

**FHWA-Indiana Environmental Document**  
**CATEGORICAL EXCLUSION / ENVIRONMENTAL ASSESSMENT FORM**  
**GENERAL PROJECT INFORMATION**

<b>Road No./County:</b>	SR 145, Perry County
<b>Designation Number(s):</b>	1800163
<b>Project Description/Termini:</b>	Slide correction on State Road (SR) 145, 1.69 miles south of SR 62 junction

<b>X</b>	<b>Categorical Exclusion, Level 2</b> – Required Signatories: INDOT DE and/or INDOT ESD
	<b>Categorical Exclusion, Level 3</b> – Required Signatories: INDOT ESD
	<b>Categorical Exclusion, Level 4</b> – Required Signatories: INDOT ESD and FHWA
	<b>Environmental Assessment (EA)</b> – Required Signatories: INDOT ESD and FHWA
	<b>Additional Investigation (AI)</b> – The proposed action included a design change from the original approved environmental document. Required Signatories must include the appropriate environmental approval authority

**Approval**

_____	_____
INDOT DE Signature and Date	INDOT ESD Signature and Date
_____	
FHWA Signature and Date	

**Release for Public Involvement**

	RF	5/21/2021
_____	_____	_____
INDOT DE Initials and Date		INDOT ESD Initials and Date

**Certification of Public Involvement**

\_\_\_\_\_

INDOT Consultant Services Signature and Date

**INDOT DE/ESD Reviewer Signature and Date:** \_\_\_\_\_

**Name and Organization of CE/EA Preparer:** \_\_\_\_\_

Payton Parke - Lochmueller Group, Inc.

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### Part I – Public Involvement

Every Federal action requires some level of public involvement, providing for early and continuous opportunities throughout the project development process. **The level of public involvement should be commensurate with the proposed action.**

Does the project have a historic bridge processed under the Historic Bridges PA*?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
If No, then: Opportunity for a Public Hearing Required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

\*A public hearing is required for all historic bridges processed under the Historic Bridges Programmatic Agreement between INDOT, FHWA, SHPO, and the ACHP.

Discuss what public involvement activities (legal notices, letters to affected property owners and residents (i.e. notice of entry), meetings, special purpose meetings, newspaper articles, etc.) have occurred for this project.

Notice of Entry letters were mailed to potentially affected property owners near the project area on January 30, 2019 notifying them about the project and that individuals responsible for land surveying and field activities may be seen in the area. A sample copy of the Notice of Entry letter is included in Appendix G, page 1.

The project will meet the minimum requirements described in the current *Indiana Department of Transportation (INDOT) Public Involvement Manual* which requires the project sponsor to offer the public an opportunity to submit comments and/or request a public hearing. Therefore, a legal notice will appear in a local publication contingent upon the release of this document for public involvement. This document will be revised after the public involvement requirements are fulfilled.

### **Public Controversy on Environmental Grounds**

Discuss public controversy concerning community and/or natural resource impacts, including what is being done during the project to minimize impacts.

At this time, there is no substantial public controversy concerning impacts to the community or to natural resources.

### Part II - General Project Identification, Description, and Design Information

Sponsor of the Project: Indiana Department of Transportation (INDOT) INDOT District: VincennesLocal Name of the Facility: SR 145Funding Source (mark all that apply): Federal  State  Local  Other\* 

\*If other is selected, please identify the funding source: \_\_\_\_\_

#### **PURPOSE AND NEED:**

The need should describe the specific transportation problem or deficiency that the project will address. The purpose should describe the goal or objective of the project. The solution to the traffic problem should NOT be discussed in this section.

Des No. 1800163 is located on SR 145 in Perry County, Indiana, approximately 1.69 miles south of the SR 62 junction. The need for this project is due to pavement cracking and sinking caused by the lateral slide of the embankment, threatening the structural integrity of the roadway. According to the geotechnical analysis completed for the project by Geotill, Inc. (Appendix I, pages 10-33), the failure surfaces of slides that occur on side-hill roadway embankments in Southern Indiana are often along the interface between the upper weathered shale bedrock surface and the overlying soils. It is evident that the sliding of the hillside upon which the SR 145 roadway was constructed has been occurring for many years and remains active. The slide has required ongoing maintenance and repair due to distress in the pavement.

This is page 2 of 21 Project name: SR 145 Slide Correction Date: May 19, 2021

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The purpose of this project is to restore this section of SR 145 which was damaged by landslide activity, and reinforce the failed slope, which will reduce the potential for future slide activity, resulting in improved traffic mobility and safety for the traveling public.

**PROJECT DESCRIPTION (PREFERRED ALTERNATIVE):**

County: Perry

Municipality: N/A

Limits of Proposed Work: SR 145, 1.69 miles south of SR 62 junction

Total Work Length: 0.051 Mile(s)

Total Work Area: 0.71 Acre(s)

Is an Interstate Access Document (IAD)<sup>1</sup> required?

If yes, when did the FHWA provide a Determination of Engineering and Operational Acceptability?

Yes <sup>1</sup>	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
Date: <input style="width: 100%;" type="text"/>	

<sup>1</sup>If an IAD is required; a copy of the approved CE/EA document must be submitted to the FHWA with a request for final approval of the IAD.

*Describe location of project including township, range, city, county, roads, etc. Existing conditions should include current conditions, current deficiencies, roadway description, surrounding features, etc. Preferred alternative should include the scope of work, anticipated impacts, and how the project will meet the Purpose and Need. Logical termini and independent utility also need discussed.*

The Federal Highway Administration (FHWA) and INDOT Vincennes District propose to proceed with a slide correction project on SR 145 under contract R-41452.

Des No. 1800163 is located on SR 145 in Perry County, Indiana, approximately 1.69 miles south of SR 62 junction. Specifically, the project is located in Section 1, Township 4 South, Range 3 West in Clark Township as depicted on the Bristow U.S. Geological Survey 1:24,000 scale quadrangle (Appendix B, page 2).

Within the project area, SR 145 is functionally classified as a rural major collector. One driveway is present within the project limits. The typical cross section consists of two 11-foot asphalt travel lanes with 1-foot to 2-foot wide usable shoulders made of compact aggregate or earth. Existing slide slopes are approximately 2:1 to 5:1 downhill embankment on the left side of SR 145 and approximately 3:1 uphill slope on the right side of SR 145. There is no guardrail present on either side of SR 145. The surrounding area is primarily wooded area with agricultural production and scattered rural residences.

The preferred alternative will correct the slide by excavating and replacing the failed soil with compacted soil and repaving the section of SR 145 that was damaged by the slide. An existing 18-inch pipe at the north end of the slide limits will be extended by about 55 feet. The project will include approximately 250 feet of stream realignment to UNT1 to Anderson River. Furthermore, the existing embankment of the unnamed tributary (UNT) of Anderson River will be stabilized using revetment riprap over geotextile fabric. The apparent existing right-of-way (ROW) width on SR 145 extends to the edge of pavement. Approximately 0.81 acre of permanent ROW will be required for this project. No temporary ROW is needed. Work will extend up to 95 feet away from the edge of pavement to correct the slide. Impacts associated with this project include 0.30 acre of tree clearing, work below the ordinary high water mark, and 275 linear feet of impacts to the UNT of Anderson River. Please refer to Appendix B for maps depicting the project area (pages 1-4), photographs of the project area (pages 5-10), and the preliminary design plans (pages 11-15).

Every effort to avoid, minimize, and/or mitigate project impacts will be made.

The proposed maintenance of traffic (MOT) plan includes a road closure with a detour. The detour will utilize I-64, SR 37, and SR 145. Please refer to the Maintenance of Traffic section of this document for full details. The MOT will be implemented per the *Indiana Design Manual* guidelines.

The project will meet the objectives of the purpose and need by reinforcing the failed slope and restoring the section of SR 145 that was damaged by the slide, thereby improving safety and mobility along SR 145.

The project is not dependent upon the completion of any other project to meet the objectives of its purpose and need; therefore, the

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project exhibits independent utility. The project termini are logical because they only encompass the section of SR 145 affected by the slide damage that resulted in pavement failure.

**OTHER ALTERNATIVES CONSIDERED:**

*Provide a header for each alternative. Describe all discarded alternatives, including the No Build Alternative. Explain why each discarded alternative was not selected. Make sure to state how each alternative meets or does not meet the Purpose and Need and why.*

No Build:

This alternative would not repair the slide. While this alternative would have eliminated cost and any environmental impacts, it would not have met the objectives of the purpose and need of the project. Therefore, this alternative was discarded from further consideration.

Reinforced Fill:

This alternative would have involved acquisition of additional ROW to excavate the failed roadway and embankment as well as construction of the slope at steep angles (almost vertical) utilizing geotextiles or geogrids within the body of the embankment. The structure fill material used within the area of reinforcement would have been granular in nature with a special gradation used within a few feet of the wire face. Drains would have had to have been installed within the reinforced slope. Furthermore, installation of guardrails would have been required for safety due to the height of the near vertical face of the reinforced slope. Although this alternative would have met the purpose and need of the project, the close proximity to the UNT stream and other site conditions would have resulted in greater impacts to natural resources. Therefore, this alternative was eliminated from further consideration.

Soil Nailing:

This alternative would have involved construction of a soil nailed wall in a top-down fashion and acquisition of additional ROW. This alternative would have required the installation of guardrails for safety due to the near vertical face of the soil nailed wall. Although this alternative would have met the purpose and need of the project, the close proximity to the UNT stream and other site conditions would have resulted in greater impacts to natural resources. Therefore, this option was eliminated from further consideration.

Riprap Fill with Rock Key:

This alternative would have involved removal of the sliding mass, construction of a rock key, and re-establishment of the slope with riprap fill. Although this alternative would have met the objectives of the purpose and need of the project, the drainage requirements of the rock key would have resulted in greater impacts to natural resources. Therefore, this alternative was discarded from further consideration.

**The No Build Alternative is not feasible, prudent or practicable because (Mark all that apply):**

It would not correct existing capacity deficiencies;

It would not correct existing safety hazards;

It would not correct the existing roadway geometric deficiencies;

It would not correct existing deteriorated conditions and maintenance problems; or

It would result in serious impacts to the motoring public and general welfare of the economy.

Other (Describe):

<b>X</b>

**ROADWAY CHARACTER:**

*If the proposed action includes multiple roadways, complete and duplicate for each roadway.*

Name of Roadway	<u>SR 145</u>			
Functional Classification:	<u>Rural Major Collector</u>			
Current ADT:	<u>418</u>	VPD (2023)	Design Year ADT:	<u>427</u> VPD (2043)
Design Hour Volume (DHV):	<u>54</u>	Truck Percentage (%)	<u>11</u>	
Designed Speed (mph):	<u>45</u>	Legal Speed (mph):	<u>45</u>	

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	Existing	Proposed
Number of Lanes:	2	2
Type of Lanes:	Travel	Travel
Pavement Width:	11 ft.	11 ft.
Shoulder Width:	1 ft.	2 ft.
Median Width:	N/A ft.	N/A ft.
Sidewalk Width:	N/A ft.	N/A ft.

Setting:	<input type="checkbox"/> Urban	<input type="checkbox"/> Suburban	<input checked="" type="checkbox"/> Rural
Topography:	<input checked="" type="checkbox"/> Level	<input type="checkbox"/> Rolling	<input type="checkbox"/> Hilly

### BRIDGES AND/OR SMALL STRUCTURE(S):

*If the proposed action includes multiple structures, complete and duplicate for each bridge and/or small structure. Include both existing and proposed bridge(s) and/or small structure(s) in this section.*

 Structure/NBI Number(s): \_\_\_\_\_ Sufficiency Rating: \_\_\_\_\_  
(Rating, Source of Information)

	Existing	Proposed
Bridge/Structure Type:		
Number of Spans:		
Weight Restrictions:		ton
Height Restrictions:		ft.
Curb to Curb Width:		ft.
Outside to Outside Width:		ft.
Shoulder Width:		ft.

*Describe impacts and work involving bridge(s), culvert(s), pipe(s), and small structure(s). Provide details for small structure(s): structure number, type, size (length and dia.), location and impacts to water. Use a table if the number of small structures becomes large. If the table exceeds a complete page, put it in the appendix and summarize the information below with a citation to the table.*

No bridges are located within the project area. An existing 24-inch unnamed pipe is located at the north end of the slide limits, approximately 1.70 miles south of SR 62 junction (Appendix B, page 3). The pipe was determined to have no stream features that displayed a bed and bank with an OHWM from the pipe to UNT1 to Anderson River, though it drains runoff water from east to west under SR 145. The pipe will be extended by about 55 feet from the west side.

### MAINTENANCE OF TRAFFIC (MOT) DURING CONSTRUCTION:

	Yes	No
Is a temporary bridge proposed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is a temporary roadway proposed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Will the project involve the use of a detour or require a ramp closure? (describe below)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Provisions will be made for access by local traffic and so posted.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Provisions will be made for through-traffic dependent businesses.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Provisions will be made to accommodate any local special events or festivals.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Will the proposed MOT substantially change the environmental consequences of the action?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is there substantial controversy associated with the proposed method for MOT?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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*Discuss closures and/or facilities (if any) that will be provided for maintenance of traffic. Any known impacts from these temporary measures should be quantified to the extent possible, particularly with respect to properties such as Section 4(f) resources and wetlands. Any local concerns about access and traffic flow should be detailed as well.*

The MOT for the project will require a road closure with an official INDOT detour. The detour will utilize I-64, SR 37, and SR 145 for a total length of 23.4 miles. Adjacent property owners will retain access to their properties through the construction process.

The closures will pose a temporary inconvenience to traveling motorists (including school buses and emergency services); however, no significant delays are anticipated and all inconveniences will cease upon project completion. Delays may occur during construction but will cease but will case upon project completion.

### ESTIMATED PROJECT COST AND SCHEDULE:

Engineering: \$ N/A (20--) Right-of-Way: \$ 13,000.00 (2022) Construction: \$ 650,000.00 (2023)

Anticipated Start Date of Construction: Spring 2023

### RIGHT OF WAY:

Land Use Impacts	Amount (acres)	
	Permanent	Temporary
Residential	0.00	0.00
Commercial	0.00	0.00
Agricultural	0.00	0.00
Forest	0.47	0.00
Wetlands	0.00	0.00
Other: Maintained Roadside	0.34	0.00
Other:	0.00	0.00
<b>TOTAL</b>	<b>0.81</b>	<b>0.00</b>

*Describe both Permanent and Temporary right-of-way and describe their current use. Typical and Maximum right-of-way widths (existing and proposed) should also be discussed. Any advance acquisition, reacquisition or easements, either known or suspected, and their impacts on the environmental analysis should be discussed.*

The apparent existing ROW extends to the edge of the pavement. Additional areas outside of the existing ROW will be required along both the northbound and southbound lanes. Following acquisition, ROW will reach a maximum of 140 feet west of the centerline and 32 feet east of the centerline.

This project requires approximately 0.81 acre of permanent ROW, including forest and maintained roadside, which will be acquired from both the west and east sides of SR 145. The ROW take along the eastern boundary, northbound lane, is not a part of this project but will be acquired per INDOT request to allow future work to be done on the adjacent ditch. No temporary ROW will be required.

If the scope of work or permanent or temporary ROW amounts change, the INDOT Environmental Services Division (ESD) and the INDOT District Environmental Section will be contacted immediately.

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### Part III – Identification and Evaluation of Impacts of the Proposed Action

#### SECTION A - EARLY COORDINATION:

List the date(s) coordination was sent and all resource agencies that were contacted as a part of the development of this Environmental Study. Also, include the date of their response or indicate that no response was received.

Early coordination letters were sent on February 19, 2021 (Appendix C, pages 1-4).

Agency	Date Sent	Date Response Received	Appendix
IDEM	February 19, 2021	February 19, 2021	Appendix C, pages 24-28
US Forest Service	February 19, 2021	February 19, 2021	Appendix C, page 29
INDOT Vincennes District	February 19, 2021	February 19, 2021	Appendix C, page 30
IGWS	February 23, 2021	February 23, 2021	Appendix C, page 31-33
NRCS	February 19, 2021	March 16, 2021	Appendix C, page 34
IDNR DFW	February 19, 2021	March 19, 2021	Appendix C, page 35-37
FHWA Indiana	February 19, 2021	No response received	
USACE	February 19, 2021	No response received	
USHUD	February 19, 2021	No response received	
Perry County Board of Commissioners	February 19, 2021	No response received	
Perry County Council	February 19, 2021	No response received	
Perry County Highway Department	February 19, 2021	No response received	
Perry County Planning and Zoning	February 19, 2021	No response received	
Perry County Sheriff's Department	February 19, 2021	No response received	
Perry County Surveyor's Office	February 19, 2021	No response received	
Perry County SWCD	February 19, 2021	No response received	

All applicable recommendations are included in the Environmental Commitments section of this CE document.

#### SECTION B – ECOLOGICAL RESOURCES:

##### Streams, Rivers, Watercourses & Other Jurisdictional Features

- Federal Wild and Scenic Rivers
- State Natural, Scenic or Recreational Rivers
- Nationwide Rivers Inventory (NRI) listed
- Outstanding Rivers List for Indiana
- Navigable Waterways

##### Presence

X

##### Impacts

Yes	No
X	

Total stream(s) in project area: 1,104 Linear feet      Total impacted stream(s): 275 Linear feet

Stream Name	Classification	Total Size in Project Area (linear feet)	Impacted linear feet	Comments (i.e. location, flow direction, likely Water of the US, appendix reference)
UNT1 to Anderson River	Perennial	964	275	Flows south to north through project area west of SR 145 southbound lane. Likely considered under USACE jurisdiction per Section 404 (Appendix B, page 3; Appendix F, page 12).

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UNT2 to Anderson River	Intermittent	140	0	Flows west to east through the project area and meets UNT1 to Anderson River. Likely considered under USACE jurisdiction per Section 404 (Appendix B, page 3; Appendix F, page 12).
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*Describe all streams, rivers, watercourses and other jurisdictional features adjacent or within the project area. Include whether or not impacts (both permanent and temporary) will occur to the features identified. Include if the streams or rivers are listed on any federal or state lists for Indiana. Include if features are subject to federal or state jurisdiction. Discuss measures to avoid, minimize, and mitigate if impacts will occur.*

Based on the desktop review, the aerial map of the project area (Appendix B, page 3), and the RFI report (Appendix E, page 8) there are six streams, rivers, watercourses or other jurisdictional features within the 0.5 mile search radius. That number could not be confirmed or updated by the site visit on September 24, 2020 by Lochmueller Group, Inc., as the field work for the project did not encompass the entire 0.5 mile search radius. There are two streams, rivers, watercourses, or other jurisdictional features present within or adjacent to the project area.

A *Waters of the U.S. Determination / Wetland Delineation Report* was approved by INDOT Ecology and Waterway Permitting Office on March 24, 2021. Please refer to Appendix F, pages 2-17 for the *Waters of the U.S. Determination / Wetland Delineation Report*. It was determined that two jurisdictional streams, UNT1 to Anderson River and UNT2 to Anderson River, were located within the project area. The U.S. Army Corps of Engineers (USACE) makes all final determination regarding jurisdiction.

UNT1 to Anderson River

UNT1 to Anderson River is a perennial stream feature that flows from south to north through the survey area. Approximately 964 feet of the stream is within the project area. The OHWM of UNT1 to Anderson River is 10 feet wide and 0.5 feet deep. The drainage area for UNT1 to Anderson River was determined to be 0.44 square mile. This reach of UNT1 to Anderson River is considered to exhibit average quality based on frequent flow and presence of riffle/run/pool structures. The project is anticipated to permanently impact approximately 275 linear feet of this stream resulting from excavation for slope stabilization measures and realignment efforts. 250 linear feet of UNT1 to Anderson river will undergo stream realignment. Mitigation for this project is not anticipated.

UNT2 to Anderson River

UNT2 to Anderson River is an intermittent stream feature that flows from west to east within the project area where it meets UNT1 to Anderson River. Approximately 140 feet of the stream is within the project area. The OHWM of UNT2 to Anderson River is 3.3 feet wide and 0.3 feet deep. The drainage area for UNT2 to Anderson River was determined to be 0.07 square mile. This reach of UNT2 to Anderson River is considered to exhibit average quality based on frequent flow and presence of riffle/run/ pools structures. UNT2 to Anderson River is located entirely outside of the disturbance area. No impacts are expected.

No Federal, Wild, and Scenic Rivers; State Natural, Scenic, and Recreational Rivers; Outstanding Rivers for Indiana; navigable waterways; or National Rivers Inventory Waterways are present in the project area.

An automated Proposed Roadway Letter was generated from the Indiana Department of Environmental Management (IDEM) website on February 19, 2021 (Appendix C, pages 24-28). Applicable recommendations from the Proposed Roadway Letter include coordinating with appropriate agencies with regards to stream and wetland impacts and limiting stream and riparian disturbance. All applicable IDEM recommendation are included in the Environmental Commitments section of this CE document.

The Indiana Division of Natural Resources Division of Fish and Wildlife (IDNR DFW) responded on March 19, 2021 with recommendations to avoid or minimize impacts to fish, botanical, and wildlife resources (Appendix C, pages 35-37). IDNR DFW recommendations included developing a mitigation plan for any unavoidable impacts to riparian habitat, minimizing and containing within the project limits in-channel disturbance, implementing appropriately designed measures for controlling erosion and sediment, and seeding and protecting all disturbed streambanks and slopes. All applicable IDNR DFW recommendations are included in the Environmental Commitments section of this CE document.



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Open Water Feature(s)	Presence	Impacts	
		Yes	No
Reservoirs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lakes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Farm Ponds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Retention/Detention Basin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Storm Water Management Facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Describe all open water feature(s) identified adjacent or within the project area. Include whether or not impacts (both permanent and temporary) will occur to the features identified. Include if features are subject to federal or state jurisdiction. Discuss measures to avoid, minimize, and mitigate if impacts will occur.

Based on the desktop review, the aerial map of the project (Appendix B, page 3), and the RFI report (Appendix E, page 8) there are no open water features within the 0.5 mile search radius. That number could not be confirmed or updated by the site visit on September 24, 2020 by Lochmueller Group, Inc., as the field work for the project did not encompass the entire 0.5 mile search radius. No open water features are present within or adjacent to the project area; therefore, no impacts are expected.

A *Waters of the U.S. Determination / Wetland Delineation Report* was completed for the project and approved by INDOT EWPO on March 24, 2021. Please refer to Appendix F, pages 2-17 for the *Waters of the U.S. Determination / Wetland Delineation Report*. It was determined that two jurisdictional streams are present within the project area. No other surface waters were identified. The USACE makes all final determinations regarding jurisdiction.

Wetlands	Presence	Impacts	
		Yes	No
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Total wetland area: \_\_\_\_\_ Acre(s) Total wetland area impacted: \_\_\_\_\_ Acre(s)

(If a determination has not been made for non-isolated/isolated wetlands, fill in the total wetland area impacted above.)

Wetland No.	Classification	Total Size (Acres)	Impacted Acres	Comments (i.e. location, likely Water of the US, appendix reference)

Wetlands (Mark all that apply)	Documentation	ESD Approval Dates
	Wetland Determination	<input type="checkbox"/>
Wetland Delineation	<input type="checkbox"/>	<input type="checkbox"/>
USACE Isolated Waters Determination	<input type="checkbox"/>	<input type="checkbox"/>

**Improvements that will not result in any wetland impacts are not practicable because such avoidance would result in** (Mark all that apply and explain):

- Substantial adverse impacts to adjacent homes, business or other improved properties;
- Substantially increased project costs;
- Unique engineering, traffic, maintenance, or safety problems;
- Substantial adverse social, economic, or environmental impacts, or
- The project not meeting the identified needs.

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*Describe all wetlands identified adjacent or within the project area. Include whether or not impacts (both permanent and temporary) will occur to the features identified. Include if features are subject to federal or state jurisdiction. Discuss measures to avoid, minimize, and mitigate if impacts will occur.*

Based on the desktop review, the aerial map of the project area, and the RFI report (Appendix E, page 8) there are no wetlands within the 0.5 mile search radius. That number could not be confirmed or updated by the site visit on September 24, 2020 by Lochmueller Group, Inc., as the field work for the project did not encompass the entire 0.5 mile search radius. No wetlands are present within or adjacent to the project area; therefore, no impacts are expected.

A *Waters of the U.S. Report Determination / Wetland Delineation Report* was completed for the project and approved by INDOT EWPO on March 24, 2021. Please refer to Appendix F, pages 2-17 for the *Waters of the U.S. Determination / Wetland Delineation Report*. It was determined that two jurisdictional streams are present within the project area. No wetlands were identified. The USACE makes all final determinations regarding jurisdiction.

### Terrestrial Habitat

#### Presence

#### Impacts

Yes

No



Total terrestrial habitat in project area: 9.87 Acre(s)

Total tree clearing: 0.33 Acre(s)

*Describe types of terrestrial habitat (i.e. forested, grassland, farmland, lawn, etc.) adjacent or within the project area. Include whether or not impacts will occur to habitat identified. Include total terrestrial habitat impacted and total tree clearing that will occur. Discuss measure to avoid, minimize, and mitigate if impacts will occur.*

Based on a desktop review, a site visit on September 24, 2020 by Lochmueller Group, Inc., the aerial map of the project area (Appendix B, page 3), there are maintained grass and mature forested habitat present. Dominant tree species within the forested habitat consist of sycamore (*Platanus occidentalis*), black walnut (*Juglans nigra*), sugar maple (*Acer saccharum*), and eastern redbud (*Cercis canadensis*). The dominant herbaceous species within the maintained grass habitat consisted of tall purpletop (*Tridens flavus*), yellow bristlegrass (*Setaria pumila*), late goldenrod (*Solidago altissima*), Queen Anne's lace (*Daucus carota*), and deer-tongue rosette grass (*Dichanthelium clandestinum*). A total of 0.58 acre of terrestrial disturbance will occur. 0.25 acre of impacts to maintained grasses and 0.33 acre of impacts to forested areas as a result of tree clearing. Avoidance alternatives would not be practical because they would not allow the project to meet its purpose of correcting the slope failure.

An automated letter was generated from the IDEM website on February 19, 2021 with recommendations to consider water, biotic, air, and land quality (Appendix C, pages 24-28). These recommendations included contacting the Office of Land Quality if the site is found to contain any areas used to dispose of solid or hazardous waste. All applicable IDEM recommendations are included in the Environmental Commitments section of this CE document.

The IDNR DFW responded on March 19, 2021 with recommendations to avoid or minimize impacts to fish, botanical, and wildlife resources (Appendix C, pages 35-37). IDNR DFW recommendations included implementing appropriately designed measures for controlling erosion and sediment and seeding and protecting all disturbed streambanks and slopes. All applicable IDNR DFW recommendations are included in the Environmental Commitments section of this CE document.

### Protected Species

#### Federally Listed Bats

Information for Planning and Consultation (IPaC) determination key completed

Section 7 informal consultation completed (IPaC cannot be completed)

Section 7 formal consultation Biological Assessment (BA) required

Yes


No


Determination Received for Listed Bats from USFWS:

NE

NLAA

LAA

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**Other Species not included in IPaC**

Additional federal species found in project area (based on IPaC species list)  
 State species (not bird) found in project area (based upon consultation with IDNR)

Yes	No
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Migratory Birds**

Known usage or presence of birds (i.e. nests)  
 State bird species based upon coordination with IDNR

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>

*Discuss IDNR coordination and species identified. Describe USFWS Section 7 consultation and determination received for Indiana bat and northern long-eared bat impacts. Discuss if other federally listed species were identified. If so, include consultation that has occurred and the determination that was received. Discuss if migratory birds have been observed and any impacts.*

Based on a desktop review and the RFI report (Appendix E, page 4) completed by Lochmueller Group, Inc. on March 10, 2021, the IDNR Perry County Endangered, Threatened and Rare (ETR) Species List has been checked. According to the IDNR DFW early coordination response letter dated March 19, 2021, the Natural Heritage Program's Database has been checked and to date, no plant or animal species listed as state of federally threatened, endangered, or rare have been reported to occur in the project vicinity.

Project information was submitted through the USFWS's Information for Planning and Consultation (IPaC) portal, and an official species list was generated (Appendix C, pages 5-10). The project is within the range of the federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened northern long-eared bat (NLEB) (*Myotis septentrionalis*). Other species were identified in the IPaC species list along with the Indiana bat and northern long-eared bat. Refer to paragraph below.

The official species list generated from IPaC indicated one other species present within the project area. The project is within the range of the federally endangered gray bat (*Myotis grisescens*). The project qualifies for the USFWS Interim Policy. No further coordination with USFWS is necessary.

The project qualifies for the *Range-wide Programmatic Informal Consultation for the Indiana bat and northern long-eared bat (NLEB)*, dated May 2016 (revised February 2018), between FHWA, Federal Railroad Association (FRA), Federal Transit Administration (FTA), and USFWS. An effect determination key was completed on January 22, 2021, and based on the responses provided, the project was found to "may affect, but is not likely to adversely affect (NLAA)" the Indiana bat and/or the NLEB (Appendix C, pages 11-23). INDOT reviewed and verified the effect finding on January 22, 2021 and requested USFWS's review of the finding. No response was received from USFWS within the 14-day review period; therefore, it was concluded they concur with the finding. Avoidance and Minimization Measures (AMMs) include Tree Removal AMM1, Tree Removal AMM2, Tree Removal AMM3, Tree Removal AMM4, Lighting AMM1, and General AMM1. AMMs are included as firm commitments in the Environmental Commitments section of this document.

This precludes the need for further consultation on this project as required under Section 7 of the Endangered Species Act, as amended. If new information on endangered species at the site becomes available, or if project plans are changed, USFWS will be contacted for consultation.

**Geological and Mineral Resources**

Project located within the Potential Karst Features Area of Indiana  
 Karst features identified within or adjacent to the project area  
 Oil/gas or exploration/abandoned wells identified in the project area

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>

Date Karst Study/Report reviewed by INDOT EWPO (if applicable): \_\_\_\_\_

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*Discuss if project is located in Potential Karst Features Area of Indiana and if any karst features have been identified in the project area (from RFI). Discuss response received from IGWS coordination. Discuss if any mines, oil/gas, or exploration/abandoned wells were identified and if impacts will occur. Describe if any impacts will occur to any karst features. Include discussion of karst study/report was completed and results. (Karst investigation must comply with the current Karst MOU and coordinated and reviewed by INDOT EWPO)*

Based on a desktop review, the project is located outside the designated karst region of Indiana as outlined in the October 13, 1993 Karst Memorandum of Understanding (MOU). According to the topo map of the project area (Appendix B, page 2), and the RFI report (Appendix E, page 8) there are no karst features identified within or adjacent to the project area. In the early coordination response on February 23, 2021, the Indiana Geological and Water Survey (IGWS) did not indicate that karst features exist in the project area (Appendix C, pages 31-33). The response did indicate high potential for encountering bedrock resources and the presence of surface coal mines in the vicinity. The response from IGWS was communicated with the designer on March 3, 2021. No impacts are expected.

### SECTION C – OTHER RESOURCES

#### Drinking Water Resources

- Wellhead Protection Area(s)
- Source Water Protection Area(s)
- Water Well(s)
- Urbanized Area Boundary
- Public Water System(s)

#### Presence

X

#### Impacts

Yes	No
X	

Is the project located in the St. Joseph Sole Source Aquifer (SSA):

If Yes, is the FHWA/EPA SSA MOU Applicable?

If Yes, is a Groundwater Assessment Required?

Yes	No
	X

*Check the appropriate boxes and discuss each topic below. Provide details about impacts and summarize resource-specific coordination responses and any mitigation commitments. Reference responses in the Appendix.*

The project is located in Perry County, which is not located within the area of the St. Joseph Sole Source Aquifer, the only legally designated sole source aquifer in the state of Indiana. Therefore, the FHWA/EPA Sole Source Aquifer Memorandum of Understanding (MOU) is not applicable to this project, a detailed groundwater assessment is not needed, and no impacts are expected.

The IDEM Wellhead Proximity Determinator website (<http://www.in.gov/idem/cleanwater/pages/wellhead/>) was accessed on February 19, 2021 by Lochmueller Group, Inc. This project is not located within a Wellhead Protection Area or Source Water Area. No impacts are expected.

The IDNR Water Well Record Database website (<https://www.in.gov/dnr/water/3595.htm>) was accessed on March 26, 2021 by Lochmueller Group, Inc. No wells are located near this project. Therefore, no impacts are expected.

Based on a desktop review of the INDOT MS4 website (<https://entapps.indot.in.gov/MS4/>) by Lochmueller Group, Inc. on March 26, 2021 this project is not located in an Urban Area Boundary. No impacts are expected.

Based on a desktop review, a site visit on September 24, 2020 by Lochmueller Group, Inc., the aerial map of the project area (Appendix B, page 3), and the design plans (Appendix B, pages 11-15) this project is located where there is a public water system. If 48 inches of cover remain at the stream crossing, no impacts are expected. However, the public water system will be affected if excavation reduces the watermain cover to less than 48 inches. Coordination with Patoka Lake Regional Water & Sewer District is ongoing as part of Design. Avoidance alternatives would not be practicable because they would not allow the project to meet the objective of the purpose and need.

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Floodplains	Presence	Impacts	
		Yes	No
Project located within a regulated floodplain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Longitudinal encroachment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transverse encroachment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Homes located in floodplain within 1000' up/downstream from project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If applicable, indicate the Floodplain Level?

Level 1  Level 2  Level 3  Level 4  Level 5

Use the IDNR Floodway Information Portal to help determine potential impacts. Include floodplain map in appendix. Discuss impacts according to the classification system. If encroachment on a flood plain will occur, coordinate with the Local Flood Plain Administrator during design to insure consistency with the local flood plain planning.

The IDNR Indiana Floodway Information Portal website (<http://dnrmmaps.dnr.in.gov/appsphp/fdms/>) was accessed on March 22, 2021 by Lochmueller Group, Inc. This project is not located in a regulatory floodplain as determined from approved IDNR floodplain maps (Appendix F, page 1). Therefore, it does not fall within the guidelines for the implementation of 23 CFR 650, 23 CFR 771, and 44 CFR. No impacts are expected.

Farmland	Presence	Impacts	
		Yes	No
Agricultural Lands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prime Farmland (per NRCS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Total Points (from Section VII of CPA-106/AD-1006\*) N/A  
 \*If 160 or greater, see CE Manual for guidance.

Discuss existing farmland resources in the project area, impacts that will occur to farmland, and mitigation and minimization measures considered.

Based on a desktop review, a site visit on September 24, 2020 by Lochmueller Group, Inc., and the aerial map of the project area (Appendix B, page 3), there is no land that meets the definition of farmland under the Farmland Protection Policy Act (FPPA) within or adjacent to the project area. The requirements of the FPPA do not apply to this project; therefore, no impacts are expected. An early coordination letter was sent on February 19, 2021, to Natural Resources Conservation Services (NRCS). The NRCS responded on March 16, 2021 stating that the project would not cause a conversion of prime farmland (Appendix C, page 34).

### SECTION D – CULTURAL RESOURCES

Minor Projects PA	Category(ies) and Type(s)	INDOT Approval Date(s)	N/A
	<u>B-10</u>	<u>March 26, 2021</u>	<input type="checkbox"/>
<b>Full 106 Effect Finding</b>	No Historic Properties Affected <input type="checkbox"/>	No Adverse Effect <input type="checkbox"/>	Adverse Effect <input type="checkbox"/>
<b>Eligible and/or Listed Resources Present</b>	NRHP Building/Site/District(s) <input type="checkbox"/>	Archaeology <input type="checkbox"/>	NRHP Bridge(s) <input type="checkbox"/>

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**Documentation Prepared** (mark all that apply)

- APE, Eligibility and Effect Determination 800.11 Documentation
- Historic Properties Report or Short Report
- Archaeological Records Check and Assessment
- Archaeological Phase Ia Survey Report
- Archaeological Phase Ic Survey Report
- Other:

**ESD Approval Date(s)**

March 26, 2021
March 26, 2021

**SHPO Approval Date(s)**

N/A
N/A

Memorandum of Agreement (MOA)

**MOA Signature Dates** (List all signatories)

--

*If the project falls under the MPPA, describe the category(ies) that the project falls under and any approval dates. If the project requires full Section 106, use the headings provided. The completion of the Section 106 process requires that a Legal Notice be published in local newspapers. Please indicate the publication date, name of the paper(s) and the comment period deadline. Include any further Section 106 work which must be completed at a later date, such as mitigation from a MOA or avoidance commitments.*

On March 26, 2021 the INDOT Cultural Resource Office (CRO) determined that this project falls within the guidelines of Category B, Type 10 under the Minor Projects Programmatic Agreement (Appendix D, page 1-3). Category B, Type 10 covers slide corrections, slope repairs, and other erosion control measures, in undisturbed soils.

An archaeological survey was required due to proposed work in undisturbed soils. The Phase Ia report stated that no archaeological sites were previously recorded within or adjacent to the project area. The archaeological investigation found no archaeological sites within the project area (Appendix D, page 2). No further consultation is required. This completes the Section 106 process and the responsibilities of the FHWA under Section 106 have been fulfilled.

**SECTION E – SECTION 4(f) RESOURCES/ SECTION 6(f) RESOURCES**

	<u>Presence</u>	<u>Use</u>	
		Yes	No
<b>Parks and Other Recreational Land</b>			
Publicly owned park	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Publicly owned recreation area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (school, state/national forest, bikeway, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Wildlife and Waterfowl Refuges</b>			
National Wildlife Refuge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
National Natural Landmark	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
State Wildlife Area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
State Nature Preserve	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Historic Properties</b>			
Site eligible and/or listed on the NRHP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Evaluations**  
**Prepared**

Programmatic Section 4(f)	<input type="checkbox"/>
"De minimis" Impact	<input type="checkbox"/>
Individual Section 4(f)	<input type="checkbox"/>
Any exception included in 23 CFR 774.13	<input type="checkbox"/>

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*Discuss Programmatic Section 4(f) and "de minimis" Section 4(f) impacts in the discussion below. Individual Section 4(f) documentation must be included in the appendix and summarized below. Discuss proposed alternatives that satisfy the requirements of Section 4(f). FHWA has identified various exceptions to the requirement for Section 4(f) approval. Refer to 23 CFR § 774.13 - Exceptions.*

Section 4(f) of the U.S. Department of Transportation Act of 1966 prohibits the use of certain public and historic lands for federally funded transportation facilities unless there is no feasible and prudent alternative. The law applies to significant publicly owned parks, recreation areas, wildlife / waterfowl refuges, and NRHP eligible or listed historic properties regardless of ownership. Lands subject to this law are considered Section 4(f) resources.

