INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Eric J. Holcomb
Governor

Brian C. Rockensuess
Commissioner

Section 401 Water Quality Certification

IDEM Number:	2023-100-29-EKB-A
USACE Number:	LRL-2019-215-sjk
Project Name:	Oak Ridge Pointe
Authority:	327 IAC 2. CWA Sections: 301, 302, 303, 306, 307, & 401
Date of Issuance:	April 28, 2023
Impacts must be completed by:	April 28, 2025

Approved:

Brian Wolff, Branch Chief
Surface Water and Operations
Office of Water Quality

Applicant / Permittee:
William Eric Group, LLC
Attention: Jesse Pohlman
510 East State Road 32
Westfield, IN 46074

Agent:
Stamtec
Attention: Ben Harvey
3901 Industrial Blvd.
Indianapolis, IN 46254

Project Location:
Hamilton County
Latitude 40.041527, Longitude -86.148063

Project Description:	Re-grade and widen 913 lf of Grassy Creek into an 825 lf two-stage ditch. Relocate and extend 367 lf of UNT to Grassy Creek into a 699 lf channel. Approximately 1,200 CYS of clean earthen fill will be used to fill UNT to Grassy Creek Encapsulate 44 lf of the relocated UNT to Grassy Creek for the placement of an access road. Discharge 202 lf of riprap across Grassy Creek and the relocated UNT to Grassy Creek. The remaining 1,278' of open stream will be non-riprapped and seeded with a native seed mixture. Excavate 0.078 acres of emergent wetland for the construction of a pond. 1280 lf of stream impacts will be compensated through the creation of 1,480 lf of stream. Purchase 0.156 acres of emergent wetland credits within the Buck Creek Mitigation Bank as mitigation for 0.078 acres of emergent wetland impact.

Authorized Impacts

STREAM IMPACT(S)	Length of Impact (linear feet)		
Type of Impact:	**Ephemeral**	**Intermittent**	**Perennial**
Relocation & Re-grading		1,280	

WETLAND IMPACT(S)	Area of Impact (acres)			
Type of Impact:	**Open Water**	**Emergent**	**Scrub/Shrub**	**Forested**
Dredging		0.078		

Project Mitigation

MITIGATION BANKS AND IN-LIEU FEE	Wetland (Acres)		
Type of Purchase	**Emergent**	**Scrub/Shrub**	**Forested**
Bank Credits	0.156		

Mitigation Location:	Buck Creek Mitigation Bank
Application Signed:	January 1, 2023
Application Received:	February 1, 2023

Based on available information, it is the judgment of this office that the impacts from the proposed project as outlined by this Section 401 Water Quality Certification and described in your application will comply with the applicable provisions of 327 IAC 2 and Sections 301, 302, 303, 306, and 307 of the Clean Water Act if you comply with the conditions set forth below. Therefore, subject to the following conditions, the Indiana Department of Environmental Management (IDEM) hereby grants Section 401 Water Quality Certification for the project described in your application. Any changes in project design or scope not detailed in the application described above or modified by this Section 401 Water Quality Certification are not authorized.

Failure to comply with the terms and conditions of this Section 401 Water Quality Certification may result in enforcement action against you. If an enforcement action is pursued, you could be assessed up to $25,000 per day in civil penalties. You may also be subject to criminal liability if it is determined that the Section 401 Water Quality Certification was violated willfully or negligently.

Conditions of the Section 401 Water Quality Certification

1.0 General

(a) Implement the project as depicted and described in the application for Section 401 Water Quality Certification as modified by the conditions of this certification.

(b) Per 33 CFR 325.6(c), 327 IAC 5-2-6, IC 13-15-3-2 the federal license shall have an established timeframe. Therefore, all approved discharges must be completed within the term of the valid federal permit.

(c) Per IC 13-14-2-2, the department may inspect public or private property to inspect for and investigate possible violations of environmental management laws. Therefore, the commissioner or an authorized representative of the commissioner (including an authorized contractor), upon the presentation of credentials must be allowed:
   (1) to enter your property, including impact and mitigation site(s);
   (2) to have access to and copy at reasonable times any records that must be kept under the conditions of this certification;

(3) to inspect, at reasonable times, any monitoring or operational equipment or method; collection, treatment, pollution management or discharge facility or device; practices required by this certification; and any mitigation wetland site;

(4) to sample or monitor any discharge of pollutants or any mitigation site.

2.0 Mitigation

Per 327 IAC 2, the goal of Indiana's water quality standards is to restore and maintain the chemical, physical and biological integrity of the state's waters. Mitigation of dredge and fill impacts to Indiana's water resources is required to maintain water quality.

(a) Mitigation via mitigation bank or ILF
Per 33 CFR 332.3 (f); 327 IAC 2-1; 327 IAC 2-1.5 the amount of mitigation required must be listed within the permit.

(1) Provide to IDEM proof of the purchase of 0.156 acre of credit from the Buck Creek Mitigation Bank:
(A) Within one (1) year of the date of this authorization;
(B) Before authorized impacts to waters of the State.

Failure to purchase credits by the required date may result in additional mitigation requirements to compensate for temporal loss.

3.0 Erosion and Sediment Control

Per 40 CFR 122.26, 327 IAC 15; 327 IAC 2-1; 327 IAC 2-1.5, the use of appropriate stormwater control measures and maintenance thereof will prevent any sediment laden water from migrating off site and entering waterways and wetlands, potentially impairing water quality. Therefore, the following erosion and sediment control steps must be completed.

(a) Implement erosion and sediment control measures on the construction site prior to land disturbance to minimize soil from leaving the site or entering a waterbody. Erosion and sediment control measures shall be implemented using an appropriate order of construction (sequencing) relative to the land-disturbing activities associated with the project. Appropriate measures include, but are not limited to, silt fence, diversions, and sediment traps.

(b) Monitor and maintain erosion control measures and devices regularly, especially after rain events, until all soils disturbed by construction activities have been permanently stabilized.

(c) Install and make appropriate modifications to erosion and sediment control measures based on current site conditions as construction progresses on the site. The Indiana Storm Water Quality Manual or similar guidance documents are available to assist in the selection of measures that are applicable to individual project sites.

(d) Implement appropriate erosion and sediment control measures for all temporary run-arounds, cofferdams, temporary causeways, temporary crossings, or other such structures that are to be constructed within any waters of the state. Minimize disturbance to riparian areas when constructing these structures. Structures must be included in reviewed designs or approved by IDEM prior to use. Construct temporary run-arounds, temporary cofferdams, temporary causeways, temporary crossings, or other such structures of non-erodible materials. Temporary crossings and causeways must be completely removed upon completion of the project and the affected area restored to pre-construction contours, grades, and vegetative conditions.

(e) Install stream pump-around operations in accordance with the plans and ensure in-stream component is constructed of non-sediment producing materials. The discharge at the outlet shall not cause erosion of the stream bottom and banks.

(f) Direct cofferdam dewatering activities to an appropriate sediment control measure or a combination of measures prior to discharging into a water of the state to minimize the discharge of sediment-laden water.

(g) Ensure cut and fill slopes located adjacent to wetlands and streams (including encapsulated streams) or that directly discharge to these aquatic features are stabilized using rapid/incremental seeding or other appropriate stabilization measures.

(h) Stabilize and re-vegetate disturbed soils as final grades are achieved. Initiation of stabilization must occur immediately or, at a minimum, within the requirements of a construction site run-off permit after work is completed. Use a mixture of herbaceous species beneficial for wildlife or an emergent wetland seed mix wherever possible and appropriate. Tall fescue may only be planted in ditch bottoms and ditch side slopes and must be a low endophyte seed mix. Stabilize the channel before releasing stream flows into the channel.

(i) As work progresses, re-vegetate areas void of protective ground cover. Areas that are to be re-vegetated shall use seeding and anchored mulch. **If alternative methods are required to ensure stabilization, erosion control blankets may be used that are biodegradable, that use loose-woven/leno-woven netting to minimize the entrapment and snaring of small-bodied**

wildlife such as snakes and turtles (follow manufacturer's recommendations for selection and installation).

Anchor mulch. Anchoring shall be appropriate for the site characteristics such as slope, slope length, and concentrated flows. **Anchoring methods may not include loose netting over straw, but can range from crimping of straw, erosion control blankets as specified above that minimize wildlife entrapment, or net free blankets.** Tackifiers with mulch and hydro-mulch are acceptable and shall be applied to the manufacturer specifications.

4.0 Construction

Per 327 IAC 2-1-6(b)(4) the protection of existing uses for aquatic life is required and, per 327 IAC 2-1.3-2 (4) the utilization of best management practices helps ensure the protection of existing uses. Therefore, the following best management practices are required.

(a) Avoid in stream channel work during the fish spawning season (April 1 through June 30).

(b) Clearly mark wetlands and streams that are to remain undisturbed on the project site.

(c) Restrict channel work and vegetation clearing to the minimum necessary for the installation of any structures. Work from only one side of the stream, and, where possible, from the side of the stream which does not have adjacent wetlands. If no wetlands are present, work from the side with the fewest trees and woody vegetation.

(d) Ensure permanent in-stream structures, including but not limited to culverts and other stream encapsulations, are embedded and sized appropriately so as not to impede surface flows or create abnormal impediments to aquatic life.

(e) Deposit any dredged material in a contained upland (non-wetland) disposal area to prevent sediment run-off to any waterbody.

(f) Create temporary structures constructed in streams such that near normal stream flows are maintained. (327 IAC definitions Stream Design Flow)

Other Applicable Permits

Based on the proposed land disturbance, a construction stormwater general permit is required for the project. Permit coverage must be obtained prior to the initiation of land-disturbing activities. Information related to obtaining permit coverage is available at

www.in.gov/idem/stormwater or by contacting the IDEM, Stormwater Program at 317-233-1864 or via email at Stormwat@idem.IN.gov.

This certification does not relieve you of the responsibility of obtaining any other permits or authorizations that may be required for this project or related activities from IDEM or any other agency or person. You may wish to contact the Indiana Department of Natural Resources at 317-232-4160 (toll free at 877-928-3755) concerning the possible requirement of natural freshwater lake or floodway permits.

This certification does not:

(1) Authorize impacts or activities outside the scope of this certification;
(2) Authorize any injury to persons or private property or invasion of other private rights, or any infringement of federal, state or local laws or regulations;
(3) Convey any property rights of any sort, or any exclusive privileges;
(4) Preempt any duty to obtain federal, state or local permits or authorizations required by law for the execution of the project or related activities; or
(5) Authorize changes in the plan design detailed in the application.

Notice of Right to Administrative Review (Permits)

If you wish to challenge this permit, you must file a Petition for Administrative Review with the Office of Environmental Adjudication (OEA), and serve a copy of the petition upon IDEM. The requirements for filing a Petition for Administrative Review are found in IC 4-21.5-3-7, IC 13-15-6-1 and 315 IAC 1-3-2. A summary of the requirements of these laws is provided below.

A Petition for Administrative Review must be filed with the Office of Environmental Adjudication (OEA) within fifteen (15) days of the issuance of this notice (eighteen (18) days if you received this notice by U.S. Mail), and a copy must be served upon IDEM. Addresses are:

Director Office of Environmental Adjudication Indiana Government Center North 100 North Senate Avenue, Room N103 Indianapolis, Indiana 46204	Commissioner Indiana Dept. of Environmental Management Indiana Government Center North 100 North Senate Avenue, Room 1301 Indianapolis, Indiana 46204

The petition must contain the following information:

(a) The name, address and telephone number of each petitioner.
(b) A description of each petitioner's interest in the permit.
(c) A statement of facts demonstrating that each petitioner is:
    (1) a person to whom the order is directed;

(2) aggrieved or adversely affected by the permit; or
(3) entitled to administrative review under any law.

(d) The reasons for the request for administrative review.
(e) The particular legal issues proposed for review.
(f) The alleged environmental concerns or technical deficiencies of the permit.
(g) The permit terms and conditions that the petitioner believes would be appropriate and would comply with the law.
(h) The identity of any persons represented by the petitioner.
(i) The identity of the person against whom administrative review is sought.
(j) A copy of the permit that is the basis of the petition.
(k) A statement identifying petitioner's attorney or other representative, if any.

Failure to meet the requirements of the law with respect to a Petition for Administrative Review may result in a waiver of your right to seek administrative review of the permit. Examples are:

(a) Failure to file a Petition by the applicable deadline;
(b) Failure to serve a copy of the Petition upon IDEM when it is filed; or
(c) Failure to include the information required by law.

If you seek to have a permit stayed during the administrative review, you may need to file a Petition for a Stay of Effectiveness. The specific requirements for such a Petition can be found in 315 IAC 1-3-2 and 315 IAC 1-3-2.1.

Pursuant to IC 4-21.5-3-17, OEA will provide all parties with notice of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders disposing of the review of this action. If you are entitled to notice under IC 4-21.5-3-5(b) and would like to obtain notices of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders disposing of the review of this action without intervening in the proceeding you must submit a written request to OEA at the address above.

If you have procedural or scheduling questions regarding your Petition for Administrative Review, additional information on the review process is available at the website of the Office of Environmental Adjudication at http://www.in.gov/oea.

If you have any questions about this certification, please contact Graham Wrin, Project Manager, by email at GCWrin@IDEM.IN.Gov or by phone at 317-605-4105.

cc: Sarah Keller USACE – Indianapolis Regulatory Office
Sarah Harrison, USFWS
Brian Boszor, IDNR
Ben Harvey, Stantec

APPLICATION FOR AUTHORIZATION TO DISCHARGE DREDGED OR FILL MATERIAL TO ISOLATED WETLANDS AND/OR WATERS OF THE STATE

State Form 51821 (R2 / 11-15)

Indiana Department of Environmental Management

INSTRUCTIONS: 1. Read the instruction sheet before filling out this form.

2. You must complete all applicable sections of this form

1. Applicant Information	2. Agent Information
Name of Applicant William Eric Group, LLC	Name of Agent Cardno
Mailing address *(Street/ PO Box/ Rural Route, City, State, ZIP Code)* 510 E State Rd 32 Westfield, IN 46074	Mailing address *(Street/ PO Box/ Rural Route, City, State, ZIP Code)* 3901 Industrial Blvd. Indianapolis, IN 46254
Daytime Telephone Number 317-696-9254	Daytime Telephone Number 317-388-1982
Fax Number	Fax Number
E-mail address *(optional)* jpohlman@williamtres.com	E-mail address *(optional)* ben.harvey@cardno.com
Contact person *(required)* Jesse Pohlman	Contact person Ben Harvey

3. Project / Tract Location

County Hamilton		Nearest city or town Westfield	
U.S.G.S. Quadrangle map name *(Topographic map)* Westfield		Project street address *(if applicable)* 631 IN-32 (Approximate) Westfield, IN 46074	
Quarter NE	Section 2	Township 18N	Range 3E
Type of aquatic resource(s) to be impacted *(Attach Worksheet One.)* Streams and Wetlands		Project name or title *(if applicable)* Oak Ridge Pointe	

Other location descriptions or driving directions

From Indianapolis, travel north on Highway 31 to SR 32. Travel west on SR 32 for 0.5 mile then turn south on Oak Ridge Road. Project site will be on the west side of road approximately 0.1 miles south of SR 32.

