

# Appendix E

## Red Flag Investigation and Hazardous Materials



# INDIANA DEPARTMENT OF TRANSPORTATION

*Driving Indiana's Economic Growth*

100 North Senate Avenue  
Room N642  
Indianapolis, Indiana 46204-2216 (317) 232-5348 FAX: (317) 233-4929

**Eric Holcomb, Governor**  
**Joe McGuinness, Commissioner**

Date: January 25, 2019

Excerpt

To: Site Assessment & Management  
Environmental Services  
Indiana Department of Transportation  
100 N Senate Avenue, Room N642  
Indianapolis, Indiana 46204

From: Hannah Marriott  
Parsons  
101 W Ohio Street, Suite 2121  
Indianapolis, Indiana 46204  
[Hannah.Marriott@parsons.com](mailto:Hannah.Marriott@parsons.com)

Note - this document was re-evaluated in January 2022 due to changes in the preferred alternative and INDOT Guidance. New information was not identified. INDOT Concurred with this on February 8, 2022 (Appendix E-9 to E-11).

Re: RED FLAG INVESTIGATION  
DES 1701589, State Project  
Bridge Replacement  
SR 163 (163-83-01393 A)  
Vermillion County, Indiana

## PROJECT DESCRIPTION

Brief Description of Project: The Indiana Department of Transportation (INDOT) proposes a bridge replacement project on SR 163 over Brouilletts Creek in Vermillion County, Indiana. Specifically, the project is located in the Saint Bernice and Clinton Quadrangles, in Sections 10, 11, 14, and 15 of Township 14 North, Range 10 West. The project is located along a rural section of SR 163. Land adjacent to the bridge consists of grassy right-of-way, woodlands, and row crop fields. Work for this project includes a full bridge replacement. This project will raise the profile of the bridge and require the bridge approaches and portions of the SR 163 roadway to be regraded.

Bridge and/or Culvert Project: Yes  No  Structure # 163-83-01393 A

If this is a bridge project, is the bridge Historical? Yes  No , Select  Non-Select

Proposed right of way: Temporary  # Acres \_\_\_\_\_ Permanent  # Acres Unknown at this time

Type of excavation: Subsurface work is expected to install new bridge piers and placement of standard rip-rap protection.

Maintenance of traffic: Potential for a complete road closure

Work in waterway: Yes  No  Above ordinary high water mark: Yes  No

State Project:  LPA:

Any other factors influencing recommendations: N/A

**INFRASTRUCTURE TABLE AND SUMMARY**

<b>Infrastructure</b>			
Indicate the number of items of concern found within the 0.5 mile search radius. If there are no items, please indicate N/A:			
Religious Facilities	N/A	Recreational Facilities	N/A
Airports <sup>1</sup>	N/A	Pipelines	1
Cemeteries	6	Railroads	N/A
Hospitals	N/A	Trails	N/A
Schools	N/A	Managed Lands	N/A

<sup>1</sup>In order to complete the required airport review, a review of public airports within 3.8 miles (20,000 feet) is required.

Cemeteries: Six (6) cemeteries were located within the 0.5 mile search radius. The southeastern portion of the project area is located within the nearest cemetery, Spangler Cemetery. A Cemetery Development Plan may be required. Coordination with INDOT Cultural Resources Office (CRO) will occur.

Pipelines: One (1) pipeline was located within the 0.5 mile search radius. It is located approximately 0.07 mile south of the project area. No impact is expected.

**WATER RESOURCES TABLE AND SUMMARY**

<b>Water Resources</b>			
Indicate the number of items of concern found within the 0.5 mile search radius. If there are no items, please indicate N/A:			
NWI - Points	N/A	Canal Routes - Historic	N/A
Karst Springs	N/A	NWI - Wetlands	28
Canal Structures – Historic	N/A	Lakes	17
NPS NRI Listed	N/A	Floodplain - DFIRM	1
NWI-Lines	12	Cave Entrance Density	N/A
IDEM 303d Listed Streams and Lakes (Impaired)	3	Sinkhole Areas	N/A
Rivers and Streams	17	Sinking-Stream Basins	N/A

NWI-Lines: Twelve (12) NWI-line segments are located within the 0.5 mile search radius. Three (3) NWI-line segments are located within the project area. A Waters of the US Report will be prepared and coordination with INDOT Environmental Services (ES) Ecology and Waterway Permitting Office (EWPO) will occur.

IDEM 303d Listed Streams and Lakes: Three (3) 303d listed stream segments are located within the 0.5 mile radius. Two (2) stream segments, both representing Brouilletts Creek, are located within the project area. It is listed as impaired for E. coli. Workers who are working in or near water with E. coli should take care to wear appropriate personal protective equipment (PPE), observe proper hygiene procedures, including regular hand washing, and limit personal exposure.

Rivers and Streams: Seventeen (17) stream segments are located within the 0.5 mile search radius. Five (5) stream segments are located within the project area. A Waters of the US Report will be prepared and coordination with INDOT ES EWPO will occur.

NWI-Wetlands: Twenty-eight (28) wetlands are located within the 0.5 mile search radius. Two (2) NWI-wetlands are located within the project area. A Waters of the US Report will be prepared and coordination with INDOT ES EWPO will occur.

Lakes: Seventeen (17) lakes are located within the 0.5 mile search radius. The nearest lake is located approximately 0.11 mile southeast of the project area. No impact is expected.

Floodplain-DFIRM: One (1) floodplain is located within the 0.5 mile search radius. The project area is located within the Floodplain-DFIRM polygon. Coordination with INDOT ES EWPO will occur.

**URBANIZED AREA BOUNDARY SUMMARY**

Explanation: The project area is not mapped within an Urbanized Area Boundary.

**MINING AND MINERAL EXPLORATION TABLE AND SUMMARY**

<b>Mining/Mineral Exploration</b>			
Indicate the number of items of concern found within the 0.5 mile search radius. If there are no items, please indicate N/A:			
Petroleum Wells	<b>N/A</b>	Mineral Resources	<b>N/A</b>
Mines – Surface	<b>6</b>	Mines – Underground	<b>8</b>

Mines – Surface: Six (6) surface mines are located within the 0.5 mile search radius. The nearest surface mine is located approximately 0.12 mile southwest of the project area. No impact is expected.

Mines – Underground: Eight (8) underground mines are located within the 0.5 mile search radius. Two (2) underground mine polygons are located within the project area. Coordination with the Indiana Department of Natural Resources (IDNR) Reclamation Division will occur.

**HAZARDOUS MATERIAL CONCERNS TABLE AND SUMMARY**

<b>Hazardous Material Concerns</b>			
Indicate the number of items of concern found within the 0.5 mile search radius. If there are no items, please indicate N/A:			
Superfund	<b>N/A</b>	Manufactured Gas Plant Sites	<b>N/A</b>
RCRA Generator/ TSD	<b>N/A</b>	Open Dump Waste Sites	<b>N/A</b>
RCRA Corrective Action Sites	<b>N/A</b>	Restricted Waste Sites	<b>N/A</b>
State Cleanup Sites	<b>N/A</b>	Waste Transfer Stations	<b>N/A</b>
Septage Waste Sites	<b>N/A</b>	Tire Waste Sites	<b>N/A</b>
Underground Storage Tank (UST) Sites	<b>N/A</b>	Confined Feeding Operations (CFO)	<b>N/A</b>
Voluntary Remediation Program	<b>N/A</b>	Brownfields	<b>N/A</b>
Construction Demolition Waste	<b>N/A</b>	Institutional Controls	<b>N/A</b>
Solid Waste Landfill	<b>2</b>	NPDES Facilities	<b>1</b>
Infectious/Medical Waste Sites	<b>N/A</b>	NPDES Pipe Locations	<b>N/A</b>
Leaking Underground Storage (LUST) Sites	<b>N/A</b>	Notice of Contamination Sites	<b>N/A</b>

Solid Waste Landfill: Two (2) solid waste landfills are located within the 0.5 mile search radius. The nearest solid waste landfill is located approximately 0.37 mile southeast of the project area.

- West Clinton Landfill is a permitted municipal solid waste disposal facility. It is also a permitted construction-demolition (C/D) disposal facility. It is located approximately 0.37 mile southeast from the project area. Based on a cursory review of files on the Virtual File Cabinet (VFC), this facility is in compliance with solid waste regulations and no violations were reported during the 2017 field inspection (VFC Documents #82535672 and #80601886). No impact is expected.

NPDES Facilities: One (1) NPDES facility is located within the 0.5 mile search radius. It is located approximately 0.48 mile southwest of the project area.

- The NPDES listing was for a K-Mart building demolition. The NPDES facility is mapped within the 0.5 mile search radius but is actually located in Vincennes, Indiana. No impact is expected.

### **ECOLOGICAL INFORMATION SUMMARY**

The Vermillion County listing of the Indiana Natural Heritage Data Center information on endangered, threatened, or rare (ETR) species and high quality natural communities is attached with ETR species highlighted. A preliminary review of the Indiana Natural Heritage Database by INDOT ES indicated the presence of one (1) endangered species. Coordination with the United States Fish and Wildlife Service (USFWS) and IDNR will occur.

A review of the USFWS database did not indicate the presence of endangered bat species in or within 0.5 mile of the project area. The October 15, 2018, inspection report for Bridge #163-83-01393A states that no evidence of bats was seen or heard under the bridge. The Range-wide Programmatic Consultation for the Indiana Bat and Northern Long-eared Bat will be completed according to "Using the USFWS's Information for Planning and Consultation (IPaC) System for listed Bat consultation for INDOT Projects".

An inquiry using the USFWS's IPaC website did not indicate the presence of the federally endangered species, the Rusty Patched Bumble Bee, in or within 0.5 mile of the project area. No impact is expected.

ETR Species list intentionally omitted, refer to  
[https://www.in.gov/dnr/nature-preserves/files/np\\_vermillion.pdf](https://www.in.gov/dnr/nature-preserves/files/np_vermillion.pdf)

### **RECOMMENDATIONS SECTION**

Include recommendations from each section. If there are no recommendations, please indicate N/A:

#### **INFRASTRUCTURE:**

Cemeteries: One (1) cemetery is located within the project area. Coordination with INDOT CRO will occur.

**WATER RESOURCES:** The presence of the following water resources will require the preparation of a Waters of the US Report and coordination with INDOT ES EWPO:

Three (3) NWI-line segments are located within the project area.

Two (2) 303d listed stream segments, associated with Brouilletts Creek, are located within the project area. It is listed as impaired for E. coli. Workers who are working in or near water with E. coli should take care to wear appropriate PPE, observe proper hygiene procedures, including regular hand washing, and limit personal exposure.

Five (5) stream segments, associated with Brouilletts Creek, are located within the project area.

Two (2) NWI-wetlands are located within the project area.

The project area is located within a Floodplain-DFIRM (coordination only).

URBANIZED AREA BOUNDARY: N\A

MINING/MINERAL EXPLORATION: Two (2) underground mine polygons are located within the project area. Coordination with IDNR Reclamation Division will occur.

HAZMAT CONCERNS: N/A

ECOLOGICAL INFORMATION: Coordination with USFWS and IDNR will occur. The range-wide programmatic consultation for the Indiana Bat and Northern Long-eared Bat will be completed according to "Using the USFWS's IPaC System for Listed Bat Consultation for INDOT Projects".

INDOT Environmental Services concurrence:

Nicole Fohey-  
Breting

Digitally signed by Nicole Fohey-Breting  
DN: cn=Nicole Fohey-Breting, o=INDOT,  
ou=Environmental Services, HazMat,  
email=NFoheyBreting@indot.in.gov,  
c=US  
Date: 2019.01.25 16:13:55 -05'00'

(Signature)

Prepared by:



Hannah Marriott  
Associate Environmental Planner  
Parsons

**Graphics:**

A map for each report section with a 0.5 mile search radius buffer around all project area(s) showing all items identified as possible items of concern is attached. If there is not a section map included, please change the YES to N/A:

SITE LOCATION: YES Intentionally omitted, refer to Appendix B.

INFRASTRUCTURE: YES

WATER RESOURCES: YES

URBANIZED AREA BOUNDARY: N/A

MINING/MINERAL EXPLORATION: YES

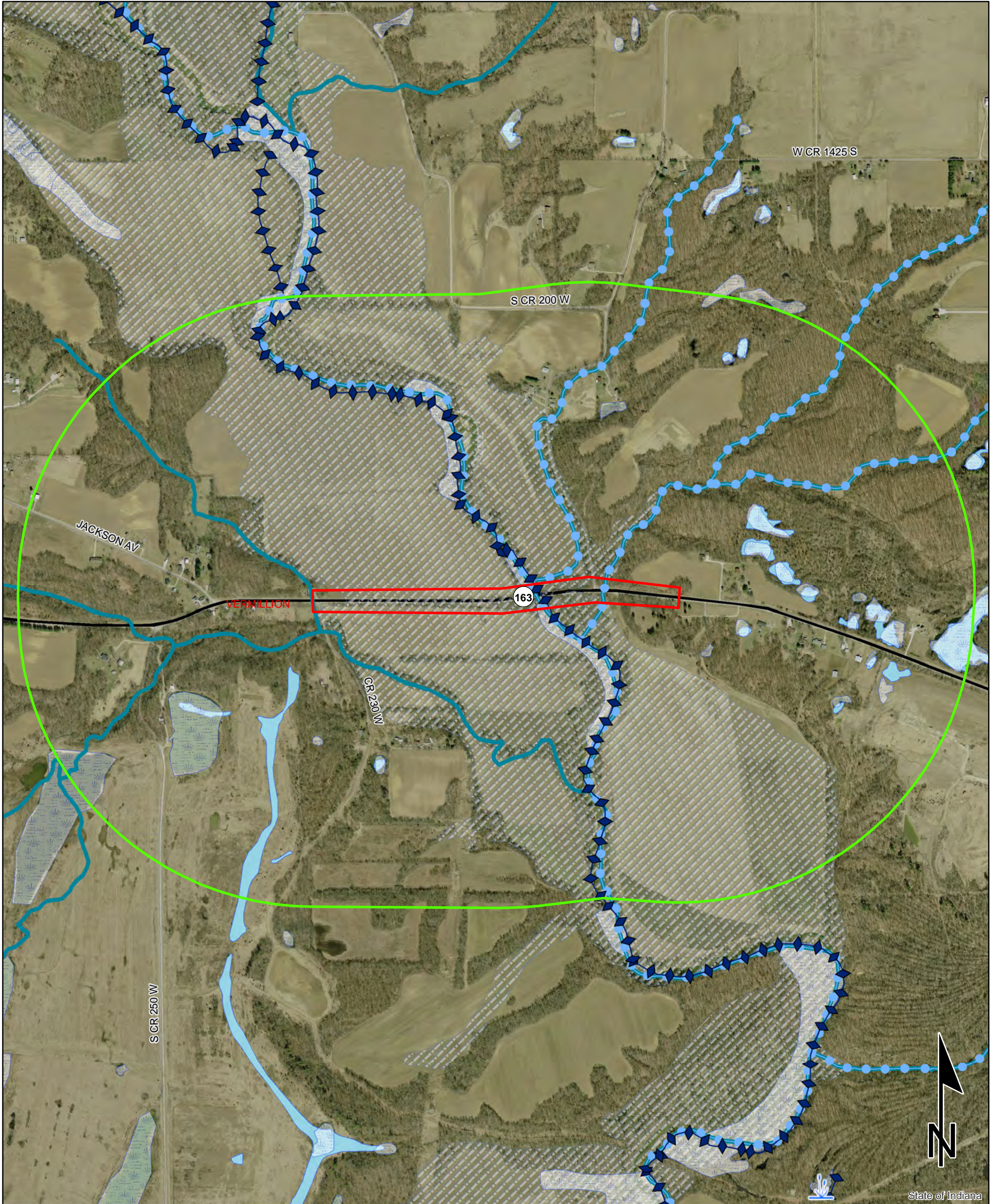
HAZMAT CONCERNS: YES

# Red Flag Investigation - Water Resources

## SR 163 Bridge over Brouilletts Creek

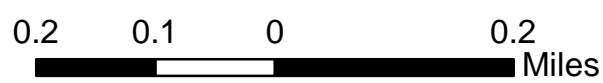
### Des. No. 1701589, Bridge Replacement