Based on a desktop review, the aerial map of the project area (Appendix B, page 3), and the RFI report (Appendix E, page 7) there is one potential 4(f) resource located within the 0.5 mile search radius. According to additional research, and by the site visit on September 24, 2020 by Lochmueller Group, Inc., there are no 4(f) resources located within or adjacent to the project area. Therefore, no 4(f) use is expected.

**Section 6(f) Involvement**

**Presence**

**Use**

Yes

No

**Section 6(f) Property**




*Discuss Section 6(f) resources present or not present. Discuss if any conversion would occur as a result of this project. If conversion will occur, discuss the conversion approval.*

The U.S. Land and Water Conservation Fund Act of 1965 established the Land and Water Conservation Fund (LWCF), which was created to preserve, develop, and assure accessibility to outdoor recreation resources. Section 6(f) of this Act prohibits conversion of lands purchased with LWCF monies to a non-recreation use.

A review of 6(f) properties on the INDOT ESD website revealed a total of two properties in Perry County (Appendix I, page 1). None of these properties are located within or adjacent to the project area. Therefore, there will be no impacts to 6(f) resources.

### SECTION F – Air Quality

**STIP/TIP and Conformity Status of the Project**

Yes

No

Is the project in the most current STIP/TIP?



Is the project located in an MPO Area?



Is the project in an air quality non-attainment or maintenance area?



If Yes, then:

Is the project in the most current MPO TIP?



Is the project exempt from conformity?



If No, then:

Is the project in the Transportation Plan (TP)?



Is a hot spot analysis required (CO/PM)?



Location in STIP:

Pages 506-507

Name of MPO (if applicable):

\_\_\_\_\_

Location in TIP (if applicable):

\_\_\_\_\_

Level of MSAT Analysis required?

Level 1a

Level 1b

Level 2

Level 3

Level 4

Level 5

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*Describe if the project is listed in the STIP and if it is in a TIP. Describe the attainment status of the county(ies) where the project is located. Indicate whether the project is exempt from a conformity determination. If the project is not exempt, include information about the TP and TIP. Describe if a hot spot analysis is required and the MSAT Level.*

This project is included in the Fiscal Year (FY) 2020-2024 State Transportation Improvement Program (STIP) (Appendix H, pages 1-2).

This project is located in Perry County, which is currently in attainment for all criteria pollutants according to the Environmental Protection Agency's Green Book website (<https://www.epa.gov/green-book>). Therefore, the conformity procedures of 40 CFR Part 93 do not apply.

This project is of a type qualifying as a categorical exclusion (Group 1) under 23 CFR 771.117(c), or exempt under the Clean Air Act conformity rule under 40 CFR 93.126, and as such, a Mobile Air Toxics analysis is not required.

### SECTION G - NOISE

**Noise**

**Yes**

**No**

Is a noise analysis required in accordance with FHWA regulations and INDOT's traffic noise policy?

Date Noise Analysis was approved/technically sufficient by INDOT ESD: \_\_\_\_\_

*Describe if the project is a Type I or Type III project. If it is a Type I project, describe the studies completed to date and if noise impacts were identified. If noise impacts were identified, describe if abatement is feasible and reasonable and include a statement of likelihood.*

The project is a Type III project. In accordance with 23 CFR 772 and the current *Indiana Department of Transportation Traffic Noise Analysis Procedure*, this action does not require a formal noise analysis.

### SECTION H – COMMUNITY IMPACTS

**Regional, Community & Neighborhood Factors**

**Yes**

**No**

Will the proposed action comply with the local/regional development patterns for the area?

Will the proposed action result in substantial impacts to community cohesion?

Will the proposed action result in substantial impacts to local tax base or property values?

Will construction activities impact community events (festivals, fairs, etc.)?

Does the community have an approved transition plan?

If No, are steps being made to advance the community's transition plan?

Does the project comply with the transition plan? (explain in the discussion below)

*Discuss how the project complies with the area's local/regional development patterns; whether the project will impact community cohesion; and impact community events. Discuss how the project conforms with the ADA Transition Plan.*

The project will ultimately be beneficial to local businesses and properties due to improvements of deteriorating roadway conditions. Overall, the negative impacts to property owners and local businesses within the project area will be minimal and will consist primarily of short-term construction impacts due to the road closure and resulting detour. No relocations are expected. Property owners will be provided access throughout the duration of the project to reduce impacts as much as possible. The project is not anticipated to result in substantial impacts to community cohesion because it will not change access to properties within the area. The proposed project is not expected to impact the surrounding community or cause economic impacts to the surrounding area. Therefore, this project will have minimal or no negative impacts to the community or local economy.

According to the Fairs and Festivals website ([www.fairsandfestivals.net](http://www.fairsandfestivals.net)), accessed March 29, 2021 by Lochmueller Group, Inc., there are no fairs or festivals scheduled within 10 miles of the project.



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The MOT may pose delays and temporary inconveniences to traveling motorists (including school buses and emergency services); however, all inconveniences will cease upon project completion. The MOT for the project is not anticipated to impact access to community events. The project sponsor will be responsible for contacting school districts and emergency services at least two weeks prior to any construction activities that would limit access; this is included as a commitment in the Environmental Commitments section of this CE document.

Perry County has an approved ADA transition plan. This is a slide correction project in a rural area of Perry County where no ADA support is in place; therefore, the project will not have any effect on the published ADA transition plan.

### Public Facilities and Services

*Discuss what public facilities and services are present in the project area and impacts (such as MOT) that will occur to them. Include how the impacts have been minimized and what coordination has occurred. Some examples of public facilities and services include health facilities, educational facilities, public and private utilities, emergency services, religious institutions, airports, transportation or public pedestrian and bicycle facilities.*

Based on a desktop review, the aerial map of the project area (Appendix B, page 3), and the RFI report (Appendix E, page 7) there are no public facilities within the 0.5 mile search radius. The number of public facilities was updated to two by the site visit on September 24, 2020 by Lochmueller Group, Inc. Southern Indiana Power and Perry-Spencer Rural Telephone Co. have facilities within the project area. Southern Indiana Power has overhead powerlines on the west side of SR 145 and Perry-Spencer Rural Telephone Co. has lines on the east side of SR 145. The construction area of the slide repair is clear of Southern Indiana Power's poles and no work will occur beyond the east edge of pavement near the telephone lines; therefore, no impacts are expected. Access to all properties will be maintained during construction.

### Environmental Justice (EJ) (Presidential EO 12898)

During the development of the project were EJ issues identified?

Does the project require an EJ analysis?

If YES, then:

Are any EJ populations located within the project area?

Will the project result in adversely high and disproportionate impacts to EJ populations?

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>

Under FHWA Order 6640.23A, FHWA and the project sponsor, as a recipient of funding from FHWA, are responsible to ensure that their programs, policies, and activities do not have a disproportionately high and adverse effect on minority or low-income populations. Per the current INDOR Categorical Exclusion Manual, an Environmental Justice (EJ) Analysis is required for any project that has two or more relocations or 0.5 acre of additional permanent ROW. The project will require 0.81 acre of permanent ROW. Therefore, an EJ Analysis is required.

Potential EJ impacts are detected by locating minority and low-income populations relative to a reference population to determine if populations of EJ concern exists and whether there could be disproportionately high and adverse impacts to them. The reference population may be a county, city, or town and is called the community of comparison (COC). In this project, the COC is Perry County. The community that overlaps the project area is called the affected community (AC). In this project, the AC is Census Tract 9522. An AC has a population of concern for EJ if the population is more than 50% minority or low-income or if the low-income or minority population is 125% of the COC. Data from the 2014-2018 American Community Survey 5 Year Estimates was obtained from the US Census Bureau Website <https://data.census.gov/cedsci/> on March 29, 2021 by Lochmueller Group, inc. The data collected for minority and low-income populations within the AC are summarized in the below table.

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Table: Minority and Low-Income Data (2015-2019 American Community Survey 5-Year Estimates)		
	COC Perry County, Indiana	AC-1 Census Tract 9522 Perry County, Indiana
Percent Minority	5.89%	8.51%
125% of COC	7.37%	AC>125% COC
EJ Population of Concern		Yes
Percent Low-Income	11.93%	8.17%
125% of COC	14.91%	AC<125% COC
EJ Population of Concern		No

AC-1, Census Tract 9522, has a percent minority of 8.51% which is below 50% but is above the 125% COC threshold. Therefore, Census Tract 9522 has a minority population of concern.

AC-1, Census Tract 9522, has a percent low-income of 8.17% which is below 50% and is below the 125% COC threshold. Therefore, Census Tract 9522 does not have a low-income population of concern.

The project will require the acquisition of approximately 0.81 acre of permanent ROW (strip ROW). Land use within the proposed permanent ROW consists of residential and forested areas.

Overall, the negative impacts to property owners within the project area will be minimal and consist primarily of short-term construction impacts and the loss of strip ROW. No relocations will be required. The ROW to be acquired will not substantially diminish the existing land use of the affected property owners. The maintenance of traffic during construction will utilize a detour route. Property owners will be provided access throughout the duration of the project to reduce impacts as much as possible. No permanent impacts to community cohesion are anticipated.

Impacts from the project to any EJ community in this area will be beneficial due to improvements of deteriorating roadway conditions. It is expected that the project will not have a disproportionately high and adverse environmental or health impact to low-income or minority populations of EJ concern when compared to non-EJ populations.

**Relocation of People, Businesses or Farms**

Will the proposed action result in the relocation of people, businesses or farms?  
Is a BIS or CSRS required?

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>

Number of relocations:      Residences: \_\_\_\_\_ Businesses: \_\_\_\_\_ Farms: \_\_\_\_\_ Other: \_\_\_\_\_

*Discuss any relocations that will occur due to the project. If a BIS or CSRS is required, discuss the results in the discussion below.*

No relocations of people, businesses, or farms will take place as a result of this project.

### SECTION I – HAZARDOUS MATERIALS & REGULATED SUBSTANCES

**Hazardous Materials & Regulated Substances** (Mark all that apply)

- Red Flag Investigation (RFI)
- Phase I Environmental Site Assessment (Phase I ESA)
- Phase II Environmental Site Assessment (Phase II ESA)
- Design/Specifications for Remediation required?

**Documentation**

<b>X</b>

Date RFI concurrence by INDOT SAM (if applicable): March 10, 2021

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*Include a summary of the potential hazardous material concerns found during review. Discuss in depth sites found within, directly adjacent to, or ones that could impact the project area. Refer to current INDOT SAM guidance. If additional documentation (special provisions, pay quantities, etc.) will be needed, include in discussion. Include applicable commitments.*

Based on a review of GIS and available public records, an RFI was concurred by INDOT SAM on March 10, 2021 (Appendix E, page 4). No sites with hazardous material concerns (hazmat sites) or sites involved with regulated substances were identified in or within 0.5 mile of the project area. Further investigation for hazardous material concerns or regulated substances is not required at this time.

### Part IV – Permits and Commitments

**PERMITS CHECKLIST**

**Permits** (mark all that apply)

**Likely Required**

**Army Corps of Engineers (404/Section10 Permit)**

Nationwide Permit (NWP)	<input type="checkbox"/>
Regional General Permit (RGP)	<input checked="" type="checkbox"/>
Individual Permit (IP)	<input type="checkbox"/>
Other	<input type="checkbox"/>

**IN Department of Environmental Management (401/Rule 5)**

Nationwide Permit (NWP)	<input type="checkbox"/>
Regional General Permit (RGP)	<input type="checkbox"/>
Individual Permit (IP)	<input checked="" type="checkbox"/>
Isolated Wetlands	<input type="checkbox"/>
Rule 5	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>

**IN Department of Natural Resources**

Construction in a Floodway	<input type="checkbox"/>
Navigable Waterway Permit	<input type="checkbox"/>
Other	<input type="checkbox"/>

**Mitigation Required**

**US Coast Guard Section 9 Bridge Permit**

**Others (Please discuss in the discussion below)**

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

*List the permits likely required for the project and summarize why the permits are needed, including permits designated as "Other."*

A total of 275 feet of UNT1 to Anderson River will be impacted by the project. Impacts will be limited to the portion of the stream within the construction limits of the project. A USACE Section 404 and IDEM 401 Water Quality Certification will likely be required due to impacts to UNT1 to Anderson River. A formal jurisdictional determination has not yet been made by the USACE, which will be required during the permitting phase.

Applicable recommendations provided by resource agencies are included in the Environmental Commitments section of this document. If permits are found to be necessary, the conditions of the permit will be the requirements of the project and will supersede these recommendations.

It is the responsibility of the project sponsor to identify and obtain all required permits.

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### ENVIRONMENTAL COMMITMENTS

List all commitments and include the name of agency/organization requesting/requiring the commitment(s). Listed commitments should be numbered.

#### Firm:

1. If the scope of work or permanent or temporary right-of-way amounts change, INDOT Environmental Services Division (ESD) and the INDOT District Environmental Section will be contacted immediately. (INDOT ESD and INDOT Vincennes District)
2. It is the responsibility of the project sponsor to notify school corporations and emergency services at least two weeks prior to any construction that would block or limit access. (INDOT ESD)
3. General AMM 1: Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable AMMs. (USFWS)
4. Tree Removal AMM 1: Modify all phases/aspects of the project (e.g. temporary work areas, alignments) to avoid tree removal. (USFWS)
5. Lighting AMM 1: Direct temporary lighting away from suitable habitat during the active season. (USFWS)
6. Tree Removal AMM 2: Apply time of year restrictions for tree removal when bats are not likely to be present, or limit tree removal to 10 or fewer trees per project at any time of year within 100 feet of existing road/rail surface and outside of documented roosting/foraging habitat or travel corridors; visual emergence survey must be conducted with no bats observed. (USFWS)
7. Tree Removal AMM 3: Ensure tree removal is limited to that specified in project plans and ensure that contractors understand clearing limits and how they are marked in the field (e.g., install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits. (USFWS)
8. Tree Removal AMM 4: Do not remove **documented** Indiana bat or NLEB roosts that are still suitable for roosting, or trees within 0.25 miles of roosts, or **documented** foraging habitat any time of year.

#### For Further Consideration:

9. Stream relocation projects are complex, difficult to design and construct, and have a high risk of failure. All reasonable alternatives should be considered first. If relocation appears to be the best option, a mitigation plan should be developed. Any hydraulic modeling of a relocated channel should be calculated with mature trees, shrubs, grasses, and other similar features. Additional mitigation, such as planting trees along a stream, may affect hydrologic modeling, so mitigation and engineering design should be coordinated. (IDNR DFW)
10. Mitigation for stream relocation requires replacement of lost qualities and characteristics on the relocated segment, which are at least equal to the original segment, and which fit the surrounding landscape. Natural channel design is applied to the relocated segment, including elements needed to complement upstream and downstream conditions. To the extent practicable, the relocated segment should have a similar cross section, substrate, in-stream features, and riparian corridor and channel morphology when compared to the original segment. The USDA's Natural Resources Conservation Service, among others, provide helpful information on channel design. See DNR's Habitat Mitigation Guidelines for full details on stream impacts and mitigation (<http://iac.iga.in.gov/20200527-IR-312200284NRA.xml.pdf>) (IDNR DFW)
11. Any riprap placement that covers the banks will impair wildlife passage. Minimize the use of riprap and use alternative erosion protection materials whenever possible. (IDNR DFW)
12. Riprap must not be placed in the active thalweg channel or placed in the streambed in a manner that precludes fish or aquatic organism passage (riprap must not be placed above the existing streambed elevation). The riprap scour protection must not extend into the channel more than approximately three feet on each side of structure to avoid accelerating flow in the low flow channel and causing bed scouring or fish passage impairment. (IDNR DFW)
13. Where riprap must be used, we recommend placing only enough riprap to provide stream bank toe protection, such as from the toe of the bank up to the ordinary high water mark (OHWM). The banks above the OHWM must be restored, stabilized, and revegetated using geotextiles and a mixture of grasses, sedges, wildflowers, shrubs, and trees native to the area and specifically for stream bank/floodway stabilization purposes as soon as possible upon completion. The proposed riprap could be adapted to facilitate wildlife movement by making the riprap extend above the ordinary high water level, mixing the riprap with smaller stone and fines that match the existing stream substrate particle distribution, thereby providing a smoother surface than riprap alone and imparting stability to the stone matrix. (IDNR DFW)
14. Where hard armoring is needed above the OHWM, wildlife passage can be facilitated by using a smooth-surfaced material instead of riprap, such as articulated concrete block mats, fabric-formed concrete mats or other similar smooth-surfaced materials as these materials will not impair wildlife movement. Poured concrete is not an acceptable type of smooth-surfaced material. (IDNR DFW)
15. Impacts to non-wetland forest of one (1) acre or more should be mitigated at a minimum 2:1 ration. If less than one acre of

This is page 20 of 21 Project name: SR 145 Slide Correction Date: May 19, 2021

## Indiana Department of Transportation

County Perry

Route SR 145

Des. No. 1800163

non-wetland forest is removed in a rural setting, replacement should be a minimum 1:1 ratio based on area. Impacts to non-wetland forest under one (1) acre in an urban setting should be mitigated by planting five trees, at least 2 inches in diameter-at-breast height (dbh), for each tree which is removed that is 10 inches dbh or greater (5:1 mitigation based on the number of large trees) or by using the 1:1 replacement ratio based on area depending on the type of habitat impacted (individual canopy tree removal in an urban streetscape or park-like environment versus removal of habitat supporting a tree canopy, woody understory, and herbaceous layer). Impacts under 0.10 acre in an urban area may still involve the replacement of large diameter trees but typically do not require any additional mitigation or additional plantings beyond seeding and stabilizing disturbed areas. There are exceptions for high quality habitat however. (IDNR DFW)

16. Do not cut any trees suitable for Indiana bat or Northern long-eared Bat roosting (greater than 5 inches dbh, living or dead, with loose hanging bark, or with crack, crevices, or cavities) from April 1 through September 30. (IDNR DFW).
17. Do not construct any temporary runarounds, access bridges, causeways, cofferdams, diversions, or pumparounds. (IDNR DFW)
18. Use minimum average 6 inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids. (IDNR DFW)
19. Plant native hardwood trees along the top of the bank and right-of-way to replace the vegetation destroyed during construction. (IDNR DFW)

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**Categorical Exclusion**

**Appendix A**

**INDOT Supporting Documentation**

## Categorical Exclusion Level Thresholds

	PCE	Level 1	Level 2	Level 3	Level 4 <sup>1</sup>
<b>Section 106</b>	Falls within guidelines of Minor Projects PA	“No Historic Properties Affected”	“No Adverse Effect”	-	“Adverse Effect” Or Historic Bridge involvement <sup>2</sup>
<b>Stream Impacts<sup>3</sup></b>	No construction in waterways or water bodies	< 300 linear feet of stream impacts	≥ 300 linear feet of stream impacts	-	USACE Individual 404 Permit <sup>4</sup>
<b>Wetland Impacts<sup>3</sup></b>	No adverse impacts to wetlands	< 0.1 acre	-	< 1.0 acre	≥ 1.0 acre
<b>Right-of-way<sup>5</sup></b>	Property acquisition for preservation only or none	< 0.5 acre	≥ 0.5 acre	-	-
<b>Relocations</b>	None	-	-	< 5	≥ 5
<b>Threatened/Endangered Species (Species Specific Programmatic for Indiana bat &amp; northern long eared bat)*</b>	“No Effect”, “Not likely to Adversely Affect” (With select AMMs <sup>6</sup> )	“Not likely to Adversely Affect” (With any AMMs or commitments)	-	“Likely to Adversely Affect”	Project does not fall under Species Specific Programmatic <sup>7</sup>
<b>Threatened/Endangered Species (Any other species)*</b>	Falls within guidelines of USFWS 2013 Interim Policy or “No Effect”	“Not likely to Adversely Affect”	-	-	“Likely to Adversely Affect”
<b>Environmental Justice</b>	No disproportionately high and adverse impacts	-	-	-	Potential <sup>8</sup>
<b>Sole Source Aquifer</b>	No Detailed Groundwater Assessment	-	-	-	Detailed Groundwater Assessment
<b>Floodplain</b>	No Substantial Impacts	-	-	-	Substantial Impacts
<b>Section 4(f) Impacts</b>	None	-	-	-	Any <sup>9</sup>
<b>Section 6(f) Impacts</b>	None	-	-	-	Any
<b>Permanent Traffic Alteration</b>	None	-	-	-	Any
<b>Noise Analysis Required</b>	No	-	-	-	Yes
<b>Air Quality Analysis Required</b>	No	-	-	-	Yes <sup>10</sup>
<b>Approval Level</b>  <ul style="list-style-type: none"> <li>• District Env. (DE)</li> <li>• Env. Serv. Div. (ESD)</li> <li>• FHWA</li> </ul>	Concurrence by DE or ESD	DE or ESD	DE or ESD	DE and/or ESD	DE and/or ESD; and FHWA

<sup>1</sup> Coordinate with INDOT Environmental Services Division. INDOT will then coordinate with the appropriate FHWA Environmental Specialist.

<sup>2</sup> Any involvement with a bridge processed under the Historic Bridge Programmatic Agreement.

<sup>3</sup> Total permanent impacts to streams (linear feet) and wetlands (acres).

<sup>4</sup> US Army Corps of Engineers Individual 404 Permit

<sup>5</sup> Total permanent and temporary right-of-way. This does not include reacquisition of existing apparent right-of-way.

<sup>6</sup> Avoidance and Mitigation Measures (AMMs) determined by the IPAC determination key to be required that are not tree AMMs, bridge AMMs, or structure AMMs.

<sup>7</sup> Projects that do not fall under a Species Specific Programmatic and results in a “Likely to Adversely Affect”. Other findings can be processed as a lower level CE.

<sup>8</sup> Potential for causing a disproportionately high and adverse impact.

<sup>9</sup> Section 4(f) use resulting in an Individual, Programmatic, or *de minimis* evaluation. The only exception is a *de minimis* evaluation for historic properties (Effective January 2, 2020). If a historic property *de minimis* and no other use, mark the *None* column.

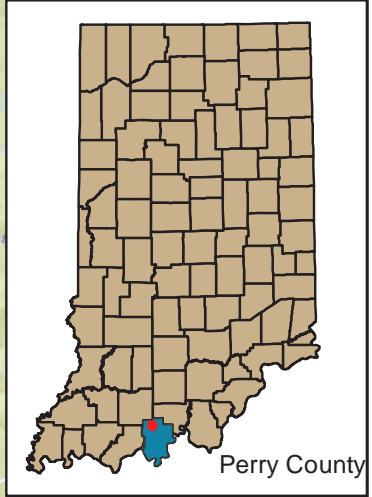
<sup>10</sup> Hot Spot Analysis and/or MSAT Quantitative Emission Analysis.

\* Includes the threatened/endangered species critical habitat

Note: Substantial public or agency controversy may require a higher-level NEPA document.



**Categorical Exclusion**  
**Appendix B**  
**Graphics**



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

**Legend**  
 Project Area

6200 Vogel Road  
 Evansville, IN 47715  
 Phone: (812) 479-6200  
 Fax: (812) 479-6262


**General Location Map**  
 Des No. 1800163

0 0.5 1 Miles

County: Perry  
 Township: Clark

SR 145, 1.69 miles south of SR 62 junction  
 Slide Correction  
 Created: 3/19/2021, P. Parke



**Legend**  
 Project Area

**Bristow Quadrangle**

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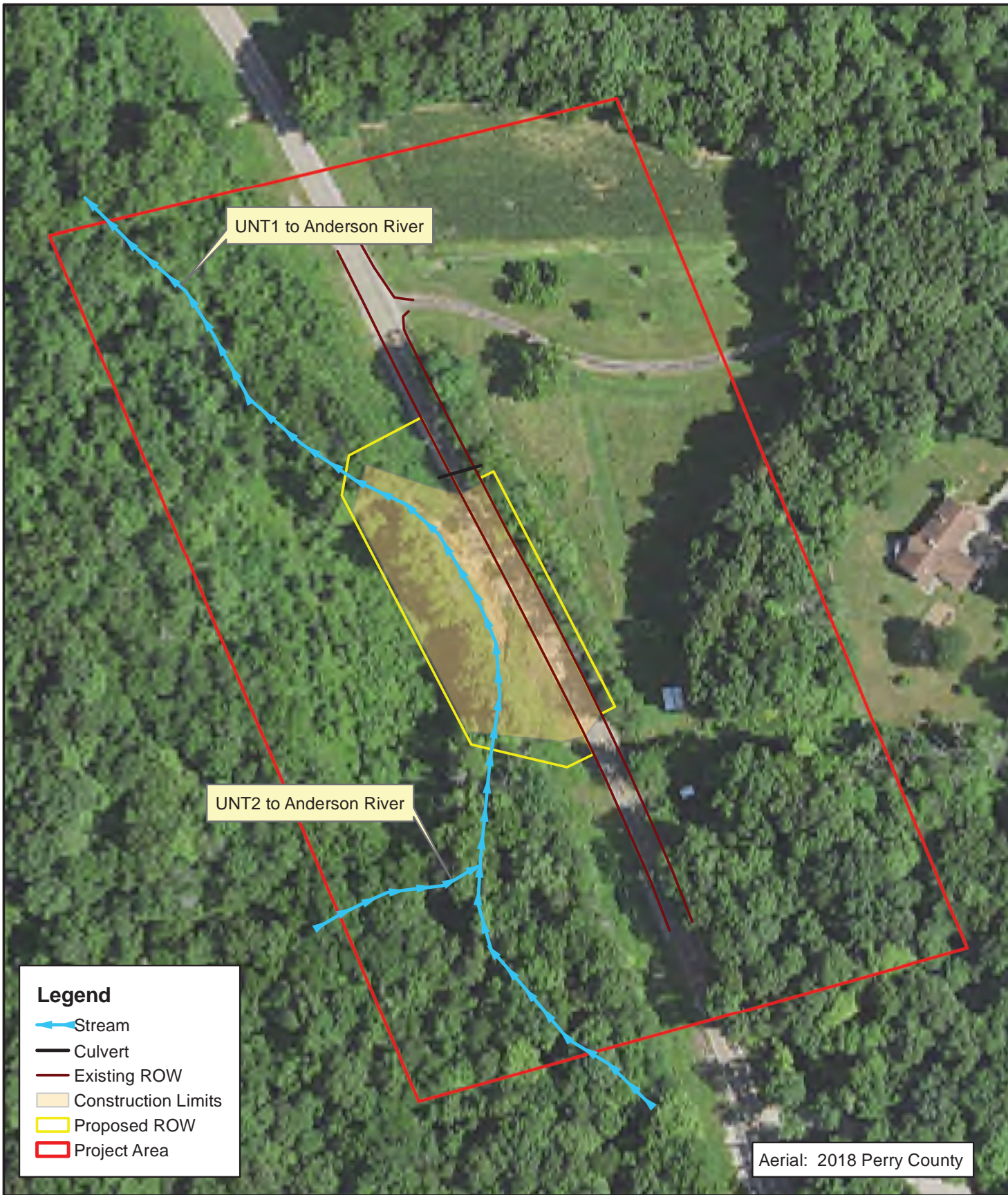
**LOCHMUELLER GROUP**  
 6200 Vogel Road  
 Evansville, IN 47715  
 Phone: (812) 479-6200  
 Fax: (812) 479-6262

**USGS Topographic Map**  
 Des No. 1800163


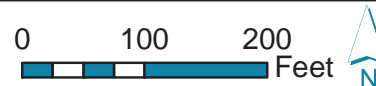
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 Township: Clark

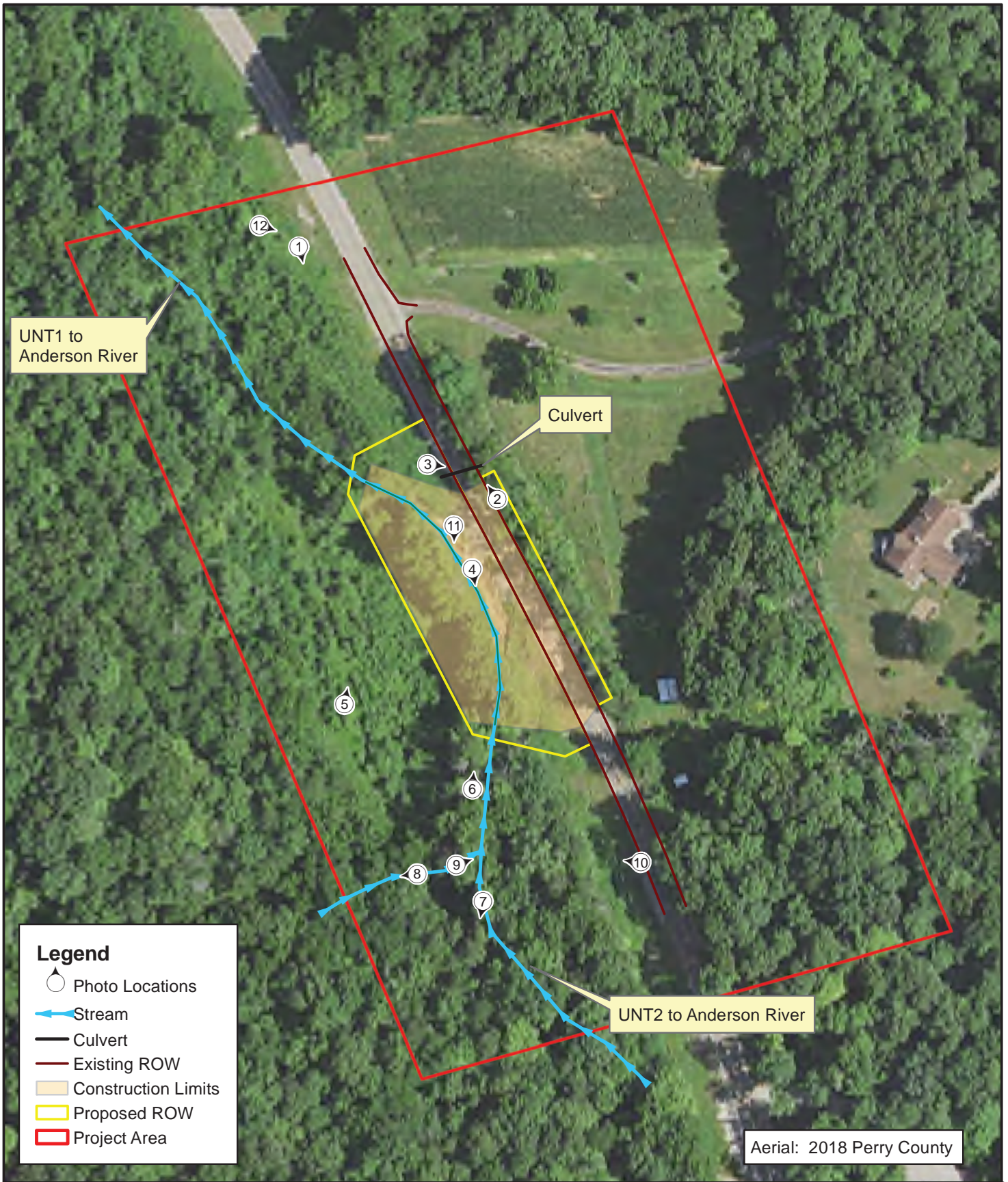


SR 145, 1.69 miles south of SR 62 junction  
 Slide Correction  
 Created: 4/14/2021, P. Parke



S:\\_2018\18-0126\GEDI\ED01-1800163\Enviro\Map\CE\_Maps\CE\_ProjectMap.mxd

 <p>6200 Vogel Road Evansville, IN 47715 Phone: (812) 479-6200 Fax: (812) 479-6262</p>	<p><b>Project Map</b> Des. No. 1800163</p>	<p>County: Perry Township: Clark</p>
	<p>0 100 200 Feet</p> 	<p>SR 145, 1.69 miles south of SR 62 junction Slide Correction Created: 3/19/2021, P. Parke</p>



**Legend**

- Photo Locations
- Stream
- Culvert
- Existing ROW
- Construction Limits
- Proposed ROW
- Project Area

Aerial: 2018 Perry County

<p>6200 Vogel Road Evansville, IN 47715 Phone: (812) 479-6200 Fax: (812) 479-6262</p>	<p><b>Photo Location Map</b> Des. No. 1800163</p>	<p>County: Perry Township: Clark</p>
	<p>0 100 200 Feet</p>	<p>SR 145, 1.69 miles south of SR 62 junction Slide Correction Created: 4/14/2021, P. Parke</p>



1. View of SR 145 facing south



2. View of SR 145 facing northwest



3. View of culvert outlet under SR 145 facing southeast



4. South view of UNT1 to Anderson River along SR 145



5. Northeast view of surrounding habitat



6. Upstream view of UNT1 to Anderson River facing northeast





7. Downstream view of UNT1 to Anderson River facing southwest



8. Upstream view of UNT2 to Anderson River facing west



9. Downstream view of UNT2 to Anderson River facing northeast



10. View of project area west of SR 145 looking west



11. View of project area west of SR 145 facing south



12. Southeast view of project area

PROJECT	DESIGNATION
1800163	1800163
CONTRACT	
R-41452	

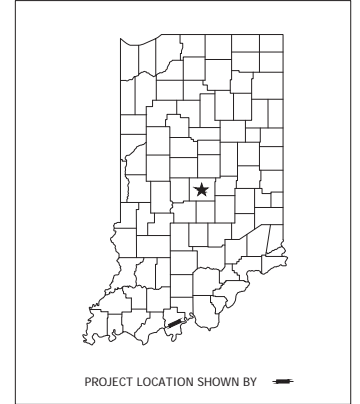
# INDIANA DEPARTMENT OF TRANSPORTATION

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## ROAD PLANS

S.R. 145  
PROJECT NO. 1800163 P.E.  
1800163 R/W  
1800163 CONST.

