boundary includes cedar/limestone glades, which consist of shallow soils interlaid with flat-bedded limestone areas. A spring flowering season (late February through April) survey will likely be required by the USFWS for this species.

CONCLUSION

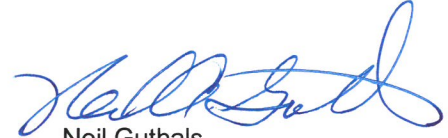
In conclusion, based on Redwing's delineation, jurisdictional water/wetland features present on the site include two perennial streams totaling 2,167 linear feet, one intermittent stream totaling 1,091 linear feet, and nine ephemeral streams totaling 2,041 linear feet. This delineation has not been verified by the USACE. As proposed site design plans are developed, permit requirements and mitigation costs can be further determined.

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

Sincerely,



Zachary T. Triplett
Staff Ecologist



Neil Guthals
Senior Ecologist

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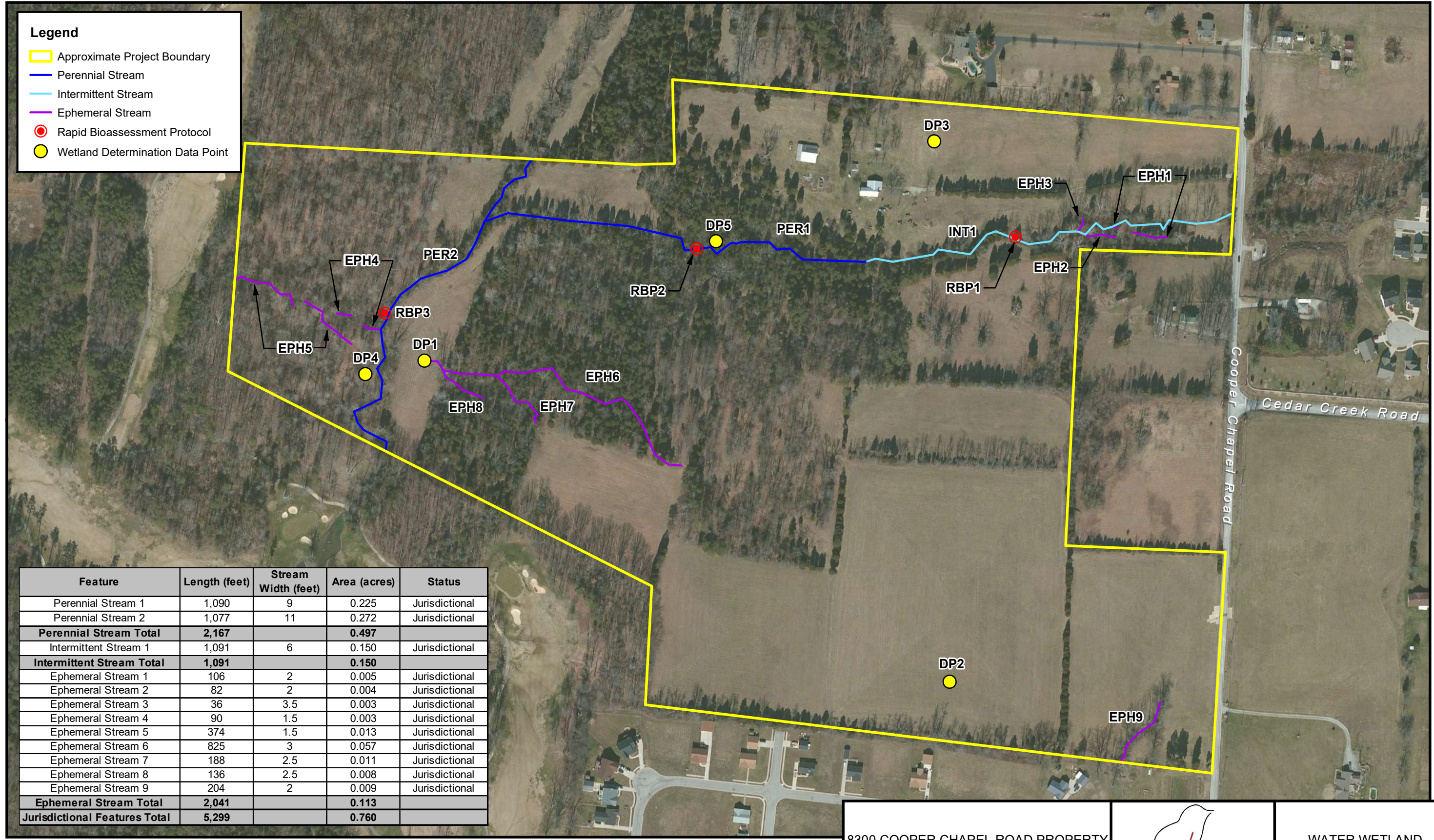
Attachment: Figure 1 – Water/Wetland Location Map

FIGURE

Source: World Imagery - Esri and the GIS User Community (2019).

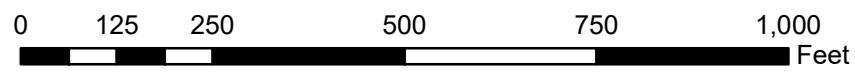
Legend

- Approximate Project Boundary
- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Rapid Bioassessment Protocol
- Wetland Determination Data Point

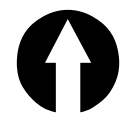


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NOTE: JURISDICTIONAL WATER/WETLAND BOUNDARIES WERE DELINEATED AND SURVEYED BY REDWING WETLAND SCIENTISTS ON DECEMBER 10, 2019. THESE BOUNDARIES HAVE NOT BEEN VERIFIED BY THE U.S. ARMY CORPS OF ENGINEERS. USE OF THIS MAP IS FOR PRELIMINARY PLANNING PURPOSES ONLY.



8300 COOPER CHAPEL ROAD PROPERTY
JEFFERSON COUNTY, KENTUCKY

REVISED DATE: 12-30-19 | DRAWN BY: ZTT



WATER WETLAND
LOCATION MAP

FIGURE 1