4. Project Purpose and Description (*Use additional sheet(s) if required.*)

Has any construction been started? ☐ Yes ☒ No	Anticipated start date *(month, day, year)* 07/2022

If yes, how much work is completed?

N/A

Purpose of project and overview of activities

The applicant proposes to develop the undeveloped portion of a parcel at the southwest corner of SR 32 and Oak Ridge Road. The need for the project arises from the rapidly developing nature of this area. Part of Grassy Branch (Stream 01 - Anna Kendall Legal Drain) will be excavated to accommodate the project. Grassy Branch will be re-graded and widened into a two-stage ditch to create compensatory flood storage within the project limits, based on county surveyor requirements. In-line detention is not proposed for this project. A tributary to Grassy Branch (Stream 02 - Osborne Branch Legal Drain) will also be relocated and lengthened. A 44 foot section of this relocation will be piped to create a new access drive onto the property. There are a maximum total of 1,280 proposed linear feet of impacts on the project. A total of 1,482 linear feet of open channel will be restored on the project area. 1,278 linear feet of open channel will not be riprapped. The banks of the restored channels and the two-stage ditch and compensatory storage area will be planted in native vegetation. One wetland will be impacted by the project. This wetland totals 0.078 acre in size, and will be entirely impacted by the project. Overall impact acreage totals 0.1562 acre and the amount of restored open channel stream acreage is 0.136. Approximately 2.25 acres of native seed will be planted along the stream channels.

5. Avoidance, Minimization, and Mitigation Information: Applicants must answer all of the following questions
(*Use additional sheet(s) if necessary - provide a detailed response to all applicable questions.*)

A. For projects with Class II isolated wetlands –

1. Is there a reasonable alternative to the proposed activity?
   N/A

2. Is the proposed activity reasonably necessary or appropriate?
   N/A

B. For projects with Class III wetlands, adjacent wetlands, and/or streams, rivers, lakes or other water bodies –

1. Is there a practicable alternative to the proposed activity?
   No, the applicant wishes to develop this parcel commercially, and because of the configuration of streams and wetlands on the property impacts are required to do so. Local regulatory requirements led to much of the impacts to Grassy Branch.

2. Have practicable and appropriate steps to minimize impacts to water resources been taken?
   Yes, the proposed structure lengths are the minimum required to develop the property. Wingwalls have been added to the structures to reduce the overall structure lengths. Riprap has been reduced to the maximum amount possible while still in compliance with local ordinances.

Describe all compensatory mitigation required for unavoidable impacts.

Formal compensatory mitigation is not proposed for the project, as the total amount of open channel stream will be increased on the project. All stream resouces will be restored to equal or better condition by the project. A maximum total of 1,280 linear feet of stream will be impacted by the project, all currently existing as open channel county surveyor legal drain. A total of 1,482 linear feet of open channel stream channel will be re-created on the property, 1,278 linear feet of which will not be riprapped. All proposed open channel stream banks will be re-planted with a native seed mixture, an improvement over the existing vegetative conditions.

6. Drawing / Plan Requirements *(Applicants must provide the following.)*

a. Top/aerial/overhead views of the project site showing existing conditions and proposed construction.
b. Cross sectional view of areas of fill or alterations to streams and other waters.
c. North arrow, scale, property boundaries.
d. Include wetland delineation boundary *(if applicable)*. Label all wetlands (jurisdictional, isolated and exempt) as I-1, I-2, I-3, etc. and the mitigation areas as M-1, M-2, etc.
e. Location of all surface waters, including wetlands, erosion control measures, existing and proposed structures, fill and excavation locations, disposal area for excavated material, including quantities, and wetland mitigation site *(if applicable)*.
f. Approximate water depths and bottom configurations *(if applicable)*.

7. Supplemental Application Materials *(Applicants must provide the following.)*

a. A wetland delineation of all wetlands on the project site *(for projects with wetland impacts)*.
b. At least three photographs of the project site. Indicate the photo locations on the project plans.
c. If isolated wetlands are present, a letter from the Corps of Engineers verifying this statement.
d. Wetland mitigation plan and monitoring report.
e. Classification of all isolated wetlands on the tract *(if isolated wetlands are present onsite)*.
f. Copies of all applicable local permits and/or resolutions pertaining to the project or tract.
g. Tract history *(see instructions)*.

8. Additional information that MAY be required *(IDEM will notify you if needed.)*

a. Erosion control and/or storm water management plans.
b. Sediment analysis.
c. Species surveys for fish, mussels, plants and threatened or endangered species.
d. Stream habitat assessment.
e. Any other information IDEM deems necessary to review the proposed project.

9. Permitting Requirements

a. Does this project require the issuance of a Department of the Army Section 404 Permit from the US Army Corps of Engineers? ☒ Yes ☐ No

If no, you do not need to answer Part b.

b. Have you applied for an Army Corps of Engineers Section 404 permit? ☒ Yes ☐ No

If yes, please supply the Corps of Engineers ID Number, the Corps of Engineers District, the project manager, and a copy of any correspondence with the Corps. **If no, contact** the Army Corps of Engineers regarding the possible need for a permit application.

Concurrent with this application.

c. Have you applied for, received, or been denied a permit from the Department of Natural Resources for this project? ☒ Yes ☐ No

Please give the permit name, permit number, and date of application, issuance or denial.

FW - 29939 - Approved

d. Have you applied for, received, or been denied any other federal, state, or local permits, variances, licenses, or certifications for this project? ☐ Yes ☒ No

Please give the permit name, agency from which it was obtained, permit number, and date of issuance or denial.

10. Adjoining Property Owners and Addresses

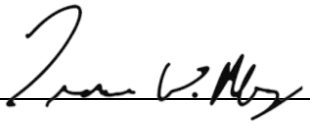
List the names and addresses of landowners adjacent to the property on which your project is located and the names and addresses of other persons (or entities) potentially affected by your project. Use additional sheet(s) if required.

Name	Address *(number and street)*	City	State	ZIP Code
Westfield Public Safety Building Corp	130 Penn St	Westfield	IN	46074
Community First Bank of Indiana	201 W Sycamore St	Kokomo	IN	46979
Hartman Capital LLC Oak Ridge Series	505 S 5th St	Champaign	IL	61820
Edge Rock Development	555 E Main St	Westfield	IN	46074
ZPS Westfield LLC	PO Box 623276	Oviedo	FL	32762

Name	Address *(number and street)*	City	State	ZIP Code

11. Signature - Statement of Affirmation

I certify that I am familiar with the information contained in this application and, to the best of my knowledge and belief, such information is true and accurate. I certify that I have the authority to undertake and will undertake the activities as described in this application. I am aware that there are penalties for submitting false information. I understand that any changes in project design subsequent to IDEM's granting of authorization to discharge to a water of the state are not authorized and I may be subject to civil and criminal penalties for proceeding without proper authorization. I agree to allow representatives of the IDEM to enter and inspect the project site. I understand that the granting of other permits by local, state, or federal agencies does not release me from the requirement of obtaining the authorization requested herein before commencing the project.

Applicant's Signature:  Date: 01/31/2023 *(mm/dd/yyyy)*

Print Name: Travis May Title: Principal

Worksheet – Summary of Onsite Water Resources and Project Impacts

A. Jurisdictional Wetlands (Existing Conditions)		Jurisdictional Wetlands (Proposed Impacts)			
Wetland Type	**Size of wetland *(acreage)***	**To be Impacted?**	**Acreage**	**Fill quantity *(cys)***	**ATF**
☒ EM ☐ SS ☐ FO	0.078	☒ Yes ☐ No	0.078	200	No
☐ EM ☐ SS ☐ FO		☐ Yes ☐ No			
☐ EM ☐ SS ☐ FO		☐ Yes ☐ No			
☐ EM ☐ SS ☐ FO		☐ Yes ☐ No			
☐ EM ☐ SS ☐ FO		☐ Yes ☐ No			
☐ EM ☐ SS ☐ FO		☐ Yes ☐ No			
☐ EM ☐ SS ☐ FO		☐ Yes ☐ No			

Describe the type and composition of fill material to be placed in wetlands on the project site:
Clean earthen fill

Describe the type and composition and quantity *(cubic yards)* of material proposed to be dredged or excavated from wetlands on the project site:
N/A

B. Isolated Wetlands (Existing Conditions)			Isolated Wetlands (Proposed Impacts)			
Wetland Class	**Type**	**Size of wetland *(acreage)***	**To be Impacted?**	**Acreage**	**Fill quantity *(cys)***	**ATF**
☐ 1 ☐ 2 ☐ 3	☐ NF ☐ F		☐ Yes ☐ No			
☐ 1 ☐ 2 ☐ 3	☐ NF ☐ F		☐ Yes ☐ No			
☐ 1 ☐ 2 ☐ 3	☐ NF ☐ F		☐ Yes ☐ No			
☐ 1 ☐ 2 ☐ 3	☐ NF ☐ F		☐ Yes ☐ No			
☐ 1 ☐ 2 ☐ 3	☐ NF ☐ F		☐ Yes ☐ No			
☐ 1 ☐ 2 ☐ 3	☐ NF ☐ F		☐ Yes ☐ No			

Describe the type and composition of fill material to be placed in isolated wetlands on the project site:
N/A

Describe the type and composition and quantity *(cubic yards)* of material proposed to be dredged or excavated from isolated wetlands on the project site:
N/A

C. Bridges and Stream Crossings - provide the following information for EACH structure (*Use additional sheet(s) if required.*)

Stream name
N/A

Description of impacts

Length of upstream bank impacts:
Left side: Right side:

Length of downstream bank impacts:
Left side: Right side:

Bank protection fill placed below the Ordinary High Water Mark:
Volume per running foot:

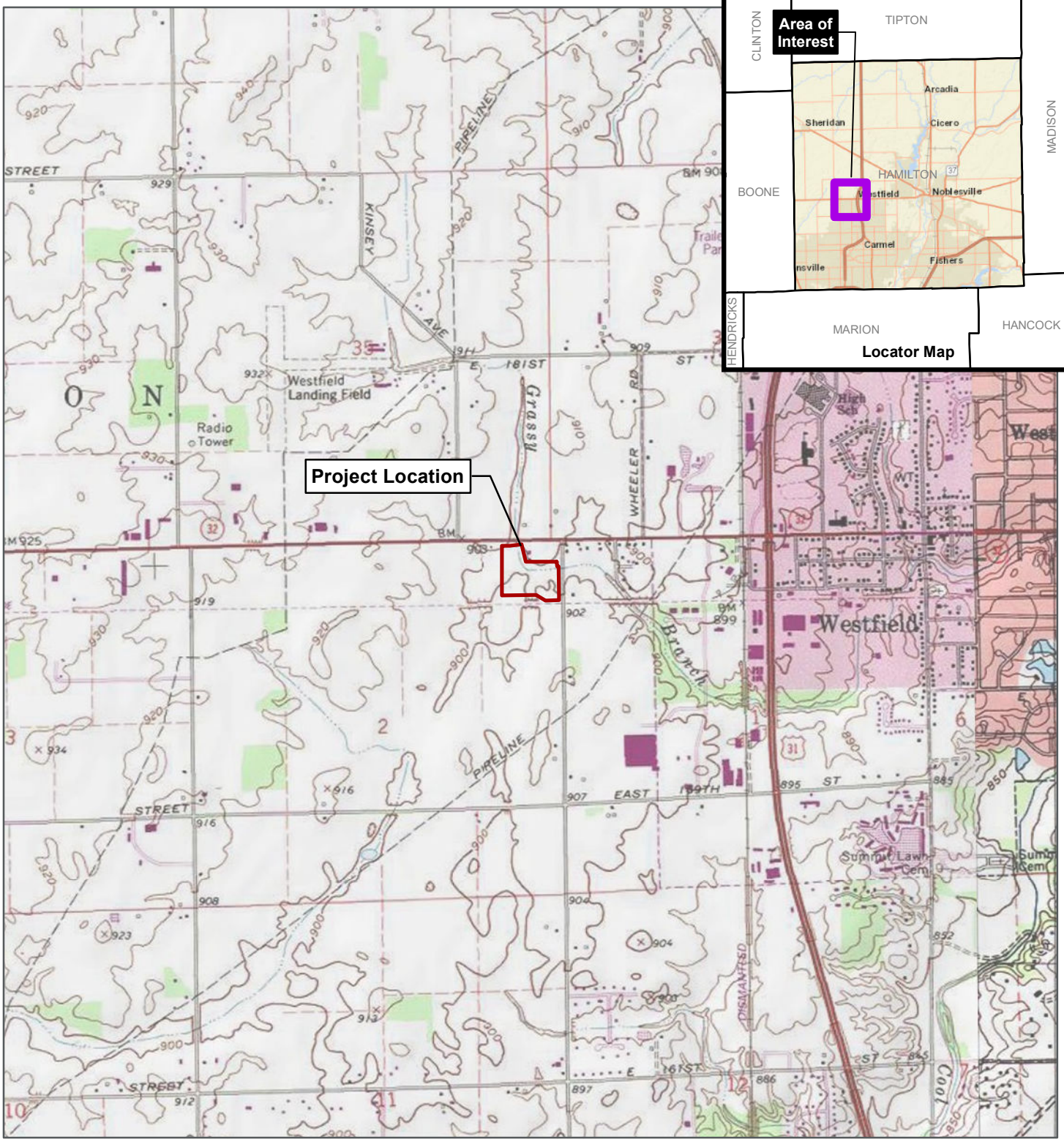
Bank protection fill placed below the Ordinary High Water Mark:
Area of coverage:

D. Bank Stabilization – provide the following information for EACH segment (*Use additional sheet(s) if required.*)
Water body name N/A
Description of impacts
Length of shoreline or bank protection
Volume *(cubic yards)* of bank protection fill placed below the Ordinary High Water Mark per running foot
Area *(square feet)* of bank protection fill placed below the Ordinary High Water Mark

E.1 S t r e a m Relocation	
Water body name Stream 01 - Grassy Branch – Anna Kendall Legal Drain	
Description of impacts Channel will be re-graded to provide additional flood storage, and re-configured into a two-stage ditch.	
Length of existing channel to be relocated *(linear feet)* 913	
Length of new channel to be constructed *(linear feet)* 825	
Existing channel to be backfilled? ☐ Yes ☒ No	Type of relocation ☐ Piping ☒ Open ☐ Channel ☐ Other:____
Type of fill and volume *(cubic yards)* N/A	