TRAFFIC DATA		S.R. 145
A.A.D.T. (2023)		418 V.P.D.
A.A.D.T. (2043) PROJECTED		427 V.P.D.
D.H.V. (2043)		54 V.P.H.
DIRECTIONAL DISTRIBUTION		53 %
TRUCKS		11 % A.A.D.T.
		21 % D.H.V.
DESIGN DATA		
DESIGN SPEED		45 MPH
PROJECT DESIGN CRITERIA		3R (NON-FREEWAY)
FUNCTIONAL CLASSIFICATION		RURAL MAJOR COLLECTOR
RURAL/URBAN		RURAL
TERRAIN		LEVEL
ACCESS CONTROL		NONE



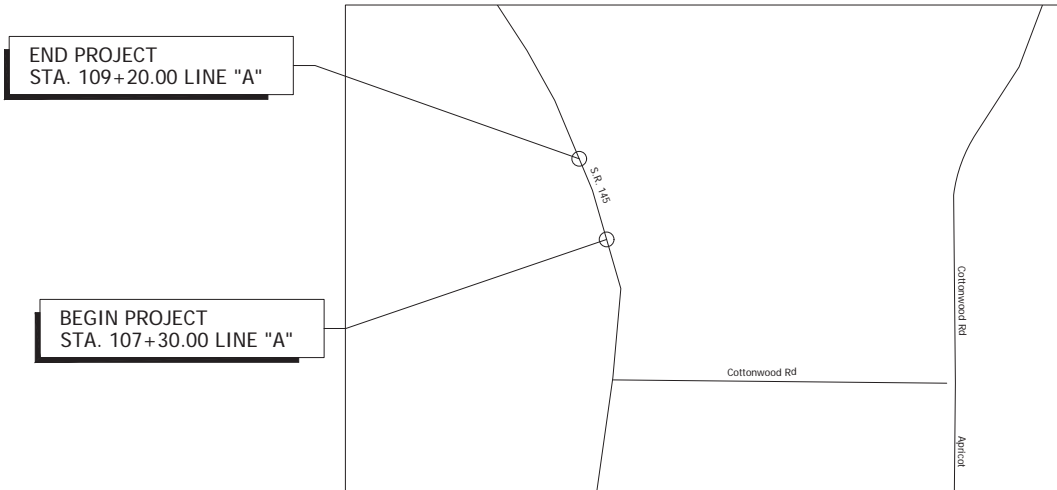
H.U.C. 14 DIGIT CODE NO.: 05090203150090

SLIDE CORRECTION LOCATED APPROXIMATELY 1.69 MILES SOUTH  
(RP 16+34) OF S.R. 62 ROAD JUNCTION PERRY COUNTY, INDIANA

GROSS LENGTH: 0.051MILES  
NET LENGTH: 0.051 MILES

PLAN { LONG: 1" = 20'  
TRANS: 1" = 20' } SCALES: { HORIZ: 1" = 20'  
VERT: 1" = 5' } MAX. GRADE: +6.77 %

LOCATION:  
LATITUDE: 38° 12' 05" N  
LONGITUDE: 86° 41' 16" W



LOCATION MAP  
PERRY COUNTY

### PFC PLANS

[INDIANA DEPARTMENT OF TRANSPORTATION  
STANDARD SPECIFICATIONS DATED 2020 TO  
BE USED WITH THESE PLANS]

PLANS PREPARED BY:	VS ENGINEERING, INC.	FAX: (317) 293-4737
		TEL: (317) 293-3542
		PHONE NUMBER
CERTIFIED BY:	XXXX, P.E.	INDIANA REG. NO. XXXXXXXX
APPROVED FOR LETTING:		DATE
	INDIANA DEPARTMENT OF TRANSPORTATION	DATE

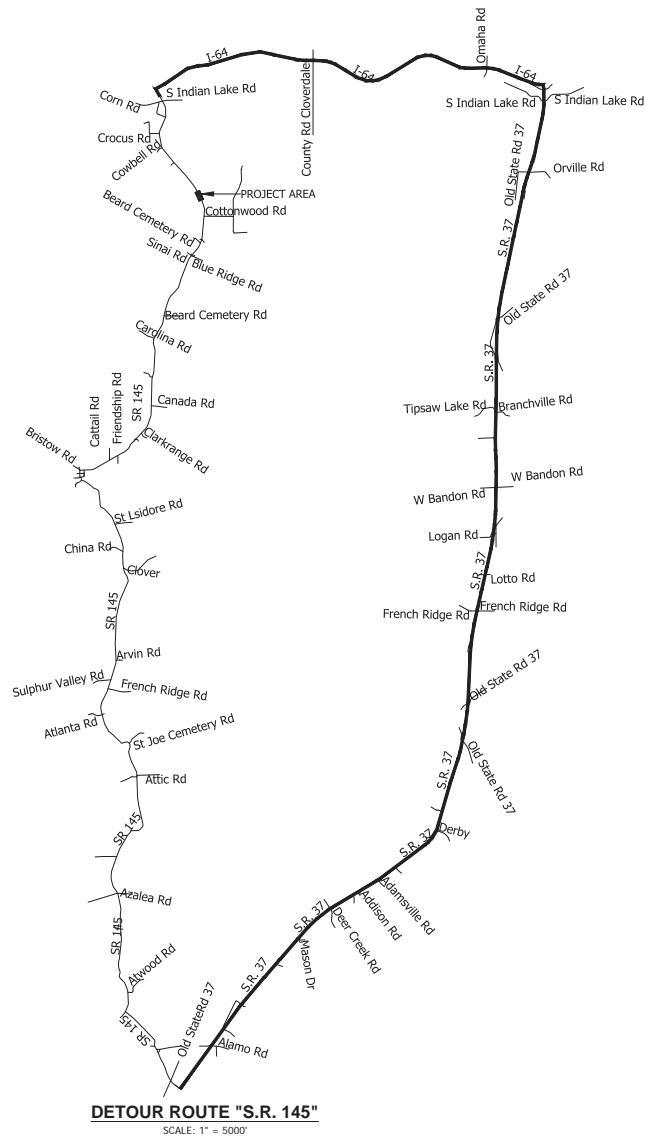
Preliminary

DESIGNATION	
1800163	
SHEETS	
1	of 19
CONTRACT	
R-41452	
PROJECT	
1800163	

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 DATE.....04/20/21 - 2:49pm



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 PLOTTED BY: jshofstall  
 DATE: 04/20/21 - 2:50pm



**DETOUR ROUTE "S.R. 145"**  
SCALE: 1" = 500'



LEGEND	
	CONSTRUCTION SIGN W/TYPE "A" LIGHT
	CONSTRUCTION SIGN
	BARRICADE TYPE III-A OR TYPE III-B AS NOTED
	DETOUR ROUTE

**NOTES:**  
See Sheet 6 for Traffic Detour Details, Road Closure Details, and M.O.T. Quantities.

Preliminary

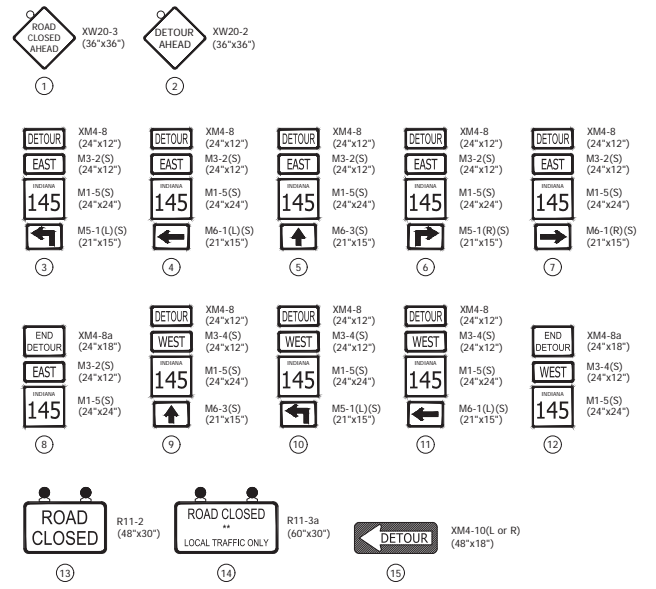
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DESIGNED: EA	DRAWN: EA	
CHECKED: MH	CHECKED: MH	

INDIANA DEPARTMENT OF TRANSPORTATION	
DETOUR ROUTE	

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	N/A
VERTICAL SCALE	DESIGNATION
N/A	1800163
SURVEY BOOK	SHEETS
	6 of 19
CONTRACT	PROJECT
R-41452	1800163

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**CONSTRUCTION SIGN LEGEND**

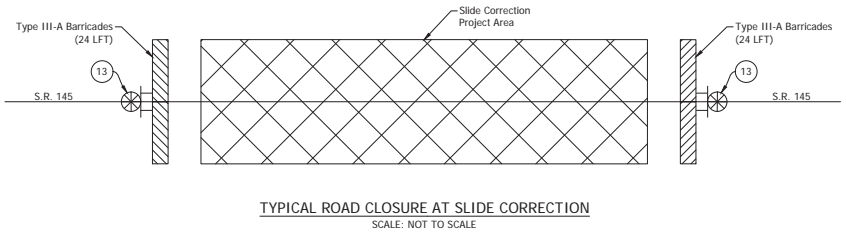


**M.O.T. QUANTITIES**

MAINTAINING TRAFFIC	0	LSUM
CONSTRUCTION SIGN, A	0	EACH
CONSTRUCTION SIGN, B	0	EACH
ROAD CLOSURE SIGN ASSEMBLY	0	EACH
DETOUR ROUTE MARKER ASSEMBLY	0	EACH
TYPE III-A BARRICADE	00	LFT
TYPE III-B BARRICADE	00	LFT

**NOTES:**

- CONTRACTOR SHALL MAINTAIN AND PROTECT VEHICULAR TRAFFIC DURING ALL OPERATIONS. VEHICULAR ACCESS TO PUBLIC/PRIVATE DRIVEWAYS SHOULD BE MAINTAINED AT ALL TIMES.
- CONTRACTOR SHALL COMPLY WITH THE LATEST EDITION OF "INDIANA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" DURING WORK OPERATIONS AND FOR THE DURATION OF THE PROJECT.
- THE CONTRACTOR SHOULD REFER TO INDOT STANDARDS AND THE "INDIANA MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" TO PROVIDE SAFE AND EFFICIENT TEMPORARY TRAFFIC CONTROL.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH ANY ADJACENT OR OVERLAPPING PROJECTS AND CHECK COMPATIBILITY OF TRAFFIC CONTROL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING LOCAL EMERGENCY PERSONNEL, SCHOOLS, AND LOCAL AND COUNTY OFFICIALS OF ANY CHANGES TO THE TRAFFIC PATTERNS THROUGHOUT THE LENGTH OF THE PROJECT.



**LEGEND**

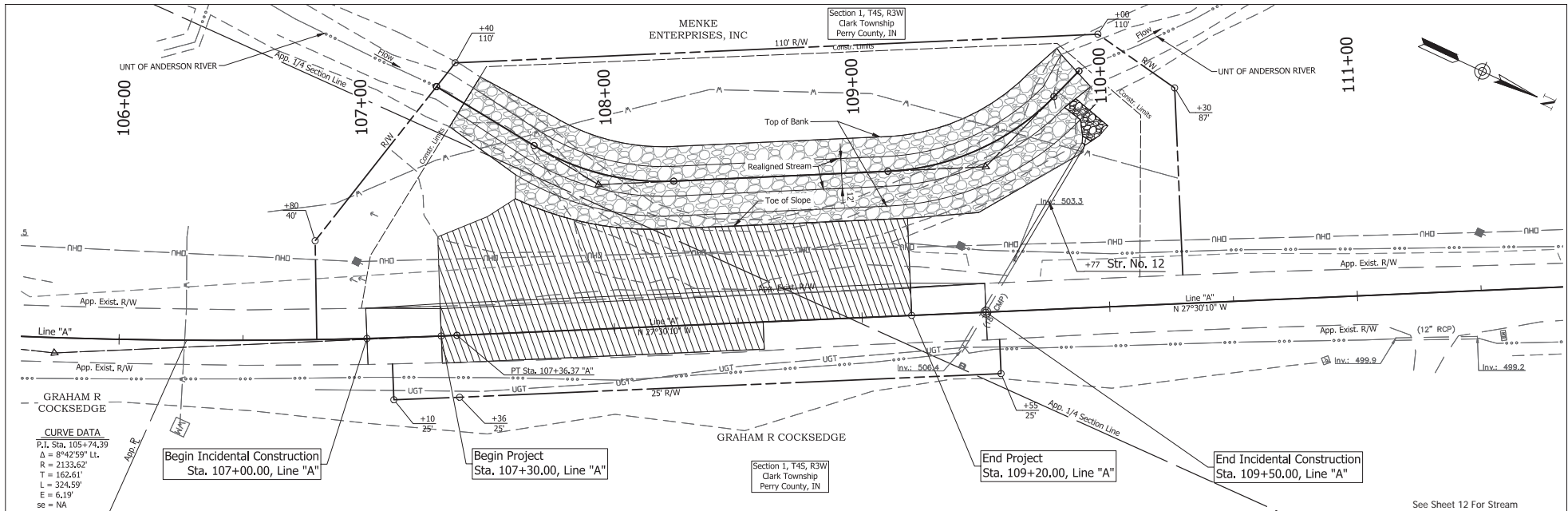
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	CONSTRUCTION SIGN		
	BARRICADE TYPE III-A OR TYPE III-B AS NOTED		
	DETOUR ROUTE		

Preliminary

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
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CHECKED: MH	CHECKED: MH	

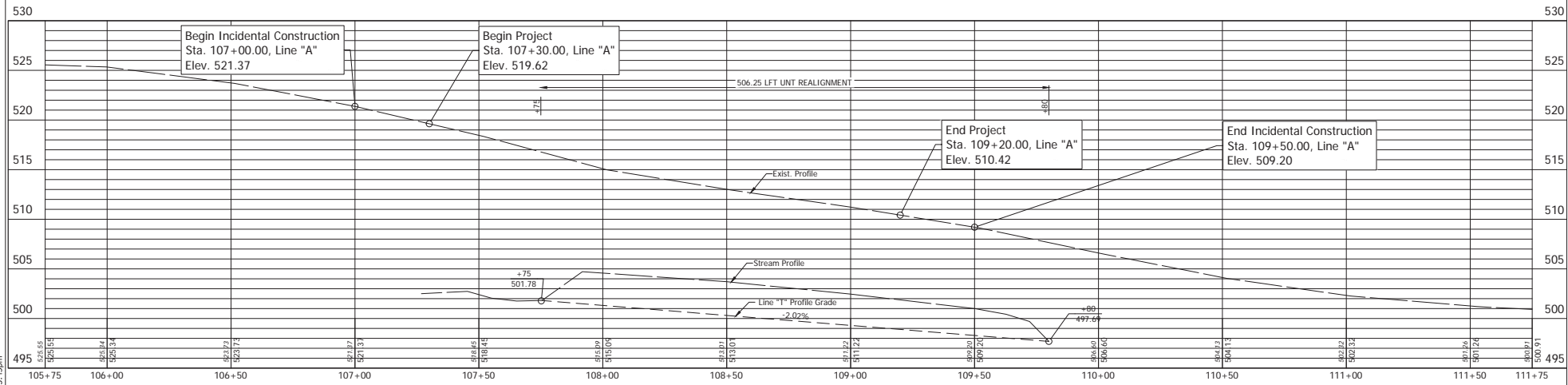
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AS NOTED	N/A
VERTICAL SCALE	DESIGNATION
N/A	1800163
SURVEY BOOK	SHEETS
	7 of 19
CONTRACT	PROJECT
R-41452	1800163



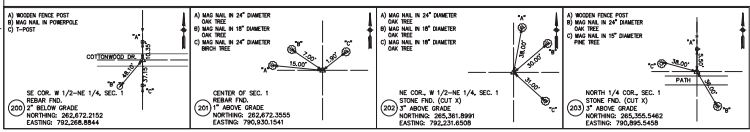
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 $R = 2133.62'$   
 $T = 162.61'$   
 $L = 324.59'$   
 $E = 6.19'$   
 $se = NA$

See Sheet 12 For Stream Realignment Geometric Detail.



Preliminary

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RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: EA	DRAWN: EA	
CHECKED: MH	CHECKED: MH	

**INDIANA**  
DEPARTMENT OF TRANSPORTATION

**PLAN & PROFILE**

HORIZONTAL SCALE 1" = 20'	BRIDGE FILE N/A
VERTICAL SCALE N/A	DESIGNATION 1800163
SURVEY BOOK	SHEETS 8 of 19
CONTRACT R-41452	PROJECT 1800163



**Categorical Exclusion**  
**Appendix C**  
**Early Coordination**



# INDIANA DEPARTMENT OF TRANSPORTATION

Eric Holcomb, Governor  
Joe McGuinness, Commissioner

February 19, 2021

SAMPLE LETTER

«Name»  
«Title»  
«Address1»  
«Address2»  
«City», «State» «Zip»

Re: Des. No.: 1800163  
Slide Correction Project  
State Project  
State Road (SR) 145, 1.69 miles south of SR 62 junction  
Perry County, Indiana

Dear «Salu»,

The Federal Highway Administration (FHWA) and the Indiana Department of Transportation (INDOT) intend to proceed with a slide correction project (Des No. 1800163) on SR 145 in Perry County.

This letter is part of the early coordination phase of the environmental review. At this time, we are requesting comments from your area of expertise regarding any possible environmental effects (social and natural) associated with this project. **Please use the above Des No. and project description in your reply.** Your comments will be incorporated into the formal environmental study. Your cooperation in this endeavor is appreciated.

#### *Project Location and Existing Conditions*

The proposed project is located along SR 145, approximately 1.69 miles south of SR 62 junction, Perry County, Indiana. Specifically, the project is located in Section 1, Township 4 South, Range 3 West in Clark Township as depicted on the Bristow U.S. Geological Survey 1:24,000 scale quadrangle. Adjacent land use consists of wooded areas and scattered residential properties.

Within the project area, SR 145 is functionally classified as a rural major collector. The typical cross section consists of two 11-foot asphalt travel lanes with 1-foot to 2-foot wide usable shoulders made of compact aggregate or earth. There is no guardrail present on either side of SR 145. Please see attachments for maps and photographs of the proposed project area.

#### *Draft Purpose and Need*

The purpose of this project is to stabilize the existing road slide and to prevent further damage from occurring to the roadway. The need for this project is to repave the portions of SR 145 that were damaged by the lateral slide of the embankment, which is threatening overall structural integrity of the roadway.

#### *Proposed Project*

Work elements include the excavation and replacement of the failed soil with compacted soil, and embankment stabilization of the Unnamed Tributary (UNT) of Anderson River. Some stream realignments will also be considered. The project will also repave damaged portions of pavement near the slide. Furthermore, a culvert is present within the north end of the slide



# INDIANA DEPARTMENT OF TRANSPORTATION

Eric Holcomb, Governor  
Joe McGuinness, Commissioner

limits and will require extension.

The proposed maintenance of traffic for this project will be road closure throughout the duration of construction, which will last for approximately four months. An official detour using I-64, SR 37, and SR 145 is proposed. No permanent or temporary lighting will be used for the project. Adjacent property owners will retain access to their properties through the construction process.

A US Army Corps of Engineers (USACE) Section 404 permit, and Indiana Department of Environmental Management (IDEM) 401 Water Quality Certification (WQC) may be required for the proposed construction activities.

Construction is expected to begin Spring 2023.

### *Right-of-Way (ROW)*

This project will require acquisition of right-of-way. The apparent existing right-of-way width on SR 145 extends to the edge of pavement. Approximately 0.81 acre of permanent right-of-way will be required for this project. No temporary right-of-way will be required for this project. Work will extend up to 95 feet away from the edge of pavement to correct the slide.

### *Environmental Resources*

A Red Flag Investigation (RFI) was performed for a 0.5-mile radius of the Des 1800163 project area. Several "Red flags" were identified within the 0.5-mile search radius. One NWI-Line segment and two unnamed tributaries of Anderson River are located within the project area. A Waters of the U.S. Determination Report and coordination with the INDOT Ecology and Waterway Permitting Office (EWPO) will occur. This project is outside the Karst Memorandum of Understanding Potential Karst Features Region.

### *Section 106*

It is anticipated that the proposed project will fall within the guidelines of Category B, Type 10 under the Minor Projects Programmatic Agreement (MPPA). As the project area includes undisturbed soils, an archaeological field review will likely be recommended. Coordination with INDOT Cultural Resources Office will occur.

### *Range-wide Informal Programmatic Consultation*

Land use in the vicinity of the project is primarily wooded areas with scattered residences. Perry County is within the range of the federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened northern long-eared bat (*Myotis septentrionalis*). A determination key has been completed using the U.S. Fish and Wildlife Service (USEWS) Information for Planning and Consultation (IPaC) portal and the project received a finding of "May Affect - Not Likely to Adversely Affect". Any additional consultation with the USFWS will occur through INDOT.

### *Early Coordination*

This letter is part of the early coordination review process. You are asked to review this information and provide any comments you may have relative to anticipated impacts of the project on areas in which you have jurisdiction or special expertise. We will incorporate your comments into a study of the project's environmental impacts. To facilitate the development of this project, you are asked to reply within 30 calendar days of receipt of this letter. If no response is received by that date, it will be assumed you have no comments at the present time.

If you have any questions regarding this project, please feel free to contact me at (812) 759-4119 or at [pparke@lochgroup.com](mailto:pparke@lochgroup.com). Additionally, should you want to contact the sponsor of this project, the INDOT – Vincennes District,



# INDIANA DEPARTMENT OF TRANSPORTATION

Eric Holcomb, Governor  
Joe McGuinness, Commissioner

please contact the Project Manager, Brian Malone, at (812) 836-2112 or at [bmalone@indot.in.gov](mailto:bmalone@indot.in.gov).

Thank you in advance for your input.

Sincerely,

A handwritten signature in black ink that reads "Payton Parke".

Payton Parke  
Environmental Department  
Lochmueller Group, Inc.

## Attachments:

- General Location Map
- USGS Topographic Map
- Aerial (2011) and Photo Orientation Map
- Photographs

Note: Attachments have been removed to avoid duplication and reduce file size.

## Distribution List:

- FHWA – Indiana Division (electronic submission)
- Indiana Geological and Water Survey (online submission)
- Indiana Department of Natural Resources – Division of Fish and Wildlife (electronic submission)
- National Park Service – Midwest Regional Office
- IDEM (online submission)
- IDEM Groundwater (online submission)
- US Housing and Urban Development (electronic submission)
- INDOT, Vincennes District (electronic submission)
- US Fish and Wildlife Service
- US Department of Agriculture – Natural Resources Conservation Service (electronic submission)
- US Army Corps of Engineers – Louisville District (electronic submission)
- US Forest Service – Hoosier National Forest (electronic submission)
- Perry County Highway Department
- Perry County Emergency Management Agency
- Perry County Commissioners
- Perry County Council



# INDIANA DEPARTMENT OF TRANSPORTATION

Eric Holcomb, Governor  
Joe McGuinness, Commissioner

- Perry County Surveyor
- Perry County Sheriff
- Perry County Soil and Water Conservation District
- Perry County Planning and Zoning



## United States Department of the Interior



### FISH AND WILDLIFE SERVICE

Indiana Ecological Services Field Office

620 South Walker Street

Bloomington, IN 47403-2121

Phone: (812) 334-4261 Fax: (812) 334-4273

<http://www.fws.gov/midwest/Endangered/section7/s7process/step1.html>

In Reply Refer To:

January 21, 2021

Consultation Code: 03E12000-2021-SLI-0326

Event Code: 03E12000-2021-E-02823

Project Name: Des. 1800163 SR 145 Slide Correction

Subject: Updated list of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the Service if they determine their project “may affect” listed species or critical habitat.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally. You may verify the list by visiting the ECOS-IPaC website <http://ecos.fws.gov/ipac/> at regular intervals during project planning and implementation and completing the same process you used to receive the attached list. As an alternative, you may contact this Ecological Services Field Office for updates.

Please use the species list provided and visit the U.S. Fish and Wildlife Service’s Region 3 Section 7 Technical Assistance website at - <http://www.fws.gov/midwest/endangered/section7/s7process/index.html>. This website contains step-by-step instructions which will help you determine if your project will have an adverse effect on listed species and will help lead you through the Section 7 process.

For all **wind energy projects** and **projects that include installing towers that use guy wires or are over 200 feet in height**, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project or may be affected by your proposed project.

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*) and Migratory Bird Treaty Act (16 U.S.C. 703 *et seq.*), as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at <http://www.fws.gov/midwest/midwestbird/EaglePermits/index.html> to help you determine if you can avoid impacting eagles or if a permit may be necessary.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

# Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Indiana Ecological Services Field Office**

620 South Walker Street  
Bloomington, IN 47403-2121  
(812) 334-4261



## Project Summary

Consultation Code: 03E12000-2021-SLI-0326

Event Code: 03E12000-2021-E-02823

Project Name: Des. 1800163 SR 145 Slide Correction

Project Type: TRANSPORTATION

Project Description: This project is located on State Road (SR) 145, approximately 1.69 miles south of the SR 62 junction in Clark Township of Perry County, Indiana (INDOT Des. No. 1800163). The project area is in Section 1, Township 4 South, Range 3 West.

The need for this project is due to pavement cracking and sinking caused by the lateral slide of the embankment, threatening the structural integrity of the roadway. The purpose of this project is to stabilize the slide and to prevent further damage from occurring to the roadway. This project will excavate the failed soil and will replace it with compacted soil. This project will also repave the damaged portions of SR 145 due to the slide. Some stream realignment will be required. An existing 18” pipe at the north end of the slide limits will be extended by about 55 feet.

Furthermore, the existing embankment of the Unnamed Tributary of Anderson River will be stabilized using revetment riprap over geotextile fabric. No permanent lighting will be used for this project. Temporary lighting may be used for construction activities.

The surrounding area is primarily wooded with agricultural production and scattered rural residences. Right-of-way will be acquired for this project. The current right-of-way extends to the edge of the traveled way according to the December 14, 2017 INDOT Preliminary R/W Report Memo. It is estimated that the permanent right-of-way through the project area will require 50 feet left and right of centerline. Approximately 1.05 acres of new right-of-way, involving up to 2 parcels, will be acquired for the slope stabilization, stream realignment, culvert extension, and relocation of utilities. An estimated 0.5 acre of temporary right-of-way will be required for construction. Work will extend up to 95 feet away from the edge of pavement.

Impacts associated with this project include tree clearing and work below the ordinary high water mark (OHWM). Approximately 0.21 acre of trees will be removed as a part of this project during the bat inactive season, prior to April 2023. Tree species to be cleared include Sycamore (*Platanus occidentalis*), Black Walnut (*Juglans nigra*), Blackhaw (*Viburnum prunifolium*), and Hackberry (*Celtis occidentalis*). All tree trimming and cutting will occur within 95 feet of the existing roadway. There will be work within the UNT of Anderson River below the OHWM. The project will impact approximately 270 linear feet of the UNT of Anderson River.

On December 21, 2020, Vincennes environmental personnel stated, “A review of the USFWS database did not indicate the presence of endangered bat species in or within 0.5 mile search radius of the project area.” This project qualifies for the application of the USFWS range-wide programmatic information consultation for the Indiana bat and northern long-eared bat and will be completed according to “Using the USFWS’s IPaC System for Listed Bat Consultation for INDOT Projects.”

There is no anticipated mitigation efforts required for impacts associated with the scope of this project. Construction is expected to begin Spring 2023 and is expected to last 4 months.

**Project Location:**

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@38.2012560092308,-86.68774125010233,14z>



Counties: Perry County, Indiana

## Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Mammals

NAME	STATUS
Gray Bat <i>Myotis grisescens</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/6329">https://ecos.fws.gov/ecp/species/6329</a>	Endangered
Indiana Bat <i>Myotis sodalis</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/5949">https://ecos.fws.gov/ecp/species/5949</a>	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"><li>▪ Incidental take of the NLEB is not prohibited here. Federal agencies may consult using the 4(d) rule streamlined process. Transportation projects may consult using the programmatic process. See <a href="http://www.fws.gov/midwest/endangered/mammals/nleb/index.html">www.fws.gov/midwest/endangered/mammals/nleb/index.html</a></li></ul> Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Threatened

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.



## United States Department of the Interior



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Phone: (812) 334-4261 Fax: (812) 334-4273

<http://www.fws.gov/midwest/Endangered/section7/s7process/step1.html>

In Reply Refer To:

January 22, 2021

Consultation code: 03E12000-2021-I-0326

Event Code: 03E12000-2021-E-02845

Project Name: Des. 1800163 SR 145 Slide Correction

Subject: Concurrence verification letter for the 'Des. 1800163 SR 145 Slide Correction' project under the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

To whom it may concern:

The U.S. Fish and Wildlife Service (Service) has received your request to verify that the **Des. 1800163 SR 145 Slide Correction** (Proposed Action) may rely on the concurrence provided in the February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (PBO) to satisfy requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C 1531 *et seq.*).

Based on the information you provided (Project Description shown below), you have determined that the Proposed Action is within the scope and adheres to the criteria of the PBO, including the adoption of applicable avoidance and minimization measures, and may affect, but is not likely to adversely affect (NLAA) the endangered Indiana bat (*Myotis sodalis*) and/or the threatened Northern long-eared bat (*Myotis septentrionalis*).

The Service has 14 calendar days to notify the lead Federal action agency or designated non-federal representative if we determine that the Proposed Action does not meet the criteria for a NLAA determination under the PBO. If we do not notify the lead Federal action agency or designated non-federal representative within that timeframe, you may proceed with the Proposed Action under the terms of the NLAA concurrence provided in the PBO. This verification period allows Service Field Offices to apply local knowledge to implementation of the PBO, as we may identify a small subset of actions having impacts that were unanticipated. In such instances, Service Field Offices may request additional information that is necessary to verify inclusion of the proposed action under the PBO.

**For Proposed Actions that include bridge/structure removal, replacement, and/or maintenance activities:** If your initial bridge/structure assessments failed to detect Indiana bats, but you later detect bats during construction, please submit the Post Assessment Discovery of Bats at Bridge/Structure Form (User Guide Appendix E) to this Service Office. In these instances, potential incidental take of Indiana bats may be exempted provided that the take is reported to the Service.

If the Proposed Action is modified, or new information reveals that it may affect the Indiana bat and/or Northern long-eared bat in a manner or to an extent not considered in the PBO, further review to conclude the requirements of ESA Section 7(a)(2) may be required. If the Proposed Action may affect any other federally-listed or proposed species, and/or any designated critical habitat, additional consultation between the lead Federal action agency and this Service Office is required. If the proposed action has the potential to take bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act may also be required. In either of these circumstances, please contact this Service Office.

The following species may occur in your project area and **are not** covered by this determination:

- Gray Bat *Myotis grisescens* Endangered

## **Project Description**

The following project name and description was collected in IPaC as part of the endangered species review process.

### ***Name***

Des. 1800163 SR 145 Slide Correction

### ***Description***

This project is located on State Road (SR) 145, approximately 1.69 miles south of the SR 62 junction in Clark Township of Perry County, Indiana (INDOT Des. No. 1800163). The project area is in Section 1, Township 4 South, Range 3 West.

The need for this project is due to pavement cracking and sinking caused by the lateral slide of the embankment, threatening the structural integrity of the roadway. The purpose of this project is to stabilize the slide and to prevent further damage from occurring to the roadway. This project will excavate the failed soil and will replace it with compacted soil. This project will also repave the damaged portions of SR 145 due to the slide. Some stream realignment will be required. An existing 18" pipe at the north end of the slide limits will be extended by about 55 feet. Furthermore, the existing embankment of the Unnamed Tributary of Anderson River will be stabilized using revetment riprap over geotextile fabric. No permanent lighting will be used for this project. Temporary lighting may be used for construction activities.

The surrounding area is primarily wooded with agricultural production and scattered rural residences. Right-of-way will be acquired for this project. The current right-of-way extends to the edge of the traveled way according to the December 14, 2017 INDOT Preliminary R/W Report Memo. It is estimated that the permanent right-of-way through the project area will require 50 feet left and right of centerline. Approximately 1.05 acres of new right-of-way, involving up to 2 parcels, will be acquired for the slope stabilization, stream realignment, culvert extension, and relocation of utilities. An estimated 0.5 acre of temporary right-of-way will be required for construction. Work will extend up to 95 feet away from the edge of pavement.

Impacts associated with this project include tree clearing and work below the ordinary high water mark (OHWM). Approximately 0.21 acre of trees will be removed as a part of this project during the bat inactive season, prior to April 2023. Tree species to be cleared include Sycamore (*Platanus occidentalis*), Black Walnut (*Juglans nigra*), Blackhaw (*Viburnum prunifolium*), and Hackberry (*Celtis occidentalis*). All tree trimming and cutting will occur within 95 feet of the existing roadway. There will be work within the UNT of Anderson River below the OHWM. The project will impact approximately 270 linear feet of the UNT of Anderson River.

On December 21, 2020, Vincennes environmental personnel stated, "A review of the USFWS database did not indicate the presence of endangered bat species in or within 0.5 mile search radius of the project area." This project qualifies for the application of the USFWS range-wide programmatic information consultation for the Indiana bat and northern long-eared bat and will be completed according to "Using the USFWS's IPaC System for Listed Bat Consultation for INDOT Projects."

There is no anticipated mitigation efforts required for impacts associated with the scope of this project. Construction is expected to begin Spring 2023 and is expected to last 4 months.

# Determination Key Result

Based on your answers provided, this project(s) may affect, but is not likely to adversely affect the endangered Indiana bat and/or the threatened Northern long-eared bat, therefore, consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required. However, also based on your answers provided, this project may rely on the concurrence provided in the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

## Qualification Interview

1. Is the project within the range of the Indiana bat<sup>[1]</sup>?

[1] See [Indiana bat species profile](#)

**Automatically answered**

Yes

2. Is the project within the range of the Northern long-eared bat<sup>[1]</sup>?

[1] See [Northern long-eared bat species profile](#)

**Automatically answered**

Yes

3. Which Federal Agency is the lead for the action?

*A) Federal Highway Administration (FHWA)*

4. Are *all* project activities limited to non-construction<sup>[1]</sup> activities only? (examples of non-construction activities include: bridge/abandoned structure assessments, surveys, planning and technical studies, property inspections, and property sales)

[1] Construction refers to activities involving ground disturbance, percussive noise, and/or lighting.

*No*

5. Does the project include *any* activities that are **greater than** 300 feet from existing road/rail surfaces<sup>[1]</sup>?

[1] Road surface is defined as the actively used [e.g. motorized vehicles] driving surface and shoulders [may be pavement, gravel, etc.] and rail surface is defined as the edge of the actively used rail ballast.

*No*

6. Does the project include *any* activities **within** 0.5 miles of a known Indiana bat and/or NLEB hibernaculum<sup>[1]</sup>?

[1] For the purpose of this consultation, a hibernaculum is a site, most often a cave or mine, where bats hibernate during the winter (see suitable habitat), but could also include bridges and structures if bats are found to be hibernating there during the winter.

*No*

7. Is the project located **within** a karst area?

*No*



8. Is there *any* suitable<sup>[1]</sup> summer habitat for Indiana Bat or NLEB **within** the project action area<sup>[2]</sup>? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

[1] See the Service's [summer survey guidance](#) for our current definitions of suitable habitat.

[2] The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR Section 402.02). Further clarification is provided by the [national consultation FAQs](#).

*Yes*

9. Will the project remove *any* suitable summer habitat<sup>[1]</sup> and/or remove/trim any existing trees **within** suitable summer habitat?

[1] See the Service's [summer survey guidance](#) for our current definitions of suitable habitat.

*Yes*

10. Will the project clear more than 20 acres of suitable habitat per 5-mile section of road/rail?  
*No*

11. Have presence/probable absence (P/A) summer surveys<sup>[1][2]</sup> been conducted<sup>[3][4]</sup> **within** the suitable habitat located within your project action area?

[1] See the Service's [summer survey guidance](#) for our current definitions of suitable habitat.

[2] Presence/probable absence summer surveys conducted within the fall swarming/spring emergence home range of a documented Indiana bat hibernaculum (contact local Service Field Office for appropriate distance from hibernacula) that result in a negative finding requires additional consultation with the local Service Field Office to determine if clearing of forested habitat is appropriate and/or if seasonal clearing restrictions are needed to avoid and minimize potential adverse effects on fall swarming and spring emerging Indiana bats.

[3] For projects within the range of either the Indiana bat or NLEB in which suitable habitat is present, and no bat surveys have been conducted, the transportation agency will assume presence of the appropriate species. This assumption of presence should be based upon the presence of suitable habitat and the capability of bats to occupy it because of their mobility.

[4] Negative presence/probable absence survey results obtained using the [summer survey guidance](#) are valid for a minimum of two years from the completion of the survey unless new information (e.g., other nearby surveys) suggest otherwise.

*No*

12. Does the project include activities **within documented Indiana bat habitat**<sup>[1][2]</sup>?

[1] Documented roosting or foraging habitat – for the purposes of this consultation, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry biangulation/triangulation to estimate foraging areas; or (3) foraging areas with repeated use documented using acoustics. Documented roosting habitat is also considered as suitable summer habitat within 0.25 miles of documented roosts.)

[2] For the purposes of this key, we are considering documented corridors as that where Indiana bats and/or NLEB have actually been captured and tracked to using (1) radio telemetry; or (2) treed corridors located directly between documented roosting and foraging habitat.

*No*

13. Will the removal or trimming of habitat or trees occur **within** suitable but **undocumented Indiana bat** roosting/foraging habitat or travel corridors?

*Yes*

14. What time of year will the removal or trimming of habitat or trees **within** suitable but **undocumented Indiana bat** roosting/foraging habitat or travel corridors occur<sup>[1]</sup>?

[1] Coordinate with the local Service Field Office for appropriate dates.

*B) During the inactive season*

15. Does the project include activities **within documented NLEB habitat**<sup>[1][2]</sup>?

[1] Documented roosting or foraging habitat – for the purposes of this consultation, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry biangulation/triangulation to estimate foraging areas; or (3) foraging areas with repeated use documented using acoustics. Documented roosting habitat is also considered as suitable summer habitat within 0.25 miles of documented roosts.)

[2] For the purposes of this key, we are considering documented corridors as that where Indiana bats and/or NLEB have actually been captured and tracked to using (1) radio telemetry; or (2) treed corridors located directly between documented roosting and foraging habitat.

*No*

16. Will the removal or trimming of habitat or trees occur **within** suitable but **undocumented NLEB** roosting/foraging habitat or travel corridors?

*Yes*

17. What time of year will the removal or trimming of habitat or trees **within** suitable but **undocumented NLEB** roosting/foraging habitat or travel corridors occur?

*B) During the inactive season*

18. Will *any* tree trimming or removal occur **within** 100 feet of existing road/rail surfaces?

*Yes*

19. Will *any* tree trimming or removal occur **between** 100-300 feet of existing road/rail surfaces?

*No*

20. Are *all* trees that are being removed clearly demarcated?  
Yes
21. Will the removal of habitat or the removal/trimming of trees include installing new or replacing existing **permanent** lighting?  
No
22. Does the project include wetland or stream protection activities associated with compensatory wetland mitigation?  
No
23. Does the project include slash pile burning?  
No
24. Does the project include *any* bridge removal, replacement, and/or maintenance activities (e.g., any bridge repair, retrofit, maintenance, and/or rehabilitation work)?  
No
25. Does the project include the removal, replacement, and/or maintenance of *any* structure other than a bridge? (e.g., rest areas, offices, sheds, outbuildings, barns, parking garages, etc.)  
No
26. Will the project involve the use of **temporary** lighting *during* the active season?  
Yes
27. Is there *any* suitable habitat **within** 1,000 feet of the location(s) where **temporary** lighting will be used?  
Yes
28. Will the project install new or replace existing **permanent** lighting?  
No
29. Does the project include percussives or other activities (**not including tree removal/trimming or bridge/structure work**) that will increase noise levels above existing traffic/background levels?  
Yes
30. Will the activities that use percussives (**not including tree removal/trimming or bridge/structure work**) and/or increase noise levels above existing traffic/background levels be conducted *during* the active season<sup>[1]</sup>?  
[1] Coordinate with the local Service Field Office for appropriate dates.  
Yes
31. Will *any* activities that use percussives (**not including tree removal/trimming or bridge/structure work**) and/or increase noise levels above existing traffic/background levels be conducted *during* the inactive season<sup>[1]</sup>?  
[1] Coordinate with the local Service Field Office for appropriate dates.  
Yes

32. Are *all* project activities that are **not associated with** habitat removal, tree removal/trimming, bridge and/or structure activities, temporary or permanent lighting, or use of percussives, limited to actions that DO NOT cause any additional stressors to the bat species?

Examples: lining roadways, unlighted signage , rail road crossing signals, signal lighting, and minor road repair such as asphalt fill of potholes, etc.

Yes

33. Will the project raise the road profile **above the tree canopy**?

No

34. Are the project activities that use percussives (not including tree removal/trimming or bridge/structure work) consistent with a Not Likely to Adversely Affect determination in this key?

**Automatically answered**

*Yes, because the activities are within 300 feet of the existing road/rail surface, greater than 0.5 miles from a hibernacula, and conducted during the active season within undocumented habitat.*

35. Are the project activities that use percussives (not including tree removal/trimming or bridge/structure work) and/or increase noise levels above existing traffic/background levels consistent with a No Effect determination in this key?

**Automatically answered**

*Yes, because the activities are within 300 feet of the existing road/rail surface, greater than 0.5 miles from a hibernacula, and conducted during the inactive season*

36. Is the habitat removal portion of this project consistent with a Not Likely to Adversely Affect determination in this key?

**Automatically answered**

*Yes, because the tree removal/trimming that occurs outside of the Indiana bat's active season occurs greater than 0.5 miles from the nearest hibernaculum, is less than 100 feet from the existing road/rail surface, includes clear demarcation of the trees that are to be removed, and does not alter documented roosts and/or surrounding summer habitat within 0.25 miles of a documented roost.*

37. Is the habitat removal portion of this project consistent with a Not Likely to Adversely Affect determination in this key?

**Automatically answered**

*Yes, because the tree removal/trimming that occurs outside of the NLEB's active season occurs greater than 0.5 miles from the nearest hibernaculum, is less than 100 feet from the existing road/rail surface, includes clear demarcation of the trees that are to be removed, and does not alter documented roosts and/or surrounding summer habitat within 0.25 miles of a documented roost.*

38. **General AMM 1**

Will the project ensure *all* operators, employees, and contractors working in areas of known or presumed bat habitat are aware of *all* FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable Avoidance and Minimization Measures?

Yes

39. **Tree Removal AMM 1**

Can *all* phases/aspects of the project (e.g., temporary work areas, alignments) be modified, to the extent practicable, to avoid tree removal<sup>[1]</sup> in excess of what is required to implement the project safely?

Note: Tree Removal AMM 1 is a minimization measure, the full implementation of which may not always be practicable. Projects may still be NLAA as long as Tree Removal AMMs 2, 3, and 4 are implemented and LAA as long as Tree Removal AMMs 3, 5, 6, and 7 are implemented.

[1] The word “trees” as used in the AMMs refers to trees that are suitable habitat for each species within their range. See the USFWS’ current summer survey guidance for our latest definitions of suitable habitat.

Yes

40. **Tree Removal AMM 3**

Can tree removal be limited to that specified in project plans and ensure that contractors understand clearing limits and how they are marked in the field (e.g., install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits)?

Yes

41. **Tree Removal AMM 4**

Can the project avoid cutting down/removal of *all* (1) **documented**<sup>[1]</sup> Indiana bat or NLEB roosts<sup>[2]</sup> (that are still suitable for roosting), (2) trees **within** 0.25 miles of roosts, and (3) documented foraging habitat any time of year?

[1] The word documented means habitat where bats have actually been captured and/or tracked.