#### Vermillion County, Indiana



**Sources:**  
**Non Orthophotography**  
**Data** - Obtained from the State of Indiana Geographical Information Office Library  
**Orthophotography** - Obtained from Indiana Map Framework Data ([www.indianamap.org](http://www.indianamap.org))  
**Map Projection:** UTM Zone 16 N **Map Datum:** NAD83

**This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.**



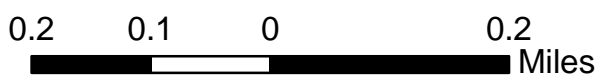
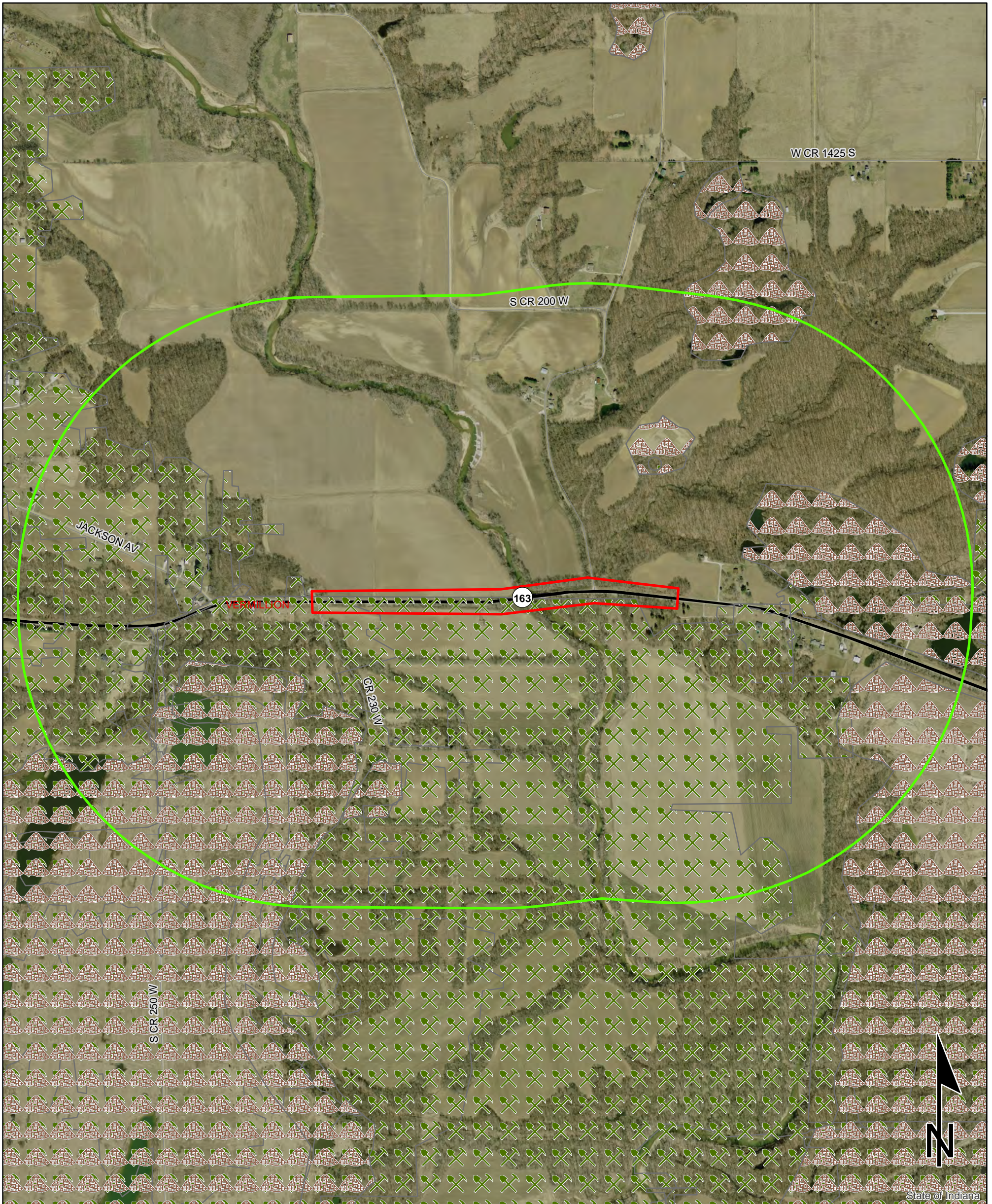
NWI - Point	Wetlands	Project Area
Karst Spring	Lake	Half Mile Radius
NWI - Line	Floodplain - DFIRM	Toll
Impaired_Stream_Lake	Cave Entrance Density	Interstate
NPS NRI listed	Sinkhole Area	State Route
River	Sinking-Stream Basin	US Route
Canal Structure - Historic	County Boundary	Local Road
Canal Route - Historic		

# Red Flag Investigation - Mining/Mineral Exploration

## SR 163 Bridge over Brouilletts Creek

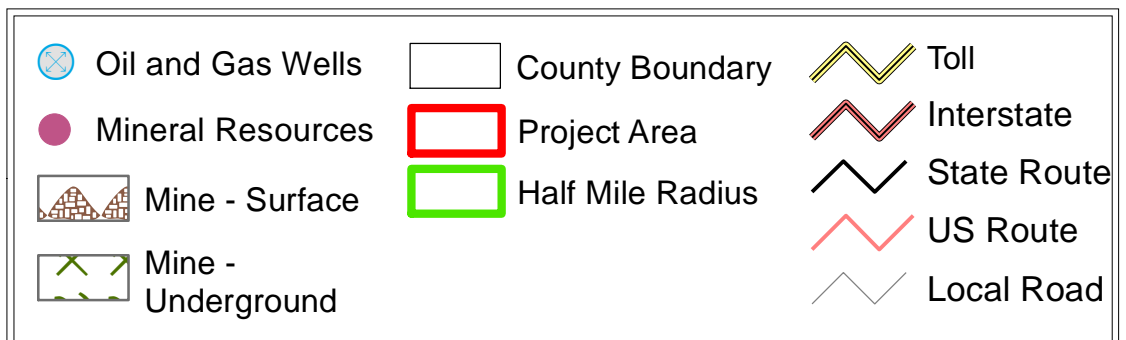
### Des. No. 1701589, Bridge Replacement

#### Vermillion County, Indiana



**Sources:**  
**Non Orthophotography Data** - Obtained from the State of Indiana Geographical Information Office Library  
**Orthophotography** - Obtained from Indiana Map Framework Data ([www.indianamap.org](http://www.indianamap.org))  
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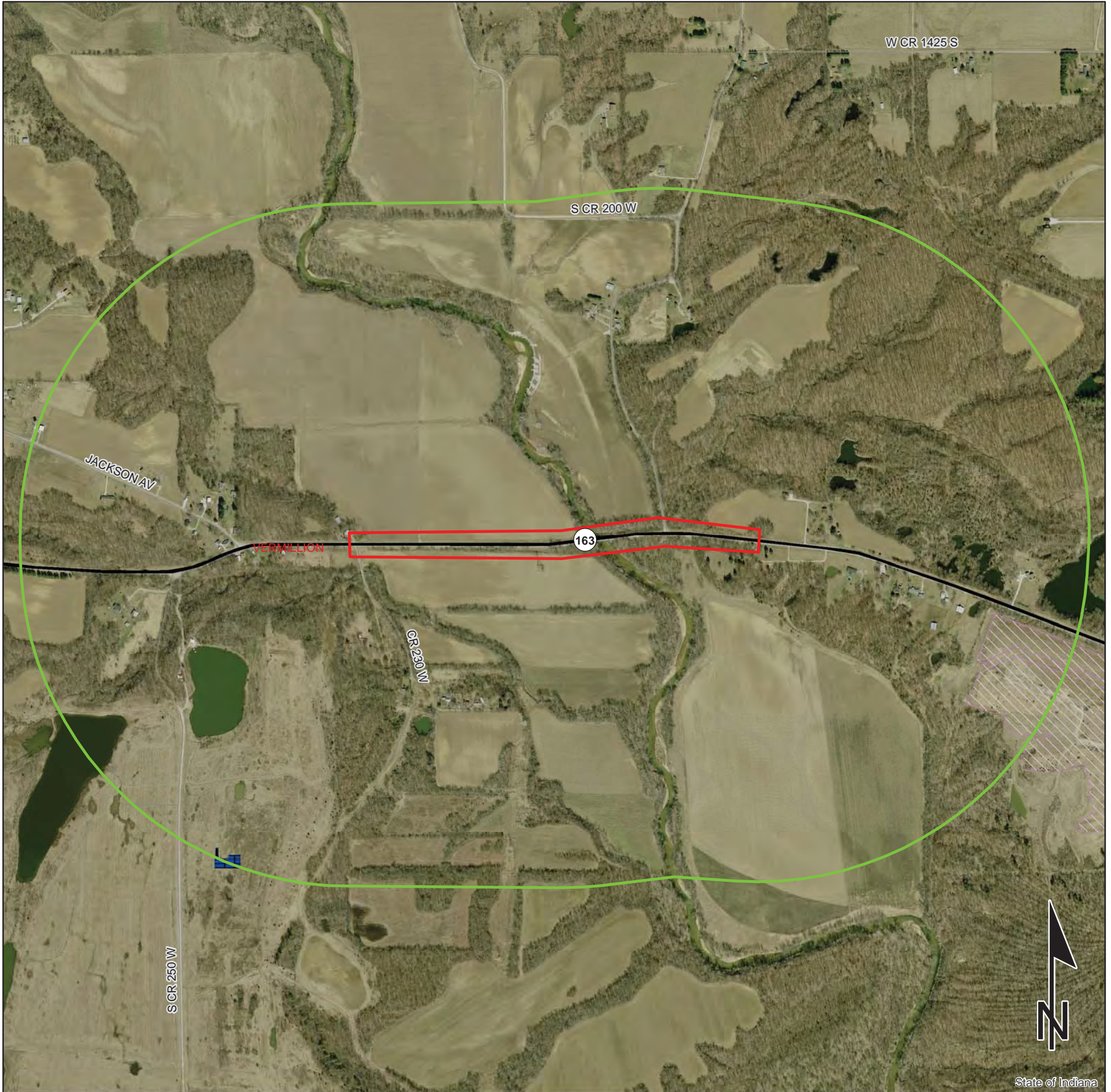


# Red Flag Investigation - Hazardous Material Concerns

## SR 163 Bridge over Brouilletts Creek

### Des. No. 1701589, Bridge Replacement

#### Vermillion County, Indiana



	Brownfield		RCRA Generator/TSD		Institutional Controls
	RCRA Corrective Action Sites		Restricted Waste Site		County Boundary
	Confined Feeding Operation		Septage Waste Site		Project Area
	Notice_Of_Contamination		Solid Waste Landfill		Half Mile Radius
	Construction/Demolition Site		State Cleanup Site		Toll
	Infectious/Medical Waste Site		Superfund		Interstate
	Leaking Underground Storage Tank		Tire Waste Site		State Route
	Manufactured Gas Plant		Underground Storage Tank		US Route
	NPDES Facilities		Voluntary Remediation Program		Local Road
	NPDES Pipe Locations		Waste Transfer Station		
	Open Dump Waste Site				

0.2 0.1 0 0.2 Miles

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**Non Orthophotography**  
**Data** - Obtained from the State of Indiana Geographical Information Office Library  
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**Map Projection:** UTM Zone 16 N **Map Datum:** NAD83

## Veldkamp, Keaton [US-US]

---

**From:** Bales, Ronald <rbales@indot.IN.gov>  
**Sent:** Tuesday, February 8, 2022 1:34 PM  
**To:** Veldkamp, Keaton [US-US]  
**Cc:** Graf, Jennifer [US-US]  
**Subject:** [EXTERNAL] RE: Des. 1701589 SR 163 Brouilletts 2019 Approved RFI Recheck

Would also add a notation on the RFI in the appendix of the NEPA document if there was a change in the project description and note about the recheck. Can be a brief notation.

### Ron Bales

INDOT-Environmental Services Division

**Office:** (317) 515-7908

**Email:** [rbales@indot.in.gov](mailto:rbales@indot.in.gov)

---

**From:** Kurtz, Randy <RKurtz@indot.IN.gov>  
**Sent:** Tuesday, February 8, 2022 9:10 AM  
**To:** Veldkamp, Keaton <keaton.veldkamp@parsons.com>; Bales, Ronald <rbales@indot.IN.gov>  
**Cc:** Jennifer.Graf@parsons.com; Kahn, Brad <Brad.Kahn@parsons.com>; Neild, Benjamin <BNeild@indot.IN.gov>  
**Subject:** FW: Des. 1701589 SR 163 Brouilletts 2019 Approved RFI Recheck

Good Morning

Keaton – This being a Level 4 document it will be reviewed by Central Office. I am including Ron Bales on the email since his team will have to make the determination. Sorry pal. I wouldn't want to tell you something wrong.