E.2 Stream Relocation	
Water body name Osborn Arm	
Description of impacts Chanel will be relocated and a 40 ft wide cross section will be put in place to provide an additional entrance into the project area.	
Length of existing channel to be relocated *(linear feet)* 367	
Length of new channel to be constructed *(linear feet)* 699 – ~~657~~ lft of open channel, 532 lft non-riprapped native vegetation, 44 lft culvert	
Existing channel to be backfilled? ☒ Yes ☐ No	Type of relocation ☒ Piping ☒ Open ☐ Channel ☐ Other:____
Type of fill and volume *(cubic yards)* Clean earthen fill, 1200 CYS	

F. Open Water Fill
Water body name N/A
Description of impacts
Area of water body to be filled *(acres)*
Type of fill and volume *(cubic yards)*



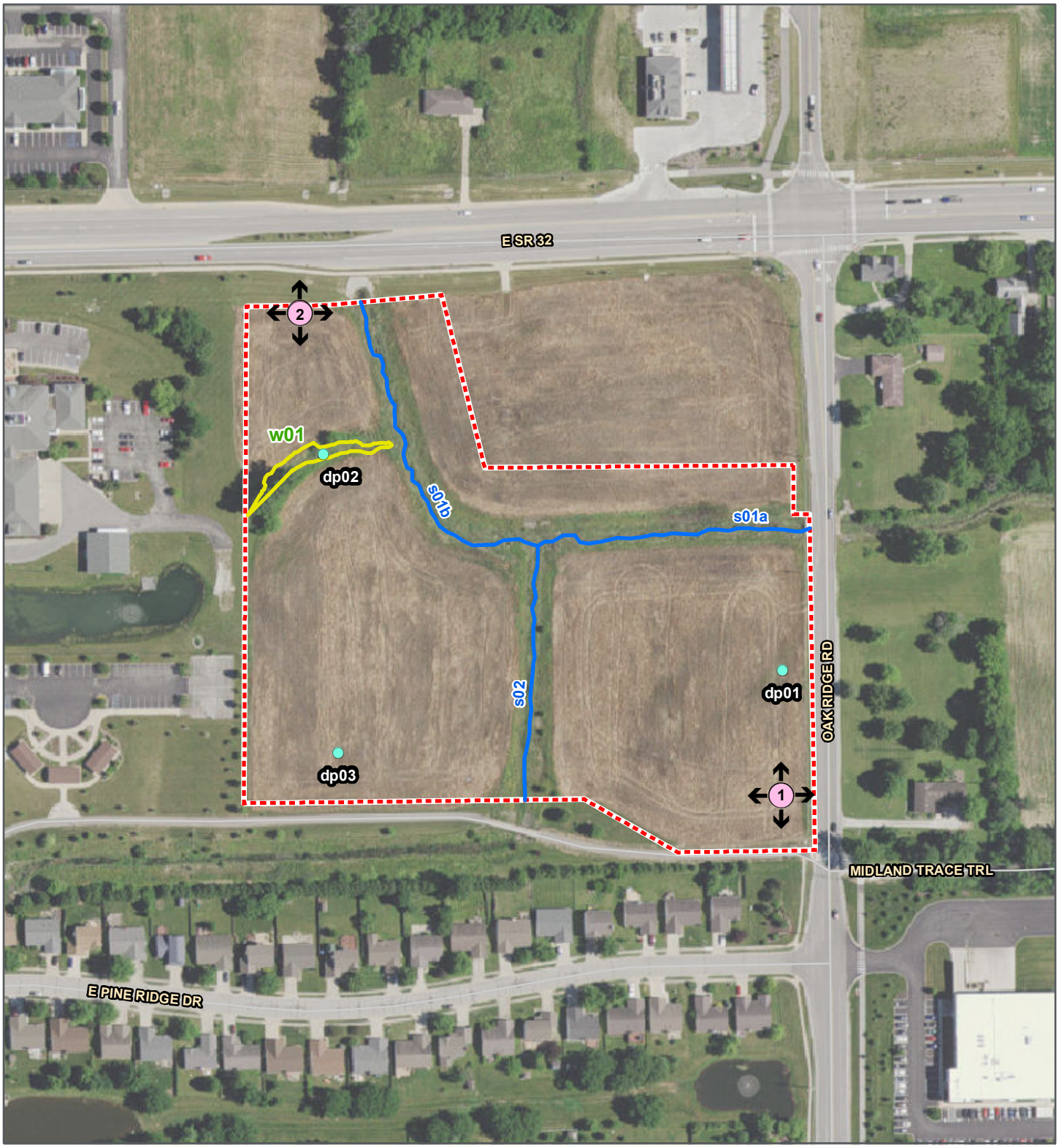
N
W E
S

7.5' Quadrangle: Westfield
T18n R3e Sec2
Project No. j191010500

Figure 1: Project Location
Oak Ridge
Regulated Waters Delineation Report
William Eric Group, LLC
Hamilton County, Indiana

Cardno
3901 Industrial Blvd.,Indianapolis, IN 46254
Phone (+1) 317-388-1982 Fax (+1) 317-388-1982
www.cardno.com

Date: 2/18/2019 File Path: R:\Projects\19\191\191010500_WilliamEricGroup_OakRidgePoint\GIS\MXD\Delineation\F1_Location.mxd Saved By: Stephen.LaFon



0 100 200 Feet
0 20 40 60 Meters

Wetland Data Point
Delineated Stream
Project Location
Photo Station
Delineated Wetland

N
W E
S

7.5' Quadrangle:
Westfield
T18n R3e Sec2
Project No.
j191010500

Figure 6: Delineation

Oak Ridge
Regulated Waters Delineation Report
William Eric Group, LLC
Hamilton County, Indiana

Cardno
3901 Industrial Blvd.,Indianapolis, IN 46254
Phone (+1) 317-388-1982 Fax (+1) 317-388-1982
www.cardno.com

Date: 2/20/2019
File Path: R:\Projects\19\191\191010500_WilliamEricGroup_OakRidgePoint\GIS\MXD\Delineation\F6_Delineation.mxd
Saved By: Tamara.Miller
National Agriculture Imagery Program (NAIP), Farm Services Agency (FSA), U. S. Department of Agriculture (USDA), UITS, Indiana Spatial Data Portal , Indiana Department of Natural Resources DFIRM (Published 03/20/2017)

Indiana Utilities Protection Service
Call 811 before you dig

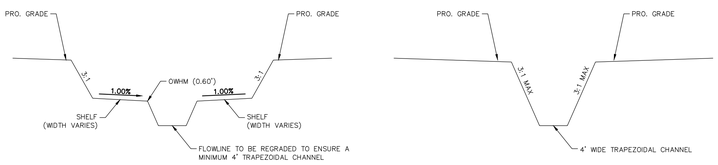
NORTH

GRAPHIC SCALE IN FEET
0 20' 40' 80'

STATE ROAD 32

STORM SEWER STRUCTURE DATA TABLE
NOTE: DEBRIS GUARD REQUIRED ON ALL END SECTIONS
ALL CASTINGS SHALL BE LABELED "DUMP NO WASTE-DRAINS TO WATERWAY"

STR. NO:	STRUCTURE/CASTING TYPE NOTE: NEENAH CASTINGS	T.O.R.	INCOMING PIPE DATA (DIRECTION) [FROM STR]	OUTGOING PIPE DATA (DIRECTION) [TO STR]	OUTGOING PIPE L.F.	OUTGOING PIPE SIZE	OUTGOING GRADE (%)	CONNECT TO STRUCTURE	REMARKS
1	FLARED END SECTION		15" RCP 890.32 (SW) [2]						
2	OUTLET CONTROL STRUCTURE	897.17	15" RCP 890.58 (W) [3]	15" RCP 890.58 (NE) [1]	64'	15"	0.41%	1	
3	FLARED END SECTION			15" RCP 890.75 (E) [2]	41'	15"	0.41%	2	
10	FLARED END SECTION		36" RCP 891.00 (S) [11]						
11	TYPE "K" MH - R-1772	898.00	36" RCP 892.23 (S) [13] 12" HDPE 891.26 (SE) [12]	36" RCP 891.26 (N) [10]	43'	36"	0.60%	10	
12	AQUASWRL XC-8 (SEE DETAILS)	898.11	12" HDPE 891.40 (SW) [13]	12" HDPE 891.40 (NW) [11]	15'	12"	0.97%	11	
13	TYPE "K" MH - R-1772	898.17	36" RCP 891.55 (S) [14]	36" RCP 892.32 (N) [11] 12" HDPE 891.55 (NE) [12]	15' 15'	36" 12"	0.60% 0.97%	11 12	
14	TYPE "K" MH - R-4342	895.48		36" RCP 892.15 (N) [13]	101'	36"	0.60%	13	
20	FLARED END SECTION		12" RCP 892.00 (W) [21]						
21	TYPE "E" INLET - R-4215-C	894.93		12" RCP 892.20 (E) [20]	24'	12"	0.82%	20	
30	CONCRETE HEADWALL		7'x7' BOX CULVERT 889.04 (S) [31]						
31	CONCRETE HEADWALL			7'x7' BOX CULVERT 889.16 (N) [30]	45'	84"	0.29%	30	



TYPICAL ANNA KENDALL CHANNEL CROSS SECTION

TYPICAL OSBORNE ARM CHANNEL CROSS SECTION

PROPOSED LEGEND

- HEAVY DUTY ASPHALT PAVEMENT — SEE CONSTRUCTION DETAILS FOR PAVEMENT SECTION
- RIGHT OF WAY PAVEMENT — SEE CONSTRUCTION DETAILS FOR PAVEMENT SECTION
- CLASS III INDOT CONCRETE DRIVEWAY — SEE CONSTRUCTION DETAILS FOR PAVEMENT SECTION
- ASPHALT PATH — SEE CONSTRUCTION DETAILS FOR PAVEMENT SECTION
- 1.5" MILL AND RESURFACE
- RIP RAP REVETMENT
- STR XX — PROPOSED STRUCTURE ID
- PROPOSED STORM SEWER LINE
- PROPOSED STORM STRUCTURES
- XXX.XX — FINISHED GRADE SPOT ELEVATION
- TC XXX.XX / BC XXX.XX — TOP OF CURB / BOTTOM OF CURB SPOT ELEVATION
- ME XXX.XX — MATCH EXISTING SPOT ELEVATION
- 620 — PROPOSED CONTOUR
- RIDGE — RIDGE LINE
- X.XX% — SLOPE AND FLOW DIRECTION
- PROPOSED SWALE

KEY NOTES

1. ASPHALT PATH, TYP. (SEE DETAILS)
2. CONCRETE CURB AND GUTTER (SEE DETAILS)
3. CONNECT TO EXISTING PAVEMENT, SIDEWALK, CURB, TYP.
4. ACCESSIBLE RAMP (SEE DETAILS)
5. 3-FT TRANSITION CURB
6. 2' STONE SHOULDER
7. BARRICAIDE

BENCHMARKS

PROJECT BM:

A STANDARD DISK STAMPED B112 1946 SET IN THE TOP OF A CONCRETE POST ALONG STATE ROAD 32 ABOUT 2.25 MILES WEST OF WASHINGTON HIGH SCHOOL AT WESTFIELD AND ABOUT 1 MILE EAST OF THE CROSS ROAD AT EAGLETOWN.

ELEVATION 924.24 (NAD 1988)

NOTE

- EXISTING TOPOGRAPHY IN PROPOSED WORK AREA WAS PROVIDED BY WILLIAM TRES DEVELOPMENT FROM WIEHE ENGINEERS DATED MAY 11, 2017.
- THE AREA DEPICTED NORTH OF THE ANNA KENDALL LEGAL DRAIN IS BASED ON DESIGN INFORMATION FROM WIEHE ENGINEERS FOR OAK RIDGE SHOPS AND COMMUNITY FIRST BANK DATED JULY 25, 2018.
- THE AREA DEPICTED EAST OF OAK RIDGE ROAD IS BASED ON DESIGN INFORMATION FROM WOOLPERT FOR TRAILS OF WESTFIELD APARTMENTS DATED OCTOBER 1, 2019.
- CONTRACTOR TO FIELD VERIFY ALL INFORMATION WITHIN PROPOSED WORK AREA PRIOR TO COMMENCING CONSTRUCTION AND NOTIFY ENGINEER IMMEDIATELY IF DISCREPANCIES EXIST.

GENERAL PLAN NOTES

REFER TO GENERAL NOTES SHEET FOR MORE INFORMATION INCLUDING THE FOLLOWING: (EXISTING LEGEND, BENCHMARK INFORMATION, AND SPECIFIC GENERAL PLAN NOTES.)