[2] Documented roosting or foraging habitat – for the purposes of this consultation, we are considering documented habitat as that where Indiana bats and/or NLEB have actually been captured and tracked using (1) radio telemetry to roosts; (2) radio telemetry triangulation/triangulation to estimate foraging areas; or (3) foraging areas with repeated use documented using acoustics. Documented roosting habitat is also considered as suitable summer habitat within 0.25 miles of documented roosts.)

Yes

42. **Lighting AMM 1**

Will *all* **temporary** lighting be directed away from suitable habitat during the active season?

Yes

## Project Questionnaire

1. Have you made a No Effect determination for *all* other species indicated on the FWS IPaC generated species list?

*Yes*

2. Have you made a May Affect determination for *any* other species on the FWS IPaC generated species list?

*No*

3. How many acres<sup>[1]</sup> of trees are proposed for removal between 0-100 feet of the existing road/rail surface?

[1] If described as number of trees, multiply by 0.09 to convert to acreage and enter that number.

*0.21*

## Avoidance And Minimization Measures (AMMs)

This determination key result includes the commitment to implement the following Avoidance and Minimization Measures (AMMs):

### TREE REMOVAL AMM 1

Modify all phases/aspects of the project (e.g., temporary work areas, alignments) to avoid tree removal.

### LIGHTING AMM 1

Direct temporary lighting away from suitable habitat during the active season.

### TREE REMOVAL AMM 2

Apply time of year restrictions for tree removal when bats are not likely to be present, or limit tree removal to 10 or fewer trees per project at any time of year within 100 feet of existing road/rail surface and **outside of documented** roosting/foraging habitat or travel corridors; visual emergence survey must be conducted with no bats observed.

### TREE REMOVAL AMM 3

Ensure tree removal is limited to that specified in project plans and ensure that contractors understand clearing limits and how they are marked in the field (e.g., install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits).

### TREE REMOVAL AMM 4

Do not remove **documented** Indiana bat or NLEB roosts that are still suitable for roosting, or trees within 0.25 miles of roosts, or **documented** foraging habitat any time of year.

### GENERAL AMM 1

Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA/FRA/FTA (Transportation Agencies) environmental commitments, including all applicable AMMs.

## **Determination Key Description: FHWA, FRA, FTA Programmatic Consultation For Transportation Projects Affecting NLEB Or Indiana Bat**

This key was last updated in IPaC on December 29, 2020. Keys are subject to periodic revision.

This decision key is intended for projects/activities funded or authorized by the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and/or Federal Transit Administration (FTA), which may require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act (ESA) for the endangered **Indiana bat** (*Myotis sodalis*) and the threatened **Northern long-eared bat** (NLEB) (*Myotis septentrionalis*).

This decision key should only be used to verify project applicability with the Service's [February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects](#). The programmatic biological opinion covers limited transportation activities that may affect either bat species, and addresses situations that are both likely and not likely to adversely affect either bat species. This decision key will assist in identifying the effect of a specific project/activity and applicability of the programmatic consultation. The programmatic biological opinion is not intended to cover all types of transportation actions. Activities outside the scope of the programmatic biological opinion, or that may affect ESA-listed species other than the Indiana bat or NLEB, or any designated critical habitat, may require additional ESA Section 7 consultation.

From: [Alan Ball](#)  
To: [Payton Parke](#)  
Subject: Fw: Des. 1800163 IPaC Review -NLAA  
Date: Friday, February 12, 2021 11:10:37 AM  
Attachments: [~WRD0000.jpg](#)  
[image005.jpg](#)  
[image006.jpg](#)  
[image007.jpg](#)

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**ALAN BALL**

NEPA Project Manager, Senior Scientist

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**From:** Falls, Ryan G <[RFalls@indot.IN.gov](mailto:RFalls@indot.IN.gov)>

**Sent:** Friday, January 22, 2021 8:33 AM

**To:** Matt Roberts <[MRoberts@vsengineering.com](mailto:MRoberts@vsengineering.com)>; Alan Ball <[ABall@vsengineering.com](mailto:ABall@vsengineering.com)>

**Cc:** Wright, Kristy <[KWright@indot.IN.gov](mailto:KWright@indot.IN.gov)>; Ridgley, Brad <[BRIDGLEY@indot.IN.gov](mailto:BRIDGLEY@indot.IN.gov)>

**Subject:** RE: Des. 1800163 IPaC Review -NLAA

The document's finding of May Effect, NLAA-With AMMs for DES 1800163 has been deemed sufficient. It has been verified and submitted to USFWS. The Service has 14 days after the "Not Likely to Adversely Affect" determination letter is generated. They will review that information once it is received; if you do not receive a response within 14 days, they have no additional comments for the two bats covered under the programmatic. The NEPA document submittal may not occur until this review period has ended. The Official Species List, Consistency Letter, and Concurrence Verification Letter are all now immediately available for your use. It is suggested that these documents be downloaded at this time. This concludes the IPaC phase of coordination with the Vincennes environmental office.

**Ryan Falls**

**Capital Program Management-Senior Environmental Manager Supervisor**

Indiana Department of Transportation

3650 South US Highway 41

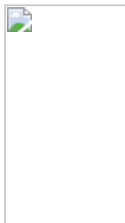
Vincennes, IN 47591

**Email:** [rfalls@indot.IN.gov](mailto:rfalls@indot.IN.gov)

**Cell:** 812-582-1387

**Office:** 812-895-7326





# Indiana Department of Environmental Management

*We Protect Hoosiers and Our Environment.*

100 North Senate Avenue - Indianapolis, IN 46204  
(800) 451-6027 - (317) 232-8603 - www.idem.IN.gov

INDOT

3650 S US 41  
Vincennes , IN 47591

Date

Lochmueller Group Inc.

Payton Parke

6200 Vogel Rd

Evansville , IN 47715

To Engineers and Consultants Proposing Roadway Construction Projects:

RE: The Federal Highway Administration (FHWA) and the Indiana Department of Transportation (INDOT) intend to proceed with a slide correction project (Des No. 1800163) on SR 145 in Perry County. The proposed project is located along SR 145, approximately 1.69 miles south of SR 62 junction, Perry County, Indiana. Specifically, the project is located in Section 1, Township 4 South, Range 3 West in Clark Township as depicted on the Bristow U.S. Geological Survey 1:24,000 scale quadrangle. Adjacent land use consists of wooded areas and scattered residential properties. Within the project area, SR 145 is functionally classified as a rural major collector. The typical cross section consists of two 11-foot asphalt travel lanes with 1-foot to 2-foot wide usable shoulders made of compact aggregate or earth. There is no guardrail present on either side of SR 145. The purpose of this project is to stabilize the existing road slide and to prevent further damage from occurring to the roadway. The need for this project is to repave the portions of SR 145 that were damaged by the lateral slide of the embankment, which is threatening overall structural integrity of the roadway. Work elements include the excavation and replacement of the failed soil with compacted soil, and embankment stabilization of the Unnamed Tributary (UNT) of Anderson River. Some stream realignments will also be considered. The project will also repave damaged portions of pavement near the slide. Furthermore, a culvert is present within the north end of the slide limits and will require extension. This project will require acquisition of right-of-way. The apparent existing right-of-way width on SR 145 extends to the edge of pavement. Approximately 0.81 acre of permanent right-of-way will be required for this project. No temporary right-of-way will be required for this project. Work will extend up to 95 feet away from the edge of pavement to correct the slide. A Red Flag Investigation (RFI) was performed for a 0.5-mile radius of the Des 1800163 project area. Several "Red flags" were identified within the 0.5-mile search radius. One NWI-Line segment and two unnamed tributaries of Anderson River are located within the project area. A Waters of the U.S. Determination Report and coordination with the INDOT Ecology and Waterway Permitting Office (EWPO) will occur. This project is outside the Karst Memorandum of Understanding Potential Karst Features Region.

This letter from the Indiana Department of Environmental Management (IDEM) serves as a standardized response to enquiries inviting IDEM comments on roadway construction, reconstruction, or other improvement projects within existing roadway corridors when the proposed scope of the project is beneath the threshold requiring a formal National Environmental Policy Act-mandated Environmental Assessment or Environmental Impact Statement. As the letter attempts to address all roadway-related environmental topics of potential concern, it is possible that not every topic addressed in the letter will be applicable to your particular roadway project.

For additional information on specific roadway-related topics of interest, please visit the appropriate Web pages cited below, many of which provide contact information for persons within the various program areas who can answer questions not fully addressed in this letter. Also please be mindful that some environmental requirements may be subject to change and so each person intending to include a copy of this letter in their project documentation packet is advised to download the most recently revised version of the letter; found at: <http://www.in.gov/idem/5283.htm> (<http://www.in.gov/idem/5283.htm>).

To ensure that all environmentally-related issues are adequately addressed, IDEM recommends that you read this letter in its entirety, and consider each of the following issues as you move forward with the planning of your proposed roadway construction, reconstruction, or improvement project:

## WATER AND BIOTIC QUALITY

1. Section 404 of the Clean Water Act requires that you obtain a permit from the U.S. Army Corps of Engineers (USACE) before discharging dredged or fill materials into any wetlands or other waters, such as rivers, lakes, streams, and ditches. Other activities regulated include the relocation, channelization, widening, or other such alteration of a stream, and the mechanical clearing (use of heavy construction equipment) of wetlands. Thus, as a project owner or sponsor, it is your responsibility to ensure that no wetlands are disturbed without the proper permit. Although you may initially refer to the U.S. Fish and Wildlife Service National Wetland Inventory maps as a means of identifying potential areas of concern, please be mindful that those maps do not depict jurisdictional wetlands regulated by the USACE or the Department of Environmental Management. A valid jurisdictional wetlands determination can only be made by the USACE, using the 1987 Wetland Delineation Manual.

USACE recommends that you have a consultant check to determine whether your project will abut, or lie within, a wetland area. To view a list of consultants that have requested to be included on a list posted by the USACE on their Web site, see USACE Permits and Public

Notices (<http://www.lrl.usace.army.mil/orf/default.asp>) (<http://www.lrl.usace.army.mil/orf/default.asp>) and then click on "Information" from the menu on the right-hand side of that page. Their "Consultant List" is the fourth entry down on the "Information" page. Please note that the USACE posts all consultants that request to appear on the list, and that inclusion of any particular consultant on the list does not represent an endorsement of that consultant by the USACE, or by IDEM.

Much of northern Indiana (Newton, Lake, Porter, LaPorte, St. Joseph, Elkhart, LaGrange, Steuben, and Dekalb counties; large portions of Jasper, Starke, Marshall, Noble, Allen, and Adams counties; and lesser portions of Benton, White, Pulaski, Kosciusko, and Wells counties) is served by the USACE District Office in Detroit (313-226-6812). The central and southern portions of the state (large portions of Benton, White, Pulaski, Kosciusko, and Wells counties; smaller portions of Jasper, Starke, Marshall, Noble, Allen, and Adams counties; and all other Indiana counties located in north-central, central, and southern Indiana) are served by the USACE Louisville District Office (502-315-6733).

Additional information on contacting these U.S. Army Corps of Engineers (USACE) District Offices, government agencies with jurisdiction over wetlands, and other water quality issues, can be found at <http://www.in.gov/idem/4396.htm> (<http://www.in.gov/idem/4396.htm>). IDEM recommends that impacts to wetlands and other water resources be avoided to the fullest extent.

2. In the event a Section 404 wetlands permit is required from the USACE, you also must obtain a Section 401 Water Quality Certification from the IDEM Office of Water Quality Wetlands Program. To learn more about the Wetlands Program, visit: <http://www.in.gov/idem/4384.htm> (<http://www.in.gov/idem/4384.htm>).
3. If the USACE determines that a wetland or other water body is isolated and not subject to Clean Water Act regulation, it is still regulated by the state of Indiana. A State Isolated Wetland permit from IDEM's Office of Water Quality (OWQ) is required for any activity that results in the discharge of dredged or fill materials into isolated wetlands. To learn more about isolated wetlands, contact the OWQ Wetlands Program at 317-233-8488.
4. If your project will involve over a 0.5 acre of wetland impact, stream relocation, or other large-scale alterations to water bodies such as the creation of a dam or a water diversion, you should seek additional input from the OWQ Wetlands Program staff. Consult the Web at: <http://www.in.gov/idem/4384.htm> (<http://www.in.gov/idem/4384.htm>) for the appropriate staff contact to further discuss your project.
5. Work within the one-hundred year floodway of a given water body is regulated by the Department of Natural Resources, Division of Water. The Division issues permits for activities regulated under the follow statutes:
  - o IC 14-26-2 Lakes Preservation Act 312 IAC 11
  - o IC 14-26-5 Lowering of Ten Acre Lakes Act No related code
  - o IC 14-28-1 Flood Control Act 310 IAC 6-1
  - o IC 14-29-1 Navigable Waterways Act 312 IAC 6
  - o IC 14-29-3 Sand and Gravel Permits Act 312 IAC 6
  - o IC 14-29-4 Construction of Channels Act No related code

For information on these Indiana (statutory) Code and Indiana Administrative Code citations, see the DNR Web site at: <http://www.in.gov/dnr/water/9451.htm> (<http://www.in.gov/dnr/water/9451.htm>). Contact the DNR Division of Water at 317-232-4160 for further information.

The physical disturbance of the stream and riparian vegetation, especially large trees overhanging any affected water bodies should be limited to only that which is absolutely necessary to complete the project. The shade provided by the large overhanging trees helps maintain proper stream temperatures and dissolved oxygen for aquatic life.

6. For projects involving construction activity (which includes clearing, grading, excavation and other land disturbing activities) that result in the disturbance of one (1), or more, acres of total land area, contact the Office of Water Quality – Watershed Planning Branch (317/233-1864) regarding the need for a Rule 5 Storm Water Runoff Permit. Visit the following Web page
  - o <http://www.in.gov/idem/4902.htm> (<http://www.in.gov/idem/4902.htm>)

To obtain, and operate under, a Rule 5 permit you will first need to develop a Construction Plan (<http://www.in.gov/idem/4917.htm#constreq> (<http://www.in.gov/idem/4917.htm#constreq>)), and as described in 327 IAC 15-5-6.5 (<http://www.in.gov/legislative/iac/T03270/A00150> [PDF] (<http://www.in.gov/legislative/iac/T03270/A00150.PDF>), pages 16 through 19). Before you may apply for a Rule 5 Permit, or begin construction, you must submit your Construction Plan to your county Soil and Water Conservation District (SWCD) (<http://www.in.gov/isda/soil/contacts/map.html> (<http://www.in.gov/isda/soil/contacts/map.html>)).

Upon receipt of the construction plan, personnel of the SWCD or the Indiana Department of Environmental Management will review the plan to determine if it meets the requirements of 327 IAC 15-5. Plans that are deemed deficient will require re-submittal. If the plan is sufficient you will be notified and instructed to submit the verification to IDEM as part of the Rule 5 Notice of Intent (NOI) submittal. Once construction begins, staff of the SWCD or Indiana Department of Environmental Management will perform inspections of activities at the site for compliance with the regulation.

Please be mindful that approximately 149 Municipal Separate Storm Sewer System (MS4) areas are now being established by various local governmental entities throughout the state as part of the implementation of Phase II federal storm water requirements. All of these MS4 areas will eventually take responsibility for Construction Plan review, inspection, and enforcement. As these MS4 areas obtain program approval from IDEM, they will be added to a list of MS4 areas posted on the IDEM Website at: <http://www.in.gov/idem/4900.htm> (<http://www.in.gov/idem/4900.htm>).

If your project is located in an IDEM-approved MS4 area, please contact the local MS4 program about meeting their storm water requirements. Once the MS4 approves the plan, the NOI can be submitted to IDEM.

Regardless of the size of your project, or which agency you work with to meet storm water requirements, IDEM recommends that appropriate structures and techniques be utilized both during the construction phase, and after completion of the project, to minimize the impacts associated with storm water runoff. The use of appropriate planning and site development and appropriate storm water quality measures are recommended to prevent soil from leaving the construction site during active land disturbance and for post construction water quality concerns. Information and assistance regarding storm water related to construction activities are available from the Soil and Water Conservation District (SWCD) offices in each county or from IDEM.

7. For projects involving impacts to fish and botanical resources, contact the Department of Natural Resources - Division of Fish and Wildlife (317/232-4080) for addition project input.
8. For projects involving water main construction, water main extensions, and new public water supplies, contact the Office of Water Quality - Drinking Water Branch (317-308-3299) regarding the need for permits.
9. For projects involving effluent discharges to waters of the State of Indiana , contact the Office of Water Quality - Permits Branch (317-233-0468) regarding the need for a National Pollutant Discharge Elimination System (NPDES) permit.
10. For projects involving the construction of wastewater facilities and sewer lines, contact the Office of Water Quality - Permits Branch (317-232-8675) regarding the need for permits.

## AIR QUALITY

The above-noted project should be designed to minimize any impact on ambient air quality in, or near, the project area. The project must comply with all federal and state air pollution regulations. Consideration should be given to the following:

1. Regarding open burning, and disposing of organic debris generated by land clearing activities; some types of open burning are allowed (<http://www.in.gov/idem/4148.htm> (<http://www.in.gov/idem/4148.htm>)) under specific conditions. You also can seek an open burning variance from IDEM.

However, IDEM generally recommends that you take vegetative wastes to a registered yard waste composting facility or that the waste be chipped or shredded with composting on site (you must register with IDEM if more than 2,000 pounds is to be composted; contact 317/232-0066). The finished compost can then be used as a mulch or soil amendment. You also may bury any vegetative wastes (such as leaves, twigs, branches, limbs, tree trunks and stumps) onsite, although burying large quantities of such material can lead to subsidence problems, later on.

Reasonable precautions must be taken to minimize fugitive dust emissions from construction and demolition activities. For example, wetting the area with water, constructing wind barriers, or treating dusty areas with chemical stabilizers (such as calcium chloride or several other commercial products). Dirt tracked onto paved roads from unpaved areas should be minimized.

Additionally, if construction or demolition is conducted in a wooded area where blackbirds have roosted or abandoned buildings or building sections in which pigeons or bats have roosted for 3-5 years precautionary measures should be taken to avoid an outbreak of histoplasmosis. This disease is caused by the fungus *Histoplasma capsulatum*, which stems from bird or bat droppings that have accumulated in one area for 3-5 years. The spores from this fungus become airborne when the area is disturbed and can cause infections over an entire community downwind of the site. The area should be wetted down prior to cleanup or demolition of the project site. For more detailed information on histoplasmosis prevention and control, please contact the Acute Disease Control Division of the Indiana State Department of Health at (317) 233-7272.

2. The U.S. EPA and the Surgeon General recommend that people not have long-term exposure to radon at levels above 4 pCi/L. (For a county-by-county map of predicted radon levels in Indiana, visit: <http://www.in.gov/idem/4145.htm> (<http://www.in.gov/idem/4145.htm>).

The U.S. EPA further recommends that all homes (and apartments within three stories of ground level) be tested for radon. If in-home radon levels are determined to be 4 pCi/L, or higher, EPA recommends a follow-up test. If the second test confirms that radon levels are 4 pCi/L, or higher, EPA recommends the installation of radon-reduction measures. (For a list of qualified radon testers and radon mitigation (or reduction) specialists visit: [http://www.in.gov/isdh/regsvcs/radhealth/pdfs/radon\\_testers\\_mitigators\\_list.pdf](http://www.in.gov/isdh/regsvcs/radhealth/pdfs/radon_testers_mitigators_list.pdf) ([http://www.in.gov/isdh/regsvcs/radhealth/pdfs/radon\\_testers\\_mitigators\\_list.pdf](http://www.in.gov/isdh/regsvcs/radhealth/pdfs/radon_testers_mitigators_list.pdf))). It also is recommended that radon reduction measures be built into all new homes, particularly in areas like Indiana that have moderate to high predicted radon levels.

To learn more about radon, radon risks, and ways to reduce exposure visit: <http://www.in.gov/isdh/regsvcs/radhealth/radon.htm> (<http://www.in.gov/isdh/regsvcs/radhealth/radon.htm>), <http://www.in.gov/idem/4145.htm> (<http://www.in.gov/idem/4145.htm>), or <http://www.epa.gov/radon/index.html> (<http://www.epa.gov/radon/index.html>).

3. With respect to asbestos removal: all facilities slated for renovation or demolition (except residential buildings that have (4) four or fewer dwelling units and which will not be used for commercial purposes) must be inspected by an Indiana-licensed asbestos inspector prior to the commencement of any renovation or demolition activities. If regulated asbestos-containing material (RACM) that may become airborne is found, any subsequent demolition, renovation, or asbestos removal activities must be performed in accordance with the proper notification and emission control requirements.

If no asbestos is found where a renovation activity will occur, or if the renovation involves removal of less than 260 linear feet of RACM off of pipes, less than 160 square feet of RACM off of other facility components, or less than 35 cubic feet of RACM off of all facility components, the owner or operator of the project does not need to notify IDEM before beginning the renovation activity.

For questions on asbestos demolition and renovation activities, you can also call IDEM's Lead/Asbestos section at 1-888-574-8150.

However, in all cases where a demolition activity will occur (even if no asbestos is found), the owner or operator must still notify IDEM 10 working days prior to the demolition, using the form found at <http://www.in.gov/icpr/webfile/formsdiv/44593.pdf> (<http://www.in.gov/icpr/webfile/formsdiv/44593.pdf>).

Anyone submitting a renovation/demolition notification form will be billed a notification fee based upon the amount of friable asbestos containing material to be removed or demolished. Projects that involve the removal of more than 2,600 linear feet of friable asbestos containing materials on pipes, or 1,600 square feet or 400 cubic feet of friable asbestos containing material on other facility components, will be billed a fee of \$150 per project; projects below these amounts will be billed a fee of \$50 per project. All notification remitters will be billed on a quarterly basis.

For more information about IDEM policy regarding asbestos removal and disposal, visit: <http://www.in.gov/idem/4983.htm> (<http://www.in.gov/idem/4983.htm>).

4. With respect to lead-based paint removal: IDEM encourages all efforts to minimize human exposure to lead-based paint chips and dust. IDEM is particularly concerned that young children exposed to lead can suffer from learning disabilities. Although lead-based paint abatement efforts are not mandatory, any abatement that is conducted within housing built before January 1, 1978, or a child-occupied facility is required to comply with all lead-based paint work practice standards, licensing and notification requirements. For more information about lead-based paint removal visit: <http://www.in.gov/isdh/19131.htm> (<http://www.in.gov/isdh/19131.htm>).
5. Ensure that asphalt paving plants are permitted and operate properly. The use of cutback asphalt, or asphalt emulsion containing more than seven percent (7%) oil distillate, is prohibited during the months April through October. See 326 IAC 8-5-2, Asphalt Paving Rule (<http://www.ai.org/legislative/iac/T03260/A00080.PDF> (<http://www.ai.org/legislative/iac/T03260/A00080.PDF>)).
6. If your project involves the construction of a new source of air emissions or the modification of an existing source of air emissions or air pollution control equipment, it will need to be reviewed by the IDEM Office of Air Quality (OAQ). A registration or permit may be required under 326 IAC 2 (View at: [www.ai.org/legislative/iac/t03260/a00020.pdf](http://www.ai.org/legislative/iac/t03260/a00020.pdf) (<http://www.ai.org/legislative/iac/t03260/a00020.pdf>)). New sources that use or emit hazardous air pollutants may be subject to Section 112 of the Clean Air Act and corresponding state air regulations governing hazardous air pollutants.
7. For more information on air permits visit: <http://www.in.gov/idem/4223.htm> (<http://www.in.gov/idem/4223.htm>), or to initiate the IDEM air permitting process, please contact the Office of Air Quality Permit Reviewer of the Day at (317) 233-0178 or OAMPROD atdem.state.in.us.

## LAND QUALITY

In order to maintain compliance with all applicable laws regarding contamination and/or proper waste disposal, IDEM recommends that:

1. If the site is found to contain any areas used to dispose of solid or hazardous waste, you need to contact the Office of Land Quality (OLQ) at 317-308-3103.
2. All solid wastes generated by the project, or removed from the project site, need to be taken to a properly permitted solid waste processing or disposal facility. For more information, visit <http://www.in.gov/idem/4998.htm> (<http://www.in.gov/idem/4998.htm>).
3. If any contaminated soils are discovered during this project, they may be subject to disposal as hazardous waste. Please contact the OLQ at 317-308-3103 to obtain information on proper disposal procedures.
4. If PCBs are found at this site, please contact the Industrial Waste Section of OLQ at 317-308-3103 for information regarding management of any PCB wastes from this site.

5. If there are any asbestos disposal issues related to this site, please contact the Industrial Waste Section of OLQ at 317-308-3103 for information regarding the management of asbestos wastes (Asbestos removal is addressed above, under Air Quality).
6. If the project involves the installation or removal of an underground storage tank, or involves contamination from an underground storage tank, you must contact the IDEM Underground Storage Tank program at 317/308-3039. See: <http://www.in.gov/idem/4999.htm> (<http://www.in.gov/idem/4999.htm>).

## FINAL REMARKS

Should you need to obtain any environmental permits in association with this proposed project, please be mindful that IC 13-15-8 requires that you notify all adjoining property owners and/or occupants within ten days your submittal of each permit application. However, if you are seeking multiple permits, you can still meet the notification requirement with a single notice if all required permit applications are submitted with the same ten day period.

Should the scope of the proposed project be expanded to the extent that a National Environmental Policy Act Environmental Assessment (EA) or Environmental Impact Statement (EIS) is required, IDEM will actively participate in any early interagency coordination review of the project.

Meanwhile, please note that this letter does not constitute a permit, license, endorsement or any other form of approval on the part of the Indiana Department of Environmental Management regarding any project for which a copy of this letter is used. Also note that it is the responsibility of the project engineer or consultant using this letter to ensure that the most current draft of this document, which is located at <http://www.in.gov/idem/5284.htm> (<http://www.in.gov/idem/5284.htm>), is used.

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## Signature(s) of the Applicant

I acknowledge that the following proposed roadway project will be financed in part, or in whole, by public monies.

## Project Description

The Federal Highway Administration (FHWA) and the Indiana Department of Transportation (INDOT) intend to proceed with a slide correction project (Des No. 1800163) on SR 145 in Perry County. The proposed project is located along SR 145, approximately 1.69 miles south of SR 62 junction, Perry County, Indiana. Specifically, the project is located in Section 1, Township 4 South, Range 3 West in Clark Township as depicted on the Bristow U.S. Geological Survey 1:24,000 scale quadrangle. Adjacent land use consists of wooded areas and scattered residential properties. Within the project area, SR 145 is functionally classified as a rural major collector. The typical cross section consists of two 11-foot asphalt travel lanes with 1-foot to 2-foot wide usable shoulders made of compact aggregate or earth. There is no guardrail present on either side of SR 145. The purpose of this project is to stabilize the existing road slide and to prevent further damage from occurring to the roadway. The need for this project is to repave the portions of SR 145 that were damaged by the lateral slide of the embankment, which is threatening overall structural integrity of the roadway. Work elements include the excavation and replacement of the failed soil with compacted soil, and embankment stabilization of the Unnamed Tributary (UNT) of Anderson River. Some stream realignments will also be considered. The project will also repave damaged portions of pavement near the slide. Furthermore, a culvert is present within the north end of the slide limits and will require extension. This project will require acquisition of right-of-way. The apparent existing right-of-way width on SR 145 extends to the edge of pavement. Approximately 0.81 acre of permanent right-of-way will be required for this project. No temporary right-of-way will be required for this project. Work will extend up to 95 feet away from the edge of pavement to correct the slide. A Red Flag Investigation (RFI) was performed for a 0.5-mile radius of the Des 1800163 project area. Several "Red flags" were identified within the 0.5-mile search radius. One NWI-Line segment and two unnamed tributaries of Anderson River are located within the project area. A Waters of the U.S. Determination Report and coordination with the INDOT Ecology and Waterway Permitting Office (EWPO) will occur. This project is outside the Karst Memorandum of Understanding Potential Karst Features Region.

With my signature, I do hereby affirm that I have read the letter from the Indiana Department of Environment that appears directly above. In addition, I understand that in order to complete that project in which I am interested, with a minimum of impact to the environment, I must consider all the issues addressed in the aforementioned letter, and further, that I must obtain any required permits.

Date: 2/24/2021

Signature of the INDOT

Project Engineer or Other Responsible Agent Brian Malone

Date: Feb. 19, 2021

Signature of the

For Hire Consultant Payton Parke

Payton Parke

From: [Amick, Kevin -FS](#)  
To: [Payton Parke](#)  
Subject: RE: Early Coordination Letter - Des 1800163 SR 145 Slide Correction Project, Perry County  
Date: Friday, February 19, 2021 4:24:59 PM  
Attachments: [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)

---

Payton,

Because the project (Des. No. 1800163) is not located on or adjacent to National Forest System lands, the Hoosier NF has no concerns regarding this project. Thank you for the opportunity to review this project.



**Kevin Amick**  
**Environmental Coordinator**  
**Forest Service**  
**Hoosier National Forest**

**p: 812-276-4746**  
**f: 812-279-3423**  
[kevin.amick@usda.gov](mailto:kevin.amick@usda.gov)

811 Constitution Ave.  
Bedford, IN 47421  
[www.fs.fed.us](http://www.fs.fed.us)



**Caring for the land and serving people**

---

**From:** Payton Parke <PParke@lochgroup.com>  
**Sent:** Friday, February 19, 2021 3:10 PM  
**To:** Amick, Kevin -FS <kevin.amick@usda.gov>  
**Cc:** Daniel Townsend <DTownsend@lochgroup.com>  
**Subject:** Early Coordination Letter - Des 1800163 SR 145 Slide Correction Project, Perry County

Dear Mr. Amick,

We are working on the environmental document for the SR 145, 1.69 miles south of SR 62 junction Slide Correction project in Perry County, IN (Des 1800163). Please find the early coordination package for your review and comment. Please let me know if you have any questions.

Thank you,  
Payton

**Payton Parke**  
Envir Specialist I

From: [Falls, Ryan G](#)  
To: [Payton Parke](#)  
Cc: [Daniel Townsend](#)  
Subject: RE: Vincennes Early Coordination Response - Des 1800163 SR 145 Slide Correction Project, Perry County  
Date: Monday, February 22, 2021 8:46:57 AM  
Attachments: [image003.jpg](#)

---

Payton Parke,

At this time, our office has no comment on this project. Thank you for the opportunity to respond to early coordination.

**Ryan Falls**

**Capital Program Management-Senior Environmental Manager Supervisor**

Indiana Department of Transportation

3650 South US Highway 41

Vincennes, IN 47591

**Email:** [rfalls@indot.IN.gov](mailto:rfalls@indot.IN.gov)

**Cell:** 812-582-1387

**Office:** 812-895-7326



---

**From:** Payton Parke <PParke@lochgroup.com>  
**Sent:** Friday, February 19, 2021 2:38 PM  
**To:** Falls, Ryan G <RFalls@indot.IN.gov>  
**Cc:** Daniel Townsend <DTownsend@lochgroup.com>  
**Subject:** Early Coordination Letter - Des 1800163 SR 145 Slide Correction Project, Perry County

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

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Dear Mr. Falls,

We are working on the environmental document for the SR 145, 1.69 miles south of SR 62 junction Slide Correction project in Perry County, IN (Des 1800163). Please find the early coordination package for your review and comment. Please let me know if you have any questions.

Thank you,  
Payton

**Payton Parke**

Envir Specialist I

**Lochmueller Group**

6200 Vogel Road, Evansville, IN 47715

## Organization and Project Information

**Project ID:** INDOT  
**Des. ID:** 1800163  
**Project Title:** SR 145, 1.69 mile south of SR 62 junction, Slide Correction  
**Name of Organization:** Lochmueller Group Inc.  
**Requested by:** Payton Parke

## Environmental Assessment Report

### 1. Geological Hazards:

- None documented in the area

### 2. Mineral Resources:

- Bedrock Resource: High Potential
- Sand and Gravel Resource: None documented in the area

### 3. Active or abandoned mineral resources extraction sites:

- Surface Coal Mines

\*All map layers from Indiana Map ([maps.indiana.edu](http://maps.indiana.edu))

## **DISCLAIMER:**

This document was compiled by Indiana University, Indiana Geological Survey, using data believed to be accurate; however, a degree of error is inherent in all data. This product is distributed "AS-IS" without warranties of any kind, either expressed or implied, including but not limited to warranties of suitability to a particular purpose or use. No attempt has been made in either the design or production of these data and document to define the limits or jurisdiction of any federal, state, or local government. The data used to assemble this document are intended for use only at the published scale of the source data or smaller (see the metadata links below) and are for reference purposes only. They are not to be construed as a legal document or survey instrument. A detailed on-the-ground survey and historical analysis of a single site may differ from these data and this document.

This information was furnished by Indiana Geological Survey

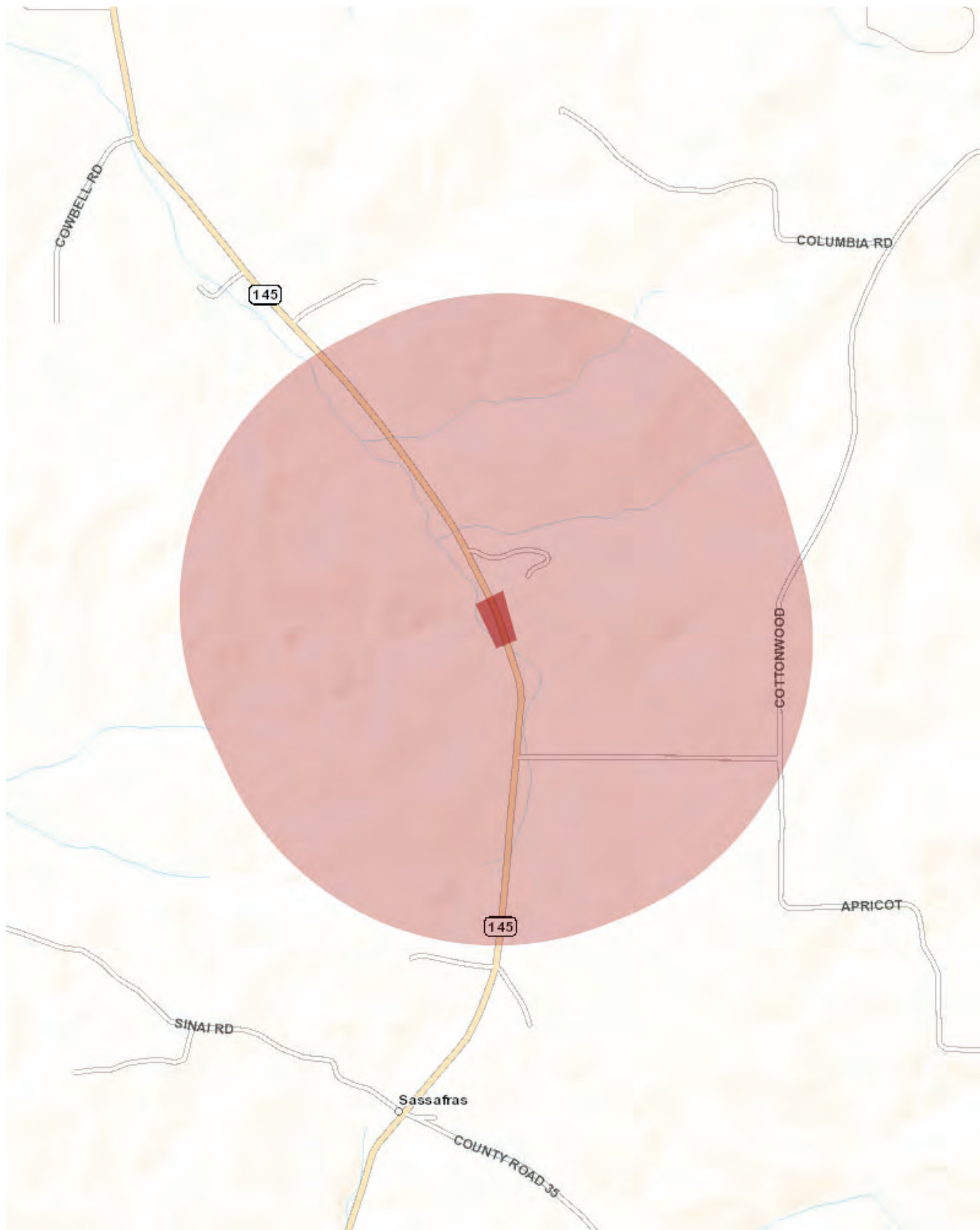
Address: 420 N. Walnut St., Bloomington, IN 47404

Email: IGSEnvir@indiana.edu

Phone: 812 855-7428

Date: February 23, 2021





## Metadata:

- [https://maps.indiana.edu/metadata/Geology/Coal\\_Mines\\_Surface.html](https://maps.indiana.edu/metadata/Geology/Coal_Mines_Surface.html)
- [https://maps.indiana.edu/metadata/Geology/Bedrock\\_Geology.html](https://maps.indiana.edu/metadata/Geology/Bedrock_Geology.html)

March 16, 2021

Payton Parke  
Lochmueller Group, Inc.  
3502 Woodview Trace, Suite 150  
Indianapolis, Indiana 46268

Dear Mr. Parke:

The proposed project to proceed with a slide correction along State Road 145 in Perry County, Indiana, (Des No 1800163) as referred to in your letter received February 19, 2021, will not cause a conversion of prime farmland.

If you need additional information, please contact John Allen at 317-295-5859.

Sincerely,

**RICHARD**  
**NEILSON**

Digitally signed by  
RICHARD NEILSON  
Date: 2021.03.17  
13:41:45 -04'00'

RICK NEILSON  
State Soil Scientist



**State of Indiana**  
**DEPARTMENT OF NATURAL RESOURCES**  
**Division of Fish and Wildlife**  
**Early Coordination/Environmental Assessment**

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**DNR #:** ER-23466

**Request Received:** February 19, 2021

**Requestor:** Lochmueller Group Inc  
Payton Parke  
6200 Vogel Road  
Evansville, IN 47715

**Project:** SR 145 slide correction and UNT Anderson River embankment stabilization, about 1.69 miles south of SR 62; Des #1800163

**County/Site info:** Perry

The Indiana Department of Natural Resources has reviewed the above referenced project per your request. Our agency offers the following comments for your information and in accordance with the National Environmental Policy Act of 1969.

If our agency has regulatory jurisdiction over the project, the recommendations contained in this letter may become requirements of any permit issued. If we do not have permitting authority, all recommendations are voluntary.

**Regulatory Assessment:** Formal approval by the Department of Natural Resources under the regulatory programs administered by the Division of Water is not required for this project.

**Natural Heritage Database:** The Natural Heritage Program's data have been checked. To date, no plant or animal species listed as state or federally threatened, endangered, or rare have been reported to occur in the project vicinity.