Ron – Can you please see below for the question Keaton is asking about an RFI? Thank you

### Randy "Zane" Kurtz

*Environmental Section Manager*



*Capital Program Management Division*

41 West 300 North

Crawfordsville, IN 47933

**Office:** (765)361-5232

**Email:** [rkurtz@indot.in.gov](mailto:rkurtz@indot.in.gov)

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---

**From:** [Keaton.Veldkamp@parsons.com](mailto:Keaton.Veldkamp@parsons.com) <[Keaton.Veldkamp@parsons.com](mailto:Keaton.Veldkamp@parsons.com)>  
**Sent:** Monday, February 7, 2022 2:50 PM  
**To:** Kurtz, Randy <[RKurtz@indot.IN.gov](mailto:RKurtz@indot.IN.gov)>  
**Cc:** [Jennifer.Graf@parsons.com](mailto:Jennifer.Graf@parsons.com); Kahn, Brad <[Brad.Kahn@parsons.com](mailto:Brad.Kahn@parsons.com)>  
**Subject:** Des. 1701589 SR 163 Brouilletts 2019 Approved RFI Recheck

## Veldkamp, Keaton [US-US]

---

**From:** Bales, Ronald <rbales@indot.IN.gov>  
**Sent:** Tuesday, February 8, 2022 1:31 PM  
**To:** Kurtz, Randy; Veldkamp, Keaton [US-US]  
**Cc:** Graf, Jennifer [US-US]; Kahn, Brad [US-US]; Neild, Benjamin  
**Subject:** [EXTERNAL] RE: Des. 1701589 SR 163 Brouilletts 2019 Approved RFI Recheck

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

If a review did not identify any new information, I am fine with just including the recent check in the narrative of your NEPA document. i.e. on (date) parsons reviewed.....

### Ron Bales

INDOT-Environmental Services Division

**Office:** (317) 515-7908

**Email:** [rbales@indot.in.gov](mailto:rbales@indot.in.gov)

---

**From:** Kurtz, Randy <RKurtz@indot.IN.gov>  
**Sent:** Tuesday, February 8, 2022 9:10 AM  
**To:** Veldkamp, Keaton <keaton.veldkamp@parsons.com>; Bales, Ronald <rbales@indot.IN.gov>  
**Cc:** Jennifer.Graf@parsons.com; Kahn, Brad <Brad.Kahn@parsons.com>; Neild, Benjamin <BNeild@indot.IN.gov>  
**Subject:** FW: Des. 1701589 SR 163 Brouilletts 2019 Approved RFI Recheck

Good Morning

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### Randy "Zane" Kurtz

*Environmental Section Manager*

*Capital Program Management Division*

41 West 300 North

Crawfordsville, IN 47933

**Office:** (765)361-5232

**Email:** [rkurtz@indot.in.gov](mailto:rkurtz@indot.in.gov)



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---

**From:** [Keaton.Veldkamp@parsons.com](mailto:Keaton.Veldkamp@parsons.com) <[Keaton.Veldkamp@parsons.com](mailto:Keaton.Veldkamp@parsons.com)>

**Sent:** Monday, February 7, 2022 2:50 PM

**To:** Kurtz, Randy <[RKurtz@indot.IN.gov](mailto:RKurtz@indot.IN.gov)>

Cc: [Jennifer.Graf@parsons.com](mailto:Jennifer.Graf@parsons.com); Kahn, Brad <[Brad.Kahn@parsons.com](mailto:Brad.Kahn@parsons.com)>

Subject: Des. 1701589 SR 163 Brouilletts 2019 Approved RFI Recheck

\*\*\*\* This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. \*\*\*\*

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SR 163 over Brouilletts Creek Bridge Project

Vermillion County

Des. No. 1701589

CE-4 level document (due to historic bridge)

Hi Zane,

We are starting the NEPA back up for a bridge rehabilitation project on SR 163 over Brouilletts Creek after the bridge (INDOT Structure No. 163-83-01393 A) was found to be historic in 2020. Since then, the project limits, scope, and right-of-way amounts have been reduced (now 0.36 acre, originally over 1.0 acre). An RFI was approved for this project on January 25, 2019.

As it has been 3 years since the RFI was originally approved we are asking for guidance on how to proceed. We rechecked the RFI database on February 7, 2022, and no changes were found. We are aiming for a draft environmental document to be approved late spring/early summer to hold a public hearing mid to late summer 2022. Will this email suffice to document the update, or do we need to generate a new RFI?

Thanks,

**Keaton Veldkamp**

Environmental Planner

101 West Ohio Street, Suite 2121 - Indianapolis, IN 46204

[Keaton.Veldkamp@parsons.com](mailto:Keaton.Veldkamp@parsons.com) P: 317.616.1021

**PARSONS – Envision More**

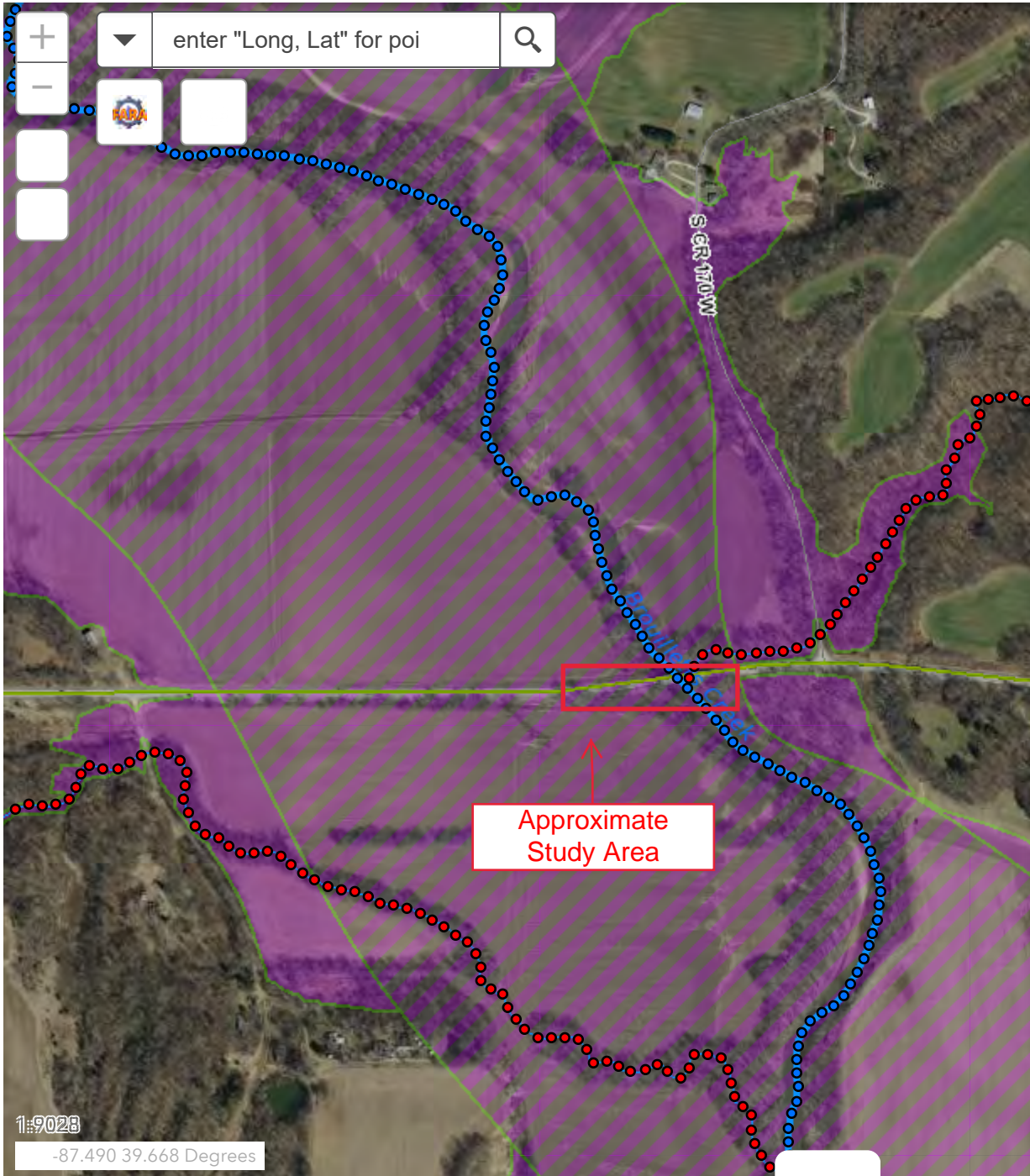
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# Appendix F

## Water Resources



### Legend

#### Local Flood Plain Administrator Jurisdiction



#### FLOOD\_FEPs - Flood Elevation Points

- 1.0
- 1.5
- 1.75
- 2.0

#### Drainage Areas for Indiana NHD Flowlines

Rivers and Streams at least 1 square mile

- 1 - 10
- 10 - 100
- 100 - 500
- > 500

#### Best Available Flood Hazard Layer (BAFL)









Best Available Flood Hazard Layer

- FEMA Zone AE Floodway; FEMA Administrative Floodway
- DNR Detailed Floodway
- DNR Approximate Floodway
- FEMA Zone A
- FEMA Zone AE
- DNR Detailed Fringe
- DNR Approximate Fringe
- Additional Floodplain Area; DNR .2 Percent



February 9, 2022

**Wetlands**

- |  |   |  |
|--|---|--|
|  Estuarine and Marine Deepwater |  Freshwater Emergent Wetland       |  Lake     |
|  Estuarine and Marine Wetland   |  Freshwater Forested/Shrub Wetland |  Other    |
|  |  Freshwater Pond                   |  Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)  
This page was produced by the NWI mapper

# Waters of the U.S. Report

## S.R. 163 over Brouilletts Creek Bridge Replacement

Vermillion County, Indiana

Designation Number 1701589



Prepared for the Indiana Department of Transportation

November 22, 2019

11/27/2019





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Most attachments intentionally omitted. Refer to Appendix B for graphics.

**WATERS OF THE U.S. REPORT**  
**SR 163 over Brouilletts Creek Bridge Replacement**  
Vermillion County, Indiana  
INDOT Designation (Des.) Number 1701589  
Prepared By: Tom Plattner, Senior Environmental Planner  
November 22, 2019

**I: Project Information**

**Fieldwork Dates:**

Fieldwork for this report was conducted on October 22 and October 25, 2019.

**Contributors:**

Greg Moushon, Senior Environmental Planner  
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Wade Kimmon, GIS Specialist

**Project Location:**

Saint Bernice and Clinton Quadrangles  
Sections 10, 11, 14, and 15 of Township 14 North, Range 10 West  
SR 163 Reference Post (RP) 1+82  
Vermillion County, Indiana  
Latitude/Longitude: 39.665659 North -87.498271 West

**Project Description:**

The Indiana Department of Transportation (INDOT) proposes a bridge replacement project on State Route (SR) 163 over Brouilletts Creek in Vermillion County (page 13). The closest community is Blanford, Indiana, approximately one mile west of the study area. SR 163 is oriented east-west and Brouilletts Creek flows northwest-southeast through the study area.

The need for the project is due to the deteriorating condition of the existing structure, INDOT Structure 163-83-01393 A. This 175-foot single-span steel truss bridge on vertical abutments was originally constructed in 1932 and upgraded in 1979. In the October 15, 2018 Bridge Inspection Report, the bridge substructure was found to be in poor condition with cracking wingwalls and advanced spalling. The superstructure was noted to be in fair condition with rusted members, section loss, and a bent bracing. Additionally, major damage to and erosion of the stream bank were noted. The purpose of the project is to provide a safe and hydrologically sufficient crossing of SR 163 over Brouilletts Creek.

This section of SR 163 has two 12-foot travel lanes, one in each direction, with 2-foot shoulders. The project is located along a rural section of SR 163. Land adjacent to the bridge consists of maintained right-of-way, trees, and row crop fields.

The proposed project will replace the existing structure with a three-span prestressed concrete bulb-tee beam bridge. The new bridge will be approximately 275 feet long and 36.3 feet wide. The existing profile will be raised. An unnamed tributary (UNT) to Brouilletts Creek will be partially realigned, and a concrete box culvert beneath County Road (CR) 170 West will be replaced. Riprap scour protection and drainage turnouts will be added. Less than one acre of permanent right-of-way will be acquired. During construction, the SR 163 bridge over Brouilletts Creek will be closed. Traffic will be maintained with a detour using SR 71, US 36, and SR 63.

**II: Office Evaluation**

**Methodology:**

The study area was based on the design alternatives evaluated for the National Environmental Policy Act (NEPA) document. It encompassed all project alternatives currently under evaluation. The final study area was approximately 17.8 acres in size.

A desktop review of the study area was conducted to identify potential waterways (streams, wetlands, ponds, etc.). This included a review of historic and recent aerial photography for any areas with a water signature or a sharp change in vegetation. Any such areas were flagged for follow-up field reconnaissance. United States Geological Survey (USGS) topographic mapping, United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping, National Hydrography Dataset (NHD) mapping, floodplain mapping, mapped soil units, historic drainage mapping, and LiDAR mapping were also reviewed. Any noted items were flagged for follow-up field reconnaissance, as well.

**Aerial Photography**

During review of current and historical aerial photography, numerous areas were identified within the study area that displayed potential wetland signatures associated with water ponding, darkened soils, and/or shifts in vegetation. Eight potential streams and wetland signatures were noted within the study area.

**USGS Mapping**

During a review of USGS 7.5-minute series topographic mapping (page 14), one perennial stream (solid blue line) and two intermittent streams (dashed blue line) were noted within the study area.

**NWI and Floodplain Mapping**

During review of NWI mapping (pages 16 to 18), two wetland polygons were noted within the study area. The GIS-based Water Resources maps included with this report appear to map “Wetland” polygons further to the east than the USFWS NWI Wetlands Mapper maps the wetland locations. The Wetlands Mapper shows Palustrine, Forested, Broad-Leaved Deciduous, Temporarily Flooded (PFO1A) along the west bank of Brouilletts Creek both north and south of the bridge, and Brouilletts Creek mapped as Riverine, Lower Perennial, Unconsolidated Bottom (R2UBH). A 100-year floodplain was noted within all portions of the study area west of the SR 163 bridge. On the east side of the SR 163 bridge, the 100-year floodplain extended approximately 200 feet east of CR 170 West (pages 16 to 18).

**Mapped Soil Units**

The Natural Resources Conservation Service (NRCS) classifies soil types as follows: hydric (100%), predominantly hydric (66-99%), partially hydric (33-65%), predominantly non-hydric (1-32%), and not hydric (0%). According to the Soil Survey Geographic (SSURGO) Database for Vermillion County, Indiana, the study area is comprised of predominantly non-hydric and not hydric soil types (pages 19 to 21). Mapped soil units within the study area are summarized in Table 1 (below).