CURVE TABLE					
CURVE #	ARC LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD DISTANCE
C5	159.12'	300.00'	30°23'22"	N75°11'41"E	157.26'
C6	141.08'	266.00'	30°23'17"	S75°11'39"W	139.43'
C7	177.16'	334.00'	30°23'29"	N75°11'45"E	175.09'

NO.	REVISIONS	DATE	BY

Kimley»Horn
© 2023 KIMLEY-HORN AND ASSOCIATES, INC.
250 EAST 96TH STREET, SUITE 580,
INDIANAPOLIS, IN 46240
PHONE: 317-228-0700
WWW.KIMLEY-HORN.COM

SCALE: AS NOTED | DESIGNED BY: DAM | DRAWN BY: RCB | CHECKED BY: ART

ANDREW R. TAYLOR — REGISTERED — 10706 — STATE OF INDIANA — PROFESSIONAL ENGINEER
NOT APPROVED FOR CONSTRUCTION

WILLIAM TRES DEVELOPMENT
DEVELOPMENT | ADVISORY | MANAGEMENT

DEVELOPMENT PLAN

OAK RIDGE POINTE
SWC OF 175TH ST. OAK RIDGE RD.
WESTFIELD, IN 46074

ORIGINAL ISSUE: 04/29/2022
KHA PROJECT NO. 170090000
SHEET NUMBER C3.0

Indiana Utilities Protection Service
Call 811 before you dig

NORTH

GRAPHIC SCALE IN FEET
0 20' 40' 80'

EROSION CONTROL LEGEND

- TEMPORARY SEEDING (SEE EROSION CONTROL DETAILS)
- TEMPORARY EROSION CONTROL BLANKET (SEE TEMPORARY EROSION CONTROL NOTE #3)
- CONSTRUCTION ENTRANCE (SEE EROSION CONTROL DETAILS)
- SILT FENCE (SEE EROSION CONTROL DETAILS)
- AREA INLET PROTECTION (SEE EROSION CONTROL DETAILS)
- CW — CONCRETE WASHOUT (SEE EROSION CONTROL DETAILS) (TO BE DETERMINED BY CONTRACTOR)
- RIP RAP (SEE EROSION CONTROL DETAILS)
- ROCK DONUT (SEE EROSION CONTROL DETAILS)
- TEMPORARY SOIL STOCKPILE
- LIMITS OF DISTURBANCE
- CHECK DAM
- 620 — EXISTING CONTOURS
- 620 — PROPOSED CONTOURS
- NS — N.O.I. SIGN
- STAGING AREA
- DD — DEBRIS DUMPSTER
- PL — PORT-O-LET
- C 125 BN EROSION CONTROL BLANKET WITH STORMWATER SEED MIX (SEE EROSION CONTROL DETAILS)
- C 125 BN EROSION CONTROL BLANKET WITH ECONOMY PRAIRIE SEED MIX (SEE EROSION CONTROL DETAILS)

EROSION INFORMATION

- INSPECT WITHIN 24 HOURS OF EACH RAIN EVENT OF 0.5 INCHES OR MORE AND AT LEAST ONCE EVERY SEVEN CALENDAR DAYS.
- ADDITION EROSION CONTROL MEASURES MAY BE REQUIRED IN THE FIELD BY THE WPWD INSPECTOR.
- CONTACT INFORMATION FOR TRAINED PERSON RESPONSIBLE FOR SWPP:

  NAME TBD
  COMPANY
  PHONE
  EMAIL

- EQUIVALENT RUNOFF UNIT CALCULATIONS

  IMPERVIOUS AREA = 10,890 SF (2.5%)
  PERVIOUS AREA = 425,146 SF (97.5%)

  TOTAL AREA = 436,036 SF

NOTE

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WILLIAM TRES DEVELOPMENT
DEVELOPMENT | ADVISORY | MANAGEMENT

EROSION CONTROL PLAN

OAK RIDGE POINTE
SWC OF 175TH ST. OAK RIDGE RD.
WESTFIELD, IN 46074

ORIGINAL ISSUE: 04/29/2022
KHA PROJECT NO. 170090000
SHEET NUMBER C4.0

Prairie Seed Mixes

Established Economy Prairie Mix

Asclepias tuberosa, **Butterfly Weed**

Ratibida pinnata, **Yellow Coneflower**

For current pricing, availability, and information on our full installation and management services, visit stantecnativeplantnursery.com

ECONOMY PRAIRIE

This prairie seed mix offers an economical way to establish a prairie. In addition to native prairie grasses, flowering species provide color throughout the growing season and food sources for birds and butterflies. Adding seed or plant plugs at a later date is a wonderful way to increase a prairie's richness and diversity. This seed mix includes at least 6 of 7 native permanent grass and sedge species and 10 of 13 native forb species. Apply at 41.16 PLS pounds per acre.

Botanical Name	Common Name	PLS Oz/Acre
Permanent Grasses		
Andropogon gerardii	Big Bluestem	12.00
Bouteloua curtipendula	Side-Oats Grama	16.00
Carex spp.	Prairie Sedge Species	3.00
Elymus canadensis	Canada Wild Rye	24.00
Panicum virgatum	Switch Grass	2.50
Schizachyrium scoparium	Little Bluestem	32.00
Sorghastrum nutans	Indian Grass	12.00
	Total	101.50
Temporary Cover		
Avena sativa	Common Oat	512.00
	Total	512.00
Forbs		
Asclepias syriaca	Common Milkweed	3.00
Asclepias tuberosa	Butterfly Weed	1.00
Chamaecrista fasciculata	Partridge Pea	10.00
Coreopsis lanceolata	Sand Coreopsis	6.00
Echinacea purpurea	Broad-Leaved Purple Coneflower	8.00
Heliopsis helianthoides	False Sunflower	0.50
Monarda fistulosa	Wild Bergamot	0.50
Penstemon digitalis	Foxglove Beard Tongue	2.00
Ratibida pinnata	Yellow Coneflower	4.00
Rudbeckia hirta	Black-Eyed Susan	8.00
Solidago speciosa	Showy Goldenrod	0.50
Symphyotrichum laeve	Smooth Blue Aster	1.00
Symphyotrichum novae-angliae	New England Aster	0.50
	Total	45 .00

Keys to seeding success

- Prepare the site adequately
- Choose the correct plant species for the site conditions
- Purchase quality PLS
- Ensure good seed-to-soil contact
- Prevent annual weeds from re-seeding
- Create and follow a maintenance plan; adapt as site conditions dictate

STORMWATER

A wetland seed mix for saturated soils in a detention pond or for seeding a saturated basin, this mix will tolerate highly fluctuating water levels and poor water quality associated with urban stormwater wetlands and ponds. For detention basins that experience long, dry periods, use the Economy Prairie seed mix in the upper third to half of the basin area in combination with this mix. This seed mix includes at least 10 of 13 native permanent grass and sedge species and 13 of 17 native forb species. Apply at 36.38 PLS pounds per acre.

Botanical Name	Common Name	PLS Oz/Acre
Permanent Grasses/Sedges/Rushes		
Bolboschoenus fluviatilis	River Bulrush	4.00
Carex cristatella	Crested Oval Sedge	0.50
Carex lurida	Bottlebrush Sedge	2.00
Carex vulpinoidea	Brown Fox Sedge	2.00
Eleocharis obtusa	Blunt Spike Rush	0.50
Elymus virginicus	Virginia Wild Rye	24.00
Glyceria striata	Fowl Manna Grass	1.00
Juncus effusus	Common Rush	1.00
Leersia oryzoides	Rice Cut Grass	1.00
Panicum virgatum	Switch Grass	2.00
Schoenoplectus tabernaemontani	Great Bulrush	3.00
Scirpus atrovirens	Dark Green Rush	2.00
Scirpus cyperinus	Wool Grass	1.00
	Total	44.00
Temporary Cover		
Avena sativa	Common Oat	512.00
	Total	512.00
Forbs and Shrubs		
Alisma subcordatum	Common Water Plantain	2.50
Asclepias incarnata	Swamp Milkweed	2.00
Bidens spp.	Bidens Species	2.00
Eupatorium perfoliatum	Common Boneset	1.00
Helenium autumnale	Sneezeweed	2.00
Iris spp.	Blue Flag Species	4.00
Lycopus americanus	Common Water Horehound	0.50
Mimulus ringens	Monkey Flower	1.00
Penthorum sedoides	Ditch Stonecrop	0.50
Persicaria spp.	Pinkweed Species	2.00
Rudbeckia subtomentosa	Sweet Black-Eyed Susan	1.00
Rudbeckia triloba	Brown-Eyed Susan	1.50
Sagittaria latifolia	Common Arrowhead	1.00
Senna hebecarpa	Wild Senna	2.00
Symphyotrichum lanceolatum	Panicled Aster	0.50
Symphyotrichum novae-angliae	New England Aster	0.50
Thalictrum dasycarpum	Purple Meadow Rue	2.00
	Total	26.00

Carex cristatella, **Crested Oval Sedge**

Mimulus ringens, **Monkey Flower**

Rudbeckia subtomentosa,
Sweet Black-Eyed Susan

For current pricing, availability, and information on our full installation and management services, visit stantecnativeplantnursery.com

Division of Nature Preserves
402 W. Washington St., Rm W267
Indianapolis, IN 46204-2739

May 16, 2022

Vince Metz
Cardno
3901 Industrial Blvd
Indianapolis, IN 46254

Dear Vince Metz:

I am responding to your request for information on the threatened or endangered (T&E) species, high quality natural communities, and natural areas for the Oak Ridge Pointe Development Project located within Hamilton County, Indiana. The Indiana Natural Heritage Data Center has been checked and there are no T&E species or significant areas documented within 0.5 mile of the project area.

If you need a general environmental review of the project from DNR, you can submit the project information to Christie Stanifer, DNR Environmental Coordinator, at environmentalreview@dnr.in.gov (preferred) or send to the street address below. For more help or guidance contact Christie Stanifer at cstanifer@dnr.in.gov.

Department of Natural Resources
Environmental Review
Division of Fish and Wildlife
402 W. Washington Street, Room W273
Indianapolis, IN 46204

The information I am providing does not preclude the requirement for further consultation with the U.S. Fish and Wildlife Service as required under Section 7 of the Endangered Species Act of 1973. If you have concerns about potential Endangered Species Act issues you should contact the Service at their Bloomington, Indiana office.

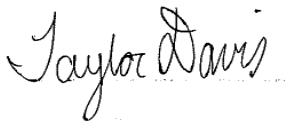
U.S. Fish and Wildlife Service
620 South Walker St.
Bloomington, Indiana 47403-2121
(812)334-4261

Please note that the Indiana Natural Heritage Data Center relies on the observations of many individuals for our data. In most cases, the information is not the result of comprehensive field surveys conducted at particular sites. Therefore, our statement that there are no documented significant natural features at a site should not be interpreted to mean that the site does not support special plants or animals.

Due to the dynamic nature and sensitivity of the data, this information should not be used for any project other than that for which it was originally intended. It may be necessary for you to request updated material from us in order to base your planning decisions on the most current information.

Thank you for contacting the Indiana Natural Heritage Data Center. You may reach me at (317)233-2558 you have any questions or need additional information.

Sincerely,



Taylor Davis
Indiana Natural Heritage Data Center

Regulated Waters Delineation Report

Oak Ridge, Westfield, Hamilton County, Indiana

February 20, 2019

Cardno®

Document Information

Prepared for	William Eric Group, LLC
Client Contact	Travis May
Project Name	Regulated Waters Delineation Report Oak Ridge, Westfield, Hamilton County, Indiana
Project Number	191010300
Cardno Contact	Marc Woernle, PWS
Date	February 20, 2019

Prepared for:
William Eric Group, LLC
238 N. Main Street, Maxwell, Indiana 46154

Prepared by:

Cardno, Inc.
3901 Industrial Boulevard, Indianapolis, Indiana 46254

Table of Contents

Tables

Appendices

Acronyms

APA	Administrative Procedure Act
BF	Bank Full
CFR	Code of Federal Regulations
CWA	Clean Water Act
DBH	Diameter at Breast Height
DNP	Division of Nature Preserves
DP	Data Point
EPA	U.S. Environmental Protection Agency
EPH	Ephemeral (Stream Type)
ETR	Endangered, Threatened, and Rare
FAC	Facultative Plant
FACU	Facultative Upland Plant
FACW	Facultative Wetland Plant
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GIS	Geographical Information System
HHEI	Headwater Habitat Evaluation Index
IC	Indiana Code
IDEM	Indiana Department of Environmental Management
IDNR	Indiana Department of Natural Resources
INT	Intermittent (Stream Type)
MS4	Municipal Separate Storm Water Sewer Systems

Acronyms (continued)

NRCS	U.S. Department of Agriculture Natural Resources Conservation Service
NWI	National Wetland Inventory
NWP	Nationwide Permit
NWPL	National Wetland Plant List
OBL	Obligate Wetland Plant
OHWM	Ordinary High Water Mark
PEM	Palustrine Emergent Wetland
PER	Perennial (Stream Type)
PFO	Palustrine Forested Wetland
PSS	Palustrine Shrub Scrub Wetland
PUB	Palustrine Unconsolidated Bottom
RGP	Regional General Permit
SNE	Significant Nexus
SWANCC	Solid Waste Agency of Northern Cook County
TNW	Traditional Navigable Water
TOB	Top of Bank
UPL	Upland Plant
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WOTUS	Waters of the United States
WQC	Water Quality Certification

1 Introduction

Cardno was contracted to perform a regulated waters delineation, including wetlands and streams, which are located at the Oak Ridge Study Area in Section 2, Township 18 North, Range 3 East, in Hamilton County, Indiana (Figure 1, Appendix A). Field work was performed on February 14, 2019. The total size of the Study Area was approximately 13.76 acres. The Study Area was primarily old field. One wetland and two streams were delineated during the field investigation.

This report identifies the jurisdictional status of the Study Area based on Cardno's best professional understanding and interpretation of the Corps of Engineers' Wetland Delineation Manual (Environmental Laboratory, 1987) and U.S. Army Corps of Engineers' (USACE) guidance documents and regulations. Jurisdictional determinations for other "waters of the U.S." were made based on definitions and guidance found in 33 CFR 328.3, USACE Regulatory Guidance Letters, and the wetland delineation manual. The USACE administers Section 404 of the Clean Water Act (CWA), which regulates the discharge of fill or dredged material into all "waters of the U.S.," and is the regulatory authority that must make the final determination as to the jurisdictional status of the Study Area.

2 Regulatory Definitions

2.1 Waters of the United States

"Waters of the U.S." are within the jurisdiction of the USACE under the CWA. "Waters of the U.S." is a broad term, which includes waters that are used or could be used for interstate commerce. This includes wetlands, ponds, lakes, territorial seas, rivers, tributary streams including any definable intermittent waterways, and some ditches below the ordinary high water mark (OHWM). Also included are manmade water bodies such as quarries and ponds, which are no longer actively being mined or constructed and are connected to other "waters". Wetlands, mudflats, vegetated shallows, riffle and pool complexes, coral reefs, sanctuaries, and refuges are all considered special aquatic sites which involve more rigorous regulatory permitting requirements. A specific, detailed definition of "waters of the U.S." can be found in the Federal Register (33 CFR 328.3).

On January 9, 2001, the U.S. Supreme Court issued a decision, Solid Waste Agency of Northern Cook County (SWANCC) v. U.S. Army Corps of Engineers (No. 99-1178). The decision reduced the regulation of isolated wetlands under Section 404 of the CWA, which assigned the USACE authority to issue permits for the discharge of dredge or fill material into "waters of the U.S.". Prior to the SWANCC decision, the USACE had adopted a regulatory definition of "waters of the U.S." that afforded federal protection for almost all of the nation's wetlands. The Supreme Court decision interpreted that the USACE's jurisdiction was restricted to navigable waters, their tributaries, and wetlands that are adjacent to these navigable waterways and tributaries. The decision leaves the majority of "isolated" wetlands unregulated by the CWA. Therefore, most wetlands that are not adjacent to, or contiguous with, any other "waters of the U.S." via a surface drain such as a swale, ditch, or stream are considered isolated and thus no longer jurisdictional by the USACE.