**Fish & Wildlife Comments:** Avoid and minimize impacts to fish, wildlife, and botanical resources to the greatest extent possible, and compensate for impacts. The following are recommendations that address potential impacts identified in the proposed project area:

1) Stream Impacts/Relocation:

Stream relocation projects are complex, difficult to design and construct, and have a high risk of failure. All reasonable alternatives should be considered first. If relocation appears to be the best option, a mitigation plan should be developed. Any hydraulic modeling of a relocated channel should be calculated with mature trees, shrubs, grasses, and other similar features. Additional mitigation, such as planting trees along a stream, may affect hydrologic modeling, so mitigation and engineering design should be coordinated.

Mitigation for stream relocation requires replacement of lost qualities and characteristics on the relocated segment, which are at least equal to the original segment, and which fit the surrounding landscape. Natural channel design is applied to the relocated segment, including elements needed to complement upstream and downstream conditions. To the extent practicable, the relocated segment should have a similar cross-section, substrate, in-stream features, and riparian corridor and channel morphology when compared to the original segment. The USDA's Natural Resources Conservation Service, among others, provide helpful information on channel design. See DNR's Habitat Mitigation Guidelines for full details on stream impacts and mitigation (<http://iac.iga.in.gov/iac/20200527-IR-312200284NRA.xml.pdf>).

2) Bank Stabilization:

Any riprap placement that covers the banks will impair wildlife passage. Minimize the use of riprap and use alternative erosion protection materials whenever possible.

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**Division of Fish and Wildlife**  
**Early Coordination/Environmental Assessment**

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Riprap must not be placed in the active thalweg channel or placed in the streambed in a manner that precludes fish or aquatic organism passage (riprap must not be placed above the existing streambed elevation). The riprap scour protection must not extend into the channel more than approximately 3' on each side of the structure to avoid accelerating flow in the low flow channel and causing bed scouring or fish passage impairment.

Where riprap must be used, we recommend placing only enough riprap to provide stream bank toe protection, such as from the toe of the bank up to the ordinary high water mark (OHWM). The banks above the OHWM must be restored, stabilized, and revegetated using geotextiles and a mixture of grasses, sedges, wildflowers, shrubs, and trees native to the area and specifically for stream bank/floodway stabilization purposes as soon as possible upon completion. The proposed riprap could be adapted to facilitate wildlife movement by making the riprap extend above the normal water level, mixing the riprap with smaller stone and fines that match the existing stream substrate particle distribution, thereby providing a smoother surface than riprap alone and imparting stability to the stone matrix.

Where hard armoring is needed above the OHWM, wildlife passage can be facilitated by using a smooth-surfaced material instead of riprap, such as articulated concrete block mats, fabric-formed concrete mats or other similar smooth-surfaced materials as these materials will not impair wildlife movement. Poured concrete is not an acceptable type of smooth-surfaced material.

Information about bioengineering techniques can be found at <http://www.in.gov/legislative/iac/20120404-IR-312120154NRA.xml.pdf>. Also, the following is a USDA/NRCS document that outlines many different bioengineering techniques for streambank stabilization: <http://directives.sc.egov.usda.gov/17553.wba>.

### 3) Riparian Habitat:

We recommend a mitigation plan be developed for any unavoidable habitat impacts that will occur. The DNR's Habitat Mitigation Guidelines (and plant lists) can be found online at: <http://iac.iga.in.gov/iac/20200527-IR-312200284NRA.xml.pdf>.

Impacts to non-wetland forest of one (1) acre or more should be mitigated at a minimum 2:1 ratio. If less than one acre of non-wetland forest is removed in a rural setting, replacement should be at a 1:1 ratio based on area. Impacts to non-wetland forest under one (1) acre in an urban setting should be mitigated by planting five trees, at least 2 inches in diameter-at-breast height (dbh), for each tree which is removed that is 10" dbh or greater (5:1 mitigation based on the number of large trees) or by using the 1:1 replacement ratio based on area depending on the type of habitat impacted (individual canopy tree removal in an urban streetscape or park-like environment versus removal of habitat supporting a tree canopy, woody understory, and herbaceous layer). Impacts under 0.10 acre in an urban area may still involve the replacement of large diameter trees but typically do not require any additional mitigation or additional plantings beyond seeding and stabilizing disturbed areas. There are exceptions for high quality habitat sites however.

The additional measures listed below should be implemented to avoid, minimize, or compensate for impacts to fish, wildlife, and botanical resources:

1. Revegetate all bare and disturbed areas with a mixture of native grasses, sedges, wildflowers, and also native hardwood trees and shrubs if any woody plants are disturbed during construction as soon as possible upon completion. Do not use any varieties of Tall Fescue or other non-native plants, including prohibited invasive species (see 312 IAC 18-3-25).
2. Minimize and contain within the project limits inchannel disturbance and the clearing

**THIS IS NOT A PERMIT**

**State of Indiana**  
**DEPARTMENT OF NATURAL RESOURCES**  
**Division of Fish and Wildlife**  
**Early Coordination/Environmental Assessment**

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of trees and brush.

- 3. Do not work in the waterway from April 1 through June 30 without the prior written approval of the Division of Fish and Wildlife.
- 4. Do not cut any trees suitable for Indiana bat or Northern Long-eared bat roosting (greater than 5 inches dbh, living or dead, with loose hanging bark, or with cracks, crevices, or cavities) from April 1 through September 30.
- 5. Do not construct any temporary runarounds, access bridges, causeways, cofferdams, diversions, or pumparounds.
- 6. Use minimum average 6 inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids.
- 7. Plant native hardwood trees along the top of the bank and right-of-way to replace the vegetation destroyed during construction.
- 8. Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.
- 9. Seed and protect all disturbed streambanks and slopes not protected by other methods that are 3:1 or steeper with erosion control blankets that are heavy-duty, biodegradable, and net free or that use loose-woven / Leno-woven netting to minimize the entrapment and snaring of small-bodied wildlife such as snakes and turtles (follow manufacturer's recommendations for selection and installation); seed and apply mulch on all other disturbed areas.

**Contact Staff:**

Christie L. Stanifer, Environ. Coordinator, Fish & Wildlife  
Our agency appreciates this opportunity to be of service. Please contact the above staff member at (317) 232-4080 if we can be of further assistance.

*Christie L. Stanifer*

---

**Date:** March 19, 2021

Christie L. Stanifer  
Environ. Coordinator  
Division of Fish and Wildlife

**Categorical Exclusion**

# **Appendix D**

**Section 106 of the National Historic  
Preservation Act (NHPA)**

**Minor Projects PA Project Assessment Form**

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**Date:** 3/26/2021

**Project Designation Number:** 1800163

**Route Number:** SR 145

**Project Description:** Slide Correction, 1.96 miles south of SR 62

SR 145 consists of two 11-foot asphalt travel lanes with 1- to 2-foot-wide usable shoulders on both sides of the highway. The existing usable shoulders are made up of compacted aggregate or earth. The existing side slopes are approximately 2:1 to 1.5:1 downhill embankment on the left side of SR 145 and approximately 3:1 uphill slope on the right side of SR 145. The project proposes that the sliding mass be removed from the project area and replaced with approximately 10 feet of compacted soil roadway fill. In addition, the UNT channel will be realigned away from the roadway embankment and lined with riprap on geotextiles. It is anticipated that this will require 6,100 cubic yards of unclassified excavation, 5,000 cubic yards of compacted roadway fill, and 2,080 tons of riprap on geotextiles for approximately 250 feet of the UNT channel realignment. The northbound lane and incidental construction limits that extend 100 feet either direction from the project limits will be milled and re-surfaced. It is anticipated that 0.81 acre of permanent right-of-way will be required for the proposed project. The total project length is approximately 190 feet, not including incidental construction.

**Feature crossed (if applicable):**

**City/Township:** Clark Township

**County:** Perry County

**Information reviewed (please check all that apply):**

- General project location map     USGS map     Aerial photograph     Interim Report
- Written description of project area     General project area photos     Soil survey data
- Previously completed historic property reports     Previously completed archaeology reports
- Bridge Inspection Information     SHAARD     SHAARD GIS     Streetview Imagery

**Other (please specify):** Indiana Historic Building, Bridges, and Cemeteries Map (IHBBCM); County GIS data (accessed via <https://perryin.wthgis.com/>); project information provided by Lochmueller Group dated 1/15/2021 on file at INDOT-CRO;

Grob, Kaye and Michael Loughlin  
2020 Phase Ia Archaeological Records Review and Reconnaissance for the Slide Correction on SR 145 at RP 16+34, 1.69 Miles South of SR 62 Junction, Perry County, Indiana. Cardno, Indianapolis.

**Please specify all applicable categories and condition(s) (applicable conditions are highlighted):**

B-10. Slide corrections, slope repairs, and other erosion control measures, in undisturbed soils under the conditions listed below [*BOTH Condition A, which pertains to Archaeological Resources, and Condition B, which pertains to Above-Ground Resources, must be satisfied*]:

**Condition A (Archaeological Resources)**

An archaeological investigation conducted by the applicant and reviewed by INDOT Cultural Resources Office determines that no National Register-listed or potentially National Register-eligible archaeological resources are present within the project area. If the archaeological investigation locates National Register listed or potentially National Register eligible



archaeological resources, then full Section 106 review will be required. Copies of any reports will be provided to the DHPA and any archaeological site form information will be entered directly into the SHAARD by the applicant. The archaeological reports will also be available for viewing (by Tribes only) on INSCOPE.

**Condition B (Above-Ground Resources)**

Work does not occur adjacent to or within a National Register-listed or National Register-eligible district or individual above-ground resource.

Are there any commitments associated with this project? If yes, please explain and include in the Additional Comments Section below.      yes                       no

Does the project result in a de minimis impact to a Section 4(f) protected historic resource? If yes, please explain in the Additional Comments Section below.      yes                       no

**Additional comments:**

**Above-ground Resources**

An INDOT-Cultural Resources Office (CRO) historian who meets the Secretary of the Interior’s Professional Qualification Standards as per 36 CFR Part 61 first performed a desktop review, checking the Indiana Register of Historic Sites and Structures (State Register) and National Register of Historic Places (National Register) lists for Perry County. No listed resources are present within 0.25 mile of the project area, a distance that would serve as an adequate area of potential effects (APE) given the scope of the project and the surrounding terrain.

The *Perry County Interim Report* (1992; Clark Township) of the Indiana Historic Sites and Structures Inventory (IHSSI) was also consulted. The National Register & IHSSI information is available in the Indiana State Historic Architectural and Archaeological Research Database (SHAARD) and the Indiana Historic Buildings, Bridges, and Cemeteries Map (IHBBM). The SHAARD information was checked against the Interim Report hard copy maps. No IHSSI sites are recorded within 0.25 mile of the project.

Land surrounding the project area is rural with agricultural fields, woods consisting of mature deciduous and coniferous trees, and scattered properties. None of the properties within 0.25 mile of the project area will be 50 years old or older by the time of project letting in 2022.

Based on the available information, as summarized above, no above-ground concerns exist as long as the project scope does not change.

**Archaeological Resources**

An INDOT-CRO archaeologist who meets the Secretary of the Interior’s Professional Qualification Standards as per 36 CFR Part 61 reviewed the Phase Ia field reconnaissance survey report completed for the project by Cardno (Grob and Loughlin 2020). No archaeological sites were previously recorded within or adjacent to the project area. A 0.92-acre survey area was investigated through a combination of shovel probing (n=6) and visual inspection of disturbed, sloped, and wet areas. No archaeological sites were recorded within the survey area and no further work was recommended. Therefore, there are no archaeological concerns as long as the project scope does not change

**Accidental Discovery:** If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, construction within 100 feet of the find will be stopped and the INDOT Cultural Resources Office and the Division of Historic Preservation and Archaeology will be notified immediately.

**INDOT Cultural Resources staff reviewer(s):** Kelyn Alexander and Matt Coon

*\*\*\*Be sure to attach this form to the National Environmental Policy Act documentation for this project. Also, the NEPA documentation shall reference and include the description of the specific stipulation in the PA that qualifies the project as exempt from further Section 106 review.*

## Hannah Blad

---

**From:** Coon, Matthew <mcoon@indot.IN.gov>  
**Sent:** Friday, March 26, 2021 1:54 PM  
**To:** Veronica Parsell  
**Cc:** Alexander, Kelyn; Falls, Ryan G; bmalone; Miller, Shaun (INDOT); Hannah Blad  
**Subject:** RE: SR 145 Slide Correction Project, Des. No. 1800163, MPPA and Archaeology Report  
**Attachments:** Minor Projects PA determination form\_B-10\_1800163.pdf

Veronica,

Thank you for submitting the revised report in response to my comments. We have completed our review of the materials and have determined that Category B-10 of the MPPA is applicable, and therefore no further Section 106 work is necessary. The completed determination form is attached for use in the CE document.

The revised archaeological report has been reviewed and approved by INDOT-CRO. Please forward one hard copy of the report to DHPA, indicating that the project qualified as a Minor Project and therefore the report is for their records only and no formal review is required under Section 106. In addition, we ask that a copy of the DHPA submittal be sent to INDOT-CRO c/o Matt Coon (mcoon@indot.in.gov) during the time of submission and that the archaeological report be posted to IN SCOPE.

Please keep in mind that if the scope of the project or the project limits should change, our office will need to re-examine the information to determine whether the MPPA still applies. Please don't hesitate to contact us should you have any questions or need additional information. Thank you.

Sincerely,

### **Matt Coon**

#### ***Archaeologist, Cultural Resources Office***

Indiana Department of Transportation  
100 North Senate Ave., **N758-Environmental Services**  
Indianapolis, IN 46204  
**Phone: 317-697-9752**

---

**From:** Veronica Parsell <Veronica.Parsell@cardno.com>  
**Sent:** Monday, March 22, 2021 9:34 AM  
**To:** Coon, Matthew <mcoon@indot.IN.gov>  
**Cc:** Alexander, Kelyn <KAlexander3@indot.IN.gov>; Falls, Ryan G <RFalls@indot.IN.gov>; Malone, Brian <bmalone@indot.IN.gov>; Miller, Shaun (INDOT) <smiller@indot.IN.gov>; Blad, Hannah <hblad@lochgroup.com>  
**Subject:** RE: SR 145 Slide Correction Project, Des. No. 1800163, MPPA and Archaeology Report

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Hi Matt,

I apologize for my delay in returning this to you. I made the update requested on 3/10, then forgot to send it back to you. Please let me know if you need anything else at this time.

Sincerely,

**Categorical Exclusion**

**Appendix E**

**Red Flag Investigation  
& Hazardous Materials**



# INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue  
Room N642  
Indianapolis, Indiana 46204

PHONE: (317) 232-5113  
FAX: (317) 233-4929

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

Date: November 13, 2020

To: Site Assessment & Management (SAM)  
Environmental Policy Office - Environmental Services Division (ESD)  
Indiana Department of Transportation  
100 N Senate Avenue, Room N642  
Indianapolis, IN 46204

From: Leigh Montano  
VS Engineering, Inc.  
4275 N High School Road  
Indianapolis, IN 46254  
lmontano@vsengineering.com

Re: RED FLAG INVESTIGATION  
DES 1800163, State Project  
Slide Correction  
SR 145 1.69 mi south of SR 62  
Perry County, Indiana

## PROJECT DESCRIPTION

Brief Description of Project: The project is located in Clark Township of Perry County, Indiana. The project area is in Section 1, Township 4 South, and Range 3 West. The structure is located 1.69 miles south of SR 62 Junction in Perry County. The latitude and longitude coordinates are 38.2013, -86.6877.

The need for this project is due to the vertical displacement along SR 145 due to embankment failure near Reference Post 16+34. The native soils are insufficient to resist the weight of the roadway fill and forces generated from the water likely entering the fill. The purpose of the proposed project is to stabilize the slide by rebuilding and reinforcing the slope, along with repairing damage to SR 145 pavement, to prevent the roadway from failing and causing a threat to the traveling public.

The preferred method of stabilizing the slope is compacted soil replacement and channel realignment with riprap. This alternative includes removing all failed material within the limits of the landslide and reconstructing the slope at a steep slope angle (almost vertical) utilizing geotextiles or geogrids as reinforcement within the body of the embankment. The structure fill material used within the area of reinforcement is typically granular in nature with a special gradation used within a few feet of the wire face. Drains are also typically installed within the reinforced slope. Due to the height and near vertical nature of the reinforced slope, installation of guardrail is anticipated for safety. This method will include roadway reconstruction within the slide area. Stream work at the base of the slide (roadway fore slope) will be required. The existing embankment of the Unnamed Tributary (UNT) of Anderson River will be stabilized using revetment riprap over geotextile fabric. A pump around is anticipated as part of the project. An existing culvert at the north end of the slide limits will require extension. Current overhead utilities could interfere with construction; therefore, possible utility relocation may be involved. The expected total project length along SR 145 is 460 feet, depending on the length of transitional milling needed to match the existing cross slopes.

[www.in.gov/dot/](http://www.in.gov/dot/)

***An Equal Opportunity Employer***

The surrounding area is primarily wooded with agricultural production and scattered rural residences. Right-of-way will need to be acquired for this project. The current right-of-way extends to the edge of the traveled way according to the December 14, 2017 INDOT Preliminary R/W Report Memo. It is estimated that the permanent right-of-way through the project area will require 50 feet left and right of centerline. Approximately 1.05 acres of new right-of-way, involving up to 2 parcels, will be acquired for the slope stabilization, stream realignment and culvert extension, and relocation of utilities. An estimated 0.5 acre of temporary right-of-way will be required for construction. Work will extend up to 95 feet away from the edge of pavement.

Bridge and/or Culvert Project: Yes  No  Structure # \_\_\_\_\_

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

(Note: If the project involves a historical bridge, please include the bridge information in the Recommendations Section of the report).

Proposed right of way: Temporary  # Acres 0.5 Permanent  # Acres 1.05, Not Applicable

Type of excavation:

Dry and wet excavation; approximately 6,100 cubic yards of slope and waterway excavation will be necessary for the slope stabilization, stream realignment, and culvert extension. Temporary impacts including pump around, 1 clean and 1 dirty, with 2 cofferdams and 4 modified check dams will be necessary for slide correction. Temporary impacts below the Ordinary High Water Mark (OHWM) are estimated to be 0.02 acre.

Maintenance of traffic:

Construction will be completed under full road closure. A full detour will follow I-64, SR 37, and SR 145, which will add 23 miles compared to the direct route.

Work in waterway: Yes  No  Below 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	N/A
Cemeteries	N/A	Railroads	N/A
Hospitals	N/A	Trails	N/A
Schools	N/A	Managed Lands	1

<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.

Explanation:

**Managed Lands:**

One Managed Lands is located within the 0.5 mile search radius. The IDNR Ferdinand State Forest managed land is 0.31 mile southwest/west 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	8
Canal Structures – Historic	N/A	Lakes	2
NPS NRI Listed	N/A	Floodplain - DFIRM	N/A
NWI-Lines	1	Cave Entrance Density	N/A
IDEM 303d Listed Streams and Lakes (Impaired)	N/A	Sinkhole Areas	N/A
Rivers and Streams	6	Sinking-Stream Basins	N/A

Explanation:

**NWI-Lines:**

One (1) NWI-Lines segment is located within the 0.5 mile search radius. The NWI-Lines segment is located within the project area. A Waters of the US Report will be prepared and coordination with INDOT ESD Ecology and Waterway Permitting will occur.

**Rivers and Streams:**

Six (6) rivers and stream segments are located within the 0.5 mile search radius. Two segments, each an unnamed tributary of Anderson River, are located within the project area. A Waters of the US Report will be prepared and coordination with INDOT ESD Ecology and Waterway Permitting will occur.

**NWI-Wetlands:**

Eight (8) wetlands are located within the 0.5 mile search radius. The nearest wetland is located 0.08 mile northeast of the project area. No impact is expected.

**Lakes:**

Two (2) lakes are located within the 0.5 mile search radius. The nearest lake is located 0.28 mile northwest of the project area. No impact is expected.

**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	N/A	Mineral Resources	N/A
Mines – Surface	2	Mines – Underground	N/A

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Explanation:

**Mines - Surface:**

Two (2) surface mines are located within the 0.5 mile search radius. The nearest mine is located 0.39 mile southwest of the project area. No impact is expected.

**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	N/A	Manufactured Gas Plant Sites	N/A
RCRA Generator/ TSD	N/A	Open Dump Waste Sites	N/A
RCRA Corrective Action Sites	N/A	Restricted Waste Sites	N/A
State Cleanup Sites	N/A	Waste Transfer Stations	N/A
Septage Waste Sites	N/A	Tire Waste Sites	N/A
Underground Storage Tank (UST) Sites	N/A	Confined Feeding Operations (CFO)	N/A
Voluntary Remediation Program	N/A	Brownfields	N/A
Construction Demolition Waste	N/A	Institutional Controls	N/A
Solid Waste Landfill	N/A	NPDES Facilities	N/A
Infectious/Medical Waste Sites	N/A	NPDES Pipe Locations	N/A
Leaking Underground Storage (LUST) Sites	N/A	Notice of Contamination Sites	N/A

Explanation: No hazardous material concerns were identified within the 0.5 mile search radius.

**ECOLOGICAL INFORMATION SUMMARY**

The Perry 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 ESD did not indicate the presence of ETR species within the 0.5 mile search radius. Coordination with IDNR will occur. Due to the nature of project activities, this project will fall under the guidelines set forth under USFWS Interim Policy for the Review of Highway Transportation Projects in Indiana dated May 29, 2013. No further coordination is necessary.

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 project area is located in a rural area with woods nearby. The range-wide programmatic consultation for the Indiana Bat and Northern Long-eared Bat will be completed according to the most recent "Using the USFWS's IPaC System for Listed Bat Consultation for INDOT Projects."

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**RECOMMENDATIONS SECTION**

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

INFRASTRUCTURE: N/A

WATER RESOURCES: The presence of the following water resources will require the preparation of a Waters of the US Report and coordination with INDOT ESD Ecology and Waterway Permitting:

- One NWI Lines segment is located within the project area.
- Two stream segments, each a UNT of Anderson River, flow through the project area.

URBANIZED AREA BOUNDARY: N/A

MINING/MINERAL EXPLORATION: N/A

HAZARDOUS MATERIAL 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 the most recent "Using the USFWS's IPaC System for Listed Bat Consultation for INDOT Projects."

Nicole Fohey  
Breting

Digitally signed by Nicole Fohey-Breting  
Date: 2021.03.10 09:52:16 -05'00'

(Signature)

INDOT ESD concurrence:

Prepared by: Leigh Montano



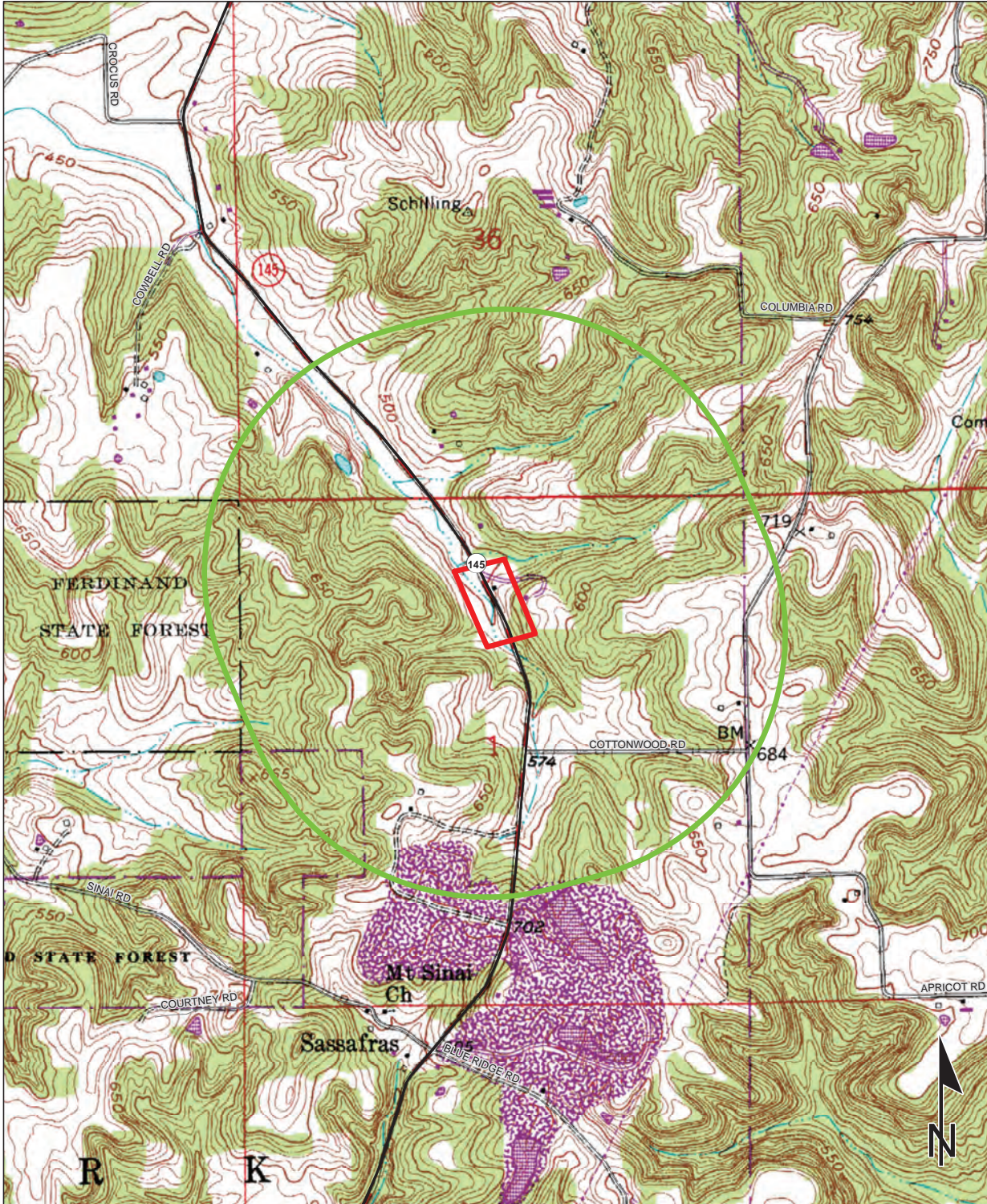
Environmental Scientist  
VS Engineering, Inc.

**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  
 INFRASTRUCTURE: ..... YES  
 WATER RESOURCES: ..... YES  
 URBANIZED AREA BOUNDARY: ..... N/A  
 MINING/MINERAL EXPLORATION: ..... YES  
 HAZARDOUS MATERIAL CONCERNS: ..... N/A

Red Flag Investigation - Site Location  
 SR 145, 1.69 Miles South of SR 62 Junction  
 Des. No. 1800163, Slide Correction  
 Perry County, Indiana



Sources: 0.25 0.125 0 0.25 Miles  
 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.

BRISTOW QUADRANGLE  
 INDIANA  
 7.5 MINUTE SERIES (TOPOGRAPHIC)

Red Flag Investigation - Infrastructure  
 SR 145, 1.69 Miles South of SR 62 Junction  
 Des. No. 1800163, Slide Correction  
 Perry County, Indiana



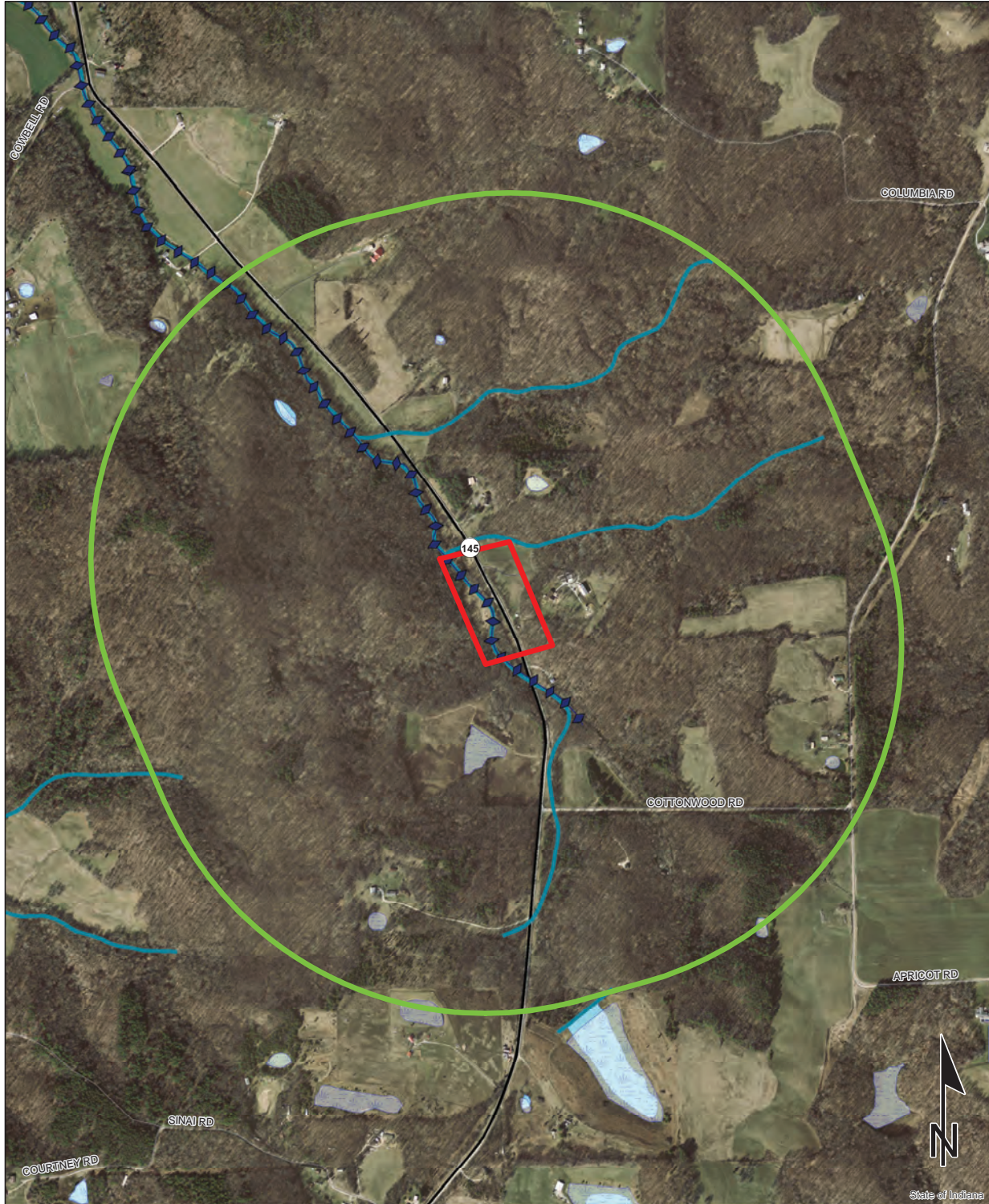
Sources: 0.2 0.1 0 0.2 Miles

**Non Orthophotography Data** - Obtained from the State of Indiana Geographical Information Office Library  
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	Religious Facility		Recreation Facility		Project Area
	Airport		Pipeline		Half Mile Radius
	Cemeteries		Railroad		Toll
	Hospital		Trails		Interstate
	School		Managed Lands		State Route
			County Boundary		US Route
					Local Road

Red Flag Investigation - Water Resources  
 SR 145, 1.69 Miles South of SR 62 Junction  
 Des. No. 1800163, Slide Correction  
 Perry County, Indiana

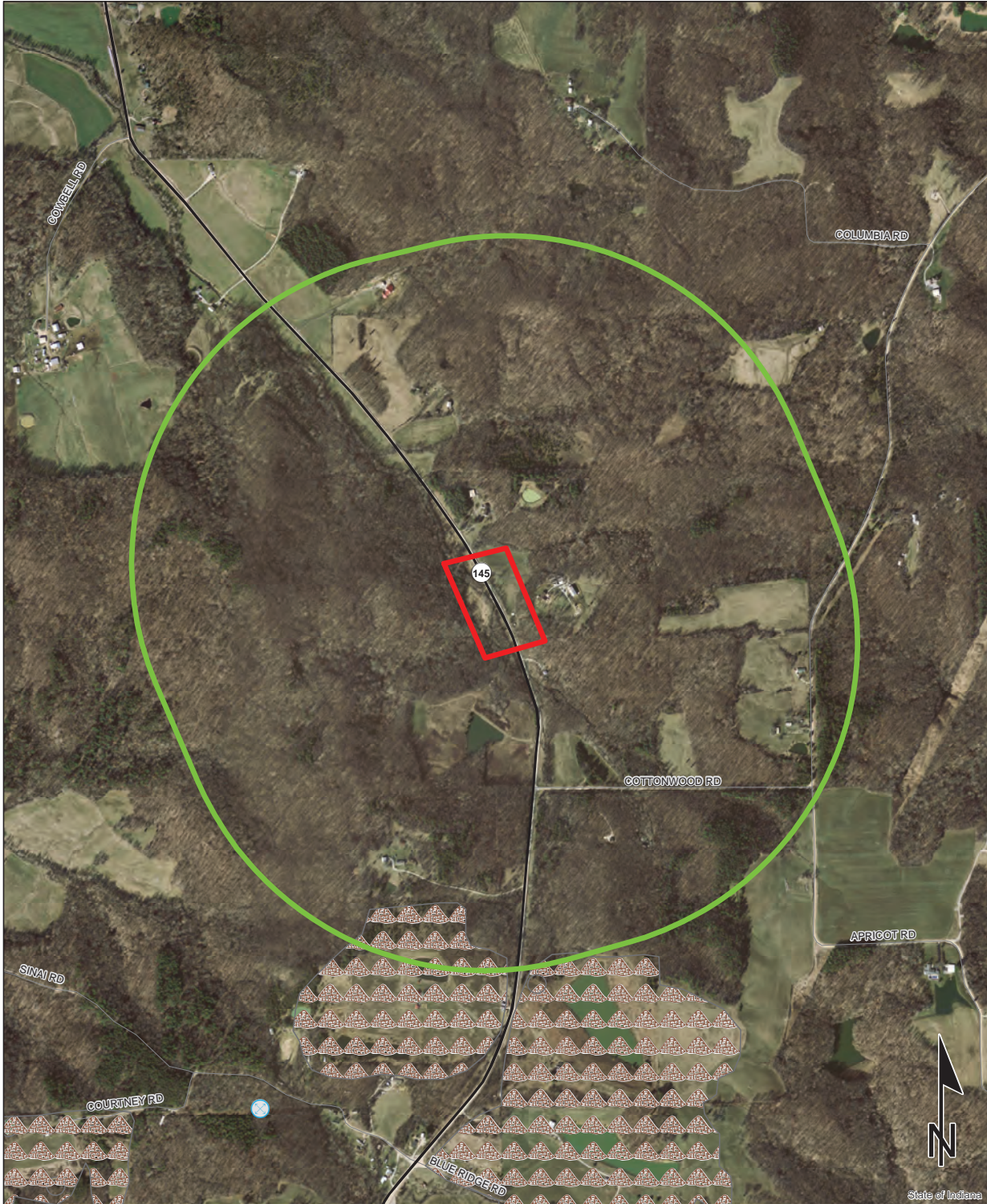


Sources: 0.15 0.075 0 0.15 Miles

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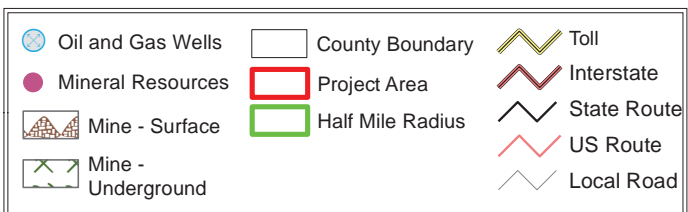

Red Flag Investigation - Mining/Mineral Exploration  
 SR 145, 1.69 Miles South of SR 62 Junction  
 Des. No. 1800163, Slide Correction  
 Perry County, Indiana



Sources: 0.2 0.1 0 0.2 Miles

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Indiana County Endangered, Threatened and Rare Species List



County: Perry

Species Name	Common Name	FED	STATE	GRANK	SRANK
<b>Insect: Plecoptera (Stoneflies)</b>					
<i>Perlesta shawnee</i>	Shawnee Stone		SE	G3	S1
<b>Mollusk: Bivalvia (Mussels)</b>					
<i>Elliptio crassidens</i>	Elephantear		SSC	G5	S2
<i>Lampsilis abrupta</i>	Pink Mucket	LE	SX	G2	SX
<i>Lampsilis fasciola</i>	Wavyrayed Lampmussel		SSC	G5	S3
<i>Plethobasus cyphus</i>	Sheepnose	LE	SE	G3	S1
<i>Pleurobema cordatum</i>	Ohio Pigtoe		SSC	G4	S2
<i>Theliderma cylindrica</i>	Rabbitsfoot	LT	SE	G3G4	S1
<i>Villosa lienosa</i>	Little Spectaclecase		SSC	G5	S3
<b>Insect: Coleoptera (Beetles)</b>					
<i>Dynastes tityus</i>	Unicorn Beetle		SR	GNR	S2
<b>Insect: Homoptera</b>					
<i>Bruchomorpha dorsata</i>			SR	GNR	S2
<i>Chlorotettix vacuna</i>	The Vacant Chlorotettix		SR	GNR	S1S2
<i>Eutettix pictus</i>	Decorated Oak Leafhopper		SE	GNR	S1
<i>Fitchiella robertsonii</i>	Robertson's Flightless Planthopper		SE	GNR	S1
<i>Flexamia reflexus</i>	Indiangrass Flexamia		SR	GNR	S1S2
<i>Graminella pallidula</i>	Pallid Graminella Leafhopper		SR	GNR	S2
<i>Hecalus flavida</i>	Little Bluestem Shovelhead Leafhopper		WL	GNR	S2
<i>Mesamia nigradorsum</i>	Black-banded Sunflower Leafhopper		WL	GNR	S2S3
<i>Paraphlepsius particolor</i>	multi-colored Paraphlepsius leafhopper		SE	GNR	S1
<i>Paraphlepsius solidaginis</i>	Goldenrod Paraphlepsius Leafhopper		SR	GNR	S1S2
<i>Polyamia brevipennis</i>	Short-winged Polyamia		SE	GNR	S1
<i>Prairiana kansana</i>	The Kansas Prairie Leafhopper		SE	GNR	S1
<i>Texananus longipennis</i>	Long-winged Texan Leafhopper		SR	GNR	S2
<i>Texananus rufusculus</i>	Reddish Texan Leafhopper		ST	GNR	S2
<i>Texananus superbus</i>	Superb Texan leafhopper		WL	GNR	S1S2
<b>Insect: Lepidoptera (Butterflies &amp; Moths)</b>					
<i>Acleris semipurpurana</i>	Oak Leaf-tier Moth		SR	GNR	SNR
<i>Amblyscirtes aesculapius</i>	Lace-winged Roadside-skipper		SE	G3G4	S1
<i>Amblyscirtes belli</i>	Bell's Roadside-skipper		SE	G3G4	S1
<i>Atrytonopsis hianna</i>	Dusted Skipper		ST	G4G5	S2S3
<i>Calephelis muticum</i>	Swamp Metalmark		ST	G3	S2S3
<i>Cyenia collaris</i>			ST	G4	S2S3
<i>Danaus plexippus</i>	Monarch	C	WL	G4	S4S5B
<i>Dichagyris acclivis</i>	A Noctuid Moth		ST	G4G5	S2