*Table 1: Mapped Soil Units within the Study Area*

Soil Unit	Abbreviation	Classification	Percent within Study Area
Genesee silt loam	Ge	Predominantly non-hydric (1-32%)	37%
Eel silt loam	Ee	Predominantly non-hydric (1-32%)	29%
Hennepin loam, 25 to 40 percent slopes	HeF	Not hydric (0%)	13%
Russel silt loam, Bloomington Ridged Plain, 2 to 5 percent slopes, eroded	RuB2	Predominantly non-hydric (1-32%)	8%
Stonelick sandy loam	Sp	Not hydric (0%)	7%
Xenia silt loam, Bloomington Ridged Plain, 2 to 5 percent slopes	XeB	Predominantly non-hydric (1-32%)	6%

**Historic Drainage**

The Vermillion County Soil Survey (USDA, 1978) was reviewed for historic drainage features within the study area. Including Brouilletts Creek, four historic drainage features were noted within the study area (page 22).

**LiDAR**

A review of LiDAR mapping revealed roadside ditches along both sides of SR 163 and CR 170 West as well as several possible jurisdictional streams (pages 23 to 24).

**Watershed**

This project is located within a single hydrologic unit code 12-digit (HUC 12) watershed: Brouilletts Creek (051201110302).

**III: Field Reconnaissance****Methodology**

Parsons conducted field investigations to determine the presence of waterways, including streams, wetlands, lakes, and ponds, within the study area. The entire study area was reviewed for resources via a walking survey. All areas flagged during desktop review were investigated and documented. Resource maps showing all identified features are attached for reference (pages 26 to 28).

The ordinary high-water mark (OHWM) of each stream was determined using a measuring tape. A hand-held GPS unit (Trimble Geo 7 Series) was used to collect the location of each identified stream. The upstream drainage area for each stream was calculated using StreamStats Version 4.3.0 (USGS, 2019), if available. Qualitative assessments of stream quality were done within the study area, while quantitative assessments often extended outside the study area. Quantitative assessments were conducted based on each stream's drainage using the guidelines for either the Headwater Habitat Evaluation Index (HHEI) (Ohio EPA, 2012) or Qualitative Habitat Evaluation Index (QHEI) (Ohio EPA, 2006) (pages 98-110).

Vegetation, soil, and hydrology data were collected using the methods described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (USACE, 2010). Wetland indicator statuses for plants were obtained from the National Wetland Plant List (Lichvar, 2016). Data forms for each wetland are included in this report for reference (pages 68 to 97). A hand-held GPS unit (Trimble Geo 7 Series) was used to collect the boundary of each identified wetland, as well as all data points. The area for each wetland and its length (measured along its centerline) are provided. A qualitative assessment of each wetland's quality was conducted, which included grading them (poor, average, or excellent) based on ecological function, size, species diversity, invasive species prevalence, and amount of disturbance.

Photographs were taken throughout the study area. This included photographs of each feature identified within the study area (pages 32 to 67). Photograph orientation maps are included for additional reference (pages 29 to 31).

**Streams**

Field investigations resulted in the identification of six likely jurisdictional streams totaling 2,851 linear feet within the study area. These features are summarized in the Stream Summary Table (Table 2, page 6). No other features exhibiting an OHWM were observed within the study area. None of the documented streams were listed as a *Federal Wild and Scenic River*, a *State Natural, Scenic and Recreational River*, or on the Indiana Register's listing of *Outstanding Rivers and Streams*, nor were they located within two miles of any such resource.

**Brouilletts Creek**

Brouilletts Creek originates north of the study area and flows to the southeast under SR 163, ultimately draining into the Wabash River (page 27). Brouilletts Creek exhibited a 73-foot wide OHWM upstream of the bridge (northwest) and a 93-foot wide OHWM downstream (southeast) of the bridge. The OHWM depth was 40 inches upstream and 32 inches

downstream of the bridge.. Approximately 427 feet of this stream lies within the study area. According to USGS Streamstats, the upstream drainage area of the SR 163 bridge is approximately 269 square miles.

Brouilletts Creek had a forested riparian corridor along both banks through the study area. Its substrate consisted of gravel, sand, and silt. Riffles and pools were observed. Moderate bank erosion was noted within the study area. Based on these observations, Brouilletts Creek was classified as a good-quality stream. This was supported by its QHEI score of 61 (pages 98 to 99).

Brouilletts Creek is shown as a perennial stream (solid blue line) on USGS 7.5-minute series topographic mapping (page 14). Brouilletts Creek is a direct tributary to the Wabash River (a traditionally navigable waterway). Because of this connectivity and the presence of an OHWM, this stream is likely a water of the US.

#### UNT 1 to Brouilletts Creek

UNT 1 to Brouilletts Creek begins northeast of the study area and flows west, under CR 170 West approximately 95 feet north of its intersection with SR 163. The stream then flows along the north side of SR 163 before discharging into Brouilletts Creek under the SR 163 bridge (pages 28 to 29). UNT 1 to Brouilletts Creek exhibited a 7-foot wide and 11-inch deep OHWM within the study area. Approximately 733 linear feet of UNT 1 to Brouilletts Creek lies within the study area. Because of historic modifications this stream in its current configuration is not shown in USGS StreamStats, however its upstream drainage area is assumed to be less than one square mile.

UNT 1 to Brouilletts Creek exhibited a narrow forested riparian corridor along its south bank and a wide forested riparian corridor with row-crop fields behind it along its north bank. Its substrate consisted of gravel and sand. Isolated pools, but no riffles, were observed. Based on these observations, UNT 1 to Brouilletts Creek was classified as a good-quality stream. This was supported by its HHEI score of 52 (pages 100 to 101).

UNT 1 to Brouilletts Creek has been channelized for agricultural drainage and now captures what is mapped as an intermittent stream (dashed blue line) on USGS 7.5-minute series topographic mapping (page 14). UNT 1 to Brouilletts Creek is a tributary to Brouilletts Creek, which is likely a water of the US. Based on this connectivity and the presence of an OHWM, this stream is likely a water of the US.

#### UNT 2 to Brouilletts Creek

UNT 2 to Brouilletts Creek begins north of the study area. It flows south through a row-crop field and forested riparian corridor before discharging into UNT 1 to Brouilletts Creek, approximately 55 feet north of SR 163 (page 27). UNT 2 to Brouilletts Creek exhibited a 2.3-foot wide and 5-inch deep OHWM within the study area. Approximately 183 linear feet of UNT 2 to Brouilletts Creek lies within the study area. Because this stream is not shown in USGS StreamStats, its upstream drainage area is assumed to be less than one square mile.

UNT 2 to Brouilletts Creek exhibited a moderately wide forested riparian corridor along its banks within the study area. Its substrate consisted of sand and silt. No pools or riffles were observed. Based on these observations, UNT 2 to Brouilletts Creek was classified as a poor-quality stream. This was supported by its HHEI score of 31 (pages 102 to 103).

UNT 2 to Brouilletts Creek is not shown as a stream on USGS 7.5-minute series topographic mapping (page 14). Based on field observations, this stream is likely ephemeral in nature. UNT 2 to Brouilletts Creek is a tributary to UNT 1 Brouilletts Creek, which is likely a water of the US. Based on this connectivity and the presence of an OHWM, this stream is likely a water of the US.

#### UNT 3 to Brouilletts Creek

UNT 3 to Brouilletts Creek begins north of the study area and flows south alongside CR 170 West. It discharges into UNT 1 to Brouilletts Creek near the intersection of CR 170 West and SR 163 (page 27). UNT 3 to Brouilletts Creek exhibited a 6.6-foot wide and 5-inch deep OHWM within the study area. Approximately 510 linear feet of UNT 3 to Brouilletts Creek lies

within the study area. Because this stream is not shown in USGS StreamStats, its upstream drainage area is assumed to be less than one square mile.

UNT 3 to Brouilletts Creek exhibited a narrow forested riparian corridor along its east bank and a moderately wide forested riparian corridor with row-crop fields behind it along its west bank. Its substrate consisted of gravel, sand, and silt. No pools or riffles were observed, and the channel had no sinuosity. Based on these observations, UNT 3 to Brouilletts Creek was classified as a poor-quality stream. This was supported by its HHEI score of 37 (page 104 to 105).

UNT 3 to Brouilletts Creek has been channelized for agricultural drainage and now captures what is mapped as an intermittent stream on USGS 7.5-minute series topographic mapping (page 14). UNT 3 to Brouilletts Creek is a tributary to UNT 1 to Brouilletts Creek, which is likely a water of the US. Based on this connectivity and the presence of an OHWM, this stream is likely a water of the US.

#### UNT 4 to Brouilletts Creek

UNT 4 to Brouilletts Creek begins within the study area at the end of a concrete-lined roadside ditch on the north side of SR 163. No OHWM was observed within the concrete-lined ditch. UNT 4 to Brouilletts Creek flows northwest before discharging into UNT 1 to Brouilletts Creek on the east side of CR 170 West (page 28). UNT 4 to Brouilletts Creek exhibited a 4-foot wide and 3-inch deep OHWM within the study area. Approximately 241 linear feet of UNT 4 to Brouilletts Creek lies within the study area. Because this stream is not shown in USGS StreamStats, its upstream drainage area is assumed to be less than one square mile.

UNT 4 to Brouilletts Creek exhibited a wide forested riparian corridor along both of its banks. Its substrate consisted of gravel, sand, and silt. No pools or riffles were observed. Based on these observations, UNT 4 to Brouilletts Creek was classified as a poor-quality stream. This was supported by its HHEI score of 32 (pages 106 to 107).

UNT 4 to Brouilletts Creek is not shown as a stream on USGS 7.5-minute series topographic mapping (page 14). Based on field observations, this stream is likely ephemeral in nature. UNT 4 to Brouilletts Creek is a tributary to UNT 1 Brouilletts Creek, which is likely a water of the US. Based on this connectivity and the presence of an OHWM, this stream is likely a water of the US.

#### UNT 5 to Brouilletts Creek

UNT 5 to Brouilletts Creek begins northeast of the study area. It flows south under SR 163 approximately 700 feet east of CR 170 West before turning west. UNT 5 then crosses under a private drive before emptying into the floodplain of Brouilletts Creek outside of the study area (page 28). UNT 5 to Brouilletts Creek exhibited a 2-foot wide and 3-inch deep OHWM within the study area. Approximately 757 linear feet of UNT 5 to Brouilletts Creek lies within the study area. Because this stream is not shown in USGS StreamStats, its upstream drainage area is assumed to be less than one square mile.

UNT 5 to Brouilletts Creek exhibited a wide forested riparian corridor along its south bank and a moderately wide riparian corridor along its north bank. Its substrate consisted of gravel, sand and silt. No pools or riffles were observed. Based on these observations, UNT 5 to Brouilletts Creek was classified as a poor-quality stream. This was supported by its HHEI score of 27 (pages 108 to 109).

UNT 5 to Brouilletts Creek is not shown as a stream on USGS 7.5-minute series topographic mapping (page 14). Based on field observations, this stream is likely ephemeral in nature. UNT 5 to Brouilletts Creek is connected to Brouilletts Creek, which is likely a water of the US. Based on this connectivity and the presence of an OHWM, this stream is likely a water of the US.

Table 2: Stream Summary Table

Name	Photo #	Latitude/ Longitude	OHWM Width (ft)	OHWM Depth (in)	Length (ft)	USGS Blue-Line (Y/N)	Riffles/ Pools (Y/N)	Typical Substrate	HHEI/ QHEI Scores	Quality *	Likely Water of the US (Y/N)
Brouilletts Creek	30, 32, 39-43, 46, 56-57, 80	39.665317/-87.4988	93	40	427	Y	Y/Y	Gravel, Sand, and Silt	61	Good	Y
UNT 1 to Brouilletts Creek	57-61, 78, 97-98	39.665625/-87.497551	7	11	733	Y**	N/Y	Gravel and Sand	52	Good	Y
UNT 2 to Brouilletts Creek	48-51	39.665819/-87.498471	2.3	5	183	N	N/N	Sand and Silt	31	Poor	Y
UNT 3 to Brouilletts Creek	60, 64-69	39.666374/-87.497291	6.6	5	510	Y**	N/N	Gravel, Sand, and Silt	37	Poor	Y
UNT 4 to Brouilletts Creek	98-101	39.665850/-87.496452	4	3	241	N	N/N	Gravel, Sand, and Silt	32	Poor	Y
UNT 5 to Brouilletts Creek	118-122, 126-141	39.665253/-87.495376	2	3	757	N	N/N	Gravel, Sand, and Silt	27	Poor	Y
<b>TOTAL</b>					<b>2,851</b>						

\*Quality was based on qualitative observations within and immediately adjacent to the study area.

\*\*Channelization and reconfiguration of an originally mapped USGS stream.

**Wetlands**

Sampling locations were determined by the presence or absence of hydrophytic vegetation and hydrology indicators. Three wetlands were identified within the study area totaling 0.170 acre (333 linear feet). All of these wetlands were forested and are likely waters of the US. A Wetland Summary Table (Table 3, page 8) and Wetland Data Point Summary Table (Table 4, page 8) summarize the data collected on these features.

Wetland 1

The area associated with Data Point 1 IN (DP-1-IN) was evaluated because it exhibited hydrophytic vegetation. DP-1-IN was taken on a lower terrace within Brouilletts Creek floodplain. The tree stratum was dominated by *Acer saccharinum* (silver maple, FACW, 40%) and *Acer negundo* (ash-leaf maple, FAC, 20%). The sapling/shrub stratum was dominated by *Ulmus americana* (American elm, FACW, 15) and *Acer negundo* (FAC, 5%). The herbaceous stratum was dominated by *Toxicodendron radicans* (eastern poison ivy, FAC, 40%). The woody vine stratum was dominated by *Toxicodendron radicans* (FAC, 3%) and *Parthenocissus quinquefolia* (Virginia-creeper, FACU, 3%). This point met the hydrophytic vegetation criterion because it passed the dominance test and prevalence index. The soil profile met the hydric soil criterion because it exhibited the Redox Dark Surface (F6) indicator. Two secondary indicators (Geomorphic Position [D2] and FAC-Neutral Test [D5]) of hydrology were observed. Since all three wetland criteria were met at DP-1-IN, this area was identified as Wetland 1.

Data Point 1 OUT (DP-1-OUT) was taken southwest of DP-1-IN. DP-1-OUT was taken on a second (higher) terrace of Brouilletts Creek floodplain, approximately 1-foot higher in elevation than DP-1-IN. The tree stratum was dominated by *Acer saccharinum* (silver maple, FACW, 30%) and *Acer negundo* (ash-leaf maple, FAC, 30%). The sapling/shrub stratum was dominated by *Acer saccharinum* (FACW, 5%) and *Morus rubra* (red mulberry, FACU, 5%). The herbaceous stratum was dominated by *Laportea canadensis* (Canadian wood-nettle, FACW, 8%) and *Ambrosia artemisiifolia* (annual ragweed, FACU,

8%). The woody vine stratum was present but not at sufficient coverage for any species to be considered dominant. This point met the hydrophytic vegetation criterion because it passed the dominance test. No hydric soil or hydrology indicators were observed. Since two of the three wetland criteria were not met at DP-1-OUT, this point was determined to be upland. This data point helped establish the boundary of Wetland 1, which was determined based on changes in vegetation and topography.