On June 19, 2006, the U.S. Supreme Court issued decisions in regards to John A. Rapanos v. United States (No. 04-1034) and June Carabell v. United States (04-1384), et al. The plurality decision created two 'tests' for determining CWA jurisdiction: the permanent flow of water test (set out by Justice Scalia) and the "significant nexus" test (set out by Justice Kennedy). On June 5, 2007 the USACE and U.S. Environmental Protection Agency (EPA) issued joint guidance on how to interpret and apply the Court's ruling. According to this guidance, the USACE will assert jurisdiction over traditionally navigable waters, adjacent wetlands, and non-navigable tributaries of traditionally navigable waters that have "relatively permanent" flow, and wetlands that border these waters, regardless of whether or not they are separated by roads, berms, and similar barriers. In addition, the USACE will use a case-by-case "significant nexus" analysis to determine whether waters and their adjacent wetlands are jurisdictional. A "significant nexus" can be found where waters, including adjacent wetlands, alter the physical, biological, or chemical integrity of the traditionally navigable water based on consideration of several factors.

In January 2015 an EPA sponsored publication, *Connectivity of Streams & Wetlands to Downstream Waters: A Review & Synthesis of the Scientific Evidence* (EPA, 2015), emphasized how streams, non-tidal wetlands, and open waters in and outside of riparian areas and floodplains effect downstream waters such as rivers, lakes, estuaries, and oceans.

On May 27, 2015 the EPA released a statement that a new Clean Water Rule typically referred to as, "The Waters of the United States (WOTUS) Rule" was finalized and that it would "not create any new permitting requirements and maintains all previous exemptions and exclusions" (epa.gov). The Rule would only protect waters that have historically been covered by the CWA. The intent was to clearly define: jurisdictional limits of tributaries of navigable waterways; set boundaries on covering nearby waters; identify specific national water treasures by name (prairie potholes, etc.); clearly define when a ditch is jurisdictional, and when it is not; maintain status that waters within Municipal Separate Storm Water Sewer Systems (MS4) are not jurisdictional; and reduce the use of case-specific analysis of waters.

Also on May 27, 2015 a publication, *Technical Support Document for the Clean Water Rule: Definition of Waters of the United States* (EPA, 2105), was released discussing in detail why the significant nexus (SNE) between one water and another is important. It specifically ties distances to the various types of waters mentioned within the Code of Federal Regulations [33 CFR 328.3(a)(1) through (a)(8)]. For example, the document states "Waters located within the 100-year floodplain of a Traditional Navigable Water (TNW), interstate water, or the territorial seas and waters located more than 1,500 feet and less than 4,000 feet from the lateral limit of an (a)(1) or (a)(3) water may still be determined to have a significant nexus on a case-specific basis under paragraph (a)(8) of the Rule and, thus, be a 'water of the United States' (EPA 2015)."

On June 29, 2015 the new Clean Water Rule was entered into the Federal Register (40 CFR Parts 110, 112, 116, et al. Clean Water Rule: Definition of ''waters of the United States''; Final Rule). This report will refer to this Rule as "June 29, 2015 WOTUS Rule". This Rule includes exact distances mentioned in the May 27, 2015 Technical Support Document as it relates to adjacent waters, including the following: waters within 100 ft. of jurisdictional waters; waters within the 100-year floodplain to a maximum of 1,500 feet from the OHWM; waters within the 100-year floodplain with a SNE to the TNW; and waters with a SNE within 4,000 ft. of jurisdictional waters.

On October 9, 2015 the U.S. Court of Appeals for the Sixth Circuit (Court) issued a nationwide stay against the enforcement of the June 29, 2015 WOTUS Rule. The Court stated, "…we conclude that…Justice Kennedy's opinion in *Rapanos* represents the best instruction on the permissible parameters of "waters of the United States" as used in the CWA, it is far from clear that the new Rule's distance limitations are harmonious with the instruction.

Moreover, the Court stated that the rulemaking process by which the distance limitations were adopted is facially suspect. Petitioners contend the proposed rule that was published, on which interested persons were invited to comment, did not include any proposed distance limitations in its use of terms like "adjacent waters" and "significant nexus." Consequently, petitioners contend, the Final Rule cannot be considered a "logical outgrowth" of the rule proposed, as required to satisfy the notice-and-comment requirements of the APA, 5 U.S.C. § 553. As a further consequence of this defect, petitioners contend, the record compiled by respondents is devoid of specific scientific support for the distance limitations that were included in the Final Rule. They contend the Rule is therefore not the product of reasoned decision-making and is vulnerable to attack as impermissibly "arbitrary or capricious" under the APA, 5 U.S.C. § 706(2)."

On February 28, 2017, President Donald Trump signed Executive Order #13778 titled "Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the 'Waters of the United States' Rule". Section 1(a) states that the EPA "shall review the final rule entitled 'Clean Water

Rule: Definition of 'Waters of the United States,'' 80 Fed. Reg. 37054; and '….shall…publish… proposed rules rescinding or revising, those issuances, as appropriate' [Section 2(b)]."

Until further notice, the June 29, 2015 WOTUS Rule is not in effect. Furthermore, this report does not attempt to include a professional opinion as it relates to the June 29, 2015 WOTUS Rule.

2.2 Waters of the State

"Waters of the state" are within the jurisdiction of the Indiana Department of Environmental Management (IDEM). They are generally defined as surface and underground water bodies, which extend through or exist wholly in the state of Indiana, which includes, but is not limited to, streams and both isolated and non-isolated wetlands. Private ponds, or any pond, reservoir, or facility built for reduction of pollutants prior to discharge are not included in this definition. In addition to "waters of the U.S.", IDEM also regulates and issues permits for isolated wetland impacts. Isolated wetlands are defined by state law as those wetlands that are not subject to regulation under Section 404(a) of the Federal CWA. Since 2004, IDEM has regulated isolated wetlands under Indiana's State Isolated Wetlands Law (IC 13-18-22). Indiana's State Isolated Wetlands Law establishes a classification system for wetlands and a set of general permits, exemption criteria, and individual permitting authority for IDEM to regulate the placement of dredged or fill material into non-exempt isolated wetlands. Indiana's isolated wetlands are defined as being a Class I, Class II, or Class III wetland; these definitions are listed in Indiana Code 13-11-2-25.8. Class I wetlands are significantly (more than 50%) disturbed by human activity or development and support only minimal wildlife or aquatic habitat or hydrologic function due to low species diversity or non-native invasive species dominance. Class II wetlands are those wetlands that are neither Class I or Class III wetlands or are wetlands that would be Class I wetlands were they not a "rare and ecologically important" [IC 13-11-2-25.8(3)(B)] wetland type. Class III wetlands are undisturbed or minimally disturbed by human activity and support diverse flora and fauna or are a "rare and ecologically important" wetland type [IC 13-11-2-25.8(3)(B)]..

IDEM relies on the USACE decision regarding wetland determinations and delineations including whether or not a wetland is isolated or non-isolated.

2.3 Wetlands

Wetlands are a category of "waters of the U.S." for which a specific identification methodology has been developed. As described in detail in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987), wetland boundaries are delineated using three criteria: hydrophytic vegetation, hydric soils, and wetland hydrology. In addition to the criteria defined in the 1987 Manual, the procedures described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (Environmental Laboratory, 2010) were used to evaluate the Study Area for the presence of wetlands.

2.3.1 Hydrophytic Vegetation

On June 1, 2012, the National Wetland Plant List (NWPL), formerly called the National List of Plant Species that Occur in Wetlands (Reed 1988), went into effect after being released by the U.S. Army Corps of Engineers (USACE) as part of an interagency effort with the U.S. Fish and Wildlife Service (USFWS), the U.S. EPA, and the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) (Lichvar and Kartesz, 2009). The NWPL, along with the information implied by its wetland plant species status ratings, provides general botanical

information about wetland plants and is used extensively in wetland delineation, restoration, and mitigation efforts. The NWPL consists of a comprehensive list of wetland plant species that occur within the United States along with their respective wetland indicator statuses by region. An indicator status reflects the likelihood that a particular plant species occurs in a wetland or upland (Lichvar et al. 2012). Definitions of the five indicator categories are presented below.

> **OBL** (Obligate Wetland Plants): almost always occur in wetlands. With few exceptions, these plants (herbaceous or woody) are found in standing water or seasonally saturated soils (14 or more consecutive days) near the surface. These plants are of four types: submerged, floating, floating-leaved, and emergent.
>
> **FACW** (Facultative Wetland Plants): usually occur in wetlands, but may occur in non-wetlands. These plants predominately occur with hydric soils, often in geomorphic settings where water saturates the soils or floods the soil surface at least seasonally.
>
> **FAC** (Facultative Plants): occur in wetlands and non-wetlands. These plants can grow in hydric, mesic, or xeric habitats. The occurrence of these plants in different habitats represents responses to a variety of environmental variables other than just hydrology, such as shade tolerance, soil pH, and elevation, and they have a wide tolerance of soil moisture conditions.
>
> **FACU** (Facultative Upland Plants): usually occur in non-wetlands, but may occur in wetlands. These plants predominately occur on drier or more mesic sites in geomorphic settings where water rarely saturates the soils or floods the soil surface seasonally.
>
> **UPL** (Upland Plants): almost never occur in wetlands. These plants occupy mesic to xeric non-wetland habitats. They almost never occur in standing water or saturated soils. Typical growth forms include herbaceous, shrubs, woody vines, and trees.

According to the USACE's Midwest Regional Supplement, plants that are rated as FAC, FACW, or OBL are classified as wetland plant species. The percentage of dominant wetland species in each of the four vegetation strata (tree, shrub/sapling, herbaceous, and woody vine) in the sample area determines the hydrophytic (wetland) status of the plant community. Dominant species are chosen independently from each stratum of the community. In general, dominants are the most abundant species that individually or collectively account for more than 50 percent of the total coverage of vegetation in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total.

For the purposes of determining dominant plant species, the four vegetation strata are defined. Trees consist of woody species 3 inches or greater in diameter at breast height (DBH). Shrubs and saplings are woody species that are over 1 meter in height and less than 3 inches DBH. Herbaceous species consist of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants less than 1 meter tall. Woody vines consist of vine species greater than 1 meter in height, such as wild grapes.

2.3.2 Hydric Soils

Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part. In general, hydric soils are flooded, ponded, or saturated for a week or more during the growing season when soil temperatures are above 32 degrees Fahrenheit. The anaerobic conditions created by repeated

or prolonged saturation or flooding result in permanent changes in soil color and chemistry, which are used to differentiate hydric from non-hydric soils.

In this report, soil colors are described using the Munsell notation system. This method of describing soil color consists of separate notations for hue, value, and chroma that are combined in that order to form the color designation. The hue notation of a color indicates its relation to red, yellow, green, blue, and purple; the value notation indicates its lightness, and the chroma notation indicates its strength or departure from a neutral of the same lightness.

The symbol for hue consists of a number from 1 to 10, followed by the letter abbreviation of the color. Within each letter range, the hue becomes more yellow and less red as the numbers increase. The notation for value consists of numbers from 0 for absolute black, to 10 for absolute white. The notation for chroma consists of numbers beginning with /0 for neutral grays and increasing at equal intervals. A soil described as 10YR 3/1 soil is more gray than a soil designated 10YR 3/6.

2.3.3 Wetland Hydrology

Wetland hydrology is defined as the presence of water for a significant period of time at or near the surface (within the root zone) during the growing season. Wetland hydrology is present only seasonally in many cases, and is often inferred by indirect evidence. Hydrology is controlled by such factors as seasonal and long-term rainfall patterns, local geology and topography, soil type, local water table conditions, and drainage. Primary indicators of hydrology are inundation, soil saturation in the upper 12 inches of the soil, watermarks, sediment deposits, and drainage patterns. Secondary indicators such as oxidized root channels in the upper 12 inches of the soil, water-stained leaves, local soil survey data, and the FAC-neutral vegetation test are sometimes used to identify hydrology. A primary indicator or two or more secondary indicators are required to establish a positive indication of hydrology.

2.3.4 Wetland Definition Summary

In general, an area must meet all three criteria to be classified as a wetland. In certain problem areas such as seasonal wetlands, which are not wet at all times, or in recently disturbed (atypical) situations, areas may be considered a wetland if only two criteria are met. In special situations, an area that meets the wetland definition may not be within the USACE's jurisdiction due to a specific regulatory exemption.

2.4 Streams, Rivers, Watercourses & Jurisdictional Ditches

With non-tidal waters, in the absence of adjacent wetlands, the extent of the USACE's jurisdiction is defined by the OHWM. USACE regulations define the term "ordinary high water mark" for purposes of the CWA lateral jurisdiction at 33 CFR 328.3(e), which states:

> The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Streams, rivers, watercourse, and ditches within the Study Area were evaluated using the above definition and documented. Waterways that did exhibit an OHWM were recorded and evaluated

using the Ohio EPA's Primary Headwater Habitat Evaluation Index (HHEI) methodology. If applicable, the results of the HHEI are presented in Section 3.2, Technical Descriptions and datasheets will be provided upon request.

3 Background Information

3.1 Existing Maps

Several sources of information were consulted to identify potential wetlands and wetland soil units on the site. These include the USFWS's *National Wetland Inventory* (NWI), the National Flood Hazard data, and the NRCS *Soil Survey* for this county. These maps identify potential wetlands and wetland soil units on the site. The NWI maps were prepared from high altitude photography and in most cases were not field checked. Because of this, wetlands are sometimes erroneously identified, missed, or misidentified. Additionally, the criteria used in identifying these wetlands were different from those currently used by the USACE. The county soil maps, on the other hand, were developed from actual field investigations. However, they address only one of the three required wetland criteria and may reflect historical conditions rather than current site conditions. The resolution of the soil maps limits their accuracy as well. The mapping units are often generalized based on topography and many mapping units contain inclusions of other soil types for up to 15 percent of the area of the unit. The USACE does not accept the use of either of these maps to make wetland determinations.

3.1.1 National Wetland Inventory

The NWI map of the area (Figure 3) identified one riverine NWI polygon within the Study Area.

3.1.2 National Flood Hazard Layer

The FEMA FIRMette map (Figure 4) identified a Regulated Floodway and 100-year floodplain within the Study Area.

3.1.3 Soil Survey

The NRCS Soil Survey of Hamilton County identified three soil series on the site (Figure 5). The following table identifies the soil unit symbol, soil unit name, and whether or not the soil type contains components that meet the hydric soil criteria.

Table 3-1 Soil Types Within the Oak Ridge Study Area

Symbol	Description	Hydric
Br	Brookston silty clay loam	Yes
CrA	Crosby silt loam, fine-loamy subsoil, 0 to 2 percent slopes	No
Pn	Patton silty loam	Yes

4 Methodology and Description

4.1 Regulated Waters Investigation

The delineation of regulated waters within the Study Area was based on the methodology described in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual:*

Eastern Mountains and Piedmont Region (Environmental Laboratory, 2010) as required by current USACE policy.