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# Indiana County Endangered, Threatened and Rare Species List



## County: Perry

Species Name	Common Name	FED	STATE	GRANK	SRANK
<i>Erynnis martialis</i>	Mottled Duskywing		WL	G3	S3
<i>Gabara subnivosella</i>	A Noctuid Moth		SR	G4	S1S2
<i>Grammia anna</i>	Anna's tiger moth		SR	G5	S2S3
<i>Hesperia leonardus</i>	Leonard's Skipper		ST	G4	S2S3
<i>Lesmone detrahens</i>	Detracted Owlet		SR	G5	S2
<i>Leucania inermis</i>	Unarmed Wainscot		SR	G5	S2S3
<i>Macaria multilineata</i>	Many-lined Angle		SR	G4	SNR
<i>Macrochilo hypocritalis</i>	Twin-dotted Macrochilo		SR	G4	S2
<i>Meropleon ambifusca</i>	Newman's Brocade		ST	G3G4	S1S2
<i>Pagara simplex</i>	Mouse-colored Lichen Moth		SR	G5	S2S3
<i>Papaipema beeriana</i>	Beer's Blazing Star Borer Moth		ST	G2G3	S1S3
<i>Pieris virginiensis</i>	West Virginia white		ST	G3?	S3
<i>Schinia jaguarina</i>	Jaguar Flower Moth		SE	G4	S1
<i>Thorybes confusus</i>	Eastern Cloudywing		ST	G4	S1S2
<i>Zomaria interruptolineana</i>	Broken-lined Zomaria		SR	GNR	SNR
<b>Insect: Odonata (Dragonflies &amp; Damselflies)</b>					
<i>Anax longipes</i>	Comet Darner		ST	G5	S2
<i>Archilestes grandis</i>	Great Spreadwing		WL	G5	S3
<i>Cordulegaster obliqua</i>	Arrowhead Spiketail		SR	G4	S2S3
<i>Hagenius brevistylus</i>	Dragonhunter		SR	G5	S2S3
<i>Neurocordulia yamaskanensis</i>	Stygian Shadowfly		ST	G5	S1S2
<b>Insect: Orthoptera</b>					
<i>Melanoplus viridipes viridipes</i>	Green-legged Spur-throated Grasshopper		SR	G4	S2
<i>Metaleptea brevicornis</i>	Clipped-wing Grasshopper		WL	G5	S3
<i>Orphulella speciosa</i>	Pasture Locust		SR	G5	S2S3
<b>Arachnida</b>					
<i>Calymmaria cavicola</i>	Cave Funnel-web Spider			GNR	S1
<b>Amphibian</b>					
<i>Acris blanchardi</i>	Blanchard's Cricket Frog		SSC	G5	S4
<i>Ambystoma barbouri</i>	Streamside Salamander	C	SSC	G4	S3
<i>Aneides aeneus</i>	Green Salamander	C	SE	G3G4	S1
<b>Reptile</b>					
<i>Crotalus horridus</i>	Timber Rattlesnake		SE	G4	S2
<i>Terrapene carolina carolina</i>	Eastern Box Turtle		SSC	G5T5	S3
<b>Bird</b>					
<i>Accipiter striatus</i>	Sharp-shinned Hawk		SSC	G5	S2B
<i>Ammodramus henslowii</i>	Henslow's Sparrow		SE	G4	S3B
<i>Buteo platypterus</i>	Broad-winged Hawk		SSC	G5	S3B

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Indiana County Endangered, Threatened and Rare Species List



County: Perry

Species Name	Common Name	FED	STATE	GRANK	SRANK
<i>Haliaeetus leucocephalus</i>	Bald Eagle		SSC	G5	S2
<i>Helmitheros vermivorus</i>	Worm-eating Warbler		SSC	G5	S3B
<i>Lanius ludovicianus</i>	Loggerhead Shrike		SE	G4	S3B
<i>Mniotilta varia</i>	Black-and-white Warbler		SSC	G5	S1S2B
<i>Setophaga cerulea</i>	Cerulean Warbler		SE	G4	S3B
<i>Setophaga citrina</i>	Hooded Warbler		SSC	G5	S3B
<i>Tyto alba</i>	Barn Owl		SE	G5	S2
<b>Mammal</b>					
<i>Myotis grisescens</i>	Gray Bat	LE	SE	G4	S1
<i>Myotis sodalis</i>	Indiana Bat	LE	SE	G2	S1
<i>Sorex fumeus</i>	Smoky Shrew		SSC	G5	S2
<i>Sorex hoyi</i>	Pygmy Shrew		SSC	G5	S2
<b>Vascular Plant</b>					
<i>Acalypha deamii</i>	Deam's two-seeded mercury		WL	G4?	S3
<i>Aconitum uncinatum</i>	blue monkshood		SE	G4	S1
<i>Baptisia australis</i>	wild false indigo		ST	G5	S3
<i>Buchnera americana</i>	bluehearts		SE	G5?	S1
<i>Bumelia lycioides</i>	buckthorn		SE	G5	S1
<i>Calycocarpum lyonii</i>	cup-seed		ST	G5	S2
<i>Carex bushii</i>	Bush's sedge		ST	G4	S2
<i>Catalpa speciosa</i>	northern catalpa		ST	G4?	S3
<i>Cheilanthes lanosa</i>	hairy lipfern		ST	G5	S3
<i>Cirsium carolinianum</i>	Carolina thistle		ST	G5	S3
<i>Crataegus intricata</i>	Copenhagen hawthorn		ST	G5	S3
<i>Crepidomanes intricatum</i>	weft fern		SE	G4G5	SU
<i>Cyripedium parviflorum var. pubescens</i>	large yellow lady's-slipper		WL	G5T5	S3
<i>Dichanthelium scoparium</i>	broom panic-grass		SE	G5	S1
<i>Dichanthelium yadkinense</i>	Yadkin panic-grass		SE	G5T4Q	S1
<i>Dodecatheon frenchii</i>	French's shootingstar		ST	G3?	S3
<i>Eupatorium album</i>	white thoroughwort		ST	G5	S3
<i>Festuca paradoxa</i>	cluster fescue		ST	G5	S2
<i>Fleischmannia incarnata</i>	pink thoroughwort		ST	G5	S2
<i>Gentiana alba</i>	yellow gentian		ST	G4	S3
<i>Hydrastis canadensis</i>	golden seal		WL	G3G4	S3
<i>Hylotelephium telephioides</i>	Allegheny stonecrop		ST	G4	S3
<i>Hypericum virgatum</i>	coppery St. John's-wort		ST	G4?	S2
<i>Hypopitys monotropa</i>	American pinesap		WL	G5	S3
<i>Juglans cinerea</i>	butternut		ST	G3	S2
<i>Juncus articulatus</i>	jointed rush		SE	G5	S1
<i>Juncus secundus</i>	Secund's rush		SE	G5?	S1

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# Indiana County Endangered, Threatened and Rare Species List



## County: Perry

Species Name	Common Name	FED	STATE	GRANK	SRANK
<i>Lilium canadense</i>	Canada lily		ST	G5	S3
<i>Linum striatum</i>	ridged yellow flax		WL	G5	S3
<i>Linum sulcatum</i>	grooved yellow flax		ST	G5	S3
<i>Ludwigia decurrens</i>	primrose willow		WL	G5	S3
<i>Matelea obliqua</i>	angle pod		ST	G4?	S3
<i>Melothria pendula</i>	creeping cucumber		ST	G5?	S2
<i>Micranthes virginiensis</i>	Virginia saxifrage		WL	G5	S3
<i>Nothoscordum bivalve</i>	crow-poison		ST	G4	S3
<i>Ophioglossum engelmannii</i>	limestone adder's-tongue		ST	G5	S3
<i>Oxalis illinoensis</i>	Illinois woodsorrel		WL	G4Q	S3
<i>Oxydendrum arboreum</i>	sourwood		ST	G5	S3
<i>Panax quinquefolius</i>	American ginseng		WL	G3G4	S3
<i>Panicum verrucosum</i>	warty panic-grass		ST	G4	S2
<i>Passiflora incarnata</i>	purple passion-flower		WL	G5	S3
<i>Phlox amplifolia</i>	large-leaved phlox		ST	G3G5	S3
<i>Phlox pilosa ssp. deamii</i>	Deam's phlox		SE	G5T3T4	S1
<i>Pleopeltis polypodioides</i>	resurrection fern		WL	G5	S3
<i>Polytaenia nuttallii</i>	prairie parsley		SE	G5	S1
<i>Prenanthes aspera</i>	rough rattlesnake-root		ST	G4?	S3
<i>Rhynchospora corniculata</i>	short-bristle hornedrush		ST	G5	S2
<i>Rudbeckia fulgida var. fulgida</i>	orange coneflower		WL	G5T4?	S3
<i>Rudbeckia fulgida var. umbrosa</i>	coneflower		SE	G5T4T5	S1
<i>Sagittaria australis</i>	longbeak arrowhead		ST	G5	S3
<i>Sanicula smallii</i>	Small's snakeroot		ST	G5	S3
<i>Schoenoplectiella purshiana</i>	weakstalk bulrush		ST	G4G5	S3
<i>Scutellaria parvula var. australis</i>	southern skullcap		WL	G4T4?	S2
<i>Scutellaria parvula var. parvula</i>	small skullcap		SE	G4T4	S1
<i>Setaria parviflora</i>	bristly foxtail		WL	G5	S3
<i>Spiranthes vernalis</i>	grassleaf ladies'-tresses		WL	G5	S3
<i>Stachys clingmanii</i>	Clingman's hedge-nettle		WL	G2	SU
<i>Stenanthium gramineum</i>	eastern featherbells		ST	G4G5	S1
<i>Strophostyles leiosperma</i>	slick-seed wild-bean		WL	G5	S3
<i>Thalictrum pubescens</i>	tall meadowrue		ST	G5	S3
<i>Tragia cordata</i>	heart-leaved noseburn		WL	G4	S3
<i>Trifolium reflexum var. glabrum</i>	buffalo clover		SE	G3G4T2T4Q	S1
<i>Vandenboschia boschiana</i>	filmy fern		SE	G4	S1
<i>Verbesina virginica</i>	white crownbeard		WL	G5?	S3
<i>Viola hirsutula</i>	southern wood violet		SE	G4	S1
<i>Vittaria appalachiana</i>	Appalachian vittaria		ST	G4	S2
<i>Wisteria frutescens</i>	American wisteria		ST	G5	S3

Indiana Natural Heritage Data Center  
Division of Nature Preserves  
Indiana Department of Natural Resources  
This data is not the result of comprehensive county surveys.

Fed: LE = Endangered; LT = Threatened; C = candidate; PDL = proposed for delisting  
State: SE = state endangered; ST = state threatened; SR = state rare; SSC = state species of special concern; SX = state extirpated; SG = state significant; WL = watch list  
GRANK: Global Heritage Rank: G1 = critically imperiled globally; G2 = imperiled globally; G3 = rare or uncommon globally; G4 = widespread and abundant globally but with long-term concerns; G5 = widespread and abundant globally; G? = unranked; GX = extinct; Q = uncertain rank; T = taxonomic subunit rank  
SRANK: State Heritage Rank: S1 = critically imperiled in state; S2 = imperiled in state; S3 = rare or uncommon in state; G4 = widespread and abundant in state but with long-term concern; SG = state significant; SH = historical in state; SX = state extirpated; B = breeding status; S? = unranked; SNR = unranked; SNA = nonbreeding status unranked

## Indiana County Endangered, Threatened and Rare Species List



### County: Perry

Species Name	Common Name	FED	STATE	GRANK	SRANK
<i>Woodwardia areolata</i>	netted chainfern		ST	G5	S3
<i>Zizia aptera</i>	golden alexanders		WL	G5	S3
<b>High Quality Natural Community</b>					
<i>Barrens - bedrock limestone</i>	Limestone Glade		SG	G4	S2S3
<i>Barrens - bedrock sandstone</i>	Sandstone Glade		SG	G2	S1
<i>Forest - upland dry Shawnee Hills</i>	Shawnee Hills Dry Upland Forest		SG	GNR	S2
<i>Forest - upland dry-mesic Shawnee Hills</i>	Shawnee Hills Dry-mesic Upland Forest		SG	GNR	S3
<i>Primary - cliff overhang</i>	Sandstone Overhang		SG	G4	S2
<i>Primary - cliff sandstone</i>	Sandstone Cliff		SG	GU	S3
<b>Other Significant Feature</b>					
<i>Freshwater Mussel Concentration Area</i>	Mussel Bed		SG	G3	SNR
<i>Geomorphic - Nonglacial Erosional Feature - Water Fall and Cascade</i>	Water Fall and Cascade			GNR	SNR

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Indiana Natural Heritage Data Center  
 Division of Nature Preserves  
 Indiana Department of Natural Resources  
 This data is not the result of comprehensive county surveys.

Fed: LE = Endangered; LT = Threatened; C = candidate; PDL = proposed for delisting  
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 GRANK: Global Heritage Rank: G1 = critically imperiled globally; G2 = imperiled globally; G3 = rare or uncommon globally; G4 = widespread and abundant globally but with long-term concerns; G5 = widespread and abundant globally; G? = unranked; GX = extinct; Q = uncertain rank; T = taxonomic subunit rank  
 SRANK: State Heritage Rank: S1 = critically imperiled in state; S2 = imperiled in state; S3 = rare or uncommon in state; G4 = widespread and abundant in state but with long-term concern; SG = state significant; SH = historical in state; SX = state extirpated; B = breeding status; S? = unranked; SNR = unranked; SNA = nonbreeding status unranked

**Categorical Exclusion**  
**Appendix F**  
**Water Resources**

# INdiana Floodplain Information Portal



## Indiana Department of Natural Resources **DNR**

Find an address

Example: 300 Michigan Avenue, Auburn, IN, 46706

**Go To Address**

Jump to a county

- or - Select your county from below  
Adams ▼

View your county's [Flood Insurance Study](#).

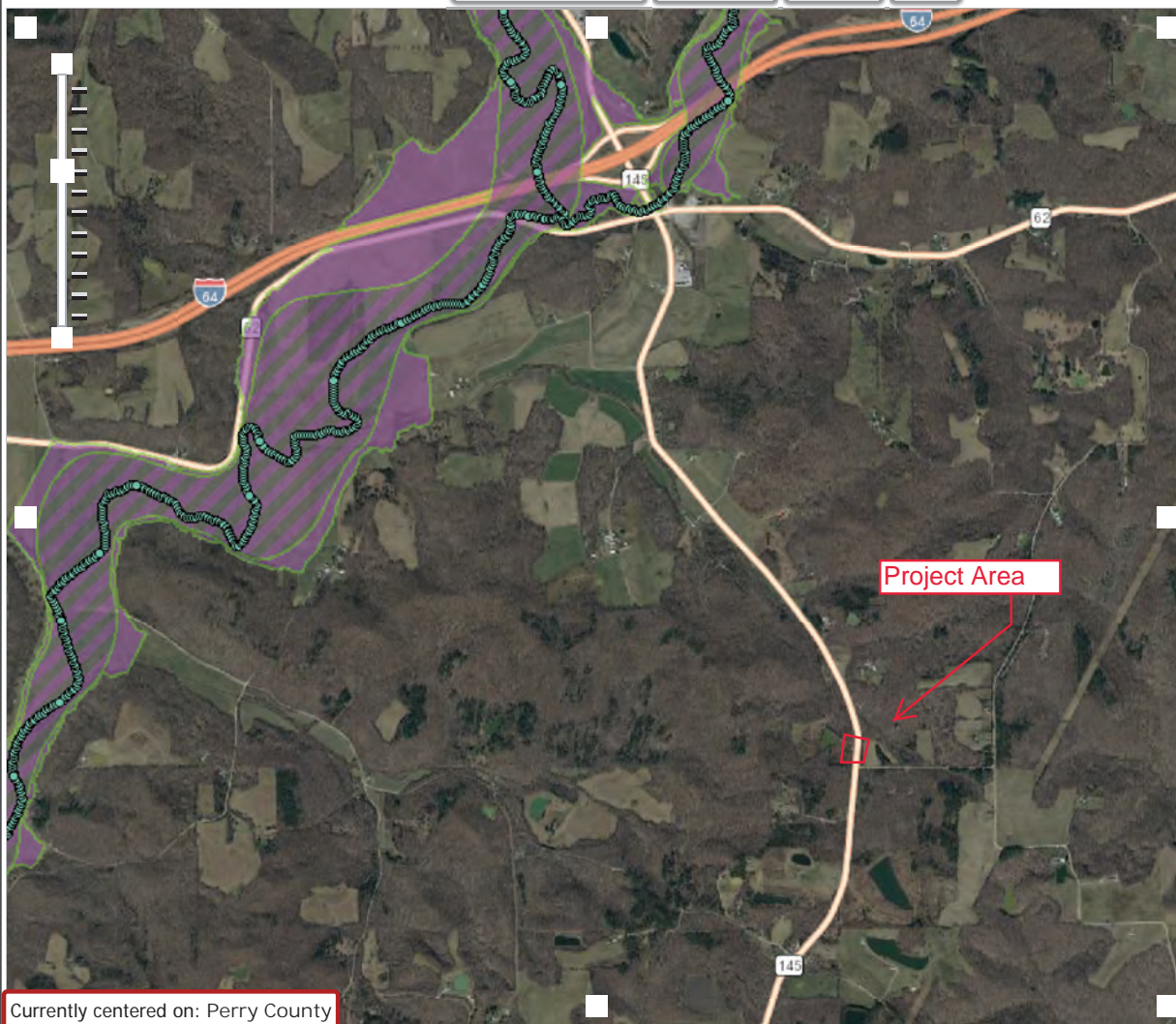
For the best feel and performance, use [Firefox 3.5+](#), [Internet Explorer 8+](#), [Chrome](#), or [Safari 4+](#).

[< Previous Tips](#) [Next Tips >](#)

Minimize

Map FEMA Flood Insurance Study Floodplain Layers Frequently Asked Questions

Profile Charter Layers Legend Help



Follow instructions under "How to navigate the map" to select a Point of Interest.

### What does INFIP do?

The Indiana Floodplain Information Portal, INFIP, is a mapping application that provides floodplain information for waterways to help citizens determine flood risk in an effort to minimize flood damage. INFIP utilizes FEMA published floodplain data and floodplain data from various, IDNR approved resources in order to provide the most available, comprehensive coverage of floodplain information for the State of Indiana.

The main functions of INFIP enables you to:

- select a Point of Interest (i.e. residence or tract of land) to view floodplain mapping and the Base Flood Elevations (BFE)
- print a floodplain map for a Point of Interest
- submit a request for a Floodplain Analysis / Regulatory Assessment (FARA) from the Division of Water using the eFARA (electronic

[Click to learn how to navigate the map](#)

[Click to learn how to submit eFARA](#)

[Click to learn about Special Flood Hazard Areas \(SFHA\) and Base Flood Elevations \(BFE\)](#)

[Click to learn about flood insurance](#)

[Click to learn about local community floodplain ordinance](#)

### Download Report

To generate a report, please zoom in and select a point of interest on the map by clicking on a location.

# SR 145 SLIDE CORRECTION PERRY COUNTY, IN

*March 17, 2021*

*Waters of the U.S. Report*

*Prepared by: Danika Fleck*

**Des. No.: 1800163**

**Contract No.: R-41452**

**Prepared for: INDOT**

**Prepared for: VS Engineering**

Approved 3.24.2021 by:

*Maryssa Engstrom*



Lochmueller Group, Inc.

6200 Vogel Road

Evansville, Indiana 47715

Phone: 812.479.6200

**Waters of the U.S. Report  
SR 145 Perry County  
Slide Correction Project  
Des. No. 1800163**

**Date(s) of Field Reconnaissance**

September 24, 2020

**Location**

The project is located on State Road (SR) 145 in Perry County, Indiana (Page A1).

- Clark Township, Perry County, Indiana
- Section 1, Township 4 South, Range 3 West
- Bristow 1:24,000 United States Geological Survey (USGS) Quadrangle (Pages A2, A3)
- Latitude/Longitude: 38.201270° N/-86.688195° W

**Project Description**

The project is located on SR 145, approximately 1.69 miles south of SR 62 in Perry County. The need for this project is due to pavement cracking and sinking caused by the lateral slide of the embankment, threatening the structural integrity of the roadway. The purpose of this project is to stabilize the slide and to prevent further damage from occurring to the roadway. This project will excavate the failed soil and will replace it with compacted soil. This project will also repave the damaged portions of SR 145 due to the slide. Some stream realignment shall also be considered. A culvert is present within the north end of the slide limits that may require extension. Furthermore, the existing embankment of the Unnamed Tributary 1 (UNT 1) of Anderson River will be stabilized using revetment riprap over geotextile fabric. No permanent or temporary lighting will be used for this project.

The Waters of the U.S. (WOTUS) investigation survey area limits were defined as approximately 920 feet in length along SR 145 from 255 to 280 feet west of the centerline of SR 145. The landscape surrounding the survey area is predominantly agricultural fields, wooded areas, and residential properties.

**Soils**

According to the Soil Survey Geographic (SSURGO) Database dated June 2020 for Perry County, Indiana, the project area does not contain soil with nationally listed hydric soils (Page A4).

Soil Name	Map Abbreviation	Hydric Range
Adyeville-Tipsaw-Ebal complex, 20 to 50% slopes, very rocky	AccG	Not Hydric (0%)
Ebal-Deuchars-Kitterman complex, 12 to 24% slopes, eroded	EabD2	Not Hydric (0%)
Gatchel loam, 0 to 2% slopes	GacAW	Not Hydric (0%)



**National Wetlands Inventory (NWI) Information**

There is one U.S. Fish and Wildlife Service (USFWS) mapped NWI linear water feature (R4SBC) within the survey area. The nearest NWI wetland beyond the survey area limits is 21 feet to the north of the survey area (Page A5).

Wetland Type	Description	Location
R4SBC	Riverine, intermittent, streambed, seasonally flooded	Within survey area
R4SBC	Riverine, intermittent, streambed, seasonally flooded	22 feet north

**12-Digit HUC (Hydrologic Unit Code)**

The SR 145 Slide Correction Project is within the 051402010403 12-Digit HUC (Sigler Creek-Anderson River) (Page A2). The watershed area for UNT 1 to Anderson River that contributes to the survey area was determined to be 0.44 square mile and the watershed area for UNT 2 to Anderson River was determined to be 0.07 square mile using USGS *StreamStats* (<https://water.usgs.gov/osw/streamstats/>). (Page A6).

**FEMA Floodway/Floodplain**

The Federal Emergency Management (FEMA) Flood Map Service Center (<https://msc.fema.gov/portal/home>) and the Indiana Floodplain Information Portal (<https://dnrmaps.dnr.in.gov/appsphp/fdms/>) Best Available Flood Zones data indicate that the survey area is not within a mapped FEMA Zone A/AE floodway (Page A7).

**Attached Documents** NOTE: A portion of these graphics have been removed to avoid duplication and reduce file size

- ~~Location Map~~
- ~~USGS Topographic Map (1:24,000)~~
- ~~USGS Topographic Map (1:12,000)~~
- USDA SSURGO Soils Map
- USFWS NWI Features Map
- USGS StreamStats Watershed Map
- IDNR, Division of Water - Best Available Flood Hazard Map
- Water Resources Map
- ~~Photo Index Map and Project Photos~~
- USACE Pre-Jurisdictional Determination Form

**Field Reconnaissance**

WETS (NRCS National Water and Climate Center (<http://agacis.rcc-acis.org/>)) data from Perry County, IN was used to determine the growing season based on a 50 percent probability of 28°F or higher air temperatures in spring and fall in accordance with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region Version 2.0* (U.S. Army Corps of Engineers 2012). For the period of record from 1971 to 2020 the Perry County growing season is from March 23 to November 14. This field survey was conducted within the growing season. For those features that displayed bed and bank, the ordinary high water mark (OHWM) width and depth was measured at the maximum dimension observed beyond the influence of bridge and culvert structures.



OHWL measurements were also documented for any stream features observed in the field that were not included as blue-line or NHD features.

### **Stream Feature(s)**

The USGS Bristow 1:24,000 topographic quadrangle includes one blue-line stream feature within the survey area for the SR 145 Slide Correction Project (Pages A2 and A3). The NHD GIS dataset includes two flow line features within the survey area (Page A8). Field investigations identified two stream features that display a bed and bank and an OHWM: UNT 1 to Anderson River and UNT 2 to Anderson River. A 24-inch culvert under SR 145 was identified on the northeast portion of the survey area and was determined to have no stream feature from the culvert to UNT 1 to Anderson River that displayed a bed and bank with an OHWM.

#### UNT 1 to Anderson River

UNT 1 to Anderson River is a perennial stream feature, which at the time of investigation had flowing water from a groundwater source. UNT 1 to Anderson River is identified as a dashed stream on the USGS topographic map which would indicate an intermittent stream, however; due to the ample stream flow at the time of the field review the stream would be considered perennial. The stream is on the east side of SR 145 and enters from the south boundary flowing through the survey area beyond the north boundary (Page A8). Approximately 1,009 feet of the stream runs through the survey area. The OHWM of UNT 1 to Anderson River is 10 feet wide and 0.5 foot deep. The drainage area for UNT 1 to Anderson River was determined to be 0.44 square mile using USGS *StreamStats* (<https://water.usgs.gov/osw/streamstats/>) (Page A6). According to the Indiana Floodplain Information Portal (<https://dnrm.dnr.in.gov/appsphp/fdms/>), UNT 1 to Anderson River is not within a mapped FEMA Zone A/AE floodway (A7).

This stream has a wide bottom streambed with considerable riffle/run/pool habitat. The substrate is dominated by cobble (55%), with a lesser component of gravel and sand. The stream displays moderate sinuosity and a flat gradient. Riparian vegetation is comprised primarily of sycamore (*Platanus occidentalis*, FACW), black walnut (*Juglans nigra*, FACU), sugar maple (*Acer saccharum*, FACU), blackhaw (*Viburnum prunifolium*, FACU), and hackberry (*Celtis occidentalis*, FACU) with sparse herbaceous cover. This reach of UNT 1 to Anderson River is considered to exhibit average quality based on frequent flow and presence of riffle/run/pool structure. Photos 7, 8, 16, 17, 21, and 28 through 30 (Pages A11 through A14) indicate stream and bank conditions for this reach.

UNT 1 to Anderson River is considered to be a relatively permanent waterway (RPW) with a connection to the Ohio River, a traditionally navigable waterway (TNW), via Anderson River. The stream is identified as perennial; therefore, UNT 1 to Anderson River is subject to USACE jurisdiction under Section 404 of the Clean Water Act. This stream is not subject to USACE jurisdiction under Section 10 of the River and Harbors Act.

#### UNT 2 to Anderson River

UNT 2 to Anderson River is an intermittent stream feature, which at the time of investigation had standing water from a groundwater source and stormwater runoff. The stream enters the survey area from the southwest and converges with UNT 1 to Anderson River (Page A8). Approximately 132 feet of

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the stream runs through the survey area. The OHWM of UNT 2 to Anderson River is 3.3 feet wide and 0.3 foot deep. The drainage area for UNT 2 to Anderson River was determined to be 0.07 square mile using USGS *StreamStats* (<https://water.usgs.gov/osw/streamstats/>) (Page A6). According to the Indiana Floodplain Information Portal (<https://dnrmapping.dnr.in.gov/appsphp/fdms/>), UNT 2 to Anderson River is not within a mapped FEMA Zone A/AE floodway (Page A7).

This stream has a flat bottom streambed with riffle/run/pool habitat. The substrate is dominated by gravel (60%), with a lesser component of cobble and some sand and silt. The stream displays moderate sinuosity and a flat to moderate gradient. Riparian vegetation is comprised primarily of black walnut, sugar maple, and eastern redbud (*Cercis canadensis*, FACU) with sparse herbaceous cover. This reach of UNT 2 to Anderson River is considered to exhibit average quality based on frequent flow and presence of riffle/run/pool structure. Photos 19 through 21 (Page A13) indicate stream and bank conditions for this reach.

UNT 2 to Anderson River is considered to be a non-relatively permanent waterway (non-RPW) with a connection to the Ohio River, a traditionally navigable waterway (TNW), via Anderson River and UNT 1 to Anderson River. The stream is identified as intermittent; therefore, UNT 2 to Anderson River is subject to USACE jurisdiction under Section 404 of the Clean Water Act. This stream is not subject to USACE jurisdiction under Section 10 of the River and Harbors Act.

**Stream Summary Table**

Water Feature Name	Photo	Lat/Long	OHW Width (ft)	OHW Depth (ft)	USGS Blue-line? Type?	Riffles? Pools?	Substrate	Quality	Likely Waters of U.S.?
UNT 1 to Anderson River	7,8,16, 17,21, 28-30	38.201297/ -86.687887	10	0.5	Yes Perennial	Yes	Cobble, gravel, sand	Average	Yes
UNT 2 to Anderson River	19-21	38.200517/ -86.688119	3.3	0.3	No Intermittent	Yes	Cobble, gravel, sand	Average	Yes

**Wetlands**

No wetland features were identified within the SR 145 Slide Correction Project survey area. The dominant herbaceous vegetation within the survey area along the road right-of-way consisted of tall purpletop (*Tridens flavus*, FACU), yellow bristlegrass (*Setaria pumila*, FAC), late goldenrod (*Solidago altissima*, FACU), Queen Anne’s lace (*Daucus carota*, UPL), and deer-tongue rosette grass (*Dichanthelium clandestinum*, FAC) with the dominant tree species consisting of sycamore (FACW), black walnut (FACU), sugar maple (FACU), and eastern redbud (FACU). Based on the dominant upland species observed, lack of suitable hydrology, and no mapped hydric soils, there were no potential wetlands within the survey area.

**Open Water**

There are no open water areas for consideration as WOTUS or non-WOTUS features within the survey area (Page A8).



### Roadside Ditch

No roadside ditch (RSD) features were identified within the survey area limits (Page A8). The general topography of the survey area slopes towards UNT 1 to Anderson Creek. The west side of SR 145 has a fairly steep road embankment slope which conveys some sheet flow runoff.

### Conclusions

The Waters of the U.S. investigation conducted for the SR 145 Slide Correction Project concludes that there are two stream features (UNT 1 to Anderson River and UNT 2 to Anderson River) within the survey area. No wetland features were identified within the survey area. No WOTUS or non-WOTUS open water features were identified within the survey area. No roadside ditches were identified within the survey area. UNT 1 to Anderson River and UNT 2 to Anderson River are likely to be considered under USACE jurisdiction per Section 404 of the Clean Water Act. There are no water resources under USACE jurisdiction per Section 10 of the Rivers and Harbors Act within the survey area.

These waterways are likely Waters of the U.S. Every effort should be taken to avoid and minimize impacts to the waterway and wetlands. If impacts are necessary, then mitigation may be required. The INDOT Environmental Services Division should be contacted immediately if impacts will occur. The final determination of jurisdictional waters is ultimately made by the U.S. Army Corps of Engineers. This report is our best judgment based on the guidelines set forth by the Corps.

The following drainage structures within the survey area were examined on September 24, 2020 for the presence of bats and were found to show no direct or indirect signs of occupation.

- 24-inch diameter CMP, 41-foot long culvert under SR 145

### Acknowledgement

This waters determination 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.

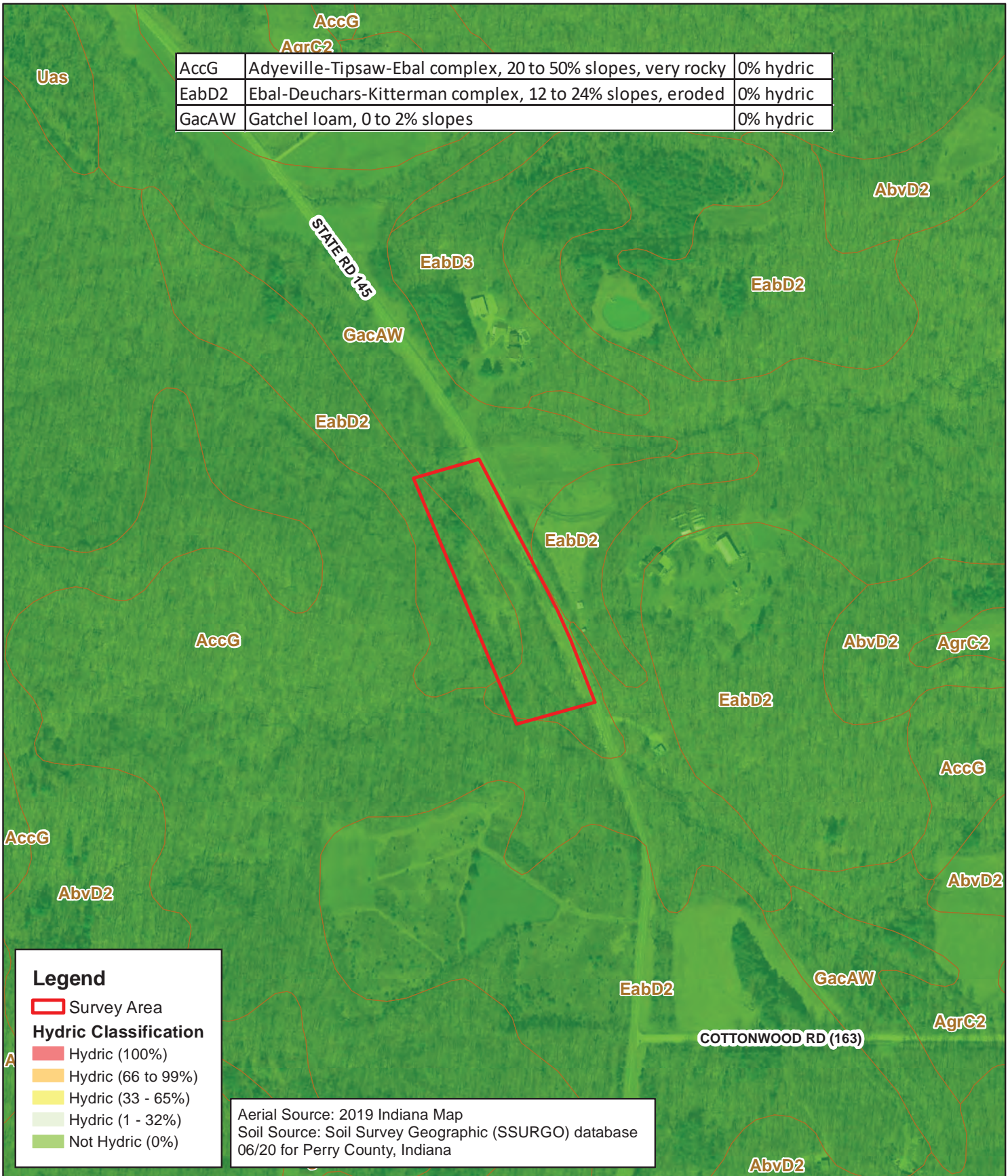
Danika Fleck



Environmental Specialist  
Lochmueller Group, Inc.



AccG	Adyeville-Tipsaw-Ebal complex, 20 to 50% slopes, very rocky	0% hydric
EabD2	Ebal-Deuchars-Kitterman complex, 12 to 24% slopes, eroded	0% hydric
GacAW	Gatchel loam, 0 to 2% slopes	0% hydric



**Legend**

Survey Area

**Hydric Classification**

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 - 65%)
- Hydric (1 - 32%)
- Not Hydric (0%)

Aerial Source: 2019 Indiana Map  
 Soil Source: Soil Survey Geographic (SSURGO) database  
 06/20 for Perry County, Indiana

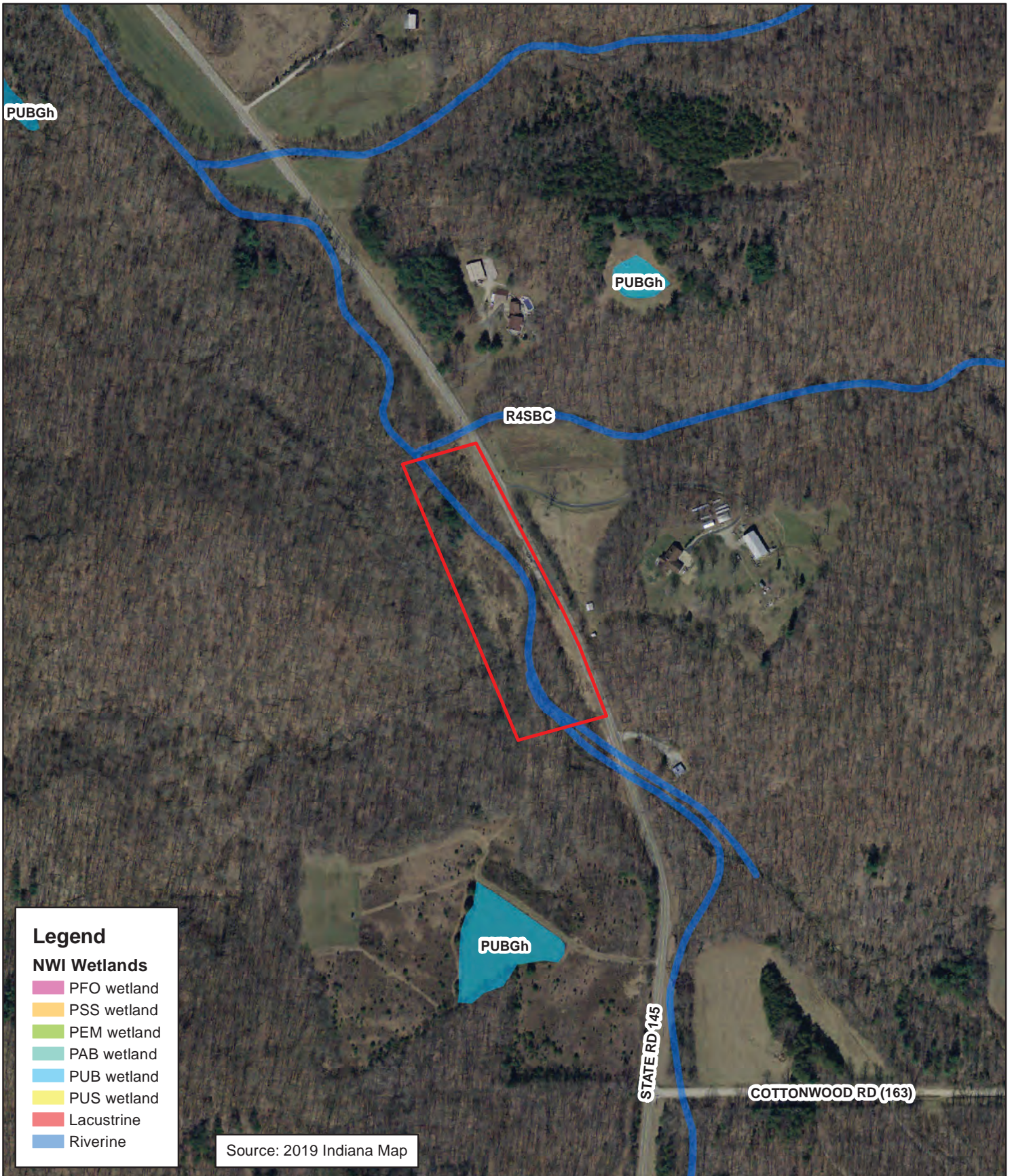
**USDA SSURGO Soils Map**  
 Des. No. 1800163  
 Waters of the U.S. Report

0 250 500 Feet

County: Perry  
 Township: Clark  
 State: Indiana

SR 145 Slide Correction Project

Created: 10/12/2020, D.Fleck


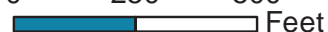



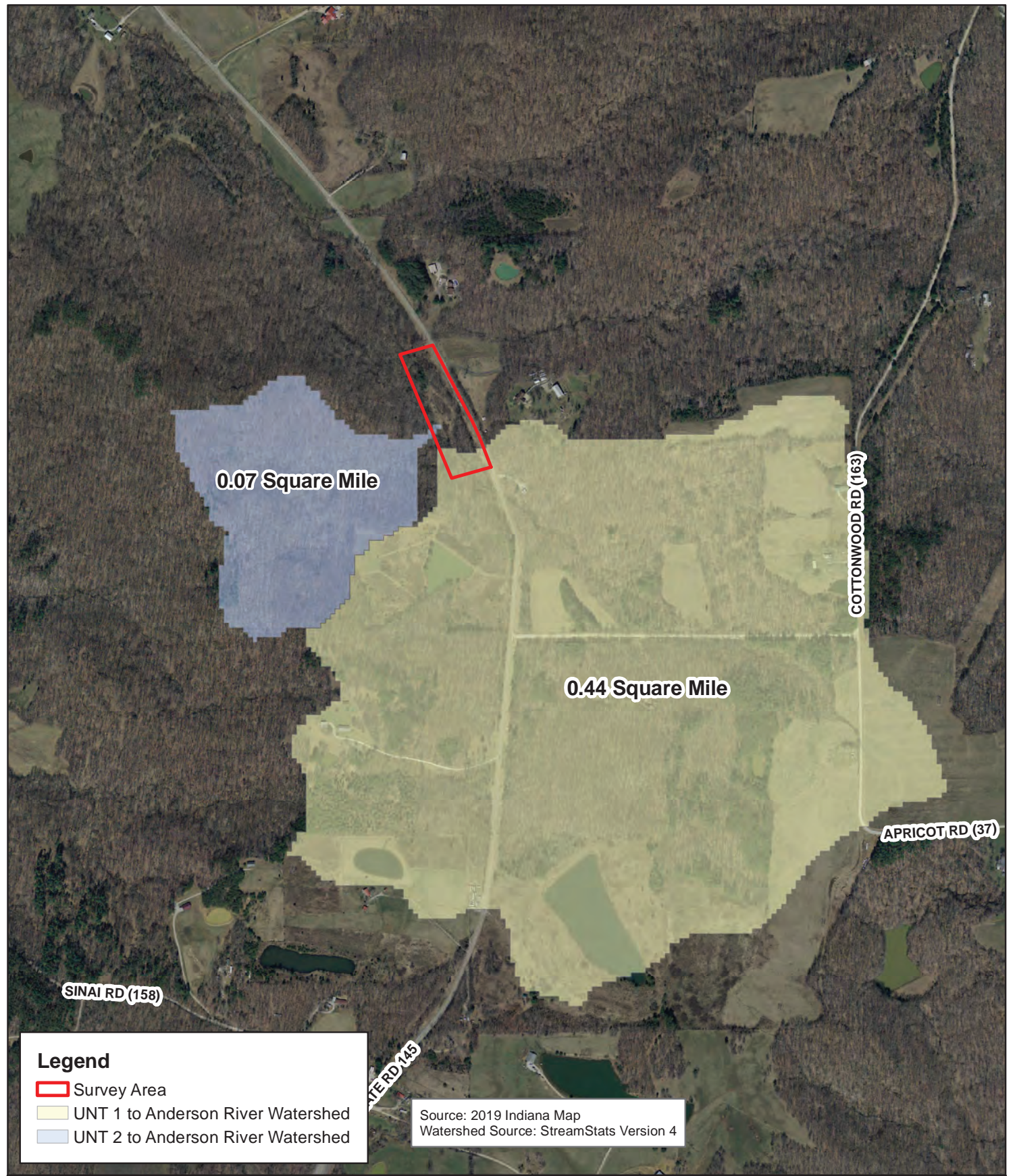
**Legend**

**NWI Wetlands**

- PFO wetland
- PSS wetland
- PEM wetland
- PAB wetland
- PUB wetland
- PUS wetland
- Lacustrine
- Riverine

Source: 2019 Indiana Map




 6200 Vogel Road Evansville IN, 47715 Phone: (812) 479-6200 Toll Free: (800) 423-7411	<b>USFWS NWI Project Map</b> Des. No. 1800163 <b>Waters of the U.S. Report</b>	County: Perry Township: Clark State: Indiana
	0      250      500  Feet	

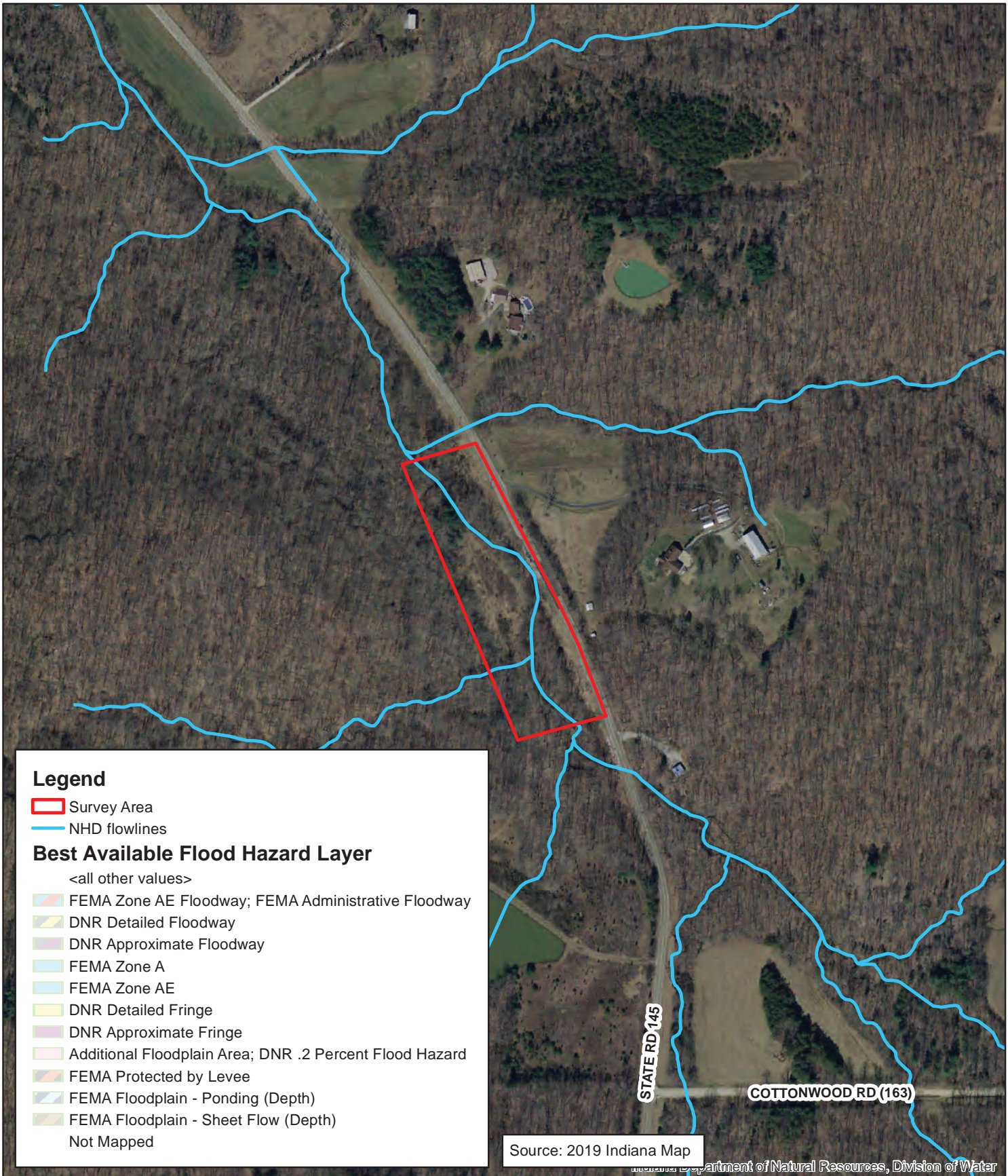


**Legend**

- Survey Area
- UNT 1 to Anderson River Watershed
- UNT 2 to Anderson River Watershed

Source: 2019 Indiana Map  
Watershed Source: StreamStats Version 4

 6200 Vogel Road Evansville IN, 47715 Phone: (812) 479-6200 Toll Free: (800) 423-7411	<b>StreamStats Watershed Map</b> Des. No. 1800163 <b>Waters of the U.S. Report</b>	County: Perry Township: Clark State: Indiana
0    500    1,000  Feet		SR 145 Slide Correction Project  Created: 10/7/2020, D.Fleck



**Legend**

- Survey Area
- NHD flowlines

**Best Available Flood Hazard Layer**  
 <all other values>

- 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 Flood Hazard
- FEMA Protected by Levee
- FEMA Floodplain - Ponding (Depth)
- FEMA Floodplain - Sheet Flow (Depth)
- Not Mapped

Source: 2019 Indiana Map

Indiana Department of Natural Resources, Division of Water

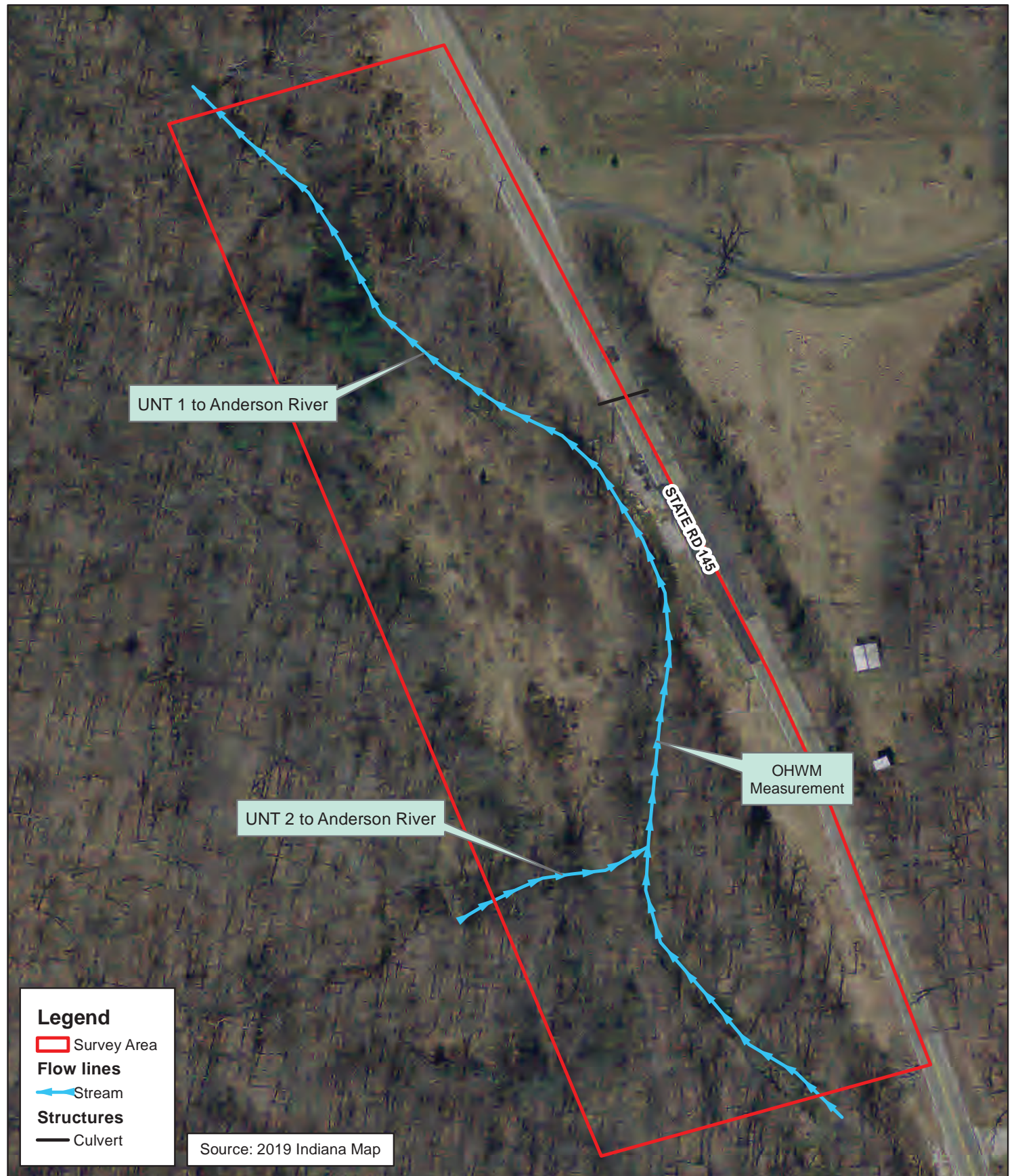
**Best Available Flood Hazard Map**  
 Des. No. 1800163  
 Waters of the U.S. Report

0 250 500  
 Feet

County: Perry  
 Township: Clark  
 State: Indiana

SR 145 Slide Correction Project


Created: 10/7/2020, D.Fleck



**Legend**

- Survey Area
- Flow lines**
- ← Stream
- Structures**
- Culvert

Source: 2019 Indiana Map

 6200 Vogel Road Evansville IN, 47715 Phone: (812) 479-6200 Toll Free: (800) 423-7411	<b>Water Resources Map</b> Des. No. 1800163 Waters of the U.S. Report	County: Perry Township: Clark State: Indiana
	0    50    100 <span style="display: inline-block; width: 60px; border-bottom: 2px solid black; margin: 0 auto;"></span> Feet <div style="display: inline-block; vertical-align: middle; text-align: center;"> <span style="font-size: 1.5em;">↑</span>  <span style="font-size: 0.8em;">N</span> </div>	SR 145 Slide Correction Project  Created: 1/18/2021, D.Fleck

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

**BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR PJD:** March 17, 2021

**B. NAME AND ADDRESS OF PERSON REQUESTING PJD:** Danika Fleck, Lochmueller Group, 6200 Vogel Road, Evansville, IN 47715

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

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

The project is located on SR 145, approximately 1.69 miles south of SR 62 in Perry County. The need for this project is due to pavement cracking and sinking caused by the lateral slide of the embankment, threatening the structural integrity of the roadway. The purpose of this project is to stabilize the slide and to prevent further damage from occurring to the roadway. This project will excavate the failed soil and will replace it with compacted soil. This project will also repave the damaged portions of SR 145 due to the slide. Some stream realignment shall also be considered. A culvert is present within the north end of the slide limits that may require extension. Furthermore, the existing embankment of the Unnamed Tributary 1 (UNT 1) of Anderson River will be stabilized using revetment riprap over geotextile fabric. No permanent or temporary lighting will be used for this project.

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

State: Indiana      County/parish/borough: Perry County      City: near Uniontown

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

Lat.: 38.201270      Long.: -86.688195

Universal Transverse Mercator: 16S, 527301E, 42288193N

Name of nearest waterbody: Anderson River

**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.**

<b>Site number</b>	<b>Latitude (decimal degrees)</b>	<b>Longitude (decimal degrees)</b>	<b>Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)</b>	<b>Type of aquatic resource (i.e., wetland vs. non-wetland waters)</b>	<b>Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)</b>
UNT1 to Anderson River +	38.201297	-86.687887	1009 linear feet	non-wetland	Section 404
UNT2 to Anderson River	38.200517	-86.688119	132 linear feet	non-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: Location map, topographic, soils, NWI, floodplain, aerial
- 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: \_\_\_\_\_
  - USGS NHD data.
  - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: Bristow 1:24,000
- Natural Resources Conservation Service Soil Survey. Citation: <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>
- National wetlands inventory map(s). Cite name: <https://www.fws.gov/wetlands/Data/Mapper.html>
- State/local wetland inventory map(s): \_\_\_\_\_
- FEMA/FIRM maps: FIRM Map Number 18123C0080D and 18123C0100C
- 100-year Floodplain Elevation is: \_\_\_\_\_.(National Geodetic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): Indiana Map 2019  
or  Other (Name & Date): Ground photos September 24, 2020
- 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

**Danika Fleck** Digitally signed by Danika Fleck  
Date: 2021.03.17 13:17:47 -04'00'

\_\_\_\_\_  
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.

From: [Engstrom, Maryssa H](#)  
To: [Danika Fleck](#)  
Cc: [Daniel Townsend](#); [Payton Parke](#); [Rehder, Crystal](#); [bmalone](#)  
Subject: RE: Waters Report Des 1800163 SR 145 Slide Correction, Perry County  
Date: Wednesday, March 24, 2021 3:20:29 PM

---

Hello Danika,

Thank you for submitting the waters report for **SR 145 Slide Correction Project, Des. No. 1800163**. Your most recent submission has been reviewed and approved. For the INDOT PM, the approved report can be found on Projectwise through this link: **[Des. No. 1800163 Waters Report - Final](#)**. It is the responsibility of the Project Manager to forward a copy of this report to the Project Designer.

The information in this report should be used by the Project Designer to determine if waters of the U.S. will be impacted by the project. Avoidance and minimization of impacts must occur before mitigation will be considered. If mitigation is required, the Project Manager or Project Designer must coordinate with the Ecology and Waterway Permitting Office to discuss how adequate compensatory mitigation will be provided.

The Project Manager should notify the Ecology and Waterway Permitting Office if there is any change to the project footprint presented in this report. Such changes may require additional fieldwork and submittal of an updated waters report covering areas not previously investigated. This report is only valid for a period of five years from the date of earliest fieldwork. If the report expires prior to waterway permit application submittal, additional fieldwork and a revised waters report will be required.

It will not be sent to the United States Army Corps of Engineers (USACE) or the Indiana Department of Environmental Management (IDEM) until the waterways permit applications are submitted to these agencies.

For the above referenced project, please get me answers to the following questions so that I may complete the permit determination.

- Will work be confined to the existing pavement? Please bear in mind that full-depth replacement and shoulder work is soil disturbance. If the answer to this is yes, then the remaining questions to not need answered.
  
- What kind of structure work is associated with this project (replacement, painting, scour protection, etc.)? If a pipe liner project, please specify the type and include an INDOT hydraulics memo if available.
  
- What is the estimated total soil disturbance associated with this project in acres? Disturbance includes (among other items):
  - Full-depth replacement;
  - Shoulder work;
  - Construction entrances;
  - Riprap drainage turnouts riprap around bridge cones;
  - Area under the bridge where equipment will be driving and working;
  - Cofferdams or dewatering systems scour work
  - Excavation around piers

**Categorical Exclusion**  
**Appendix G**  
**Public Involvement**



# **VS ENGINEERING, INC.**

Civil • Structural • Transportation • Environmental

## **NOTICE OF SURVEY**

Sample Letter

January 30, 2019

RE: SR 145 Road Slide Correction  
Perry County, Indiana

Dear Property Owner:

Our information indicates that you own or occupy property near this proposed highway project. Our employees will be doing a survey of the project area in the near future. It may be necessary for them to come onto your property to complete this work. This is allowed by law by Indiana Code IC 8-23-7-26. They will show you their identification, if you are available, before coming onto your property. If you have sold this property, or it is occupied by someone else, please let us know the name and address of the new owner or current occupant so we can contact them about the 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.

The survey work will include mapping the location of features such as trees, buildings, fences and drives, and obtaining ground elevations. The survey work may also include the identification and mapping of wetlands, archaeological investigations (which may include excavation of small shovel test probes), and various other environmental studies. The survey is needed for the proper planning and design of this highway project. Please be assured of our sincere desire to cause you as little inconvenience as possible during this survey. If any problems do occur, please contact our field crew or contact me at the phone number or address shown herein.

Sincerely,

VS Engineering, Inc.  
Alex J Daugherty, PS  
Project Surveyor  
812-401-0303

Des. No. 180163

4275 North High School Road Indianapolis, Indiana 46254  
(317) 293-3542 Tel (317) 293-4737 Fax  
[www.vsengineering.com](http://www.vsengineering.com)  
Appendix G: Public Involvement

**Categorical Exclusion**  
**Appendix H**  
**Air Quality**

Indiana Department of Transportation (INDOT)  
 State Preservation and Local Initiated Projects FY 2020 - 2024

SPONSOR	CONTRACT # / LEAD DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Estimated Cost left to Complete Project*	PROGRAM	PHASE	FEDERAL	MATCH	2020	2021	2022	2023	2024
<b>Perry County</b>																		
Perry County	1592999	Init.	VA VARI	Bridge Inspections	Countywide Bridge Inspection and Inventory Program for Cycle Years 2019-2022	Vincennes	0	Multiple		Local Funds	PE	\$0.00	\$25,211.10	\$4,268.30	\$18,399.50	\$2,543.30		
										Local Bridge Program	PE	\$100,844.40	\$0.00	\$17,073.20	\$73,598.00	\$10,173.20		
Performance Measure Impacted: Bridge Condition																		
Indiana Department of Transportation	38715 / 1500055	Init.	SR 70	Small Structure Replacement	5.50 miles E of Jct of SR 37	Vincennes	0	STBG		Bridge Construction	CN	\$2,993,532.80	\$748,383.20	\$3,741,916.00				
Performance Measure Impacted: Bridge Condition																		
Indiana Department of Transportation	38715 / 1500055	A 04	SR 70	Small Structure Replacement	5.50 miles E of Jct of SR 37	Vincennes	0	NHPP	\$3,102,369.00	Bridge ROW	RW	\$8,400.00	\$2,100.00	\$10,500.00				
Performance Measure Impacted: Bridge Condition																		
Comments:Amend 2020-2024 STIP. Adding FY20 RW 10,500.00. (Des#1401601) No MPO.																		
Indiana Department of Transportation	40563 / 1601064	Init.	SR 66	HMA Overlay, Preventive Maintenance	From N Jct with SR-37 to 2.05 mi E of N Jct with SR-37	Vincennes	1.521	NHPP		Road Construction	CN	\$797,770.40	\$199,442.60			\$997,213.00		
										Road ROW	RW	\$30,400.00	\$7,600.00	\$38,000.00				
										Safety Construction	CN	\$1,451,472.80	\$362,868.20			\$1,814,341.00		
Performance Measure Impacted: Pavement Condition																		
Tell City	41237 / 1800988	Init.	ST 1017	Bike/Pedestrian Facilities	Main Street from Jefferson Street to Highway 37/66	Vincennes	.73	STBG		Local Funds	CN	\$0.00	\$278,058.96			\$278,058.96		
										Local Transportation Alternatives	CN	\$880,520.04	\$0.00			\$880,520.04		
Performance Measure Impacted: Reliability and Freight Reliability																		
Tell City	41237 / 1800988	M 01	ST 1017	Bike/Pedestrian Facilities	Main Street from Jefferson Street to Highway 37/66	Vincennes	.73	STBG	\$1,158,579.00	Local Transportation Alternatives	CN	\$0.00	\$0.00			(\$880,520.04)	\$880,520.04	
										Local Funds	CN	\$0.00	\$0.00			(\$278,058.96)	\$278,058.96	
Performance Measure Impacted: Reliability and Freight Reliability																		
Comments:Modify 2020-2024 STIP. Move CN Funds from FY22 to FY23. No MPO.																		
Indiana Department of Transportation	41409 / 1800172	Init.	SR 545	HMA Overlay, Preventive Maintenance	From SR-66 to 0.31 mi N of SR-66 (Troy)	Vincennes	.31	STBG		Road Construction	CN	\$3,032,800.00	\$758,200.00					\$3,791,000.00
										Road ROW	RW	\$116,000.00	\$29,000.00			\$145,000.00		
Performance Measure Impacted: Pavement Condition																		
Indiana Department of Transportation	41452 / 1800163	Init.	SR 145	Slide Correction	1.69 mi S SR-62 Jct	Vincennes	0	STBG		Road Construction	CN	\$520,000.00	\$130,000.00					\$650,000.00

\*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.



Indiana Department of Transportation (INDOT)  
 State Preservation and Local Initiated Projects FY 2020 - 2024

SPONSOR	CONTR ACT # / LEAD DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Estimated Cost left to Complete Project*	PROGRAM	PHASE	FEDERAL	MATCH	2020	2021	2022	2023	2024
Indiana Department of Transportation	41452 / 1800163	Init.	SR 145	Slide Correction	1.69 mi S SR-62 Jct	Vincennes	0	STBG		Road ROW	RW	\$10,400.00	\$2,600.00			\$13,000.00		
Performance Measure Impacted: Safety																		
Tell City	42003 / 1802901	A 03	ST 5120	Bike/Pedestrian Facilities	Washington Street from SR 66 (12th Street) to Main Street (8th Street)	Vincennes	3	STBG	\$1,178,876.98	Local Funds	PE	\$0.00	\$42,102.80	\$42,102.80				
Local Funds																		
										Local Funds	CN	\$0.00	\$193,672.58				\$193,672.58	
Local Transportation Alternatives																		
										Local Transportation Alternatives	PE	\$168,411.20	\$0.00	\$168,411.20				
Local Transportation Alternatives																		
										Local Transportation Alternatives	CN	\$774,690.40	\$0.00				\$774,690.40	
Performance Measure Impacted: Reliability and Freight Reliability																		
Comments:Amend 2020-2024 STIP. Adding FY20 PE Federal \$168,411.20, FY20 PE Local \$42,102.80, FY23 CN Federal \$774,690.40, FY23 CN Local \$193,672.58. No MPO.																		
Perry County	42005 / 1802903	A 03	ST 2538	Road Reconstruction (3R/4R Standards)	River Road from intersection of 10th St & Boundary Way to 0.2 1 miles West of State Road 66	Vincennes	1.3	STBG	\$7,315,000.00	Group IV Program	PE	\$376,000.00	\$0.00	\$376,000.00				
Group IV Program																		
										Group IV Program	CN	\$5,476,000.00	\$0.00					\$5,476,000.00
Local Funds																		
										Local Funds	PE	\$0.00	\$94,000.00	\$94,000.00				
Local Funds																		
										Local Funds	CN	\$0.00	\$1,369,000.00					\$1,369,000.00
Comments:Amend 2020-2024 STIP. Adding FY20 PE Federal \$376,000.00, FY20 PE Local \$94,000.00, FY24 CN Federal \$5,476,000.00, FY24 CN Local \$1,369,000.00. No MPO.																		
Indiana Department of Transportation	42540 / 1601064	M 02	SR 66	HMA Overlay, Preventive Maintenance	From N Jct with SR-37 to 2.05 mi E of N Jct with SR-37	Vincennes	1.521	NHPP	\$2,970,354.00	Road Consulting	PE	\$96,640.00	\$24,160.00	\$120,800.00				
Performance Measure Impacted: Pavement Condition																		
Comments:Modify 2020-2024 STIP. Increased FY20 PE \$120,800.00. No MPO.																		
Indiana Department of Transportation	42540 / 1601064	M 05	SR 66	HMA Overlay, Preventive Maintenance	From N Jct with SR-37 to 2.05 mi E of N Jct with SR-37	Vincennes	1.521	NHPP	\$1,724,113.00	Road Construction	CN	\$400,000.00	\$100,000.00			\$500,000.00		
Performance Measure Impacted: Pavement Condition																		
Comments:Increasing FY22 CN \$500,000.00 from Des# 1902695. No MPO.																		
Indiana Department of Transportation	42644 / 1902741	A 13	SR 66	Small Structure Maint and Repair	over , SR 66 1+55 E JCT SR 37	Vincennes	0	NHPP	\$40,000.00	Bridge Consulting	PE	\$32,000.00	\$8,000.00	\$40,000.00				
Performance Measure Impacted: Safety																		
Comments:Adding FY20 PE \$40,000.00. No MPO.																		
Indiana Department of Transportation	42644 / 1902741	A 17	SR 66	Small Structure Maint and Repair	over , SR 66 1+55 E JCT SR 37	Vincennes	0	STBG	\$140,000.00	Bridge Construction	CN	\$80,000.00	\$20,000.00			\$100,000.00		
Performance Measure Impacted: Safety																		
Comments:Adding FY22 CN \$100,000.00. No MPO.																		

\*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.

**Categorical Exclusion**  
**Appendix I**  
**Other**

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

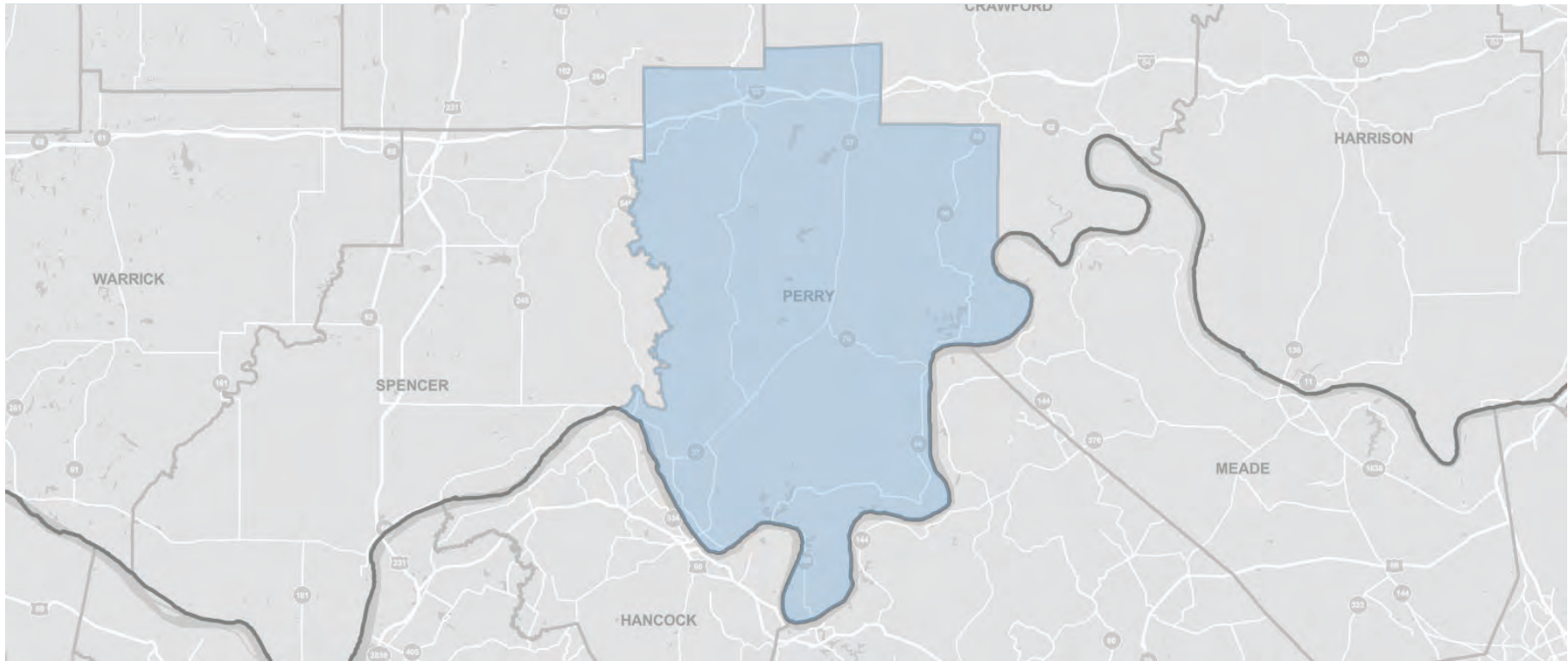
ProjectNumber	SubProjectCode	County	Property
1800510	1800510	Perry	Sunset Park (Tell City Ohio River Access Site)
1800639	1800639	Perry	Walter Hagedorn Park & Pool

\*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.

### County Selection Map

Geographies: County  Year: 2018

Select Clear Geos Table Notes



LEGEND	YEAR: 2018
Selected Geographies	1

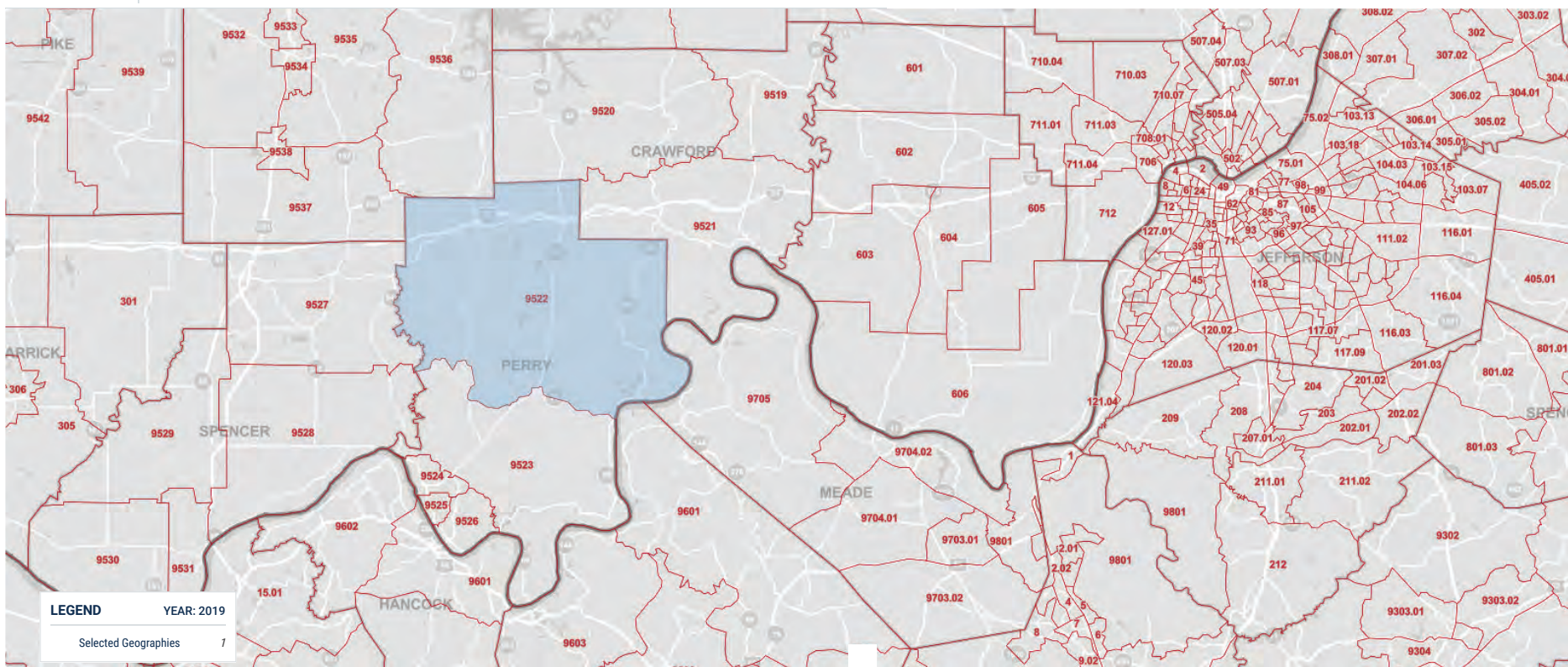
5 mi

### Census Tract Selection Map

Geographies: Census Tract

Year: 2019

Select Clear Geos Table Notes



## HISPANIC OR LATINO ORIGIN BY RACE

Note: This is a modified view of the original table produced by the U.S. Census Bureau. This download or printed version may have missing information from the original table.

Label	Perry County, Indiana		Census Tract 9522, Perry County, Indiana	
	Estimate	Margin of Error	Estimate	Margin of Error
▼ Total:	19,102	*****	5,344	±223
▼ Not Hispanic or Latino:	18,836	*****	5,286	±228
White alone	17,976	±14	4,889	±227
Black or African American alone	552	±61	385	±84
American Indian and Alaska Native alone	41	±40	0	±17
Asian alone	97	±20	6	±10
Native Hawaiian and Other Pacific Islander alone	0	±19	0	±17
Some other race alone	11	±14	0	±17
▼ Two or more races:	159	±69	6	±11
Two races including Some other race	6	±8	0	±17
Two races excluding Some other race, and three or more races	153	±68	6	±11
▼ Hispanic or Latino:	266	*****	58	±44
White alone	115	±56	33	±28
Black or African American alone	25	±36	0	±17
American Indian and Alaska Native alone	0	±19	0	±17
Asian alone	0	±19	0	±17
Native Hawaiian and Other Pacific Islander alone	0	±19	0	±17
Some other race alone	59	±59	25	±32
▼ Two or more races:	67	±52	0	±17
Two races including Some other race	24	±26	0	±17
Two races excluding Some other race, and three or more races	43	±49	0	±17

## Table Notes

### HISPANIC OR LATINO ORIGIN BY RACE

**Survey/Program:**

American Community Survey

**Universe:**

Total population

**Year:**

2019

**Estimates:**

5-Year

**Table ID:**

B03002

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see ACS Technical Documentation). The effect of nonsampling error is not represented in these tables.

The 2015-2019 American Community Survey (ACS) data generally reflect the September 2018 Office of Management and Budget (OMB) delineations of metropolitan and micropolitan statistical areas. In certain instances, the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB delineation lists due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

**Explanation of Symbols:**

An "\*\*\*" entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.

An "-" entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution, or the margin of error associated with a median was larger than the median itself.

An "-" following a median estimate means the median falls in the lowest interval of an open-ended distribution.

An "+" following a median estimate means the median falls in the upper interval of an open-ended distribution.

An "\*\*\*" entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.

An "\*\*\*\*\*" entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.

An "N" entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.

An "(X)" means that the estimate is not applicable or not available.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

## POVERTY STATUS IN THE PAST 12 MONTHS BY SEX BY AGE

Note: This is a modified view of the original table produced by the U.S. Census Bureau. This download or printed version may have missing information from the original table.

Label	Perry County, Indiana		Census Tract 9522, Perry County, Indiana	
	Estimate	Margin of Error	Estimate	Margin of Error
▼ Total:	17,325	±186	3,939	±275
▼ Income in the past 12 months below poverty level:	2,067	±320	322	±168
▼ Male:	841	±184	141	±81
Under 5 years	175	±80	0	±17
5 years	18	±21	8	±12
6 to 11 years	114	±50	31	±36
12 to 14 years	25	±20	17	±18
15 years	10	±15	8	±15
16 and 17 years	6	±12	6	±12
18 to 24 years	82	±77	0	±17
25 to 34 years	95	±76	0	±17
35 to 44 years	80	±43	17	±18
45 to 54 years	51	±38	5	±12
55 to 64 years	77	±43	24	±25
65 to 74 years	86	±61	25	±41
75 years and over	22	±22	0	±17
▼ Female:	1,226	±211	181	±120
Under 5 years	166	±79	28	±33
5 years	11	±13	0	±17
6 to 11 years	103	±55	22	±26
12 to 14 years	21	±18	6	±9
15 years	34	±50	34	±50
16 and 17 years	57	±36	8	±14
18 to 24 years	153	±62	0	±17
25 to 34 years	273	±97	55	±56



## Table Notes

### POVERTY STATUS IN THE PAST 12 MONTHS BY SEX BY AGE

**Survey/Program:**

American Community Survey

**Universe:**

Population for whom poverty status is determined

**Year:**

2019

**Estimates:**

5-Year

**Table ID:**

B17001

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

Source: U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see ACS Technical Documentation). The effect of nonsampling error is not represented in these tables.

The 2015-2019 American Community Survey (ACS) data generally reflect the September 2018 Office of Management and Budget (OMB) delineations of metropolitan and micropolitan statistical areas. In certain instances, the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB delineation lists due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

**Explanation of Symbols:**

An "\*\*\*" entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.

An "-" entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution, or the margin of error associated with a median was larger than the median itself.

An "-" following a median estimate means the median falls in the lowest interval of an open-ended distribution.

An "+" following a median estimate means the median falls in the upper interval of an open-ended distribution.

An "\*\*\*" entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.

An "\*\*\*\*\*" entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.

An "N" entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.

An "(X)" means that the estimate is not applicable or not available.

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

2015-2019 American Community Survey 5-Year Estimates

		<u>COC</u>	<u>AC</u>
		Perry County, Indiana	Census Tract 9522, Perry County, Indiana
<b>B17001</b>	<b>Low-Income</b>		
001	Population for whom poverty status is determined: Total	17,303	3,939
002	Population for whom poverty status is determined: Income in past 12 months below poverty level	2,434	322
	<b>Percent Low-income (002/001 x 100)</b>	<b>14.07%</b>	<b>8.17%</b>
	<b>125 Percent of COC</b>	<b>17.58%</b>	<b>AC &lt; 125% COC</b>
	<b>Potential Low-income EJ Impact?</b>		<b>No</b>

<b>B03002</b>	<b>Minority</b>		
001	Total Population: Total	19,102	5,344
002	Total Population: Not Hispanic or Latino	18,836	5,286
003	Total Population: Not Hispanic or Latino; White alone	17,976	4,889
004	Total Population: Not Hispanic or Latino; Black or African American alone	552	385
005	Total Population: Not Hispanic or Latino; American Indian and Alaska Native alone	41	0
006	Total Population: Not Hispanic or Latino; Asian alone	97	6
007	Total Population: Not Hispanic or Latino; Native Hawaiian and Other Pacific Islander alone	0	0
008	Total Population: Not Hispanic or Latino; Some other race alone	11	0
009	Total Population: Not Hispanic or Latino; Two or more races	159	6
010	Total Population: Hispanic or Latino	266	58
011	Total Population: Hispanic or Latino; White alone	115	33
012	Total Population: Hispanic or Latino; Black or African American alone	25	0
013	Total Population: Hispanic or Latino; American Indian and Alaska Native alone	0	0
014	Total Population: Hispanic or Latino; Asian alone	0	0
015	Total Population: Hispanic or Latino; Native Hawaiian and Other Pacific Islander alone	0	0
016	Total Population: Hispanic or Latino; Some other race alone	59	25
017	Total Population: Hispanic or Latino; Two or more races	67	0
	<b>Number Non-white/minority (001-003)</b>	<b>1,126</b>	<b>455</b>
	<b>Percent Non-white/Minority (001-003/001 x 100)</b>	<b>5.89%</b>	<b>8.51%</b>
	<b>125 Percent of COC</b>	<b>7.37%</b>	<b>AC &lt; 125% COC</b>
	<b>Potential Minority EJ Impact?</b>		<b>Yes</b>

From: [Fair, Terri](#)  
To: [Payton Parke](#)  
Cc: [Miller, Brandon](#); [Bales, Ronald](#)  
Subject: FW: Draft EJ Analysis for Review - DES 1800163 SR 145, 1.69 miles south of SR 62 junction, Slide Correction Project  
Date: Thursday, April 15, 2021 3:46:44 PM  
Attachments: [DES 1800163 Draft EJ Analysis - Rev 1.docx](#)  
[DES 1800163 EJ Analysis Map - Rev 1.pdf](#)

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INDOT-Environmental Services Division (ESD) has reviewed the project information along with the Environmental Justice (EJ) Analysis for the above referenced project. With the information provided, the project may require minimal right-of-way, require no relocations, and would not disrupt community cohesion or create a physical barrier. With the information provided, INDOT-ESD would not consider the impacts associated with this project as causing a disproportionately high and adverse effect on minority and/or low income populations of EJ concern relative to non EJ populations in accordance with the provisions of Executive Order 12898 and FHWA Order 6640.23a. No further EJ Analysis is required.

**From:** Payton Parke <[PParke@lochgroup.com](mailto:PParke@lochgroup.com)>  
**Sent:** Friday, April 02, 2021 10:58 AM  
**To:** Bales, Ronald <[rbales@indot.IN.gov](mailto:rbales@indot.IN.gov)>  
**Cc:** Daniel Townsend <[DTownsend@lochgroup.com](mailto:DTownsend@lochgroup.com)>; Nick Jahn <[nrjahn@vsengineering.com](mailto:nrjahn@vsengineering.com)>; Malone, Brian <[bmalone@indot.IN.gov](mailto:bmalone@indot.IN.gov)>  
**Subject:** Draft EJ Analysis for Review - DES 1800163 SR 145, 1.69 miles south of SR 62 junction, Slide Correction Project

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

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Hi Ron,

Attached is the SR 145 Slide Correction Project (DES 1800163) draft Environmental Justice (EJ) analysis for your review and comment. One elevated low-income census tract and one elevated minority census tract are present within the project area.

Please let me know if you have any questions or if additional information is needed.

Thank you,  
Payton

**Payton Parke**  
Envir Specialist I

**Lochmueller Group**

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Note: This report was extracted from the Engineering Assessment.

**GEOTECHNICAL ENGINEERING INVESTIGATION**  
**State Road 145 Landslide Corrections**  
**At RP 15+67**  
**Perry County, Indiana**  
**INDOT Contract No. R-41452**  
**INDOT Des. No. 1800163**  
**GEOTILL Project No. 111910063**

**Prepared For:**

**Geotechnical Services Division, INDOT**  
**120 S. Shortridge Road**  
**Indianapolis, IN 46219**

**Attn: Mr. Athar Khan, P.E.**  
**Director, Geotechnical Services Division**

**October 30, 2019**



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*Geotechnical, Environmental and Construction Materials Testing Professionals*

**SUMMARY OF GEOTECHNICAL ENGINEERING EVALUATION  
State Road 145 Landslide Corrections at RP 15+67**

Perry County, Indiana  
INDOT Contract No. R-41452  
INDOT Des. No. 1800163  
GEOTILL Project No. 111910063

**GENERAL INFORMATION**

This report presents the results of our geotechnical engineering investigation for the State Road 145 Landslide Correction at RP 15+67 from Station 107+10.00 Line “A” to Station 109+77 Line “A”. The slide area is located approximately 1.69 miles south of the junction of SR-62 and SR-145 in Perry County, Indiana. (approximate latitude/longitude 38.201287°, -86.687724°). The shallow soils encountered along most of the roadway alignment were primarily soft to hard silty clay loam, sandy loam, silty loam, sandy loam, silty clay, clay and loose to dense sandy loam soil. These surficial materials were underlain by soft shale, shale, and limestone.

**LANDSLIDE REMEDIATION**

The geometry and subsurface conditions at the SR-145 landslide makes the option of excavate and replace with riprap an effective correction technique. The option calls for excavating the soils and the weathered shale to the competent limestone / shale rock, establishing a riprap key that has 3 ft embedment and 10 ft wide in the competent rock.

**ROADWAY RECOMMENDATIONS**

The table below provides a summary of pavement design considerations including resilient modulus ( $M_R$ ) values, the depth to water, and subgrade treatment type.

**Pavement Design Consideration**

Resilient Modulus ( $M_R$ ) of Prepared Subgrade	9,000 psi
Resilient Modulus ( $M_R$ ) of Natural Subgrade	3,000 psi
Predominant Soil Type	Silty Clay Loam (A-6)
Percent Passing #200	80
% Silt	54
LL	40
PL	22
PI	18
Depth to Water Table	Deeper than 6 ft below existing grade
Natural Density (pcf) of Natural Subgrade	120
% Moisture of Natural Subgrade	21
Organic Content	Not tested
Marl Content	Not tested
Sulfate Content	140 to 206
Rock Elevation	Encountered at 7.5 ft (RB-8)
Filter Fabric Required for Underdrains	Yes (Geotextile Type 1-A)*
New Pavement	Subgrade Treatment Type IC

\*According to 918.02 (b)

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Note: Appendices have been removed to reduce file size.

## GEOTECHNICAL ENGINEERING INVESTIGATION

### **State Road 145 Landslide Corrections at RP 15+67**

Perry County, Indiana

INDOT Des. No. 1800163

GEOTILL Project No. 111910063

## **1.0 INTRODUCTION**

This report presents the results of our geotechnical engineering investigation that was performed by GEOTILL Inc. for the proposed landslide correction project on SR-145 at RP 15+67 from Station 107+10.00 Line “A” to Station 109+77 Line “A”. The slide area is located approximately 1.69 miles south of the junction of SR-62 in Perry County, Indiana. (approximate latitude/longitude 38.201287°, -86.687724°) (see Project Location Map, Figure 1 in Appendix A). The project is shown on the General Site Map (see Figure 2 in Appendix A).

This investigation was performed to characterize and evaluate the soil and bedrock beneath the project site and to develop recommendations relative to the design and construction of the earth related elements of the landslide correction project including riprap key earth embankments, and roadway pavement subgrade treatment. The study consisted of an exploratory drilling and sampling program, laboratory testing of soil and rock samples obtained from the test boring locations, engineering analyses, and preparation of this report.

## **2.0 PURPOSE OF WORK**

The purpose of this study was to determine the general subsurface conditions along the roadway alignment by drilling eight (8) roadway test borings, three (3) soundings, and installing one (1) inclinometer. Evaluating these conditions with respect to roadway construction, slope stability issues, and riprap backfilling for the proposed project. The site has been evaluated with respect to potential construction problems and

recommendations are included that address matters of earthwork and quality control during construction.

### **3.0 PROJECT DESCRIPTION**

The Indiana Department of Transportation (INDOT) is planning measures to correct a landslide-prone portion of State Road 145 at RP 15+67 from Station 107+10.00 Line “A” to Station 109+77 Line “A”. The slide area is located approximately 1.69 miles south of the junction of SR-62 in Perry County, Indiana. (approximate latitude/longitude 38.201287°, -86.687724°). The slide area is about 270 ft long. Based on visual observations, it appears likely that most of the relatively narrow roadway section within the project area was formed by cutting into the uphill side of the hill and filling on the downhill side of the hill. The majority of the site has relatively somewhat steep to flatter slopes on the downhill side (generally on the order of about 1.75 to 3 horizontal to 1 vertical).

The portion of SR-145 in which the project area is being evaluated is located along the western shoulder of the southbound lanes.

Based upon visual observations made at the time of our field check, as well as the review of data that has been collected by INDOT in the past, it is evident that sliding of the hillside upon which the road was constructed has been occurring for many years and has required ongoing maintenance and repair due to distress in the pavement. It was apparent that relatively new asphalt had been placed to level the right side (the downhill side) of the roadway, indicating that movement of the hillside is ongoing. The landslide continues to remain active as evidenced by our inclinometer monitoring and the observed continued pavement distress.



The existing pavement surface has been patched with multiple asphalt layers to maintain pavement grades along the roadway alignment. We have not reviewed historical data indicating when the distress was first reported or the number and/or type of repairs to the pavement surface.

The existing hillside downslope of the distressed area is relatively steep and covered in the steep area with riprap and the other areas with a variety of trees, grass, and shrubs.

The site description contained in this section is based on our field reconnaissance, observations during drilling and inclinometer monitoring activities, review of USGS topographic information, and topographic survey data provided by INDOT.

In addition to stabilizing the movement of the roadway, the reconstructed State Road 145 within the project limits will consist of two travel lanes. The new profile grade will generally match that of the current roadway.

## **4.0 SCOPE OF WORK**

### **4.1 Field Exploration**

The subsurface conditions for the proposed landslide correction project were investigated by GEOTILL during the period of July 5, 2019 to July 13, 2019. Drilling was performed on the with all-terrain-vehicle (“skid-mounted”) drilling equipment using hollow stem augers to advance the boreholes. Traffic control during our drilling operations was coordinated by GEOTILL. Where split-spoon samples were taken, they were obtained by using standard penetration test (SPT) procedures (American Association of State Highway and Transportation Officials (AASHTO) T 206), generally at 2.5 ft and 5.0 ft intervals at the locations indicated on the Test Boring Logs. The number of blows required to drive the sampler with a 140-pound hammer falling 30 inches was recorded for each of three, 6-inch

intervals for a total of 18 inches. The number of blows required to drive the sampler the final 12 inches is termed the Standard Penetration Test N-value.

As proposed, each of the test borings fully penetrated the existing overburden to determine the depth to bedrock at each location. The bedrock beneath the overburden soil was cored in the test borings to depths of about 5 to 10 feet below the auger refusal. Following completion of drilling at test Boring RB 3-I, an inclinometer casing was installed and cement-bentonite mix grouted into the open borehole. The inclinometer casing was socketed at least 10 feet into bedrock. Borings RB-3-I was completed with flush-mounted inclinometer covers at the existing roadway surface.

The bedrock beneath the overburden soil was cored in to a depth of about 5 to 10 ft. below the auger refusal depth in all test borings except for test borings RB-7 and RB-9. Rock coring was performed with an NQ core barrel, which yields a nominal 2-inch diameter core. Portions of the rock core were wrapped in the field to prevent moisture loss. The core was classified using generally accepted engineering geology methods, and the rock core recovery and RQD were measured in the field and verified in the soils laboratory. The total length of rock core, divided by the length of the run, is referred to as rock core recovery, and is expressed as a percentage. The Rock Quality Designation (RQD) is a measure of the rock mass quality, and is defined as the total length of intact rock core pieces 4 inches or more in length, divided by the length of the rock core run, also expressed as a percentage.

Subsequent to drilling activities where inclinometers were not installed, the boreholes were backfilled in accordance with the specifications set forth by the Indiana Department of Transportation (INDOT) geotechnical manual and the INDOT "Aquifer Protection Guidelines".

The number, locations and depths of the borings were selected by GEOTILL in consultation

with INDOT, during the preparation of the proposal and after our site reconnaissance. The soil boring locations were staked in the field by GEOTILL field personnel. Ground surface elevations at the test boring locations were interpolated from the provided topographic survey data, and should be considered approximate. The borings were drilled at the approximate locations noted on the boring logs in Appendix B.

Boring logs, which show visual descriptions of all soil strata encountered using the AASHTO classification system based on INDOT requirements, are included in Appendix B. Sampling information and other pertinent field data and observations are also included on the boring logs. In addition to the boring logs, a sheet defining the terms and symbols used on the logs and explaining the standard penetration test (SPT) procedure is provided immediately preceding the boring logs in Appendix B.

#### **4.2 Laboratory Investigation**

Upon completion of drilling operations, the soil samples obtained in the borings were returned to our Soil Mechanics Laboratory for further evaluation. The disturbed soil samples were visually classified by the Project Geotechnical Engineer, in accordance with AASHTO classification system and the INDOT Geotechnical Manual. Laboratory testing was performed on selected representative soil samples to provide specific data to aid in classifying and characterizing the recovered soils. A detailed log of each test boring was prepared by the Project Geotechnical Engineer based on the laboratory examination, laboratory test results, and the drill foreman's field notes. The test boring logs were prepared in INDOT format and are presented in Appendix B. Soil index property tests including natural moisture content (AASHTO T265), grain size distribution and analyses (AASHTO T88), Atterberg limits determinations (AASHTO T89 and T90), soil pH tests (AASHTO T200), and Compaction (AASHTO T99) tests were performed on representative samples. In addition to the soil index property tests, a special testing program included unconfined compression strength tests and point load tests for selected rock samples. The results of all

laboratory tests are included on the test boring logs in Appendix B and/or on respective plots or summary sheets in Appendix C.

#### **4.3 Geotechnical Engineering Analyses**

In addition to the normal geotechnical considerations for roadway projects, extensive consideration was given to issues of slope stability due to the sliding of the hillside that has occurred in this section of the roadway. This included an evaluation of historical instabilities in similar geologic conditions near the landslide area as well as numerous stability analyses for a variety of models that were generated using site topography, estimated ground water table, strength parameters, and slope inclinometer data

### **5.0 GENERAL SITE CONDITIONS**

#### **5.1 Subsurface Conditions**

The general subsurface conditions were investigated by drilling eight (8) test borings, designated as RB-1 through RB-9, to depths about 8 to 34 feet below existing grade at the locations indicated on the Test Boring Logs and shown on the boring location plan (Figures 3.a and 3.b). Boring No. 6 could not be drilled due to denied access by the property owner. Additionally, three (3) sounding designated as S-1 to S-3, were drilled to depths of 29.5 to 33 feet below the existing grade at the locations indicated on the Test Boring Logs. Borings RB-7, RB-8, and RB-9 were drilled west of the small water creek west of the roadway. The subsurface conditions disclosed by the field investigation are summarized in the following paragraphs. Detailed descriptions of the subsurface conditions encountered in each test boring are presented on the Test Boring Logs. The logs for borings drilled during this investigation are included in Appendix B. It should be noted that the stratification lines shown on the soil boring logs represent approximate transitions between material types. In-situ stratum changes could occur gradually or at slightly different depths and variations in the soil stratigraphy.

Test borings RB-1 to RB-5 revealed about 17 to 27 inches of asphalt, underlain by 3.0 to 4.0 inches of gravel in Borings RB-1, RB-2, and RB-5. The other Borings Nos. B-7, B-8 and B-9 revealed about 6 to 12 inches of topsoil. These surficial materials were underlain predominantly by silty clay loam, sandy loam, silty loam, sandy loam, silty clay, clay and loose to dense sandy loam. With regard to origin, the soil materials appear to be of three types: colluvial, residual or man-placed fill to construct the roadway.

Beneath the overburden soils, and based on the retrieved rock cores, the test borings encountered consisted of soft shale, shale and limestone. weathered shale and soft shale underlain by gray shale bedrock that is randomly interbedded with limestone and/or soft and weathered shale. Boring RB-1 revealed approximately 5.0 ft of soft shale, no limestone.

Based upon the results of the rock coring that was performed in the test borings, the site is underlain by shale that is sometimes underlain with limestone and/or soft shale. The rock cores typically revealed, gray soft shale, greenish gray soft shale, gray shale, gray limestone, gray and green/greenish gray limestone, shale with limestone, and limestone with layers of shale. Recovery ratios and Rock Quality Designations (RQD) values were measured for each rock core run. These values are presented in the table below and on the Test Boring Logs in the Appendix B.

### Recovery Ratios and Rock Quality Designations (RQD)

Boring Type		Roadway and Off-Road Borings					
Boring No.		RB-1	RB-2	RB-3I	RB-4	RB-5	RB-8
Core Depth, feet	Run 1	16-21	26-31	24-34	19-24	16-21	7.5-12.5
	Run 1	60	60	115	65	60	60
Recovery, inches	Run 1	60	60	115	65	60	60
RQD, %	Run 1	58	68	73	85	82	87
Description		Soft Shale	Limestone, Soft Shale, Shale	Shale and Limestone	Limestone, Soft Shale, Shale	Shale and Limestone	Limestone and Soft Shale

### Recovery Ratios and Rock Quality Designations (RQD)

Boring Type		Shoulder Borings		
Boring No.		S-1	S-2	S-3
Core Depth, feet	Run 1	20-25	23-28	19.5-24.5
	Run 2	25-30	28-33	24.5-29.5
Recovery, inches	Run 1	53	55	43
	Run 2	53	60	60
RQD, %	Run 1	53	68	40
	Run 2	60	42	63
Description		Shale and Soft Shale, Limestone	Limestone, Shale, Shale with Limestone, Limestone	Limestone, Shale, Soft Shale, Limestone with Layers of Shale

Based on the INDOT Geotechnical Manual, an RQD of less than 25 percent is considered to be a "poor" rock quality.

## **5.2 Ground Water Conditions**

Groundwater level observations were made, during drilling operations (by noting the depth of water on the drilling tools), in the open boreholes following withdrawal of the drilling augers, and 24 hours after completion of the drilling activities. Free groundwater that was noted in all test borings, except Boring Nos. RB-3I, RB-4, and RB-5, between depths of about 3.0 and 12.0 feet. Free groundwater that was noted at each test boring is presented on the individual boring logs in Appendix B. Since the bedrock was cored in all test borings, the ground water levels at completion and after 24 hours were possibly affected by the water introduced into the boreholes to facilitate coring of the bedrock.

It should be noted that the groundwater level measurements do not define a static groundwater condition but rather represent isolated or “perched” water conditions at the specific boring locations at the time the test borings were drilled. It is likely that the static groundwater level on the hillside depends upon precipitation patterns and the presence of discontinuities in the bedrock. It is well known that heavy precipitation results in pore pressures along potential failure surfaces near the interface between the colluvium and the weathered bedrock.

## **6.0 DESIGN RECOMMENDATIONS**

The following design recommendations regarding the earth-related aspects of the State Road 145 landslide correction project have been developed on the basis of the previously described project characteristics and subsurface conditions. If there are any changes in these project criteria, including the alignment and profile of the roadway or changes in structure types and locations, a review should be made by this office.

## **6.1 Findings and Recommendations**

This section summarizes our findings obtained during this study. Based on our subsurface findings and inclinometer data and upon past experience, the failure surfaces of slides that occur on side-hill roadway embankments in southern Indiana are often along the interface between the upper weathered shale bedrock surface and the overlying soils. In general, the failure surfaces typically intersect the roadway surface near the center of the roadway, although in some cases the failure surfaces appear to extend farther inward from the crest of the slope. Based upon this assumed failure mode and failure surfaces, it appears that the portions of the roadway embankments that have failed should be removed to expose sound bedrock and a “rock-key” should be excavated into the sound bedrock.

Considering the slope of the ground surface and based on the subsurface conditions, it is our opinion that the slope can be corrected by removal of the sliding mass, construction of a rock-key, and re-establishment of the slope with rip-rap fill. A “rock-key” that is approximately 10 ft wide and extending approximately 3 ft into competent bedrock (the rock key should not terminate in weathered shale) should be cut into the bedrock at the base of the excavation in a fashion similar to that shown in Figure 6 in the appendix. The surface of the competent bedrock should be verified in the field by the geotechnical engineer or a qualified representative of the geotechnical engineer. Shale excavation equipment (ripper bucket or similar equipment) will be required to excavate the shale bedrock and it may be necessary to remove sandstone or limestone with a hoe-ram or other similar equipment.

The rock key should be filled with Class 1 riprap, as well as the excavated zone above the rock key. A geotextile separation fabric should be placed over the exposed soil face of the excavation prior to placement of the riprap against the soil / weathered rock slope (riprap may be placed directly upon the bedrock in the keyway). The rock fill will also provide



erosion control at the face and is relatively maintenance free. In order to re-establish the pavement section, we recommend that the riprap be capped with 12 in. of INDOT No. 2 crushed stone, followed by 12 in. of INDOT No. 8 crushed stone, followed by 12 in. of INDOT No. 53 crushed stone. Other considerations should include positive drainage of the rock-key and re-grading of the roadside ditch. For long-term considerations, it is important that the ditch located on the east side of SR-145 be cleaned on a periodic basis to promote free flow. The bottom of the rock key shall be sloped toward the north to allow drainage from the rock-key. If the bottom of the rock key is below the creek level the rock key shall be sloped parallel to the roadway alignment to a point where it can be day lighted if the slope of the roadway alignment allows it. In addition, the final pavement grade should be constructed to direct water away from the slope and into the ditch. In order to accommodate any short-term creep in the finished slope, consideration should be given to delaying final paving operations until any immediate settlement and short-term creep is ceased.

The excavation of the existing overburden materials and rock key must be done in relatively small segments in order to reduce the risk of initiating additional sliding. The individual excavations should be made no wider than approximately 30 ft, but in no case should the excavation be made larger than what the contractor can reasonably excavate safely and backfill immediately with riprap. Under no circumstances should excavations be made that cannot be backfilled the same day. It is important for the contractor to provide enough trucks in order to deliver enough amount of riprap and keep up the speed of filling. A critical component of the rock key and riprap backfill repair method is maintaining temporary excavation stability including the need to backfill the individual excavations immediately with riprap. All issues relative to excavation safety are the responsibility of the contractor.

## 6.2 Global Stability Analyses

The 270 ft length of the project that will require excavation and replacement with riprap was divided into three zones based on variations in the subsurface and geometric conditions. The existing slope stability conditions were modeled for one representative cross-section within each of the three project zones to determine the existing factor of safety and to determine the external resisting forces needed for stability under the critical conditions. The global stability cross-sections are summarized in the table below. The limit equilibrium analyses recommended in this method were performed using the computer program SLIDE. The SLIDE input data and output data is included in Appendix D.

**Summary of Global Slope Stability Cross-Sections**

Cross-Section Number	Cross-Section Analyzed, Station
1	107+10 to 108+00
2	108+00 to 109+00
3	109+00 to 109+77

Test borings that were drilled near each global stability analysis cross-section were used in order to develop the subsurface stratigraphy and available topographic information was used to define the surface geometry. Groundwater information was taken from observations in the test borings, piezometers, and as well as from back-calculations based on slope stability analyses. A residual effective angle of internal friction of 14 degrees, which was established by back-calculating the stability of several critical sections in conjunction with published literature values that have traditionally been used for weathered shale or residual soils derived from Ordovician shales in this area, was estimated for the weathered shale while effective angle of internal friction of 28 to 32 degrees was estimated for the colluvial soils.

Three options have been analyzed and considered for the riprap rock key at Section No. 2 from Station 108+00 to Station 109+00 Line "A". The three options are shown below:

1. Riprap face with slope 1:1 covered with shotcrete face that provide roadway shoulder.
2. Riprap face with slope 1:1.5 without roadway shoulder.
3. Riprap face with slope 1:1.5 that provide roadway shoulder; however, it needs some modification for the creek alignment located at the toe of the slope.

based on cost analyses and design methodology, the designer can pick one of the above options.

### **6.3 Embankment Regrading and Creek Re-alignment**

Considering the slope of the ground surface and based on the subsurface conditions assuming re-alignment of the creek is possible, it is our opinion that the slope can be corrected by removal of the sliding mass, construction of 2.5:1 slope, and re-establishment of the slope with compacted backfill and adding drainage drains near the toe of the slope and vegetative cover. Riprap needs to be added at the toe of the slope, under the creek and between the creek and the toe as it shown in the Appendix Figure 6-b The slope stability analyses showing satisfactory factor of safety for 2.5:1 backfill slope is included in Appendix E

It is extremely important that all earth fill that is placed adjacent to the existing highway embankment be carefully benched into the existing embankment as prescribed in INDOT Standard Specification Section 203.21 in order to preclude a weak zone from forming at the interface between the existing embankment soils and the new fill soils. Benches having a minimum width of 10 ft. should be cut into the natural slopes and existing embankment side slopes that are 4 (horizontal) to 1 (vertical), or steeper, before new engineered fill is placed. These benches should be excavated in accordance with Section 203.21 of the INDOT Standard Specifications. The subgrade beneath the new expanded embankment areas should be prepared in accordance with site preparation and fill

materials and be placed and compacted in accordance with the “Placement and Compaction of Engineered Fill” section of this report. All conventional earth embankment work should be performed in accordance with current INDOT Standard Specifications.

#### **6.4 Drainage Pipes**

It is important that the materials at the base of the excavations for the drainage pipes be carefully inspected to verify that suitable bearing soils exist at the design bearing elevation. Any sediment from the streams, organic material, soft or loose natural soils or otherwise unsuitable material must be undercut beneath the structures and replaced with well-compacted engineered fill.

The backfill around the pipes should consist of structure backfill placed and compacted in accordance with Section 211 of the INDOT Standard Specifications. When the fill reaches the top of the structure, two lifts of structured backfill should be placed over the structure before compacting. The backfill level should be maintained at or near the same level on both sides of the structure at all times and the fill on either side should not be higher than one lift thickness above the other side. Only light compaction equipment should be used until the fill is at least 2 ft above the top of the structure. The operation of compaction equipment should be in accordance with the manufacturer’s specifications.

Positive scour protection at the entrances and exits of the drainage pipes is essential to maintaining the integrity of the backfill materials and the materials that support the structures. If riprap is used for scour protection, the natural subgrade soils should first be covered with a non-woven geotextile fabric.

#### **6.5 Pavements**

The pavement replacement on SR-145 for Line “A” involves full depth new pavement.

Standard penetration testing indicates the foundation soils are generally characterized to be stiff condition.

Based upon the above considerations, the recommended subgrade treatment types are included in the following table for Line “A”. The subgrade treatment should be performed in accordance with INDOT Standard Specifications, Section 207.04 and the recommendations of this report. An estimated resilient modulus for improved subgrade of about 9,000 lbs./sq. in is recommended for use in the design of the pavement. The table below provides a summary of pavement design considerations including resilient modulus ( $M_R$ ) values, the soil classification, the depth to water, and subgrade treatment type.

#### Pavement Design Consideration

Resilient Modulus ( $M_R$ ) of Prepared Subgrade	9,000 psi
Resilient Modulus ( $M_R$ ) of Natural Subgrade	3,000 psi
Predominant Soil Type	Silty Clay Loam (A-6)
Percent Passing #200	80
% Silt	54
LL	40
PL	22
PI	18
Depth to Water Table	Deeper than 6 ft below existing grade
Natural Density (pcf) of Natural Subgrade	120
% Moisture of Natural Subgrade	21
Organic Content	Not tested
Marl Content	Not tested
Sulfate Content	140 to 206
Rock Elevation	Encountered at 7.5 ft (RB-8)
Filter Fabric Required for Underdrains	Yes (Geotextile Type 1-A)*
New Pavement	Subgrade Treatment Type IC

\*According to 918.02 (b)

Depending upon the weather condition, wet surface soils may be encountered during construction. This will require undercutting the subgrade soil and replacing with # 53 aggregate for improvement and subgrade treatment. A quantity of this foundation improvement should be included in the contract that is equal to 5% of the area to receive

new pavement, and this foundation improvement shall only be used at the discretion of the Engineer. This item can be used for the improvement of the existing foundation soils before treatment or backfill is placed, if needed.

Where overlay of the existing pavement (rather than reconstruction) is planned, it is recommended that the existing pavement be inspected for cracking and deterioration prior to placing the overlay. Any portions of the pavement that exhibit such features should be removed and reconstructed.

## **6.6 Dewatering**

Based upon the ground water data obtained during drilling operations, it appears that dewatering may be required for the excavations during construction. The best dewatering system must be determined at the time of construction based upon actual field conditions.

## **7.0 GENERAL CONSTRUCTION PROCEDURES AND RECOMMENDATIONS**

Since this exploration study identified actual subsurface conditions only at the test boring locations, it was necessary for our geotechnical engineers to extrapolate these conditions in order to characterize the entire project site. Even under the best of circumstances, the conditions encountered during construction can be expected to vary somewhat from the test boring results and may, in the extreme case, differ to the extent that modifications to the foundation recommendations become necessary. Therefore, we recommend that GEOTILL be retained as geotechnical consultant through the earth-related phases of this project to correlate actual soil conditions with test boring data, identify variations, conduct additional tests that may be needed and recommend solutions to earth-related problems that may develop.

## **7.1 Site Preparation and Earthwork**

The initial step in site preparation should include stripping of the existing vegetation, topsoil and any organic-containing materials from site. If any fill debris is encountered, it should also be removed and replaced with B-borrow. The exposed subgrade should then be evaluated and any wet, soft or otherwise unsuitable soils encountered should be removed within the construction limits prior to construction of the roadway embankment. Proofrolling of the subgrade should be performed in accordance with the INDOT Standard Specifications, Section 203.26 within all areas where new fill or pavement will be placed. Care should be exercised during grading operations at the site. Due to the nature of the near-surface soils, the traffic of heavy equipment, including heavy compaction equipment, may create pumping and general deterioration of the shallower soils, therefore, additional removal of weak materials may also be required, especially if excess surface water is present on site. The grading, therefore, should be done during a dry season, if possible, however if it is not possible the wet soil should be removed and replaced with structural backfill.

Soft, loose, or otherwise unsuitable bearing soils encountered during the proofrolling operations should be removed and replaced with “B” borrow to a depth of at least 2 ft above the ground water level (if free ground water is encountered within an excavation). If removal and replacement is not feasible, aeration and compaction of the soils should be considered or it may be necessary to stabilize the subgrade using other procedures. It is recommended that the proper subgrade treatments be determined at the time of construction, since the actual subgrade condition can be properly assessed at that time. The placement of fill should be accomplished in accordance with Section 203.09 of INDOT Standard Specifications. “B” borrow material, for use in conjunction with this project, should be as defined in INDOT Standard Specifications, Sections 203.08 and 211.02.

## **7.2 Placement and Compaction of Engineered Fill**

Engineered fill should be placed in lift thicknesses that do not exceed about 8 in. and compacted to a minimum of 95 percent of the standard Proctor maximum dry density (AASHTO T99) as specified in the current INDOT Standard Specifications. It is possible that some drying of the fill material will be required before being placed in order to meet the INDOT Specification for fill placement. However, adequate moisture conditioning may be difficult during wet seasons and, during such seasons, a granular material may be necessary to satisfy the minimum compaction requirements.

Where the alignment of the roadway crosses existing drainage ditches, the soft sediment in the base of the channels should be removed and replaced with “B” borrow to a thickness of at least 2.0 ft above the free ground water level. Otherwise, backfilling should be done in accordance with Section 203.09 of the INDOT Standard Specifications.

## **7.3 Fill Sections**

Where fill material is placed on existing slopes, benches should be cut into the existing slopes so as to preclude a shear plane from developing at the interface. Benches having a minimum width of 10 ft should be cut into the natural slopes and existing embankment side slopes that are 4 (horizontal) to 1 (vertical) or steeper before new engineered fill is placed. These benches should be excavated in accordance with Section 203.21 of the INDOT Standard Specifications. If seepage (such as a spring or any indication that there may be periodic flow from a spring) is noted on a slope on which fill is to be placed, measures (such as French drain that discharges beyond the limits of the new fill) should be taken to provide an outlet for this seepage.

## **7.4 Erosion Protection**

Highly erodible, granular material (such as “B” borrow) should not be used in proposed ditches or within 12 in. of the required final grade of side slopes. The material required



to encase the embankment should be non-erodible, cohesive material free from debris and other deleterious materials and suitable for sustaining vegetation. The final slopes should be seeded or sodded for erosion control. If seeded, the slope should be protected with an erosion control blanket to provide for adequate seed germination and rooting.

All topsoil and any soft sediments should be removed along the entire length of all proposed drainage structures and replaced with engineered fill to an elevation 2.0 ft above the ground water level or to the invert elevation of the proposed structure, whichever is higher. The outer 10 ft of "B" borrow under the ends of the structure should be enveloped with a continuous length of permeable non-woven geotextile. This geotextile should extend the entire width of the excavation. All the soils surrounding the drainage structures should be compacted to at least 95 percent of the maximum dry density as determined in accordance with section 203.24 of the INDOT standard specifications. The soil in the bottom of the excavation, any bedding material, and the "B" borrow for structural backfill, should be tested to ensure compliance with this density criteria. If during construction, soft soils are encountered at depths that make removal impractical or if 95 percent of the maximum dry density cannot be obtained at the bottom of the excavation or in other areas, this office should be contacted for additional recommendations.

## **7.5 Construction Dewatering**

Based upon the groundwater data obtained during the drilling operations, it appears that a certain amount of construction dewatering will be required during construction. It is likely that most dewatering can be done by conventional dewatering methods such as by pumping from sumps or a gravity flow system. However, the best dewatering system for each case must be determined at the time of construction based upon actual field conditions.

## **7.6 Construction Testing and Inspection**

Construction testing and inspection by a geotechnical technician working under the supervision of the Project Geotechnical Engineer is critical to the long-term successful performance of this project. We recommend that these services be provided throughout the remediation phase. GEOTILL respectfully requests continued involvement in this project by providing these services throughout the construction phase. This continued involvement is considered essential to evaluate site and construction conditions as they relate to our findings, assumptions, and recommendations.

## **8.0 LIMITATIONS OF STUDY**

An inherent limitation of any geotechnical engineering study is that conclusions must be drawn on the basis of data collected at a limited number of discrete locations. The recommendations provided in this report were developed from the information obtained from the test borings that depict subsurface conditions only at these specific locations and at the particular time designated on the logs. Soil conditions at other locations may differ from conditions occurring at these boring locations. The nature and extent of variations between the borings may not become evident until the course of construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations of this report after performing on-site observations during the excavation period and noting the characteristics of any variation.

Our professional services have been performed, our findings obtained and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. This warranty is in lieu of all other warranties either express or implied. This company is not responsible for the independent conclusions, opinions or recommendations made by others based on the field exploration and laboratory test data

presented in this report.

The scope of our services does not include any environmental assessment or investigation for the presence or absence of hazardous or toxic materials in the soil, ground water or surface water within or beyond the site studied.