Wetland 1 is a forested wetland that is approximately 0.036 acre (60 linear feet) in size. It is located within the floodplain of Brouilletts Creek along its western bank, approximately 100 feet north of SR 163 (page 27). Wetland 1 is dominated by native species and exhibited a high species diversity. Because of this, it was classified as an average-quality wetland. Wetland 1 is adjacent to Brouilletts Creek, which is likely a water of the US. Based on this connectivity, Wetland 1 is likely a water of the US.

Wetland 2

The area associated with Data Point 2 IN (DP-2-IN) was evaluated because it exhibited hydrophytic vegetation. This location is a vegetated swale. The tree stratum was dominated by *Acer saccharinum* (silver maple, FACW, 40%). The sapling/shrub stratum was present but not at sufficient coverage for any species to be considered dominant. The herbaceous stratum was dominated by *Carex grayi* (Gray's sedge, FACW, 30%), *Boehmeria cylindrica* (small-spike false nettle, OBL, 20%), and *Symphotrichum lanceolatum* (American white paniced aster, FAC, 20%). This point met the hydrophytic vegetation criterion because it passed the rapid test, dominance test, and prevalence index. The soil profile met the hydric soil criterion because it exhibited the Redox Dark Surface (F6) indicator. One primary indicator (Oxidized Rhizospheres on Living Roots [C3]) and three secondary indicators (Surface Soil Cracks [B6], Geomorphic Position [D2] and FAC-Neutral Test [D5]) of hydrology were observed. Since all three wetland criteria were met at DP-2-IN, this area was identified as Wetland 2.

Data Point 2 OUT (DP-2-OUT) was taken upslope of DP-2-IN. This location is west of the wetland swale. The tree stratum was dominated by *Acer negundo* (ash-leaf maple, FAC, 15%) and *Celtis occidentalis* (common hackberry, FAC, 15%). The sapling/shrub stratum was present but not at sufficient coverage for any species to be considered dominant. The herbaceous stratum was dominated by *Boehmeria cylindrica* (small-spike false nettle, OBL, 50%) and *Rudbeckia laciniata* (green-head coneflower, FACW, 20%). This point met the hydrophytic vegetation criterion because it passed the dominance test. No hydric soil or hydrology indicators were observed. Since the two of the three wetland criteria were not met at DP-2-OUT, this point was determined to be upland. This data point helped establish the boundary of Wetland 2, which was determined based on changes in topography.

Wetland 2 is a forested wetland that is approximately 0.075 acre (135 linear feet) in size. It is located within the floodplain of Brouilletts Creek, approximately 40 feet south of SR 163 (page 27). Wetland 2 is dominated by native species, but had low species diversity. Because of this, it was classified as an average-quality wetland. Brouilletts Creek is likely a water of the US. Based on this connectivity, Wetland 2 is likely a water of the US.

Wetland 3

The area associated with Data Point 3 IN (DP-3-IN) was evaluated because it exhibited hydrophytic vegetation. This location is in a depression by a new drive. The tree stratum was dominated by *Acer saccharinum* (silver maple, FACW, 50%). The sapling/shrub stratum was dominated by *Fraxinus pennsylvanica* (green ash, FACW, 10%). The herbaceous stratum was dominated by *Packera glabella* (cress-leaf groundsel, FACW, 30%). This point met the hydrophytic vegetation criterion because it passed the rapid test, dominance test, and prevalence index. The soil profile met the hydric soil criterion because it exhibited the Redox Dark Surface (F6) indicator. Two primary indicators (Drift Deposits [B3] and Oxidized Rhizospheres on Living Roots [C3]) and three secondary indicators (Surface Soil Cracks [B6], Geomorphic Position [D2], and FAC-Neutral Test [D5]) of hydrology were observed. Since all three wetland criteria were met at DP-3-IN, this area was identified as Wetland 3.

Data Point 3 OUT (DP-3-OUT) was taken upslope and northeast of DP-3-IN. The tree stratum was dominated by *Acer saccharum* (sugar maple, FACU, 20%), *Celtis occidentalis* (common hackberry, FAC, 15%), *Ulmus americana* (American elm, FACW, 15%), and *Populus deltoides* (eastern cottonwood, FAC, 15%). The sapling/shrub stratum was dominated by



*Acer saccharum* (FACU, 15%). The herbaceous stratum was dominated by *Asarum canadense* (Canadian wild-ginger, FACU, 20%), *Toxicodendron radicans* (eastern poison ivy, FAC, 15%), and *Smilax rotundifolia* (horsebrier, FAC, 10%). This point met the hydrophytic vegetation criterion because it passed the dominance test. No hydric soil indicators were observed. The Problematic Hydric Soil indicator was considered but dismissed as it did not contain fluvial deposits. Furthermore, unlike DP-3-IN, it did not contain any redox features. One primary hydrology indicator (Drift Deposits [B3]) and one secondary hydrology indicator (Geomorphic position [D2]) were observed. Since the hydric soil criterion was not met at DP-3-OUT, this point was determined to be upland. This data point helped establish the boundary of Wetland 3, which was determined based on changes in vegetation and topography.

Wetland 3 is a forested wetland that is approximately 0.069 acre (138 linear feet) in size. It is located along the western portion of UNT 5 to Brouilletts Creek, approximately 40 feet south of SR 163 (page 28). Wetland 3 is dominated by native species and exhibited good species diversity. Because of this, it was classified as an average-quality wetland. UNT 5 to Brouilletts Creek is likely a water of the US. Based on this connectivity, Wetland 3 is likely a water of the US.

Table 3: Wetland Summary Table

Name	Photograph Number	Latitude/Longitude	Wetland Type (Palustrine)	Area (acre)	Length (linear feet)	Quality	Likely Water of the US (Y/N)	Isolated (Y/N) and Class I, II or III	Likely Exempt Isolated Wetland (Y/N)
Wetland 1	19-23	39.6657/-87.49946	Forested	0.036	60	Average	Y	N	N
Wetland 2	89-93	39.66520/-87.49731	Forested	0.075	135	Average	Y	N	N
Wetland 3	121-122, 128, 130-131	39.66521/-87.49600	Forested	0.069	138	Average	Y	N	N
<b>Total</b>				<b>0.180</b>	<b>333</b>				

\*Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979)

**Non-Jurisdictional Features**

Additional Data Points

Several additional data points were investigated throughout the study area due to the presence of hydrophytic vegetation. The sample area surrounding these data points was further investigated to confirm or deny the presence of hydrophytic soils and wetland hydrology. A summary of each data point is provided below.

Upland Data Point 1 (UPL-1) was taken in a roadside ditch on south side of SR 163 and east of overhead electric transmission lines. This area was evaluated because it exhibited hydrophytic vegetation. UPL-1 was dominated by *Celtis occidentalis* (common hackberry, FAC, 25%) and *Populus deltoides* (eastern cottonwood, FAC, 20%) in the tree stratum. The sapling shrub stratum was dominated by *Cornus racemosa* (gray dogwood, FAC, 5%) and *Celtis occidentalis* (FAC, 2%). The herbaceous stratum was dominated by *Elymus virginicus* (Virginia wild rye, FACW, 60%) and *Symphotrichum lanceolatum* (white paniced American-aster, FAC, 20%). This point met the hydrophytic vegetation criterion because it passed the dominance test. No hydric soil indicators were observed. Only one secondary indicator (Geomorphic Position [D2]) of hydrology was observed at UPL-1. Since only one of the three wetland criteria was met at UPL-1, this area was determined to be upland (page 26).

Upland Data Point 2 (UPL-2) was taken in an area of Brouilletts Creek’s floodplain that was dominated by hydrophytic vegetation. UPL-2 was dominated by *Acer saccharinum* (silver maple, FACW, 60%) in the tree stratum. The herbaceous stratum was dominated by *Solidago gigantea* (late goldenrod, 30, FACW), *Toxicodendron radicans* (eastern poison ivy, FAC, 20%), and *Packeria aurea* (golden groundsel, FACW, 20%). The woody vine stratum was present but not at sufficient coverage for any species to be considered dominant. This point met the hydrophytic vegetation criterion because it passed

the dominance test. No hydric soil indicators were observed. Only one secondary hydrology indicator (FAC-Neutral Test [D5]) was observed. Since only one of the three wetland criteria were met at UPL-2, this area was determined to be upland (page 27).

Upland Data Point 3 (UPL-3) was taken near the confluence of Brouilletts Creek and UNT 1 to Brouilletts Creek. This area was evaluated because it exhibited hydrophytic vegetation. UPL-3 was dominated by *Acer saccharinum* (silver maple, FACW, 15%), *Populus deltoides* (eastern cottonwood, FAC, 15%), and *Juglans nigra* (black walnut, FACU, 5%) in the tree stratum. The sapling/shrub stratum was dominated by *Acer negundo* (ash-leaf maple, FAC, 10%) and *Acer saccharinum* (FACW, 5%). The herbaceous stratum was dominated by *Phalaris arundinacea* (reed canary grass, FACW, 40%) and *Helianthus tuberosus* (Jerusalem-artichoke, FACU, 20%). The woody vine stratum was present but not at sufficient coverage for any species to be considered dominant. This point met the hydrophytic vegetation criterion because it passed the dominance test. No hydric soil indicators were observed. The Problematic Hydric Soil indicator was considered but dismissed as it did not contain fluvial deposits or redox features. One primary hydrology indicator (Drift Deposits [B3]) and two secondary Indicators (Geomorphic position [D2] and FAC-Neutral Test [D5]) were observed. Since only two of the three wetland criteria were met at UPL-3, this area was determined to be upland (page 27).

Upland Data Point 4 (UPL-4) was taken in a swale east of UNT 2 to Brouilletts Creek. This area was evaluated because it exhibited hydrophytic vegetation. UPL 4 was dominated by *Acer saccharinum* (silver maple, FACW, 3%) in the tree stratum. The herbaceous stratum was dominated by *Leersia oryzoides* (rice cut grass, OBL, 20%), *Ambrosia trifida* (great ragweed, FAC, 20%), *Phalaris arundinacea* (reed canary grass, FACW, 10%), *Solidago gigantea* (late goldenrod, FACW, 10%), and *Boehmeria cylindrica* (small-spike false nettle, OBL, 10%). This point met the hydrophytic vegetation criterion because it passed the dominance test. No hydric soil indicators were observed. Only one secondary indicator (FAC-Neutral Test [D5]) was observed. Since only one of the three wetland criteria were met at UPL-4, this area was determined to be upland (page 27).

Upland Data Point 5 (UPL-5) was taken east of CR 170 W and north of UNT 1 to Brouilletts Creek. This area was evaluated because it exhibited hydrophytic vegetation. UPL-5 was dominated by *Maclura pomifera* (Osage-orange, FACU, 35%), *Ulmus americana* (American elm, FACW, 15%), *Acer negundo* (ash-leaf maple, FAC, 15%), and *Platanus occidentalis* (American sycamore, FACW, 15%) in the tree stratum. The sapling/shrub stratum was dominated by *Carya cordiformis* (bitter-nut hickory, FACU, 7%), *Acer negundo* (FAC, 5%), and *Ulmus americana* (FACW, 5%). The herbaceous stratum was dominated by *Laportea canadensis* (Canadian wood-nettle, FACW, 40%). The woody vine stratum was dominated by *Toxicodendron radicans* (eastern poison ivy, FAC, 3%) and *Parthenocissus quinquefolia* (Virginia-creeper, FACU, 3%). This point met the hydrophytic vegetation criterion because it passed the dominance test. No hydric soil indicators were observed. Only one secondary indicator (FAC-Neutral Test [D5]) was observed. Since only one of the three wetland criteria were met at UPL-5, this area was determined to be upland (page 27).

Upland Data Point 6 (UPL-6) was taken in Brouilletts Creek’s floodplain in a harvested cornfield adjacent to the creek’s forested riparian corridor. This area was evaluated because the adjacent forested riparian corridor exhibited hydrophytic vegetation. UPL-6 was dominated by *Gleditsia triacanthos* (honey-locust, FACU, 2%), *Acer saccharinum* (silver maple, FACW, 2%), and *Fraxinus pennsylvanica* (green ash, FACW, 2%) in the tree stratum. The herbaceous stratum was dominated by *Zea mays* (corn, UPL, 84%). This point did not meet any hydrophytic vegetation, hydric soil, or wetland hydrology indicators. Since none of the three wetland criteria were met at UPL-6, this area was determined to be upland (page 27).

Upland Data Point 7 (UPL-7) was taken on a lower terrace of the floodplain of Brouilletts Creek that was dominated by hydrophytic vegetation. UPL-7 was dominated by *Populus deltoides* (eastern cottonwood, FAC, 20%) and *Celtis occidentalis* (common hackberry, FAC, 20%) in the tree stratum. The sapling/shrub stratum was dominated by *Celtis occidentalis* (FAC, 5%), *Acer negundo* (ash-leaf maple, FAC, 2%), *Fraxinus pennsylvanica* (green ash, FACW, 2%), and *Cornus racemosa* (gray dogwood, FAC, 2%). The herbaceous stratum was dominated by *Toxicodendron radicans* (eastern poison ivy, FAC, 20%), *Smilax rotundifolia* (horsebrier, FACU, 20%), *Symphotrichum lanceolatum* (American white paniced aster, FAC, 10%), *Solidago altissima* (tall goldenrod, FACU, 10%) and *Carex lurida* (shallow sedge, OBL, 10%). This point met the hydrophytic vegetation criterion because it passed the dominance test. No hydric soil indicators were observed. Only one secondary

hydrology indicator (FAC-Neutral Test [D5]) was observed. Since only one of the three wetland criteria were met at UPL-7, this area was determined to be upland (page 27).

Upland Data Point 8 (UPL-8) was taken in Brouilletts Creek’s floodplain in an area that was dominated by hydrophytic vegetation. UPL-8 was dominated by *Acer negundo* (ash-leaf maple, FAC, 30%) and *Juglans nigra* (black walnut, FACU, 30%) in the tree stratum. The sapling/shrub stratum was dominated by *Lonicera maackii* (Amur honeysuckle, UPL, 5%) and *Asimina triloba* (common paw paw, FAC, 5%). The herbaceous stratum was dominated by *Laportea canadensis* (Canadian wood-nettle, FACW, 40%). This point met the hydrophytic vegetation criterion because it passed the dominance test. No hydric soil indicators were observed. The Problematic Hydric Soil indicator was considered but dismissed as it did not contain fluvial deposits. Furthermore, the lower horizon had higher chroma than the upper horizon. One primary hydrology indicator (Drift Deposits [B3]) was observed. Since two of the three wetland criteria were not met at UPL-8, this area was determined to be upland (page 27).