Prior to the field work, the background information was reviewed to establish the probability and potential location of wetlands and regulated waters on the site. Next, a general reconnaissance of the Study Area was conducted to determine site conditions. The site was then walked with the specific intent of determining wetland and jurisdictional stream boundaries. Data stations were established at locations within and near the wetland areas to document soil characteristics, evidence of hydrology and dominant vegetation. Note that no attempt was made to examine a full soil profile to confirm any soil series designations. However, when possible, soils were examined to a depth of at least 16 inches to assess soil characteristics and site hydrology. Complete descriptions of typical soil series can be found in the soil survey for this county.

4.1.1 Site Photographs

Photographs of the site are located in Appendix B. These photographs are the visual documentation of site conditions at the time of inspection. The photographs are intended to provide representative visual samples of any wetlands or other special features found on the site.

4.1.2 Delineation Data Sheets

Where stations represent a wetland boundary point they are typically presented as paired data points, one each documenting the wetland and upland sides of the wetland boundary. The routine wetland delineation data sheets used in the jurisdictional delineation process are located in Appendix C. These forms are the written documentation of how representative sample stations met or did not meet each of the wetland criteria. For plant species included on the National Wetlands Plant List, nomenclature will follow their lead. For all other plants not listed in the NWPL, nomenclature will follow the USDA's Plants Database. Data point locations are shown on Figure 5.

4.2 Technical Descriptions

Complete field data sheets from the site investigation are located in Appendix D. The site is located in Hamilton County, Indiana (Figure 1). The area investigated was approximately 13.76 acres. The Study Area was an old field.

4.2.1 Data Point and Wetland Descriptions

Upland Data Point

Data Point 1 (DP01)

Dominant vegetation in the vicinity of DP01 included Frank's Sedge (*Carex frankii*, OBL), and Kentucky Blue Grass (*Poa pratensis*, FAC). In addition, non-dominant vegetation observed included White Oldfield American-Aster (S*ymphyotrichum pilosum*, FACU), Yellow Bristle Grass (*Setaria pumila*, FAC), White Clover (*Trifolium repens*, FACU), and Fall Panic Grass (Panicum dichotomiflorum, FACW). The plants at this data point qualified as hydrophytic vegetation. The soil from 0-20" had a matrix soil color of 10YR 3/2 with a texture of Silty Clay Loam. The soil at the data point was mapped as Brookston silt loam, and did not meet any hydric soil criteria. Primary indicators of hydrology included Surface Water (A1), Saturation (A3), and secondary indicators of hydrology observed included Drainage Patterns (B10), and the FAC-Neutral Test (D5). This data point did not meet wetland criteria.

Wetland 01 (0.08 Acre)

This wetland was a forested wetland adjacent to Grassy Branch. Grassy Branch flows into Cool Creek, which flows into the White River, a Traditional Navigable Water (TNW). Due to this connection, this wetland should be considered a "waters of the United States."

Wetland Data Point

Data Point 2 (DP02)

Dominant vegetation in the vicinity of DP02 included Reed Canary Grass (*Phalaris arundinacea*, FACW). The plants at this data point qualified as hydrophytic vegetation. The soil from 0-6" had a matrix soil color of 10YR 4/2 with a texture of Silty Clay Loam. The soil from 6-20" had a matrix soil color of 10YR 4/2 with concentrations in the matrix at 5%, and a texture of Silty Clay Loam. The soil at the data point was mapped as Brookston Silt loam, and met the Depleted Matrix (F3) hydric soil criteria. Primary indicators of hydrology included Surface Water (A1), and secondary indicators of hydrology observed included Drainage Patterns (B10), and the FAC-Neutral Test (D5). This data point qualified as a wetland.

Upland Data Point

Data Point 3 (DP03)

Dominant vegetation in the vicinity of DP03 included Alfalfa (*Medicago sativa*, FACU). In addition, non-dominant vegetation observed included Orchard Grass (*Dactylis glomerata*, FACU), and Red Clover (*Trifolium pratense*, FACU). The plants at this data point did not qualify as hydrophytic vegetation criteria. The soil from 0-20" had a matrix soil color of 10YR 4/3 with a texture of Silty Clay Loam. The soil at the data point was mapped as Crosby silt loam, fine-loam subsoil, and did not meet any hydric soil criteria. No indicators of hydrology were observed. This data point did not meet wetland criteria.

4.2.2 Stream Descriptions

Stream 01a (Grassy Branch) (402 Linear Feet)

Grassy Branch was a perennial stream that flowed east through the project study area. Stream 01a was considered to be recovering from past modifications. Both banks had no riparian corridor, with the floodplain land use predominantly residential, park, or new field. The stream had low sinuosity, with a one and a half S-curve observed within the two hundred foot survey reach. The stream had a flat to moderate gradient, with a drop between a half a foot and two feet every hundred feet. This stream was at base flow conditions at the time of the stream survey. The turbidity levels were not elevated at the time of survey. The dominant substrates were gravel and silt. Ordinary High Water Mark width was three feet and depth was 0.6 foot. Bank Full width was six feet and depth was one foot. Top of Bank width was 40 feet and depth was six feet. The maximum pool depth observed was between nine and twelve inches. Grassy Branch flows into the White River, a Traditional Navigable Water. Due to this connection, this stream should be considered a "waters of the United States."

Stream 01b (Grassy Branch) (511 Linear Feet)

Grassy Branch was an intermittent stream that flowed south through the project study area and becomes Stream 01b. Stream 01b was considered to be recovering from past modifications. Both banks had no riparian corridor, with the floodplain land use predominantly residential, park,

or new field. The stream had low sinuosity, with a half S-curve observed within the two hundred foot survey reach. The stream had a flat to moderate gradient, with a drop between a half a foot and two feet every hundred feet. This stream was at base flow conditions at the time of the stream survey. The turbidity levels were not elevated at the time of survey. The dominant substrates were gravel and silt. Ordinary High Water Mark width was two feet and depth was 0.5 foot. Bank Full width was six feet and depth was one foot. Top of Bank width was 40 feet and depth was six feet. The maximum pool depth observed was between nine and twelve inches. Grassy Branch flows into the White River, a Traditional Navigable Water. Due to this connection, this stream should be considered a "waters of the United States."

Stream 02 (Unnamed Tributary to Grassy Branch) (367 Linear Feet)

The Unnamed Tributary to Grassy Branch was an intermittent stream that flowed north through the project study area and into Stream 01 (Grassy Branch). Stream 02 was considered to be recovering from past modifications. Both banks had no riparian corridor, with the floodplain land use predominantly residential, park, or new field. The stream had low sinuosity, with a half S-curve observed within the two hundred foot survey reach. The stream had a flat to moderate gradient, with a drop between a half a foot and two feet every hundred feet. This stream was at base flow conditions at the time of the stream survey. The turbidity levels were not elevated at the time of survey. The dominant substrates were gravel and silt. Ordinary High Water Mark width was two feet and depth was 0.5 foot. Bank Full width was six feet and depth was one foot. Top of Bank width was 30 feet and depth was six feet. The maximum pool depth observed was between nine and twelve inches. The Unnamed Tributary to Grassy Branch flows into the White River, a Traditional Navigable Water. Due to this connection, this stream should be considered a "waters of the United States."

5 Jurisdictional Analysis

5.1 U.S. Army Corps of Engineers and the Indiana Department of Environmental Management

The USACE has authority over the discharge of fill or dredged material into “waters of the U.S.”. This includes authority over any filling, mechanical land clearing, or construction activities that occur within the boundaries of any “waters of the U.S.”. A permit must be obtained from the USACE under Section 404 of the CWA before any of these activities occur. Permits can be divided into three general categories: Individual Permits, Nationwide Permits (NWP), and the Regional General Permits for Indiana.

Individual Permits are required for projects that do not fall into one of the specific NWP or the Regional General Permit (RGP) or are deemed to have significant environmental impacts. These permits are much more difficult to obtain and receive a much higher level of regulatory agency and public scrutiny and may require several months to more than a year for processing.

NWP have been developed for projects which meet specific criteria and are deemed to have minimal impact on the aquatic environment. In Indiana, however, most NWP's have been rescinded and replaced by the RGP.

The RGP for Indiana authorizes activities associated with the construction or installation of new facilities or structures as well as for agriculture or mining. Proposed wetland impacts must be less than 1 acre and meet specific criteria in order to qualify for these permits. Section 401 WQC must be obtained from IDEM before the USACE will perform their permit review.

IDEM is responsible for issuing CWA Section 401 WQCs in conjunction with the USACE Section 404 permits. IDEM requires notification for all permanent non-isolated wetland impacts less than 0.10 acre, which entails a brief notification form that must be signed by the applicant. If only temporary wetland impacts are proposed, then notification is also required for the cumulative wetland temporary impacts that exceed 0.10 acre. However, for non-isolated wetland impacts greater than 0.10 acre, an application for WQC must be submitted concurrently with a wetland mitigation plan. IDEM will not initiate their review process until both the application and wetland mitigation plan have been submitted.

Applicants proposing an impact to an “isolated wetland,” which is a wetland that the USACE has determined to be a non-federally jurisdictional wetland, are required to apply for and obtain Isolated Wetland Permits from IDEM. Isolated wetland permits are required under Indiana’s State Isolated Wetland Law (Indiana Code 13-18-22 and 327 Indiana Administrative Code 17).

5.2 Indiana Department of Natural Resources

Indiana Department of Natural Resources (IDNR) has jurisdiction over mapped floodways, 100-year floodplains where there is no mapped floodway (Figure 4), and the floodway of ditches and streams with a watershed greater than one (1) square mile. If impacts are proposed to jurisdictional floodways, a Construction-In-A-Floodway Permit may be required from IDNR.

6 Summary and Conclusion

6.1 Summary

Cardno inspected the Oak Ridge Study Area on February 14, 2019.

6.1.1 Wetlands and Waterways

One wetland and two streams were identified during the field investigation. Delineated features are shown on Figure 6 and in Table 6-1.

Table 6-1 Features Identified Within Oak Ridge Study Area

Feature Name	Feature Class	Area (Acres) / Linear Feet (LF)	Regulatory Status
Wetland 01	PFO	0.08 AC	Non-Isolated
Stream 01a (Grassy Branch)	Perennial	402 LF	Non-Isolated
Stream 01b (Grassy Branch)	Intermittent	511 LF	Non-Isolated
Stream 02	Intermittent	367 LF	Non-Isolated
TOTAL		**0.08 Acres/1,280 LF**	

6.1.2 Floodways and Floodplains

Stream 01 (Grassy Branch) has a mapped Regulated Floodway within the Study Area (Figure 4).

6.2 Conclusion

One wetland and two streams were identified during the field investigation. All of these features were identified as “waters of the United States.” There was also a mapped Regulated Floodway within the Study Area.

While this report represents our best professional judgment based on our knowledge and experience, it is important to note that the Louisville District of the U.S. Army Corps of Engineers has final discretionary authority over all jurisdictional determinations of “waters of the United States” including wetlands under Section 404 of the CWA in this region. It is therefore, recommended that a copy of this report be furnished to the Louisville District of the U.S. Army Corps of Engineers to confirm the results of our findings.

7 References

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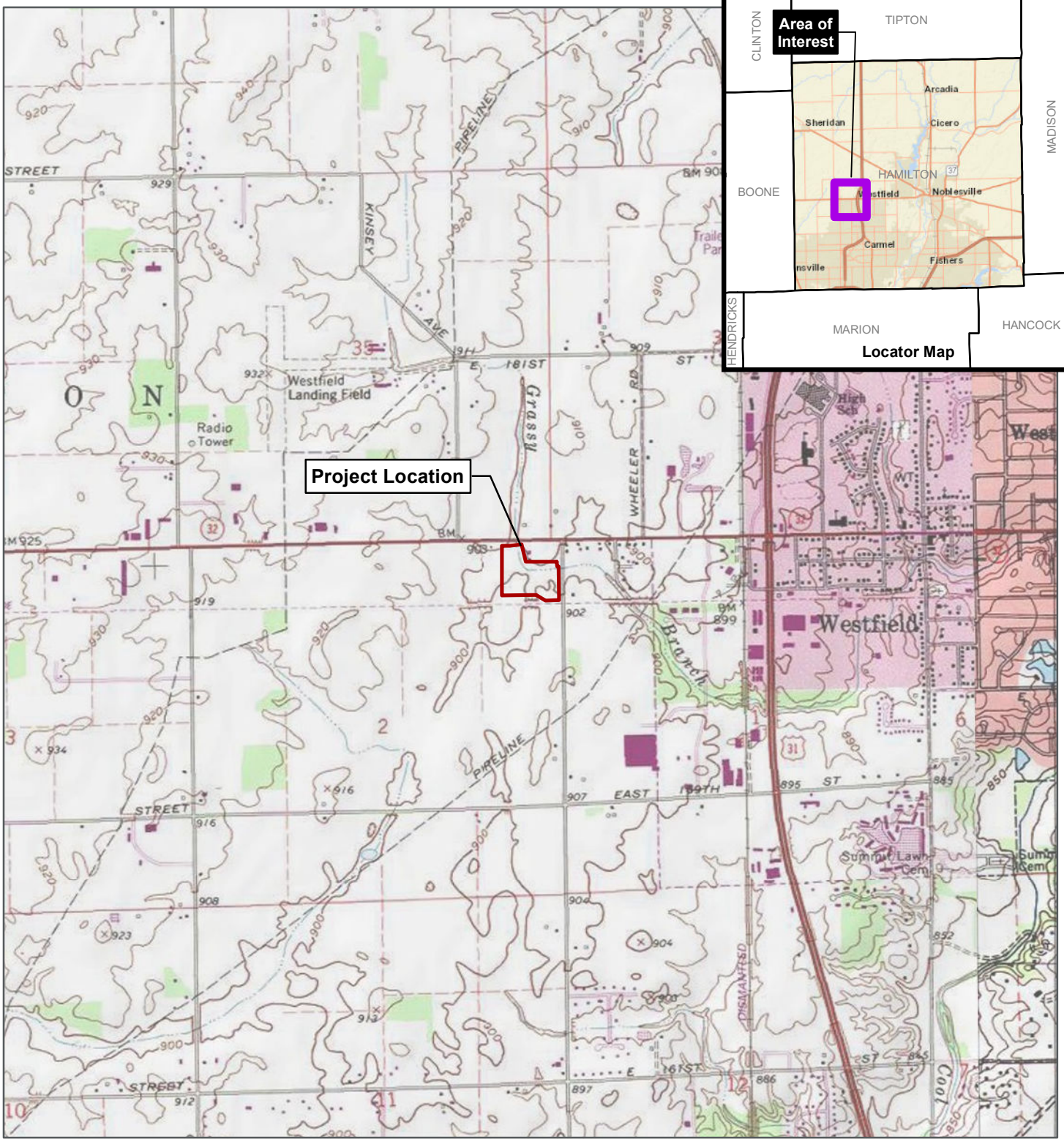
Oak Ridge, Westfield, Hamilton County, Indiana

APPENDIX A

FIGURES



N
W E
S

7.5' Quadrangle: Westfield
T18n R3e Sec2
Project No. j191010500

Figure 1: Project Location
Oak Ridge
Regulated Waters Delineation Report
William Eric Group, LLC
Hamilton County, Indiana

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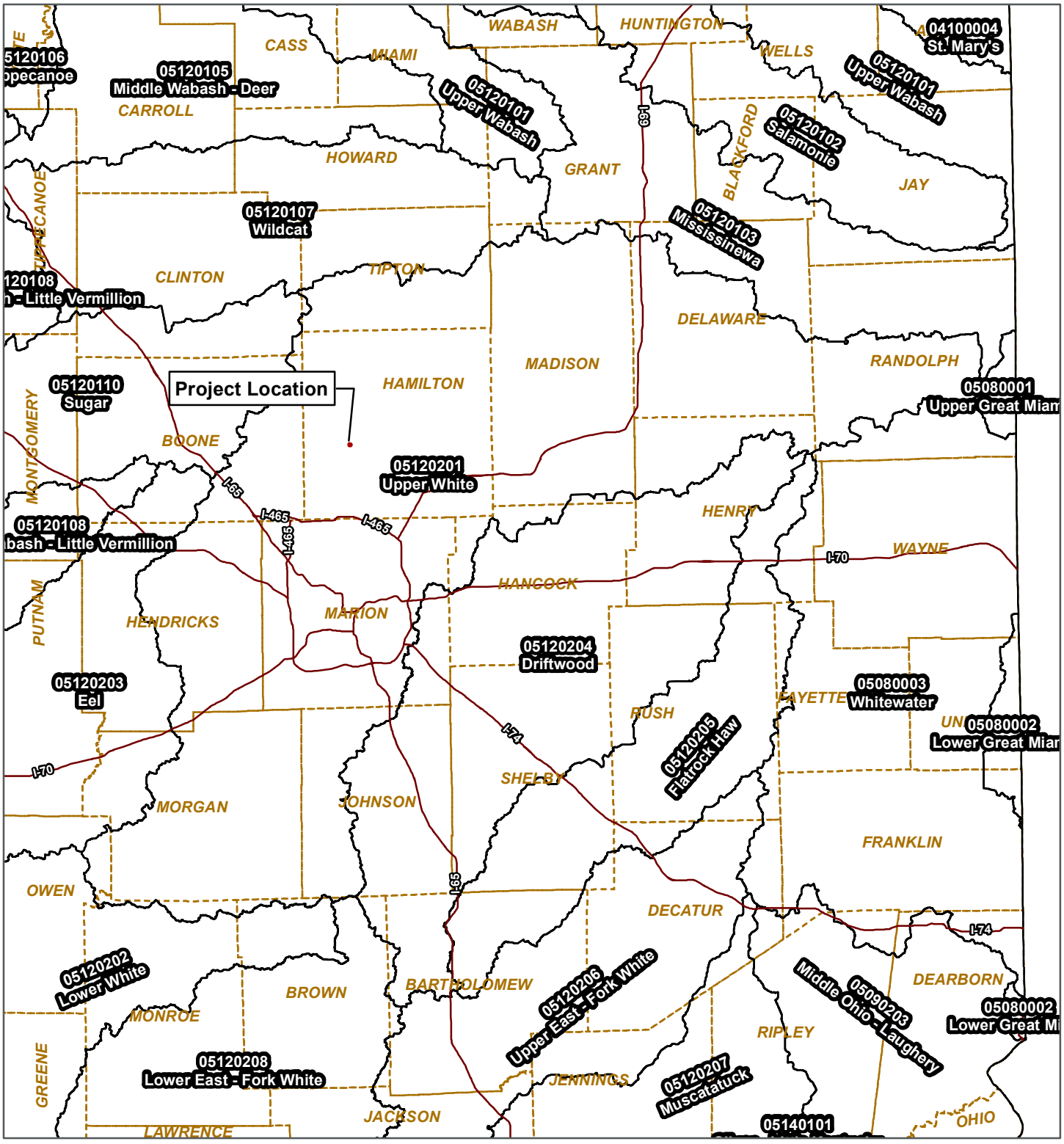
3901 Industrial Blvd.,Indianapolis, IN 46254
Phone (+1) 317-388-1982 Fax (+1) 317-388-1982
www.cardno.com

Date: 2/18/2019 File Path: R:\Projects\19\191\191010500_WilliamEricGroup_OakRidgePoint\GIS\MXD\Delineation\F1_Location.mxd Saved By: Stephen.LaFon



N
W E
S

7.5' Quadrangle:
Westfeld
T18n R3e Sec2
Project No.
j191010500

Figure 2: 8-Digit Hydrologic Unit Code
Oak Ridge
Regulated Waters Delineation Report
William Eric Group, LLC
Hamilton County, Indiana

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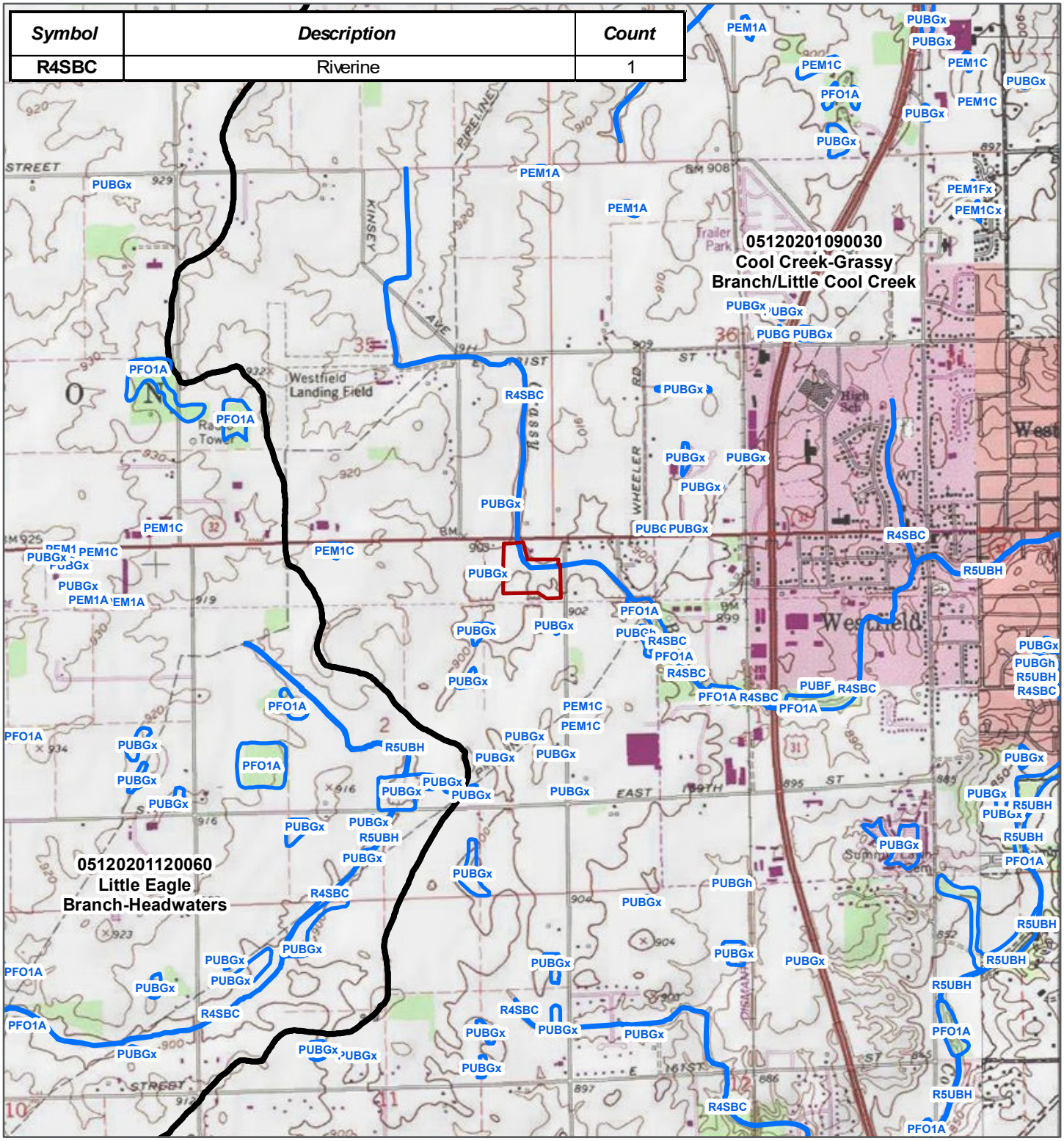
Symbol	Description	Count
R4SBC	Riverine	1



0 500 1,000 2,000 Feet
0 100 200 300 400 500 600 Meters

Project Location
14-Digit HUC Watershed
NWI Wetlands

N
W E
S

7.5' Quadrangle:
Westfield
T18n R3e Sec2
Project No.
j191010500

Figure 3: Water Resources
Oak Ridge
Regulated Waters Delineation Report
William Eric Group, LLC
Hamilton County, Indiana

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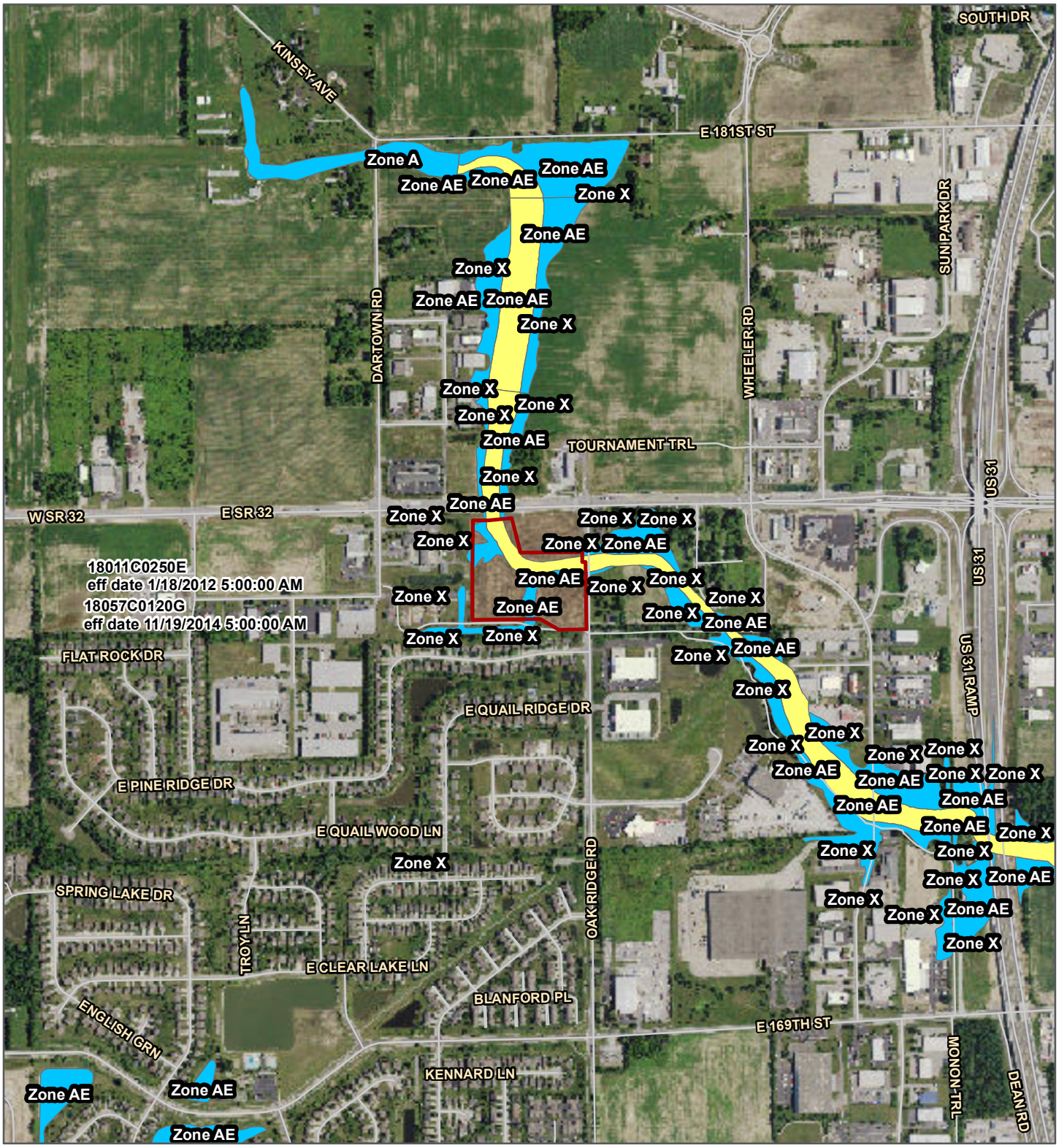

0 500 1,000 Feet
0 100 200 300 Meters

Project Location
National Flood Hazard - FIRM Panels
FEMA Mapped 100-year Floodplain
Regulated Floodway

N W E S

7.5' Quadrangle: Westfeld
T18n R3e Sec2
Project No. j191010500

Figure 4: Flood Hazard

Oak Ridge
Regulated Waters Delineation Report
William Eric Group, LLC
Hamilton County, Indiana