Upland Data Point 9 (UPL-9) was taken east of CR 170 W and north of SR 163. This area was evaluated because it exhibited hydrophytic vegetation. UPL-9 was dominated by *Acer saccharum* (sugar maple, FACU, 25%), *Ulmus americana* (American elm, FACW, 20%), and *Juglans nigra* (black walnut, FACU, 20%) in the tree stratum. The sapling/shrub stratum was dominated by *Acer saccharum* (FACU, 5%) and *Acer negundo* (ash-leaf maple, FAC, 5%). The herbaceous stratum was dominated by *Laportea canadensis* (Canadian wood-nettle, FACW, 60%) and *Asarum canadense* (Canadian wild ginger, FACU, 20%). No hydrophytic vegetation, hydric soil, or wetland hydrology indicators were observed. Since none of the three wetland criteria were met at UPL-9, this area was determined to be upland (page 28).

Table 4: Data Point Summary Table

Data Point Name	Page Number	Hydrophytic Vegetation (Y/N)	Hydric Soils (Y/N)	Wetland Hydrology (Y/N)	Wetland (Y/N)
DP-1-IN	68-69	Y	Y	Y	Y
DP-1-OUT	70-71	Y	N	N	N
DP-2-IN	72-73	Y	Y	Y	Y
DP-2-OUT	74-75	Y	N	N	N
DP-3-IN	76-77	Y	Y	Y	Y
DP-3-OUT	78-79	Y	N	Y	N
UPL-1	80-81	Y	N	N	N
UPL-2	82-83	Y	N	N	N
UPL-3	84-85	Y	N	Y	N
UPL-4	86-87	Y	N	N	N
UPL-5	88-89	Y	N	N	N
UPL-6	90-91	N	N	N	N
UPL-7	92-93	Y	N	N	N
UPL-8	94-95	Y	N	Y	N
UPL-9	96-97	N	N	N	N

Drainage Features

Seven roadside ditches (RSD) totaling approximately 5,105 linear feet within the study area were investigated for potential water resources. Some contained wetlands and streams and were discussed earlier in this report. The remaining RSDs lacked an OHWM and wetland characteristics. Therefore, they were considered to be non-jurisdictional features. RSD 1 is located in the northwest quadrant, west of Brouilletts Creek, and runs for approximately 870 linear feet. RSD 2 is located in the southwest quadrant, west of Brouilletts Creek, and runs for approximately 950 linear feet. RSD 3 is located north of SR 163 between Brouilletts Creek and CR 170 West, and runs for approximately 450 linear feet. RSD 4 is located west of CR 170 West in the study area and runs for approximately 500 linear feet. RSD 5 is located east of CR 170 West and runs for approximately 525 linear feet. RSD 6 is located in the northeast quadrant, north of SR 163 and east of CR 170 West, and runs for approximately 680 linear feet. RSD 7 is located in the southeast quadrant, south of SR 163 and east of Brouilletts Creek, and runs for approximately 1,130 linear feet.

Three erosional features (EF-1 through EF-3, Photos 25 and 107-109) were identified and mapped within the study area during the field investigations. All of these were reviewed for consideration as streams. They all lacked an OHWM and other stream characteristics.

**IV: Conclusions**

Based on field investigations, the study area has features that are likely waters of the US. Six likely jurisdictional streams totaling 2,581 linear feet were identified within the study area. Three wetlands were identified within the study area totaling 0.180 acre (333 linear feet). All of these wetlands were forested and are likely waters of the US. No other likely waters of the US or waters of the State were identified within the study area.

All jurisdictional waters of the US are under the regulatory authority of USACE under Section 404 of the Clean Water Act. Every effort should be taken to avoid and minimize impacts to the resources outlined in this report. If impacts are necessary, then mitigation may be required. Impacts must be minimized before mitigation can be considered. The INDOT Environmental Services Division should be contacted immediately if impacts will occur. The final determination of jurisdictional waters is ultimately made by USACE and IDEM. This report is our best judgement based on the guidelines set forth by USACE.

A pre-jurisdictional determination form is attached to the end of this report (pages 110 to 113).

**V. References**

Cowardin, L.M, V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. US Department of the Interior, Fish and Wildlife Service, Washington DC.

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. *The National Wetland Plant List: 2016 Wetland Ratings*. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X

Ohio EPA. 2012. *Field Evaluation Manual for Ohio’s Primary Headwater Habitat Streams*. State of Ohio Environmental Protection Agency, Division of Surface Water.

Ohio EPA. 2006. *Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI)*. State of Ohio Environmental Protection Agency, Division of Surface Water.

United States Fish and Wildlife Service. 2019. *National Wetlands Inventory. Wetlands Mapper*. <https://www.fws.gov/wetlands/Data/Mapper.html>

United States Army Corps of Engineers. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)*. US Army Engineer Research and Development Center, Washington DC.

United States Army Corps of Engineers. 1987. *Corps of Engineers Wetland Delineation Manual. Wetlands Research Program Technical Report Y-87-1*.

United States Department of Agriculture, Soil Conservation Service. 1978. *Soil Survey of Vermillion County, Indiana*.

United States Department of Interior, U.S. Geological Survey. 2019. *StreamStats Version 4.3.0: Indiana*. <https://streamstats.usgs.gov/ss/>

**VI. Acknowledgements**

This report has been prepared based on the best available information, interpreted in the light of the investigator’s training, experience, and professional judgement in conformance with the 1987 Corps of Engineers Wetlands Delineation Manual, the appropriate regional supplement, the USACE Jurisdictional Determination Form Instructional Guidebook, and other appropriate agency guidelines.



Tom Plattner  
Senior Environmental Planner  
Parsons

**Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM**

**BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR PJD:** November 22, 2019

**B. NAME AND ADDRESS OF PERSON REQUESTING PJD:** Tom Plattner (Parsons)  
101 West Ohio Street, Suite 2121, Indianapolis, IN 46204

**C. DISTRICT OFFICE, FILE NAME, AND NUMBER:**

**D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:**

INDOT proposes a bridge replacement on SR 163 over Brouilletts Creek. The 175-foot single-span steel truss bridge on vertical abutments was constructed in 1932 (upgraded in 1979). The 2018 Bridge Inspection Report, found the substructure in poor condition with cracking wingwalls and advanced spalling. Superstructure was in fair condition with rusted members, section loss, and bent bracing. Major stream bank damage and erosion were noted. SR 163 has two 12-ft. lanes with 2-ft. shoulders. The project will replace the existing structure with a 3-span prestressed concrete bulb-tee beam bridge, 275 ft. long and 36.3 ft. wide, and existing profile will be raised. An UNT to Brouilletts Creek will be partially realigned, and a concrete box culvert beneath CR 170 W will be replaced. Riprap scour protection and drainage turnouts will be added. Less than 1 ac. of ROW will be acquired.

**(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)**

State: **IN** County/parish/borough: **Vermillion** City: **Blanford**

Center coordinates of site (lat/long in degree decimal format):

Lat.: **39.665659 N** Long.: **87.498271 W**

Universal Transverse Mercator: **NAD 1983 45 S, 542739.07 E, 4390768.34 N**

Name of nearest waterbody: **Brouilletts Creek**

**E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

Office (Desk) Determination. Date:

Field Determination. Date(s):

**TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION.**

Site Number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
Brouilletts Creek	39.665317	-87.4988	0.813 ac. (427 l.f.)	Non-wetland	Section 404
UNT 1 to Brouilletts Creek	39.665625	-87.497551	0.118 ac. (733 l.f.)	Non-wetland	Section 404
UNT 2 to Brouilletts Creek	39.665819	-87.498471	0.010 ac. (183 l.f.)	Non-wetland	Section 404
UNT 3 to Brouilletts Creek	39.666374	-87.497291	0.077 ac. (510 l.f.)	Non-wetland	Section 404
UNT 4 to Brouilletts Creek	39.66585	-87.496452	0.022 ac. (241 l.f.)	Non-wetland	Section 404
UNT 5 to Brouilletts Creek	39.665253	-87.495376	0.035 ac. (757 l.f.)	Non-wetland	Section 404
Wetland 1	39.6657	-87.49946	0.036 ac. (60 l.f.)	Wetland	Section 404
Wetland 2	39.665208	-87.497319	0.075 ac. (135 l.f.)	Wetland	Section 404
Wetland 3	39.665215	-87.496007	0.069 ac. (138 l.f.)	Wetland	Section 404

- 1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.
- 2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there "*may be*" waters of the U.S. and/or that there "*may be*" navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:



**SUPPORTING DATA. Data reviewed for PJD (check all that apply)**

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

- Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:  
Map: All attached mapping prepared by Parsons.
- Data sheets prepared/submitted by or on behalf of the PJD requestor.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report. Rationale: \_\_\_\_\_.
- Data sheets prepared by the Corps: \_\_\_\_\_.
- Corps navigable waters' study: \_\_\_\_\_.
- U.S. Geological Survey Hydrologic Atlas: National Map & GIS database
  - USGS NHD data.
  - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: Saint Bernice & Clinton Quadrangles.
- Natural Resources Conservation Service Soil Survey. Citation: Vermillion County, 1978.
- National wetlands inventory map(s). Cite name: USFWS NWI GIS Database.
- State/local wetland inventory map(s): \_\_\_\_\_.
- FEMA/FIRM maps: GIS database.
- 100-year Floodplain Elevation is: \_\_\_\_\_.(National Geodetic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): Orthos 2012  
or  Other (Name & Date): Site photographs October 22 & 25, 2019
- Previous determination(s). File no. and date of response letter: \_\_\_\_\_.
- Other information (please specify): \_\_\_\_\_.

**IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.**

\_\_\_\_\_  
Signature and date of  
Regulatory staff member  
completing PJD

Tom Plattner 11-22-2019  
\_\_\_\_\_  
Signature and date of  
person requesting PJD  
(REQUIRED, unless obtaining  
the signature is impracticable)<sup>1</sup>

<sup>1</sup> Districts may establish timeframes for requestor to return signed PJD forms. If the requestor does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

# Appendix G

## Public Involvement

Example NOE letter sent to land owners.

RE: Des. No. 1701589  
SR 163 Bridge Replacement over Brouillettes Creek  
Vermillion County, Indiana

**Notice of Entry for Survey or Investigations**

May 10, 2018

Dear Property Owner,

Our information indicates that you own property near the above proposed transportation project. Representatives of the Indiana Department of Transportation will be conducting engineering and/or environmental surveys of the project area in the near future. It may be necessary for the INDOT Representatives to enter onto your property to complete this work. This is permitted by Indiana Code § 8-23-7-26. Anyone performing this type of work has been instructed to identify him or herself to you, if you are available, before they enter your property. If you no longer own this property or it is currently occupied by someone else (i.e. rental, sharecrop), please let us know the name of the new owner or occupant so that we can contact them about the survey.

**Please read the attached notice to inform you of what the “Notice of Entry for Survey or Investigation” means.** The design and environmental surveys are needed for the proper planning and design of this highway project. Engineering survey work would include mapping the location of features such as trees, buildings, fences, drives, ground elevations, etc. Environmental survey work may include the identification and mapping of wetlands, architectural surveys, archaeological investigations (which may involve the survey, testing, or excavation of identified archaeological sites), and various other environmental studies. It is our sincere desire to cause you as little inconvenience as possible during this survey.

At this stage we generally do not know what effect, if any, our project may eventually have on your property. If we determine later that your property is involved, we will contact you with additional information.

If any problems occur, please contact the field crew or one of the following:

Matt Kohut, PE  
Bridge Project Manager  
101 West Ohio Street, Suite 2121  
Indianapolis, IN 46204  
(317) 616-1003  
[matthew.kohut@parsons.com](mailto:matthew.kohut@parsons.com)

Daniel J. Miller  
Principal Environmental Planner  
101 West Ohio Street, Suite 2121  
Indianapolis, IN 46204  
(317) 616-4663  
[daniel.j.miller@parsons.com](mailto:daniel.j.miller@parsons.com)

Harry S. Nikides  
ASC Group, Inc.  
9376 Castlegate Drive  
Indianapolis, IN 46256  
(317) 915-9300 x100

Please be aware that IC 8-23-7-27 and 28 provides that you may seek compensation from INDOT for damages occurring to your property (land or water) that result from INDOT’s entry for the purposes mentioned above in IC 8-23-7-26. In this case, a basic procedure that may be followed is for you and/or an INDOT employee or representative to present an account of the damages to one of the above named INDOT staff. They will check the information and forward it to the appropriate person at INDOT who will contact you to discuss the situation and compensation.

In the event that property damage occurs as a result of work performed during survey, the Crawfordsville District Right of Way Manager can provide you with a form to request compensation for damages. You may contact:

Bert Herron  
Crawfordsville District Right of Way Manager  
41 W 300 N  
Crawfordsville, IN 47933  
756-361-5243  
[bherron@indot.in.gov](mailto:bherron@indot.in.gov)

After filling out the form, you can return it to the District Right of Way Manager for consideration. Please contact the District Right of Way Manager if you have questions regarding the matter, rights, and procedures.

If you are not satisfied with the compensation that INDOT determines is owed to you, Indiana Code 8-23-7-8 provides the following:

The amount of damages shall be assessed by the county agricultural extension educator of the county in which the land or water is located and two (2) disinterested residents of the county, one (1) appointed by the aggrieved party and one (1) appointed by the department. A written report of the assessment of damages shall be mailed to the aggrieved party and the department by first class United States mail. If either the department or the aggrieved party is not satisfied with the assessment of damages, either or both may file a petition, not later than fifteen (15) days after receiving the report, in the circuit or superior court of the county in which the land or water is located.

Thank you in advance for your cooperation in this matter.

Sincerely,



Daniel J. Miller  
Parsons, Principal Environmental Planner  
101 W. Ohio St., Suite 2121  
Indianapolis, IN 46204  
[daniel.j.miller@parsons.com](mailto:daniel.j.miller@parsons.com)

Attachment

Example NOE letter sent to land owners.

RE: Des. No. 1701589  
SR 163 Bridge Replacement over Brouillettes Creek  
Vermillion County, Indiana

**Notice of Entry for Survey or Investigations**

October 8, 2019

Dear Property Owner,

Our information indicates that you own property near the above proposed transportation project. Additional environmental surveys of the project area are required. It may be necessary for the INDOT Representatives to enter onto your property to complete this work. This is permitted by Indiana Code § 8-23-7-26. Anyone performing this type of work has been instructed to identify him or herself to you, if you are available, before they enter your property. If you no longer own this property or it is currently occupied by someone else (i.e. rental, sharecrop), please let us know the name of the new owner or occupant so that we can contact them about the survey.

**Please read the attached notice to inform you of what the “Notice of Entry for Survey or Investigation” means.** The design and environmental surveys are needed for the proper planning and design of this highway project. Engineering survey work would include mapping the location of features such as trees, buildings, fences, drives, ground elevations, etc. Environmental survey work may include the identification and mapping of wetlands, architectural surveys, archaeological investigations (which may involve the survey, testing, or excavation of identified archaeological sites), and various other environmental studies. It is our sincere desire to cause you as little inconvenience as possible during this survey.

At this stage we generally do not know what effect, if any, our project may eventually have on your property. If we determine later that your property is involved, we will contact you with additional information.

If any problems occur, please contact the field crew or one of the following:

Matt Kohut, PE  
Bridge Project Manager  
101 West Ohio Street, Suite 2121  
Indianapolis, IN 46204  
(317) 616-1003  
[matthew.kohut@parsons.com](mailto:matthew.kohut@parsons.com)

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Harry S. Nikides  
ASC Group, Inc.  
9376 Castlegate Drive  
Indianapolis, IN 46256  
(317) 915-9300 x100

Please be aware that IC 8-23-7-27 and 28 provides that you may seek compensation from INDOT for damages occurring to your property (land or water) that result from INDOT’s entry for the purposes mentioned above in IC 8-23-7-26. In this case, a basic procedure that may be followed is for you and/or an INDOT employee or representative to present an account of the damages to one of the above named INDOT staff. They will check the information and forward it to the appropriate person at INDOT who will contact you to discuss the situation and compensation.

In the event that property damage occurs as a result of work performed during survey, the Crawfordsville District Right of Way Manager can provide you with a form to request compensation for damages. You may contact:

Bert Herron  
Crawfordsville District Right of Way Manager  
41 W 300 N  
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756-361-5243  
[bherron@indot.in.gov](mailto:bherron@indot.in.gov)

After filling out the form, you can return it to the District Right of Way Manager for consideration. Please contact the District Right of Way Manager if you have questions regarding the matter, rights, and procedures.

If you are not satisfied with the compensation that INDOT determines is owed to you, Indiana Code 8-23-7-8 provides the following:

The amount of damages shall be assessed by the county agricultural extension educator of the county in which the land or water is located and two (2) disinterested residents of the county, one (1) appointed by the aggrieved party and one (1) appointed by the department. A written report of the assessment of damages shall be mailed to the aggrieved party and the department by first class United States mail. If either the department or the aggrieved party is not satisfied with the assessment of damages, either or both may file a petition, not later than fifteen (15) days after receiving the report, in the circuit or superior court of the county in which the land or water is located.

Thank you in advance for your cooperation in this matter.

Sincerely,



Daniel J. Miller  
Parsons, Principal Environmental Planner  
101 W. Ohio St., Suite 2121  
Indianapolis, IN 46204  
[daniel.j.miller@parsons.com](mailto:daniel.j.miller@parsons.com)

Attachment

# Public Involvement Plan



## SR 163 over Brouilletts Creek Bridge Project

Vermillion County | Des. No. 1701589

January 6, 2022



Des. 1701589



Appendix G

Appendix G-5

## Introduction

This Public Involvement Plan has been developed for the proposed bridge project on SR 163 over Brouilletts Creek in Vermillion County, Des. No. 1701589, by the consulting firm Parsons Transportation Group (“Parsons”), on behalf of the Indiana Department of Transportation (INDOT). The purpose of this plan is to establish the goals and strategies for engaging with the public and key stakeholders in accordance with the current INDOT *Project Development Public Involvement Procedures Manual*. Successful public involvement establishes communication between the public and INDOT in order to integrate the views, community concerns, transportation needs, and environmental considerations of the public into the transportation decision-making process.

## Project Description

The need for the project is due to the deteriorating condition and non-standard lane and shoulder widths of the existing structure, INDOT Structure 163-83-01393 A (National Bridge Inventory [NBI] No. 28420). This 175-foot single-span steel truss bridge on vertical abutments was originally constructed in 1932 and rehabilitated in 1979. Recent inspections have found the bridge substructure to be in poor condition (INDOT SI&A rating 4 out of 9) with cracking wingwalls and advanced spalling. The superstructure was noted to be in fair condition (INDOT SI&A rating 5 out of 9) with rusted members, section loss, and a bent bracing. Additionally, major damage to and erosion of the stream bank were noted.

The bridge was originally designed with an H20 structural capacity (20-ton truck). Based on the INDOT design standards, as a 2-lane rural collector on the state highway system, the bridge should accommodate an HS15 design vehicle (27 tons). The existing bridge does not meet current design standards for lane width or shoulder width. The existing bridge provides two 11-foot lanes with 1-foot shoulders, for a total clear roadway width of 24 feet. INDOT design criteria for 2-lane rural collector roadways that are on the state highway system indicate a minimum 2-foot shoulder is required and based on the approach roadway width (24 feet), the minimum clear roadway width required for two lanes of traffic is 28 feet. These geometric deficiencies have led to numerous collisions, resulting in damage to the bridge’s railing and end post.

The purpose of the project is to:

- Extend the life of the structure by a minimum of 30 years,
- Provide a minimum HS-15 load rating, and
- Improve the clear roadway width of the bridge to improve safety and protect the bridge.

This section of SR 163 has two 12-foot travel lanes, one in each direction, with 2-foot shoulders. SR 163 is oriented generally east-west and Brouilletts Creek flows from the northwest to the southeast through the study area. The project is located along a rural section of SR 163. Spangler Cemetery is located southeast of the project area. Land adjacent to the bridge consists of maintained right-of-way, trees, and row crop fields.

INDOT currently plans to rehabilitate the bridge for continued vehicular use, but would reduce the roadway to a single lane, using a signal at either end to maintain bi-directional travel, which is detailed in the draft Historic Bridge Alternatives Analysis (HBAA) report, which was distributed to consulting parties on November 1, 2021. The project is located in a rural area, between the communities of Blanton and Centenary.

Due to its historic significance and “select” status, special care and consideration will be taken during the rehabilitation process. According to the Historic Bridges Programmatic Agreement, “select” bridges are historic bridges that are most suitable for preservation and are excellent examples of a given type of historic bridge. During the Section 106 consultation process for the bridge rehabilitation project, a *Historic Properties Short Report* (HPSR; Kennedy, 3-23-20) included a National Register-eligibility evaluation to review the previous



ineligible determination. The HPSR recommended Bridge No. 163-83-01393A eligible for listing in the National Register based on its engineering significance as a rare example of its type within its region and as an example of a structure built by a significant Indiana firm, the Vincennes Bridge Company.

## Goals for the Public Involvement Plan

INDOT recognizes that public involvement is a key component in the success of any transportation project and understands the importance of information exchange when developing and maintaining transportation facilities. INDOT's mission is to plan, build, and operate safe and efficient transportation systems that enhance the quality of life, drives economic growth, and accommodates new modes of transport that benefit residents. The public involvement processes outlined in this plan have been selected to provide opportunities for early and continual community engagement in the transportation decision-making process. With this in mind, the goals established for this Public Involvement Plan are to:

- Identify and seek input from project stakeholders - the public, area businesses, elected officials, local governments, federal and state resource agencies, neighborhood and community groups, social service organizations, and other interested parties.
- Establish a collaborative relationship with project stakeholders
- Effectively communicate project information, including the project's benefits and schedule
- Respond quickly and clearly to stakeholder/community questions.
- Encourage project support
- Provide opportunities for public comment

## Public Involvement Process

Open communication between INDOT, local officials, key stakeholders, and the public is essential for delivering a project that aligns with the needs of the community. The public involvement process begins with coordination between the Team, local officials, and other stakeholders that will be involved with the project. Initial coordination meetings with local officials will include information on the scope and schedule of the project, as well as an opportunity to discuss potential project impacts as they relate to their jurisdiction. The process continues by providing information to these same stakeholders and keeping them informed of the project's direction.

The use of virtual public involvement methods will encourage public participation and promote safe and prudent practices, particularly during emergencies, in a manner that meets all federal and state public involvement requirements. The most current public involvement guidance, including approved methods of engaging the with the public during emergency situations, can be found in the INDOT *Project Development Public Involvement Procedures Manual* which is available at: <https://www.in.gov/indot/4103.htm>

## Stakeholder Groups

The first step in implementing the Public Involvement Plan is to identify key stakeholders and to assemble contact information. Stakeholders are people, businesses, and organizations that may be affected by or have interest in the project as well as agencies with jurisdiction related to project activities. Team members will communicate and coordinate with stakeholders at key milestones and will address questions and comments throughout the duration of the project. The stakeholder groups for the SR 163 over Brouilletts Creek bridge project include:

- Federal, state, and local resource agencies
- Federal, state, and local governments and elected officials
- Major businesses and employers
- Community and neighborhood groups
- Social service organizations
- Local churches and schools
- Public safety and emergency responders
- Historical/Cultural organizations
- Native American Tribes
- General public
- Adjoining landowners

## Government and Resource Agency Stakeholders

Federal, state, and local government and regulatory agencies will be engaged to identify important issues and ensure project compliance with state and federal regulations. Agency stakeholder meetings are not currently scoped for this project; however, they will receive project information through early coordination letters and coordination calls may be conducted as needed. Government and resource agencies invited to comment on this project include:

### Federal

- Federal Highway Administration (FHWA)
- US Army Corps of Engineers (USACE)
- US Fish and Wildlife Service (USFWS)
- US Department of Interior, National Park Service (NPS)
- US Department of Agriculture, Natural Resource Conservation Service (NRCS)
- US Department of Housing and Urban Development (HUD)

### State

- Indiana Department of Natural Resources (IDNR)
- Indiana Department of Transportation - Crawfordsville District (INDOT)
- Indiana Geological and Water Survey (IGWS)
- Indiana Department of Environmental Management (IDEM)

### Regional and Local

- West Central Indiana Economic Development District
- Vermillion County Board of County Commissioners
- Vermillion County Surveyor
- Vermillion County Highway Clerk
- South Vermillion Community Schools Corporation

## Local Stakeholders

### Public Safety and Emergency Responders

Public safety and emergency responders must be able to effectively respond to incidents in the Blanford/Centenary area. Public agencies responsible for incident response include:

- Clinton Police Department
- Vermillion County Sheriff
- Vermillion County Emergency Management
- Black Diamond Fire Department (Volunteer)
- Indiana State Police

### Major Employers

The major employers in Blanton, Centenary, and Clinton include:

- Union Hospital
- Centenary and Clinton Community Schools
- Walmart

### Communities and Neighborhoods

The Team will coordinate with nearby communities and neighborhoods. These groups will be engaged at key milestones and will receive project information, including the Notice of Public Hearing.

- Vermillion County
- Town of Blanford (unincorporated)
- Town of Centenary (unincorporated)

### General Public

Engagement with the general public will occur during the public hearing. Throughout the duration of the project, INDOT's website, traditional media, and social media will be used to communicate with the public.

## Section 106 Consulting Parties

Section 106 of the National Historic Preservation Act (NHPA) (1966) requires each federal agency to identify and assess the effects of their undertakings on historic properties and to coordinate with appropriate consulting parties including state and local governments, Tribal governments, historic preservation societies, historic neighborhood representatives, property owners, and those with an interest in the project or concern about the project's effect on historic properties. Consulting parties invited to participate in project include:

- INDOT Cultural Resource Office (CRO)
- IDNR Division of Historic Preservation and Archeology (DHPA)
- Indiana Landmarks
- Vermillion County
- Vermillion County Historical Society
- Native American Tribes with jurisdiction
- Indiana Historic Spans Task Force
- DePauw University, History Department
- Historic Hoosier Bridges
- Historic Bridges.org
- Historic Bridge Foundation

## Environmental Justice (EJ) Outreach

Federal law, including Title VI of the Civil Rights Act of 1964, the Federal Highway Act of 1973, and the Age Discrimination Act of 1975, prohibits discrimination on the basis of race, color, national origin, gender, and age and Executive Order 12898 obligates Federal actions (those receiving federal funding) to avoid or minimize and mitigate adverse impacts to low-income, minority populations, or other EJ populations and to assure that disproportionately high and adverse impacts on these populations are identified and addressed.

Based on initial research using the USHUD Resource Locator mapping tool (<https://resources.hud.gov/>) and the EPA EJ Screening and Mapping tool (<https://www.epa.gov/ejscreen>), no minority, low-income, or Limited English Proficiency (LEP) populations are located within 2.0 miles of the project area.

## Outreach Schedule

The current anticipated schedule is summarized in the following table:

Date	Phase Description
Various	<b>Early Coordination Letters</b> - Initial NEPA early coordination letters (ECLs) were sent on December 2, 2019. Updated ECLs will be sent winter 2022. (Resource Agencies December 2, 2019; Section 106 December 19, 2020)
April 7, 2021	<b>Consulting Party Meeting</b> – A consulting party meeting was held on April 7, 2021.
December 3, 2021	<b>Section 106 Public Notice</b> for bridge reclassification (i.e. "Select") and availability of draft HBAA. (The comment period ended January 3, 2022)
Spring 2022	<b>Section 106 Effect Finding (80011) Public Notice</b>
Summer 2022	<b>Public Hearing</b> - Following release of the draft environmental document, the public will have the opportunity to comment via an in-person Public Hearing.

## Communication Methods and Notifications

### Early Coordination

Early coordination, including Notice of Entry Letters, Section 106 consulting party coordination, and coordination with regulatory agencies and other stakeholders, will be conducted in accordance with current INDOT policies.

### Press Releases

Press releases will be developed and distributed to local media outlets and posted on INDOT social media platforms and website at key project milestones.

### Project Website

Project-related information will be posted on INDOT's project website to provide the public with the most current project information. The website will contain the latest updates, project schedule, maps, documents, and any upcoming meeting dates as well as Project Team contact information, resource agency links, and options for providing comments.

## Meetings

### Section 106 Process and Consulting Party Meeting(s)

Section 106 meetings with consulting parties may be conducted to discuss the project's historic and archaeological reports, Alternatives Analysis, Effect Findings, and/or memorandum of agreement (MOA). Based on initial project feedback, no controversy is expected and there is little interest in the project. A consulting party meeting was held on April 7, 2020. Additional meetings may be held if they are requested.

### Other Meetings

At this time, no other stakeholder meetings are proposed; however, this does not preclude INDOT from hosting such meetings should they be needed.

### Public Hearing

The Public Hearing is an opportunity for the public to make formal statements of their views on the project immediately before project decision-making. The Public Hearing will be held once preliminary plans have been developed and a draft environmental document has been approved by INDOT. The Public Hearing Notice will be mailed to project stakeholders including adjoining landowners.

The Public Hearing will also be advertised twice in the legal notice section of the *Tribune Star* and the *Indianapolis Star* newspapers. The first notice will be published at least 15 days before the hearing and the second notice will be published at least 7 days before the hearing.