Cardno
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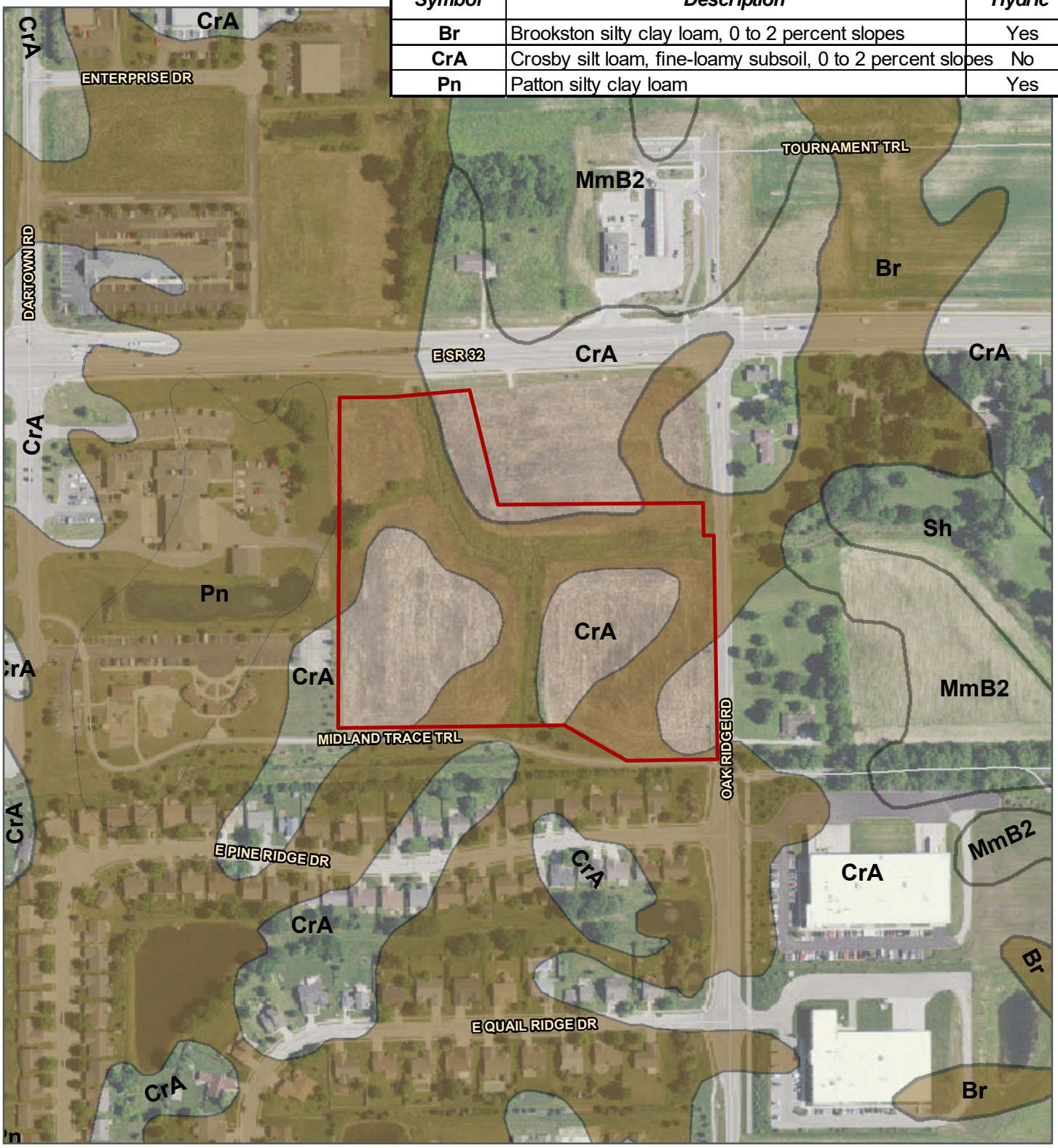
Date: 2/18/2019
File Path: R:\Projects\19\191\191010500_WilliamEricGroup_OakRidgePoint\GIS\MXD\Delineation\F4_FloodHazard.mxd
Saved By: Stephen.LaFon

National Agriculture Imagery Program (NAIP), Farm Services Agency (FSA), U. S. Department of Agriculture (USDA), UITS, Indiana Spatial Data Portal , Indiana Department of Natural Resources DFIRM (Published 03/20/2017)

Symbol	Description	Hydric
Br	Brookston silty clay loam, 0 to 2 percent slopes	Yes
CrA	Crosby silt loam, fine-loamy subsoil, 0 to 2 percent slopes	No
Pn	Patton silty clay loam	Yes



0 150 300 Feet
0 30 60 90 Meters

Project Location
Soil Unit - Hydric
Soil Unit

N
W E
S

7.5' Quadrangle: Westfeld
T18n R3e Sec2
Project No. j191010500

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Figure 5: Soil Survey
Oak Ridge
Regulated Waters Delineation Report
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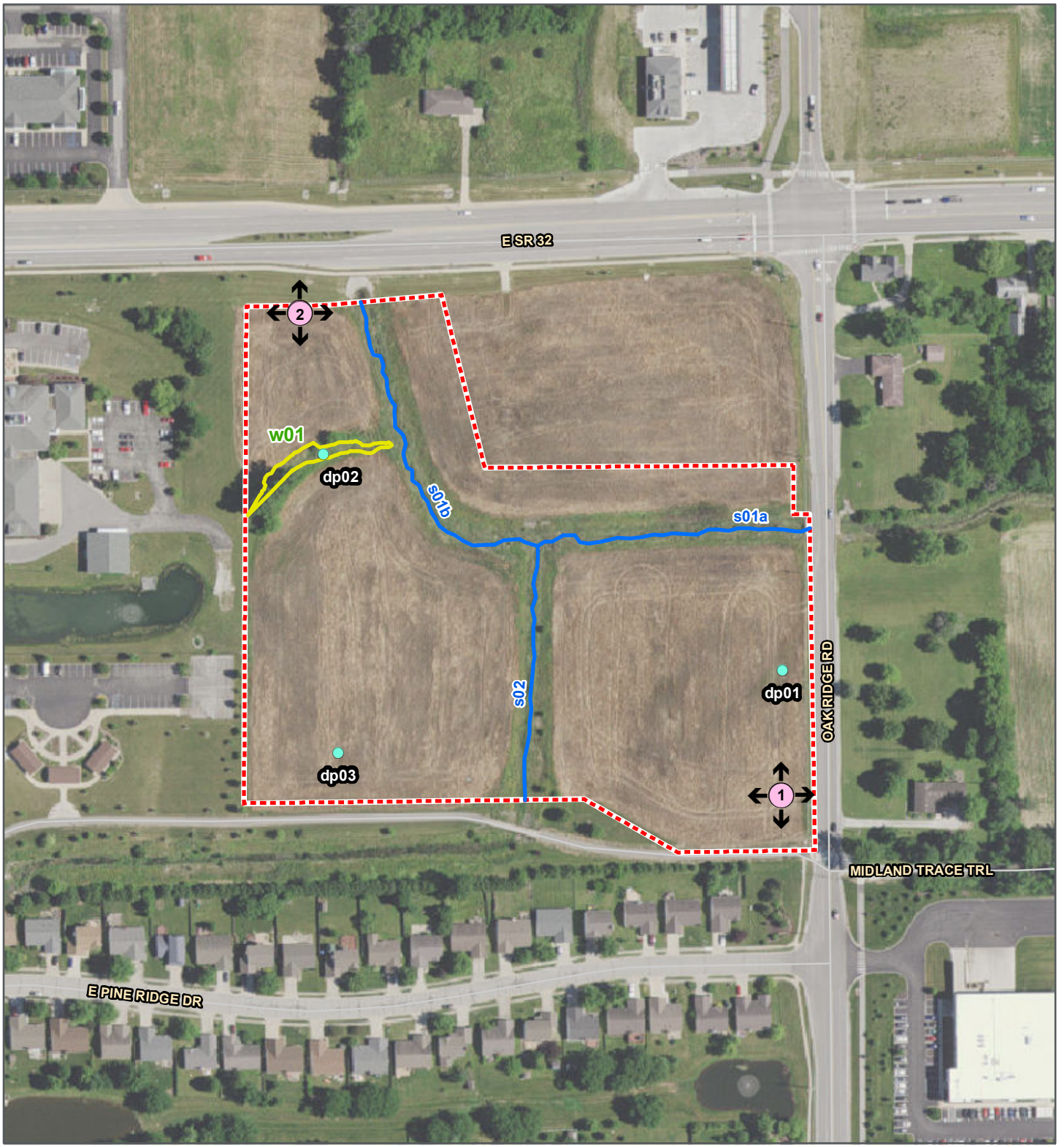
Date: 2/18/2019
File Path: R:\Projects\19\191\191010500_WilliamEricGroup_OakRidgePoint\GIS\MXD\Delineation\F5_SoilSurvey.mxd
Saved By: Stephen.LaFon
National Agriculture Imagery Program (NAIP), Farm Services Agency (FSA), U. S. Department of Agriculture (USDA), UITS, Indiana Spatial Data Portal , Indiana Department of Natural Resources DFIRM (Published 03/20/2017)



0 100 200 Feet
0 20 40 60 Meters

Wetland Data Point
Delineated Stream
Project Location
Photo Station
Delineated Wetland

N
W E
S

7.5' Quadrangle:
Westfield
T18n R3e Sec2
Project No.
j191010500

Figure 6: Delineation

Oak Ridge
Regulated Waters Delineation Report
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Date: 2/20/2019
File Path: R:\Projects\19\191\191010500_WilliamEricGroup_OakRidgePoint\GIS\MXD\Delineation\F6_Delineation.mxd
Saved By: Tamara.Miller
National Agriculture Imagery Program (NAIP), Farm Services Agency (FSA), U. S. Department of Agriculture (USDA), UITS, Indiana Spatial Data Portal , Indiana Department of Natural Resources DFIRM (Published 03/20/2017)

Oak Ridge, Westfield, Hamilton County, Indiana

APPENDIX B

SITE PHOTOGRAPHS

Data Point 1. View Looking North, 02/14/2019

Data Point 1. View Looking East, 02/14/2019

Data Point 1. View Looking South, 02/14/2019

Data Point 1. View Looking West, 02/14/2019

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Data Point 2. View Looking North, 02/14/2019

Data Point 2. View Looking East, 02/14/2019

Data Point 2. View Looking South, 02/14/2019

Data Point 2. View Looking West, 02/14/2019

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Data Point 3. View Looking North, 02/14/2019

Data Point 3. View Looking East, 02/14/2019

Data Point 3. View Looking South, 02/14/2019

Data Point 3. View Looking West, 02/14/2019

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Stream 1a. View Looking Upstream, 02/14/2019

Stream 1a. View Looking Downstream, 02/14/2019

Stream 01b. View Looking Upstream, 02/14/2019

Stream 01b. View Looking Downstream, 02/14/2019

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Stream 02. View Looking Upstream, 02/14/2019

Stream 02. View Looking Downstream, 02/14/2019

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Photo Station 01. View Looking North, 02/14/2019

Photo Station 01. View Looking East, 02/14/2019

Photo Station 01. View Looking South, 02/14/2019

Photo Station 01. View Looking West, 02/14/2019

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Photo Station 02. View Looking North, 02/14/2019

Photo Station 02. View Looking East, 02/14/2019

Photo Station 02. View Looking South, 02/14/2019

Photo Station 02. View Looking West, 02/14/2019

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Oak Ridge, Westfield, Hamilton County, Indiana

APPENDIX C

WETLAND DELINEATION DATA SHEETS – MIDWEST REGION

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Oak ridge | City/County: Hamilton County | Sampling Date: 2/14/2019

Applicant/Owner: William Eric Group | State: IN | Sampling Point: DP01

Investigator(s): Ben Hess, Crystal Renskers | Section, Township, Range: S2,18N, 3E

Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): concave

Slope (%): | Lat: 40.040912 | Long: -86.14625 | Datum: NAD83 UTM16N

Soil Map Unit Name: Brookston silty clay loam, 0 to 2 percent slopes | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**	
Hydric Soil Present?	Yes	No X	**within a Wetland?**	Yes No X
Wetland Hydrology Present?	Yes X	No		

Remarks:

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size: 5' radius)			
1. *Carex frankii*	50%	Yes	OBL
2. *Symphyotrichum pilosum*	5%	No	FACU
3. *Poa pratensis*	30%	Yes	FAC
4. *Setaria pumila*	10%	No	FAC
5. *Trifolium repens*	5%	No	FACU
6. *Panicum dichotomiflorum*	5%	No	FACW
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	105%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species	50%	x1 =	0.5
FACW species	5%	x2 =	0.1
FAC species	40%	x3 =	1.2
FACU species	10%	x4 =	0.4
UPL species		x5 =	
Column Totals:	1.05 (A)		2.2 (B)

Prevalence Index = B/A = 2.10

Hydrophytic Vegetation Indicators:

- 1-Rapid Test for Hydrophytic Vegetation
- X 2-Dominance Test is >50%
- 3-Prevalence Index is ≤3.0[1]
- 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20"	10YR 3/2	100					Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Oak Ridge | City/County: Hamilton County | Sampling Date: 2/14/2019

Applicant/Owner: William Eric Group | State: IN | Sampling Point: DP02

Investigator(s): Ben Hess, Crystal Renskers | Section, Township, Range: S2, 18N, 3E

Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): concave

Slope (%): | Lat: 40.041775 | Long: -86.148575 | Datum: NAD83 UTM16N

Soil Map Unit Name: Brookston silty clay loam, 0 to 2 percent slopes | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	

Remarks:

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	100%	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	100% = Total Cover		

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species		x1 =	
FACW species	100%	x2 =	2
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	1.00 (A)		2 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- X 1-Rapid Test for Hydrophytic Vegetation
- X 2-Dominance Test is >50%
- X 3-Prevalence Index is ≤3.0[1]
- 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR 4/2	100					Silty Clay Loam	
6-20"	10YR 4/2	95	10YR 4/6	5	C	M	Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Oak Ridge | City/County: Hamilton County | Sampling Date: 2/14/2019

Applicant/Owner: William Eric Group | State: IN | Sampling Point: DP03

Investigator(s): Ben Hess, Crystal Renskers | Section, Township, Range: S2, 18N, 3E

Landform (hillslope, terrace, etc.): Shoulder | Local relief (concave, convex, none): concave

Slope (%): | Lat: 40.040605 | Long: -86.148515 | Datum: NAD83 UTM16N

Soil Map Unit Name: Crosby silt loam, fine-loamy subsoil, 0 to 2 percent slopes | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation N , Soil N , or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N , Soil N , or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS -- Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?**	Yes ____ No X
Hydric Soil Present?	Yes ____	No X		
Wetland Hydrology Present?	Yes ____	No X		

Remarks:

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size: 5' radius)			
1. *Medicago sativa*	80%	Yes	FACU
2. *Dactylis glomerata*	15%	No	FACU
3. *Trifolium pratense*	20%	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	115% = Total Cover		

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species	115%	x4 =	4.6
UPL species		x5 =	
Column Totals:	1.15 (A)		4.6 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation

____ 2-Dominance Test is >50%

____ 3-Prevalence Index is ≤3.0[1]

____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20"	10YR 4/3	100					Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

About Cardno

Cardno is a professional infrastructure and environmental services company, with expertise in the development and improvement of physical and social infrastructure for communities around the world. Cardno's team includes leading professionals who plan, design, manage, and deliver sustainable projects and community programs.

Cardno Zero Harm

Cardno ZERO HARM EVERY JOB. EVERY DAY.

At Cardno, our primary concern is to develop and maintain safe and healthy conditions for anyone involved at our project worksites. We require full compliance with our Health and Safety Policy Manual and established work procedures and expect the same protocol from our subcontractors. We are committed to achieving our Zero Harm goal by continually improving our safety systems, education, and vigilance at the workplace and in the field. Safety is a Cardno core value and through strong leadership and active employee participation, we seek to implement and reinforce these leading actions on every job, every day.

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