The notices will specify the date, time, place, and purpose of the hearing. It will include a brief project description and announce the locations for viewing the environmental document (website and local repositories). The notice will also include a point of contact for those requesting assistance for persons with disabilities or communication barriers, including those with limited English proficiency (LEP).

The Public Hearing will be held at a place and time generally convenient for people affected by or interested in the project and at a location accessible to people with disabilities. At the hearing, the Team will have an Open House session prior to the formal presentation. This Open House session will allow the public and stakeholders to speak with the Team and ask project related questions. Various large display boards will be on view, as well as handouts with project information, copies of the draft environmental document, and design plans. Following the Open House session, there will be a formal presentation by the Team, which will include the following information:

- The project's purpose and need
- The project schedule, including major milestones, phasing, and anticipated construction start and end dates
- Estimated construction cost
- The Maintenance of Traffic plan
- The project's alternatives and major design features
- The social, economic, environmental, and other impacts of the project
- The availability of the environmental document
- Procedures for the public to make verbal and written statements about the project

INDOT is committed to providing a Public Hearing format that allows full public participation. After the formal presentation, there will be a Question & Answer session, so the Team can answer any project-related questions. The public and other stakeholders will then have an opportunity to make a formal comment about the project in the following ways:

- Public statements at the hearing
- Verbal comments made privately during the meeting to a recording device
- Written comments will be accepted in person at the Public Hearing
- 30-day public comment period following the hearing - the public and other stakeholders, including stakeholders who did not attend the Public Hearing, may submit comments to the Team via mail or email

A transcript will be made of all verbal statements and comments made at the Public Hearing. The transcript will include copies of all written statements from the public, both those submitted at the public hearing and during the 30-day public comment period following the hearing. A summary of the Public Hearing proceedings and responses to all substantive comments will be included in the final environmental document for the project.

## Port, Juliet [US-US]

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**From:** Bales, Ronald <rbales@indot.IN.gov>  
**Sent:** Tuesday, January 11, 2022 8:56 AM  
**To:** Port, Juliet [US-US]; Heck, Sara R; Kurtz, Randy  
**Cc:** Prevost, Daniel [US-US]; Kahn, Brad [US-US]; Greene, Michelle [NN-US]  
**Subject:** [EXTERNAL] RE: PIP for SR 163 Brouilletts Creek Bridge

INDOT ESD has no comment on the PIP.

Thank you.

### Ron Bales

INDOT-Environmental Services Division  
**Office:** (317) 515-7908  
**Email:** [rbales@indot.in.gov](mailto:rbales@indot.in.gov)

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**From:** Juliet.Port@parsons.com <Juliet.Port@parsons.com>  
**Sent:** Thursday, January 6, 2022 10:43 AM  
**To:** Heck, Sara R <SHeck@indot.IN.gov>; Bales, Ronald <rbales@indot.IN.gov>; Kurtz, Randy <RKurtz@indot.IN.gov>  
**Cc:** Prevost, Daniel <Daniel.Prevost@parsons.com>; Kahn, Brad <Brad.Kahn@parsons.com>; Michelle.Greene@parsons.com  
**Subject:** PIP for SR 163 Brouilletts Creek Bridge

\*\*\*\* This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. \*\*\*\*

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Request for review: draft Public Involvement Plan (PIP)  
SR 163 over Brouilletts Creek Bridge Project  
CE-4 Level Project (Historic Bridge)  
Vermillion County  
Des. No. 1701589

Sara,

We have prepared the attached draft PIP for the referenced project. This is a CE-4 level project due to the historic bridge, so we copied both Zane and Ron Bales. As always, please do not hesitate to contact us with any questions or requests.

Thank you,

### Juliet Port, LPG

Principal Environmental Planner  
(She/Her)  
101 W Ohio, Suite 2121  
Indianapolis, IN 46204  
[juliet.port@parsons.com](mailto:juliet.port@parsons.com)  
Direct: +1 317.616.4693

[Parsons \[protect2.fireeye.com\]](https://protect2.fireeye.com) / [LinkedIn \[protect2.fireeye.com\]](https://www.linkedin.com/company/protect2-fireeye) / [Twitter \[protect2.fireeye.com\]](https://twitter.com/protect2_fireeye) / [Facebook \[protect2.fireeye.com\]](https://www.facebook.com/protect2.fireeye.com) / [Instagram \[instagram.com\]](https://www.instagram.com/protect2_fireeye)

# Appendix H

## Air Quality



Excerpt

SPONSOR	CONTR ACT # / LEAD DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Total Cost of Project*	PROGRAM	PHASE	FEDERAL	MATCH	2022	2023	2024	2025	2026										
Indiana Department of Transportation	43422 / 2001827	Init.	SR 71	Pavement Replacement	From 0.40 mi N of US 36 to 1.00 mi N of US 36 (Dana)	Crawfordsville	.602	STBG	\$3,629,073.00	Bridge Construction	CN	\$366,051.20	\$91,512.80		\$10,000.00		\$447,564.00											
										Road ROW	RW	\$80,000.00	\$20,000.00	\$100,000.00														
										Road Construction	CN	\$1,915,127.20	\$478,781.80				\$2,393,909.00											
Performance Measure Impacted: Pavement Condition																												
Comments:Include DES 2002194, 2101221, 2001827																												
Indiana Department of Transportation	43591 / 1701589	Init.	SR 163	Bridge Rehabilitation Or Repair	Over Brouillets Creek	Crawfordsville	0	STBG	\$4,539,133.00	Bridge Construction	CN	\$2,882,862.40	\$720,715.60				\$3,603,578.00											
										Performance Measure Impacted: Bridge Condition																		
										Comments:Include DES 1701589																		
Indiana Department of Transportation	43686 / 2100188	Init.	SR 63	HMA Overlay Minor Structural	From 0.1 mi S of US 36 to 0.07 mi S of SR 71	Crawfordsville	8.264	NHPP	\$39,257,095.00	Road Construction	CN	\$23,433,676.00	\$5,858,419.00			\$40,000.00		\$29,252,095.00										
										Road ROW	RW	\$120,000.00	\$30,000.00			\$150,000.00												
										Bridge ROW	RW	\$120,000.00	\$30,000.00			\$150,000.00												
										Bridge Consulting	PE	\$720,000.00	\$180,000.00	\$900,000.00														
										Bridge Construction	CN	\$5,632,000.00	\$1,408,000.00				\$7,040,000.00											
										Road Consulting	PE	\$1,380,000.00	\$345,000.00	\$1,725,000.00														
										Performance Measure Impacted: Pavement Condition																		
Comments:Include DES 2100190, 2100966, 2100967, 2100968, 2100969, 2100188																												

**Vermillion County Total**

Federal: \$84,432,239.10      Match :\$16,809,271.90      2022: \$9,337,334.00      2023: \$1,052,585.00      2024: \$7,293,493.00      2025: \$15,744,186.00      2026: \$67,813,913.00

\*Estimated Costs left to Complete Project column is for costs that may extend beyond the four years of a STIP. This column is not fiscally constrained and is for information purposes.

# Appendix I

## Engineering Documents

**Land and Water Conservation Fund (LWCF) County Property List for Indiana (Last Updated July 2020)**

ProjectNumber	SubProjectCode	County	Property
1800103	1800103	Vermillion	Blanford Community Park
1800144	1800144	Vermillion	Fairview Park Ballfield
1800208	1800208	Vermillion	Millers Park, Miller Community Park
1800286	1800286	Vermillion	Perrysville Park

\*Park names may have changed. If acquisition of publically owned land or impacts to publically owned land is anticipated, coordination with IDNR, Division of Outdoor Recreation, should occur.

Source: <https://www.in.gov/indot/engineering/files/IN-LWCF-sites-by-county.xlsx>

Utility Log for SR 163 Des. 1701589

1/10/2019	All utilities	Parsons	Email	Initial Notice request
2/7/2019	All utilities	Parsons	Email	Verification request
11/21/2019	All utilities	Parsons	Email	Conflict analysis request

UTILITIES	
TELEPHONE:	AT&T Curtis Miller 116 E Taylor St Kokomo, IN 46901 765-454-5021
ELECTRIC:	Duke Energy Joe Eckardt 301 Home Ave. Terre Haute, IN 47803 812-231-6740
GAS:	Vectren Benjamin Vasquez 2345 E Main St. Danville, IN 46122 317-718-3657
WATER:	Clinton Township Water John Haynes 15495 S Rangeline Rd Clinton IN 765-832-9370

Sensitive



# INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue  
Room N642-BR  
Indianapolis, Indiana 46204

**Eric Holcomb, Governor**  
**Joe McGuinness,**  
**Commissioner**

July 2, 2021

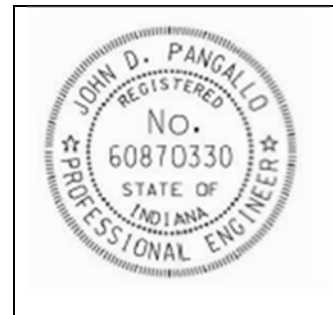
TO: Melissa Patton  
INDOT Project Manager, Crawfordsville District

FROM: John Pangallo  
Consultant Hydraulics Engineer

SUBJECT: HYDRAULIC LETTER FOR BRIDGES  
Structure: 163-83-1393  
Location: 1.18 miles east of SR 71  
Des. #: 1701589  
Crossing: Brouilletts Creek  
Consultant: Parsons  
SPMS Type of Work: Bridge Rehabilitation

ANALYSIS: John Pangallo, P.E.  
Consultant Hydraulics Engineer

REVIEWER: Darrin Miller, P.E.  
INDOT Hydraulics Engineer



Drainage Area	= 269	sq. mi.
Q <sub>100</sub>	= 16,000	cfs
Elevation @ Q <sub>100</sub>	= 508.56	ft.

### Approved Scour Data Single Span

Q <sub>100</sub> Contraction Scour =	46.6	ft.
Q <sub>100</sub> Total Scour =	46.6	ft.
Flowline Elevation =	489.64	ft. (from HEC-RAS model)
Q <sub>100</sub> Low Scour Elevation =	443.04	ft
Q <sub>100</sub> Max Velocity =	7.16	ft/s.
Q <sub>100</sub> Avg Velocity =	6.61	ft/s.
Q <sub>100</sub> Hydraulic Depth =	16.2	ft.



## Scour Analysis Narrative

The bridge has two vertical abutments founded on 20-ton piles, with no pile driving records. The design plans estimate 20'-0" as the driving length; however, this length cannot be verified. Therefore, the bridge is determined to be scour critical and mitigation measures will be implemented during the rehabilitation project.

Part A of this scour letter is provided by the Hydraulics Section and identifies the low scour elevation from the hydraulic analysis and makes recommendations for scour mitigation measures. The information from Part A may be used by the Bridge Section and the Engineer of Record to make the Bridge Scour Critical Determination in Parts B and C of this letter, unless the final determination is made by the Hydraulics Engineer and noted as such in Part A. The stamp and signature provided by the INDOT Hydraulics Section is for the information provided in Part A.

If the bridge is determined to be scour critical the following measures are recommended:

## Scour Mitigation Measures

Standard scour countermeasures call for Class 1 riprap to be laid 2.0 ft. thick for a width of 2 times the water depth or a minimum of 10' for each abutment per IDM Figure 203.3B. This will require a width of 32.4' from each abutment.

### Part A Scour Status

Final Determination – Parts B and C not applicable

Not Scour Critical

Scour Critical

Scour Status Pending Part B

CIF Permit required: (Y-if scour critical/N)

Justification/Comments:

The application of revetment riprap on the spill slopes should be used as per IDM Fig. 203-3B

If you have any questions or comments, please contact me at (317) 234-5422.

DKM  
cc: file

**Inspector:** Melvin Hughes  
**Inspection Date:** 10/14/2021

**Asset Name:** 163-83-01393 A  
**Facility Carried:** SR 163

**Bridge Inspection Report**

**(59) SUPERSTRUCTURE: 5 - Fair Condition (minor section loss)**

Comments:

The upstream truss L7 U8 and L8 U9 diagonal tension members have old minor vehicle damage.

Downstream U5 L6 Diagonal has old vehicle damage.

There is a 1" diameter rust hole in downstream truss member L8 U8 near the lower chord gusset plate connection, along with some section loss in the web of the west c- channel at the guard rail. some of the structures lattice work is rusted into or has rust scale in the end posts. The lower chord has pack rust between the built up members. The truss post end connections have pack rust and scale. U3 L3 sway bracing is bent from over sized load. U5 L6 DS has slight rotation, paint scrapes on traffic side. see executive summary.

**(60) SUBSTRUCTURE: 4 - Poor Condition (advanced deterioration)**

Comments:

Wing walls have map cracking throughout with heavy efflorescence. The east bent has advanced spalling with exposed rebar particularly around the southeast bearing. The west bent has advanced spalling around both bearings and in the backwall at the south end and cracking with efflorescence.

**(61) CHANNEL/CHANNEL PROTECTION 5 - Bank eroded.. major damage**

Comments:

The channel flows north to south and comes very close to northwest corner of bridge, at high water levels the water impacts the west abutment. The banks are not well protected. There is bank erosion at the northwest corner of the channel.

**(62) CULVERTS: N - Not Applicable**

Comments:

**LOAD RATING AND POSTING**

(31) DESIGN LOAD:	<b>4 - H 20</b>	(66) INVENTORY RATING:	<b>33.984</b>
(70) BRIDGE POSTING	<b>5 - Equal to or above legal loads</b>	(65) INVENTORY RATING METHOD: <b>1 - Load Factor (LF)</b>	
(41) STRUCTURE OPEN/POSTED/CLOSED:	<b>A - Open</b>	(66B) INVENTORY RATING (H):	
(64) OPERATING RATING:	<b>56.988</b>	(66C) TONS POSTED :	
(63) OPERATING RATING METHOD:	<b>1 - Load Factor (LF)</b>	(66D) DATE POSTED/CLOSED:	

**APPRAISAL**

SUFFICIENCY RATING:	<b>42.0</b>	(36) TRAFFIC SAFETY FEATURE:	
STATUS:	<b>1</b>	36A) BRIDGE RAILINGS:	<b>0</b>
(67) STRUCTURAL EVALUATION:	<b>4</b>	36B) TRANSITIONS:	<b>0</b>
(68) DECK GEOMETRY:	<b>4</b>	36C) APPROACH GUARDRAIL:	<b>0</b>
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL:	<b>N</b>	36D) APPROACH GUARDRAIL ENDS:	<b>0</b>

**(71) WATERWAY ADEQUACY: 6 - Occasional Overtopping of Approaches - Insignificant Delays**

Comments:

Evidence of high water on stringers and floor beams, therefore assume slight chance of overtopping this major collector. On the original plans the elevations are not very legible, but the max high water elevation line is at the lower chord.

**(72) APPROACH ROADWAY ALIGNMENT: 8 - Equal to present desirable criteria**

Comments: