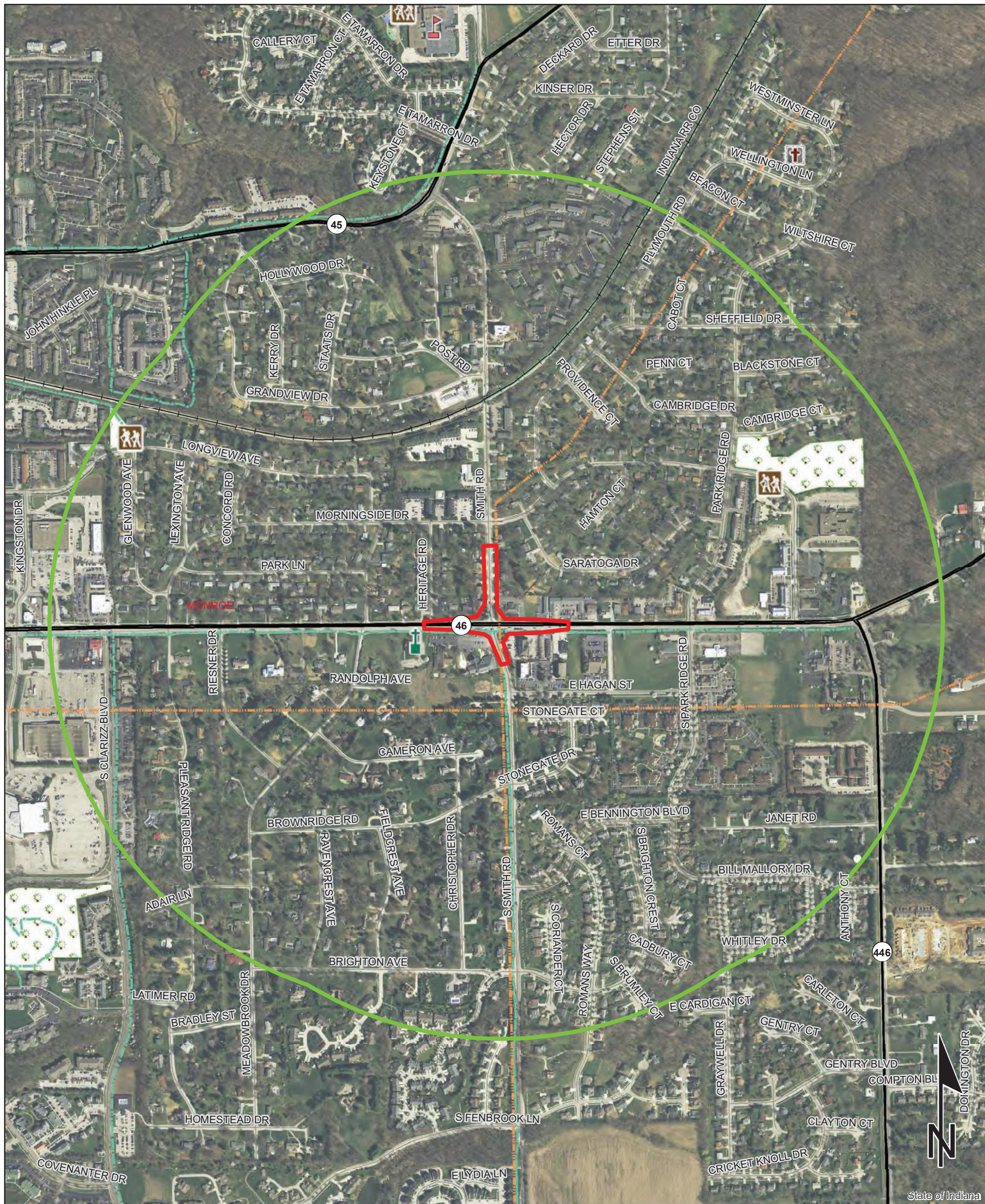


Red Flag Investigation - Infrastructure

State Road 46 and Smith Rd.

Des. No. 1800208, Intersection Improvement

Monroe County, Indiana



Sources: 0.15 0.075 0 0.15 Miles

Non Orthophotography Data - Obtained from the State of Indiana Geographical Information Office Library

Orthophotography - Obtained from Indiana Map Framework Data (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.

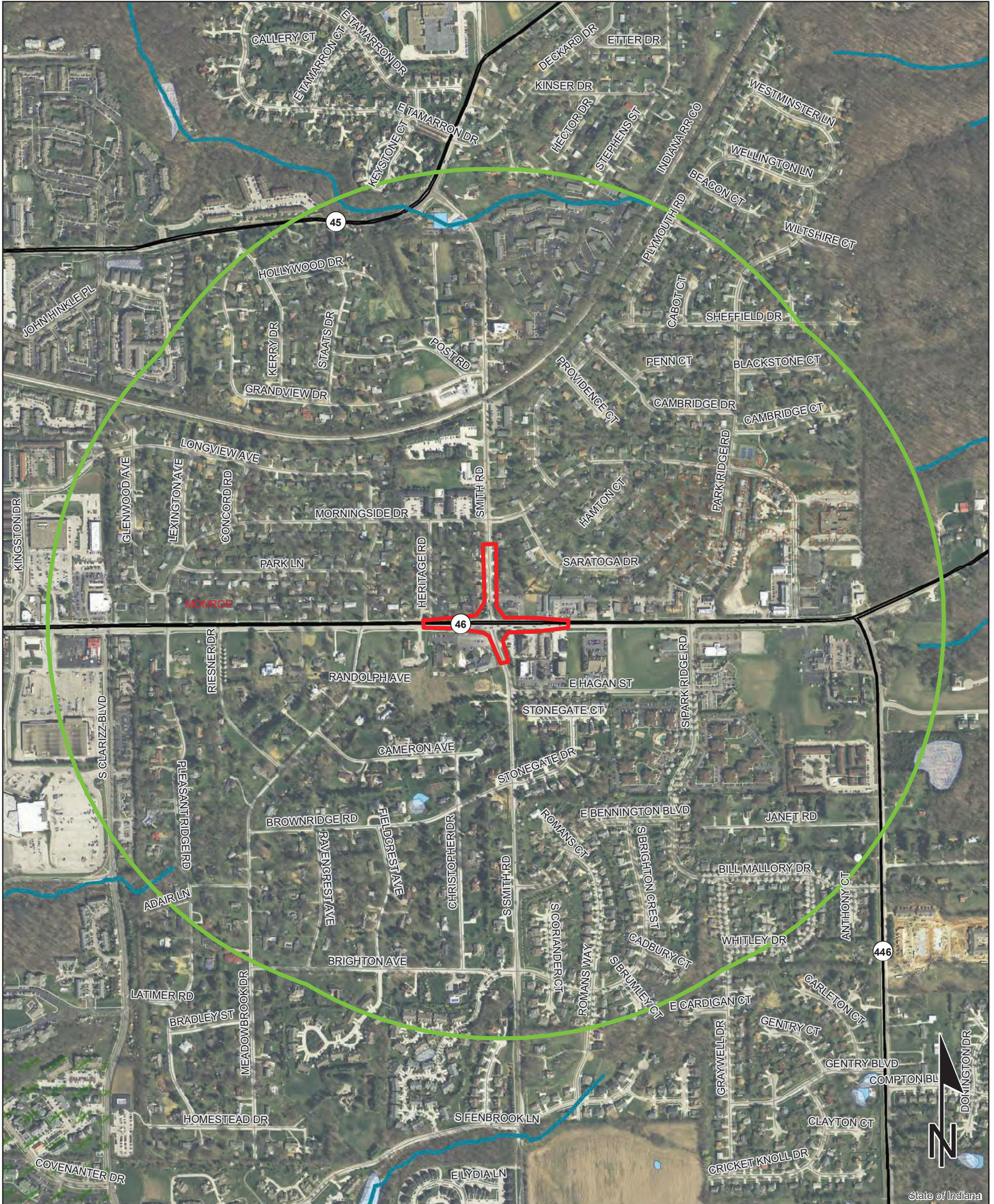
	Religious Facility		Recreation Facility		Project Area
	Airport		Pipeline		Half Mile Radius
	Cemeteries		Railroad		Toll
	Hospital		Trails		Interstate
	School		Managed Lands		State Route
			County Boundary		US Route
					Local Road

Red Flag Investigation - Water Resources

State Road 46 and Smith Rd.

Des. No. 1800208, Intersection Improvement

Monroe County, Indiana



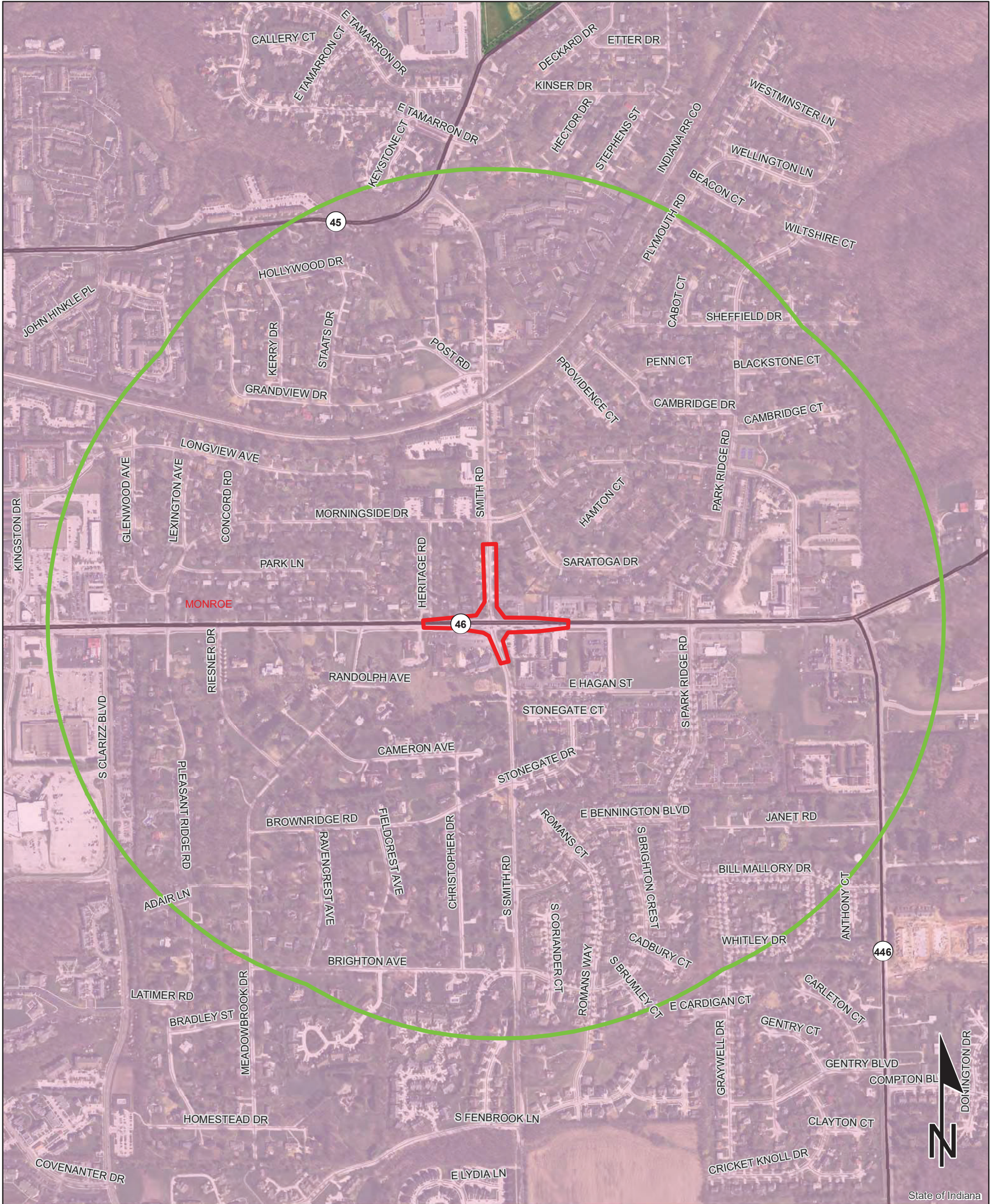
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Non Orthophotography
Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
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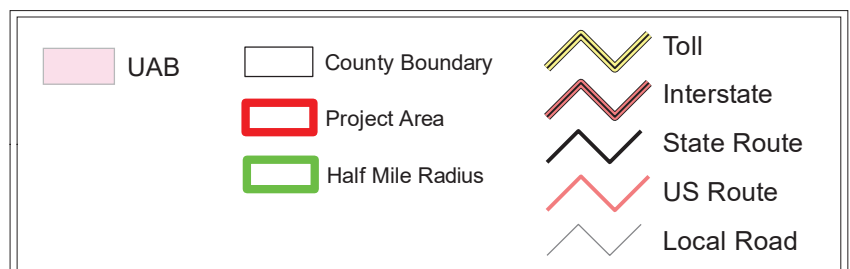
NWI - Point	Wetlands	Project Area
Karst Spring	Lake	Half Mile Radius
NWI - Line	Floodplain - DFIRM	Toll
Impaired_Stream_Lake	Cave Entrance Density	Interstate
NPS NRI listed	Sinkhole Area	State Route
River	Sinking-Stream Basin	US Route
Canal Structure - Historic	County Boundary	Local Road
Canal Route - Historic		

Red Flag Investigation - Urbanized Area Boundary State Road 46 and Smith Rd. Des. No. 1800208, Intersection Improvement Monroe County, Indiana

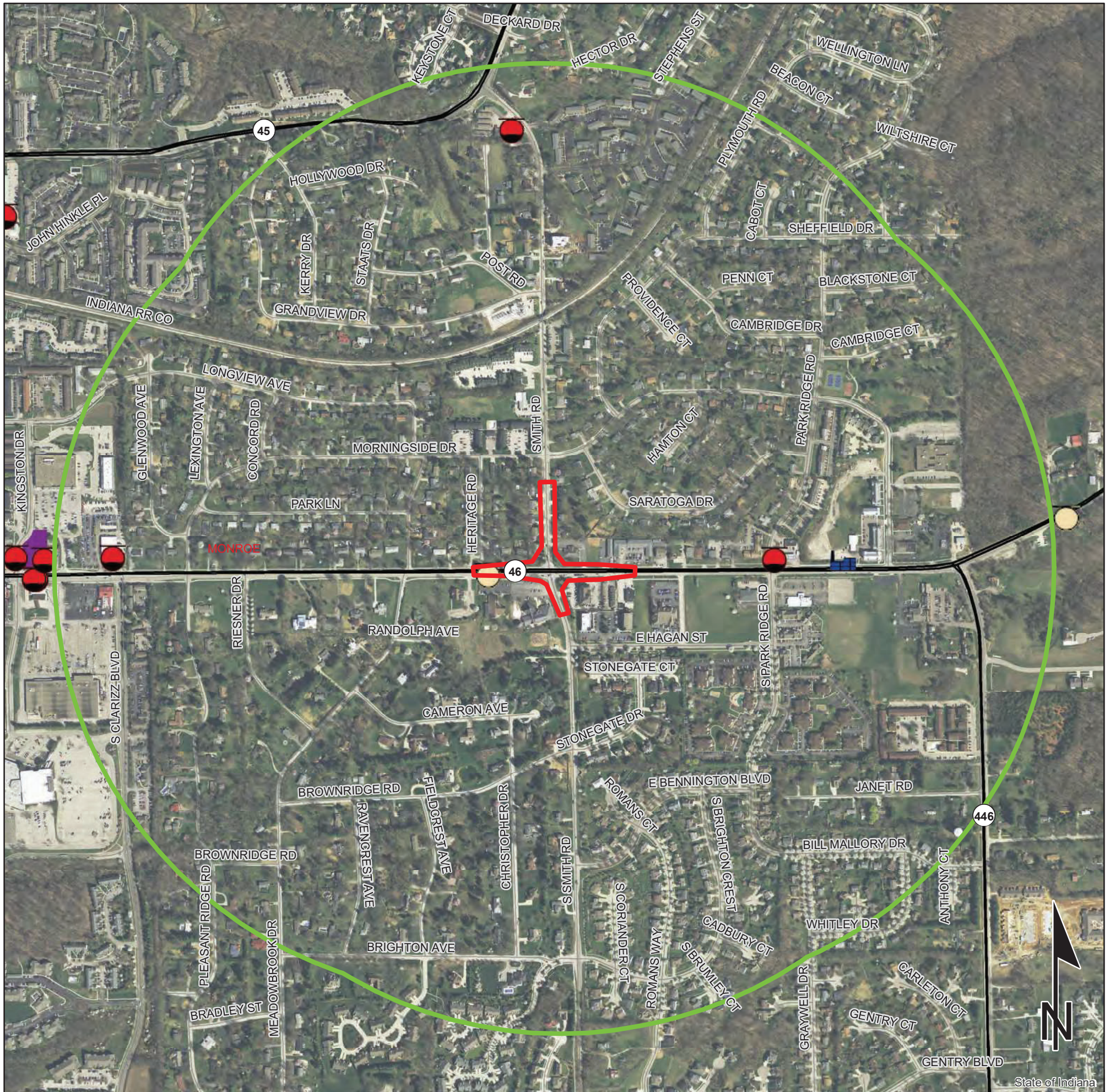


Sources:
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Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
Map Projection: UTM Zone 16 N **Map Datum:** NAD83

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Red Flag Investigation - Hazardous Material Concerns State Road 46 and Smith Rd. Des. No. 1800208, Intersection Improvement Monroe County, Indiana



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



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

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

Indiana County Endangered, Threatened and Rare Species List

County: Monroe

Species Name	Common Name	FED	STATE	GRANK	SRANK
Diplopoda					
Conotyia bollmani	Bollman's Cave Milliped		WL	G5	S3
Crustacean: Malacostraca					
Caecidotea jordani	Jordan's groundwater isopod		SE	G2G3	S1
Crangonyx packardi	Packard's Cave Amphipod		WL	G4	S3
Orconectes inermis testii	Troglobitic Crayfish		SR	G5T3	S3
Crustacean: Ostracoda					
Pseudocandona jeanneli	Jeannel's Cave Ostracod		SE	G2	S1
Sagittocythere barri	Barr's Commensal Cave Ostracod		WL	G5	S3S4
Mollusk: Bivalvia (Mussels)					
Cyprogenia stegaria	Eastern Fanshell Pearlymussel	LE	SE	G1Q	S1
Epioblasma torulosa torulosa	Tubercled Blossom	LE	SE	G2TX	SX
Fusconaia subrotunda	Longsolid	C	SE	G3	SX
Obovaria subrotunda	Round Hickorynut	C	SE	G4	S1
Pleurobema clava	Clubshell	LE	SE	G1G2	S1
Quadrula cylindrica cylindrica	Rabbitsfoot	LT	SE	G3G4T3	S1
Villosa lienosa	Little Spectaclecase		SSC	G5	S3
Mollusk: Gastropoda					
Fontigens cryptica	Hidden Springs Snail		SE	G1	S1
Punctum minutissimum	Small Spot			G5	S2
Ellipluran: Collembola					
Hypogastrura gibbosus	Humped Springtail		WL	GNR	SNR
Isotoma anglicana	A Springtail		WL	GNR	SNR
Pseudosinella argentea	A Springtail		SE	GNR	S1
Pseudosinella collina	Hilly Springtail		SR	GNR	S2?
Pseudosinella fonsa	Fountain Cave Springtail		ST	G3G4	S2
Sinella alata	Springtail		WL	G5	S4
Insect: Coleoptera (Beetles)					
Aleochara lucifuga	Rove beetle		WL	GNR	S4
Atheta annexa	Rove beetle		WL	G4	S4
Dynastes tityus	Unicorn Beetle		SR	GNR	S2
Nicrophorus americanus	American Burying Beetle	LE	SX	G2G3	SX
Pseudanophthalmus shilohensis mayfieldensis	Monroe cave ground beetle		SE	G1G2T1T2	S1S2
Pseudanophthalmus stricticollis	Marengo Cave Ground Beetle		WL	G4	S3
Insect: Lepidoptera (Butterflies & Moths)					
Artogeia virginiensis	West Virginia White		SR	G3?	S3
Celastrina nigra	Dusky Azure		ST	G4	S2
Insect: Odonata (Dragonflies & Damselflies)					
Rhionaeschna mutata	Spatterdock Darner		ST	G4	S2S3

Indiana Natural Heritage Data Center
Division of Nature Preserves
Indiana Department of Natural Resources
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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
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Indiana County Endangered, Threatened and Rare Species List

County: Monroe

Species Name	Common Name	FED	STATE	GRANK	SRANK
Tachopteryx thoreyi	Gray Petaltail		wl	G4	S3
Insect: Tricoptera (Caddisflies)					
Agapetus gelbae	An Agapetus Caddisfly		ST	G3	S2
Diplectrona metaqui	A Diplectronan Caddisfly		ST	G4G5	S2
Goera stylata	A Northern Casemaker Caddisfly		SE	G5	S1
Homoplectra doringa	A Homoplectran Caddisfly		SE	G5	S1
Arachnida					
Dolomedes scriptus	Lined Nursery Web Spider			G5	S1?
Nesticus carteri	Carter's Cave Spider			GNR	S1
Fish					
Amblyopsis hoosieri	Hoosier cavefish	C	SE	G2	S1
Amphibian					
Acris blanchardi	Northern Cricket Frog		SSC	G5	S4
Hemidactylum scutatum	Four-toed Salamander		SSC	G5	S2
Lithobates areolatus circulosus	Northern Crawfish Frog		SE	G4T4	S2
Necturus maculosus	Common mudpuppy		SSC	G5	S2
Reptile					
Clonophis kirtlandii	Kirtland's Snake	C	SE	G2	S2
Crotalus horridus	Timber Rattlesnake		SE	G4	S2
Opheodrys aestivus	Rough Green Snake		SSC	G5	S3
Terrapene carolina carolina	Eastern Box Turtle		SSC	G5T5	S3
Thamnophis proximus proximus	Western Ribbon Snake		SSC	G5T5	S3
Bird					
Accipiter striatus	Sharp-shinned Hawk		SSC	G5	S2B
Aimophila aestivalis	Bachman's Sparrow			G3	SXB
Ardea alba	Great Egret		SSC	G5	S1B
Bartramia longicauda	Upland Sandpiper		SE	G5	S3B
Buteo lineatus	Red-shouldered Hawk		SSC	G5	S3
Buteo platypterus	Broad-winged Hawk		SSC	G5	S3B
Coragyps atratus	Black Vulture			G5	S1N,S2B
Dendroica virens	Black-throated Green Warbler			G5	S2B
Haliaeetus leucocephalus	Bald Eagle		SSC	G5	S2
Helmitheros vermivorus	Worm-eating Warbler		SSC	G5	S3B
Ixobrychus exilis	Least Bittern		SE	G5	S3B
Mniotilta varia	Black-and-white Warbler		SSC	G5	S1S2B
Setophaga cerulea	Cerulean Warbler		SE	G4	S3B
Vermivora chrysoptera	Golden-winged Warbler	C	SE	G4	S1B
Wilsonia citrina	Hooded Warbler		SSC	G5	S3B

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Indiana County Endangered, Threatened and Rare Species List

County: Monroe

Species Name	Common Name	FED	STATE	GRANK	SRANK
Lasiurus borealis	Eastern Red Bat		SSC	G3G4	S4
Lasiurus cinereus	Hoary Bat		SSC	G3G4	S4
Mustela nivalis	Least Weasel		SSC	G5	S2?
Myotis lucifugus	Little Brown Bat	C	SSC	G3	S2
Myotis septentrionalis	Northern Long Eared Bat	LT	SSC	G1G2	S2S3
Myotis sodalis	Indiana Bat or Social Myotis	LE	SE	G2	S1
Neotoma magister	Allegheny Woodrat		SE	G3G4	S2
Perimyotis subflavus	Tricolored Bat		SSC	G2G3	S2S3
Sorex fumeus	Smoky Shrew		SSC	G5	S2
Sorex hoyi	Pygmy Shrew		SSC	G5	S2
Taxidea taxus	American Badger		SSC	G5	S2
Vascular Plant					
Acalypha deamii	Mercury		SR	G4?	S2
Armoracia aquatica	Lake Cress		SE	G4?	S1
Carex timida	Timid Sedge		SE	G2G4	S1
Castanea dentata	American Chestnut		WL	G4	S3
Catalpa speciosa	Northern Catalpa		SR	G4?	S2
Cypripedium parviflorum var. pubescens	Large Yellow Lady's-slipper		WL	G5T5	S3
Epigaea repens	Trailing Arbutus		WL	G5	S3
Hydrastis canadensis	Golden Seal		WL	G3G4	S3
Juglans cinerea	Butternut		WL	G4	S3
Linum striatum	Ridged Yellow Flax		WL	G5	S3
Liparis loeselii	Loesel's Twayblade		WL	G5	S3
Lithospermum incisum	Narrow-leaved Puccoon		SE	G5	S1
Malaxis unifolia	Green Adder's-mouth Orchid		SE	G5	S1
Oryzopsis racemosa	Black-fruit Mountain-ricegrass		SR	G5	S2
Oxalis illinoensis	Illinois Woodsorrel		WL	G4Q	S2
Panax quinquefolius	American Ginseng		WL	G3G4	S3
Platanthera flava var. herbiola	Pale Green Orchis		WL	G4?T4Q	S3
Potamogeton pusillus	Slender Pondweed		WL	G5	S2
Rubus centralis	Illinois Blackberry		SE	G2?Q	S1
Zannichellia palustris	Horned Pondweed		SR	G5	S2
Zizia aptera	Golden Alexanders		SR	G5	S2
High Quality Natural Community					
Forest - floodplain mesic	Mesic Floodplain Forest		SG	G3?	S1
Forest - upland dry Highland Rim	Highland Rim Dry Upland Forest			GNR	S3
Forest - upland dry-mesic Highland Rim	Highland Rim Dry-mesic Upland Forest			GNR	S3
Forest - upland mesic Highland Rim	Highland Rim Mesic Upland Forest			GNR	S3

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Indiana County Endangered, Threatened and Rare Species List

County: Monroe

Species Name	Common Name	FED	STATE	GRANK	SRANK
Primary - cave aquatic	Aquatic Cave		SG	GNR	SNR
Primary - cliff limestone	Limestone Cliff		SG	GU	S1
Other Significant Feature					
Geomorphic - Nonglacial Erosional Feature - Water Fall and Cascade	Water Fall and Cascade			GNR	SNR

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SR 46 & Smith Road Intersection Improvements
CE Level 2

APPENDIX F: WATER RESOURCES



Note: Duplicate mapping and photographs were included in the Waters Report, but were intentionally removed. Please see Appendix B for maps and photographs.

Waters Report

State Road 46 and Smith Road
City of Bloomington, Monroe County, Indiana
Intersection Improvement

DES No: 1800208

Completed Date: NOVEMBER 2, 2020
INDOT EWPO Approval Date:



PREPARED BY:

CRAWFORD, MURPHY & TILLY, INC.
8790 PURDUE ROAD
INDIANAPOLIS, INDIANA 46268



PREPARED FOR:

INDIANA DEPARTMENT
OF TRANSPORTATION
SEYMOUR DISTRICT OFFICE

Waters Report
State Road 46 (SR 46) and Smith Road in Bloomington, Monroe County, Indiana
Intersection Improvement
DES No: 1800208
Prepared by: Ellen Hoglebe
Contact Information: ehoglebe@cmtengr.com, 314-571-9103
Company: Crawford, Murphy & Tilly, Inc.
Completed Date: November 2, 2020

PROJECT INFORMATION

Dates of Field Reconnaissance: July 24, 2019; October 1, 2020

Location:

Sections 1 and 2, Township 8 North, Range 1 West
Sections 35 and 36, Township 9 North, Range 1 West
Unionville Indiana, Quadrangle
Monroe County, Indiana
39.164240 Latitude, -86.481232 Longitude

PROJECT DESCRIPTION

The study area for the intersection improvement includes the four-legged intersection of State Road 46 (SR 46) and Smith Road. Within the study area, SR 46 runs east-west and Smith Road runs north-south.

The proposed improvements would include providing exclusive left turn lanes on both the northbound and southbound approaches of Smith Road. The improvements would involve widening on the east and west sides of Smith Road. The existing bike lanes on Smith Road, north of SR 46, would also be replaced in their existing location and sidewalk reconstruction around the intersection may also be necessary. The drainage in the southwest corner of the intersection will also be modified.

Land use in the vicinity of the project is residential and commercial.

The project has been programmed by INDOT as SR 46 and Smith Rd. Intersection Improvement, DES No: 1800208.

The study area was established using the anticipated project footprint to construct the proposed improvements. The location of the project within Monroe County and the study area are shown on the attached mapping.

DESKTOP RECONNAISSANCE

SOILS

According to the Soil Survey Geographic (SSURGO) Database for Monroe County, Indiana, the study area does not contain soil areas with nationally listed hydric soils.

Soil Name	Map Abbreviation	Hydric Range
BdB	Bedford silt loam, 2 to 6 percent slopes	Not Hydric (0%)
CtB	Crider-Urban land complex, 2 to 6 percent slopes	Not Hydric (0%)
CtC	Crider-Urban land complex, 6 to 12 percent slopes	Not Hydric (0%)

NATIONAL WETLAND INVENTORY (NWI) INFORMATION

There are no wetlands identified within the study area. There is one (1) NWI feature identified near the study area.

Wetland Type	Location
Freshwater Pond (PUBGh)	A pond is mapped approximately 0.20 mile southwest of the study area.

12 DIGIT HUC

051202080801 – Jackson Creek – Clear Creek

USGS NATIONAL HYDROGRAPHY DATASET (NHD)

According to the USGS National Hydrography Dataset (NHD layer), one (1) NHD layer stream and two (2) NHD layer pipes are identified within the study area. The unnamed tributary flows generally southwest within a pipe through the study area, under SR 46 and Smith Road, and then continues within the study area in an open channel along the south side of SR 46.

FEMA FLOOD INSURANCE RATE MAP (FIRM)

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), the study area is not located within or adjacent to a floodplain.

ATTACHED DOCUMENTS

- Project Mapping (Project Location, Aerial, Topographic, NRCS Soils, NWI, USGS NHD, 12 Digit HUC, and Floodplain)
- Photographs with Photo Location Map

FIELD RECONNAISSANCE

One (1) stream was identified within the study area during the onsite investigation for the presence of wetlands and other Waters of the United States (WOTUS) by Crawford, Murphy and Tilly, Inc (CMT).

The investigation for wetlands was conducted in accordance with the *1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual and the August 2010 Midwest Regional Supplement (Version 2.0) Manual*.

The stream was evaluated according to the definition of a Water of the United States in 33 CFR 328.3(a). The attached WOTUS Map depicts the location of the identified surface water resource on an aerial photograph. Representative photographs are provided.

STREAMS

One (1) stream was identified within the study area. A summary of the stream is provided in the table below. Photographs of the stream are attached within the Photolog.

Stream Summary Table										
Water Feature Name	WOTUS Photos	Lat/Long	Average OHWM Width (ft)	Average OHWM Depth (in)	USGS Blue-Line? Type?	Stream Type	Riffles? Pools?	Quality	Substrate	Likely Water of the U.S.?
UNT to Jackson Creek	1-6	39.164082°N -86.482149°W	3.6	7	No	Ephemeral	No	Poor	Cobble, gravel, silt, artificial	No

An unnamed tributary (UNT) to Jackson Creek is located in the western portion of the study area along the south side of SR 46. From an existing culvert outlet, UNT flows generally southwest through an existing open channel for approximately 267 linear feet within the study area. The drainage area upstream of the study area is approximately 0.08 square mile. Although UNT is not mapped on the USGS topographic quadrangle as a 'blue-line' feature, it exhibits connectivity to Jackson Creek, a mapped perennial 'blue-line' feature. UNT flows through Jackson Creek to Clear Creek to Salt Creek to East Fork White River to White River to Wabash River, which is a tributary to the Ohio River, a Section 10 Traditional Navigable Water (TNW).

Within the study area, UNT has cobble, gravel, silt, and artificial substrate. The width of the ordinary high water mark (OHWM) ranges from 3.25 to 4.6 feet with an average width of 3.6 feet within the study area. The depth of the OHWM ranges from 5 to 12 inches with an average depth of 7 inches within the study area. This stream has no riffle/pool complexes within the study area. Within the study area, UNT has ephemeral flow. No water was observed within the stream channel at the time of the site visit. UNT is not anticipated to flow for three consecutive months out of the year and is only expected to flow after heavy rain events. Based on the provisional determination of UNT as a Non-Relatively Permanent Water (Non-RPW), UNT to

Jackson Creek is not likely to fall under the jurisdiction of the USACE. The USACE will make the final determination of jurisdiction.

Based on a lack of a riparian buffer, a lack of riffle/pool complexes, and stream channel modifications from the construction of SR 46, UNT is a poor-quality stream.

WETLANDS

No wetlands were observed within or adjacent to the study area. Within the study area, no hydrology indicators were observed and the area was dominated by upland vegetation including Kentucky blue grass (*Poa pratensis*, FAC), English plantain (*Plantago lanceolata*, FACU), and white clover (*Trifolium repens*, FACU). The three wetland criteria were not met; therefore, no wetlands were present.

OPEN WATER

No open water areas were observed within or adjacent to the study area.

OTHER FEATURES

ROADSIDE DITCHES

No roadside ditches were observed within or adjacent to the study area.

DRAINAGE FEATURES WITHOUT OHWM

No drainage features without an OHWM were observed within or adjacent to the study area.

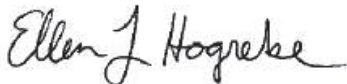
CONCLUSIONS

One (1) stream was identified within the study area. UNT to Jackson Creek was located in the western portion of the study area along the south side of SR 46. UNT flows generally southwest through an existing open channel from an existing culvert outlet. Based on the provisional determination of UNT as an ephemeral, Non-RPW, UNT to Jackson Creek is not likely to fall under the jurisdiction of the USACE.

The final determination of jurisdictional waters is ultimately made by the U.S. Army Corp of Engineers. This report is our best judgement based on the guidelines set for by the Corps.

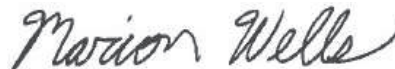
ACKNOWLEDGEMENT

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.



Ellen Hogrebe
Environmental Scientist
Crawford, Murphy & Tilly, Inc.

Date: November 2, 2020

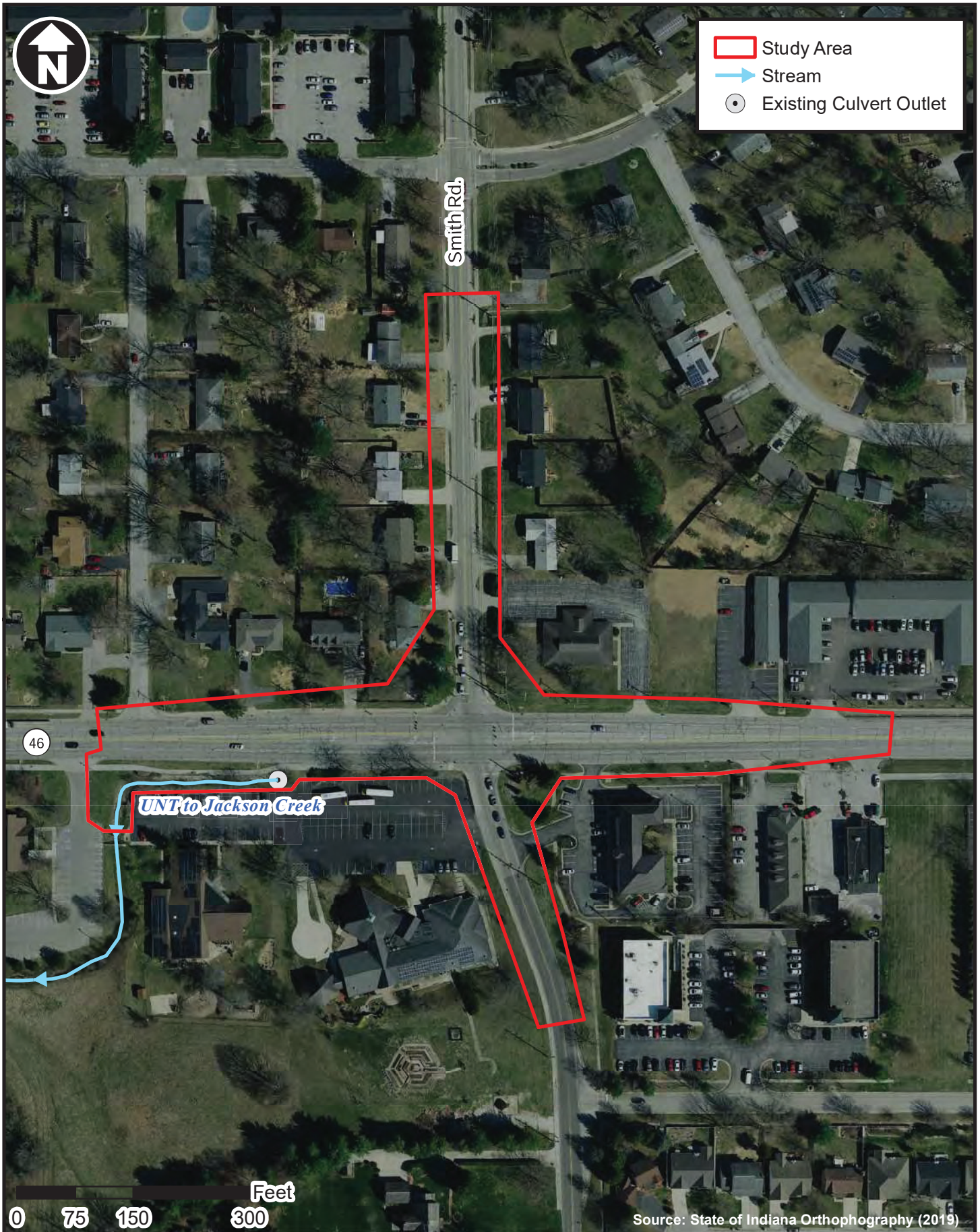


Marion Wells - Reviewer
Environmental Scientist
Crawford, Murphy & Tilly, Inc.

Date: November 2, 2020

SUPPORTING DOCUMENTATION

- Maps
- Photos



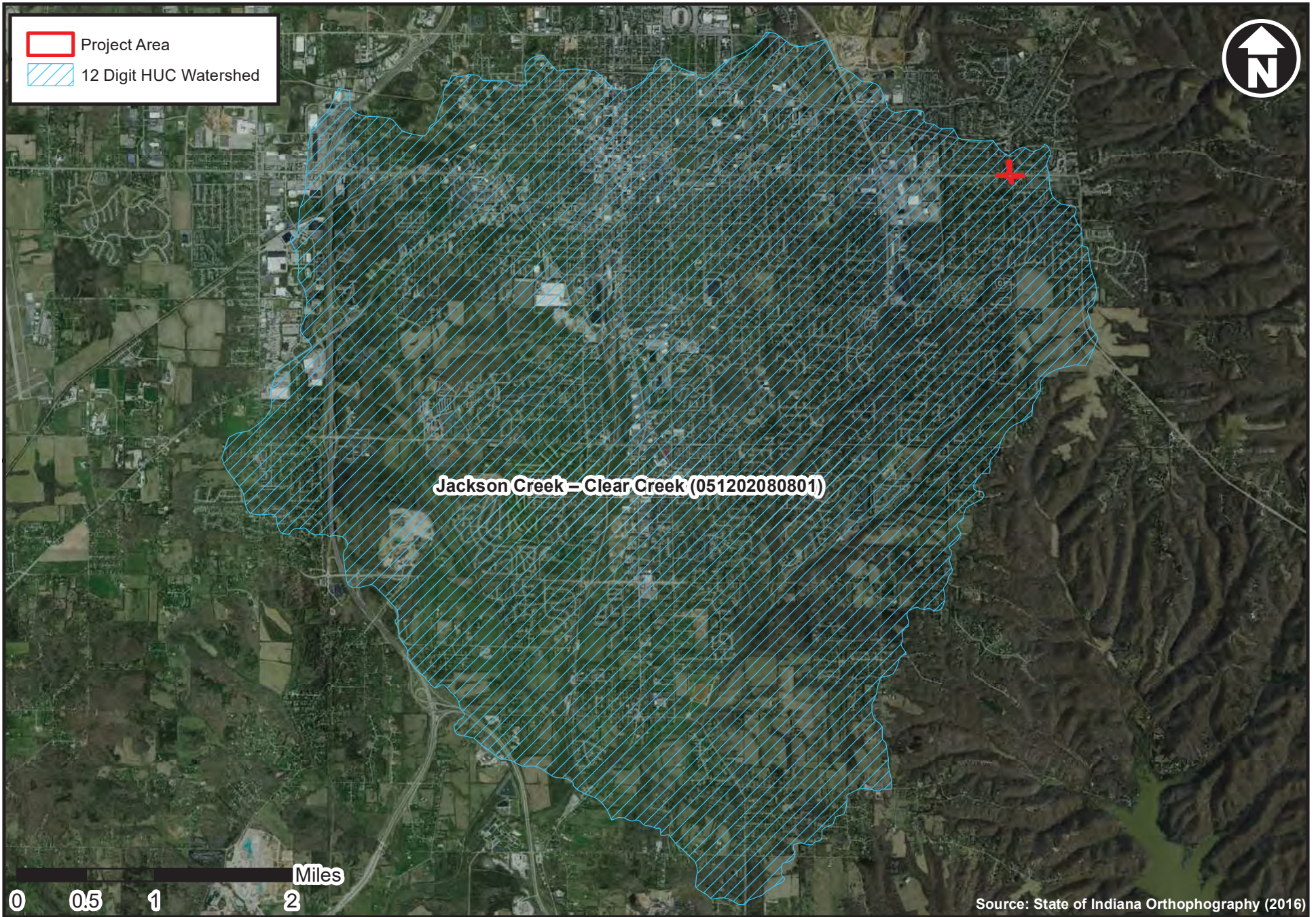
SR 46 and Smith Rd. Intersection Improvement (Des No 1800208) - Monroe Co., IN

Waters of the United States (WOTUS) Map

Ellen Hogrebe; 10/26/2020

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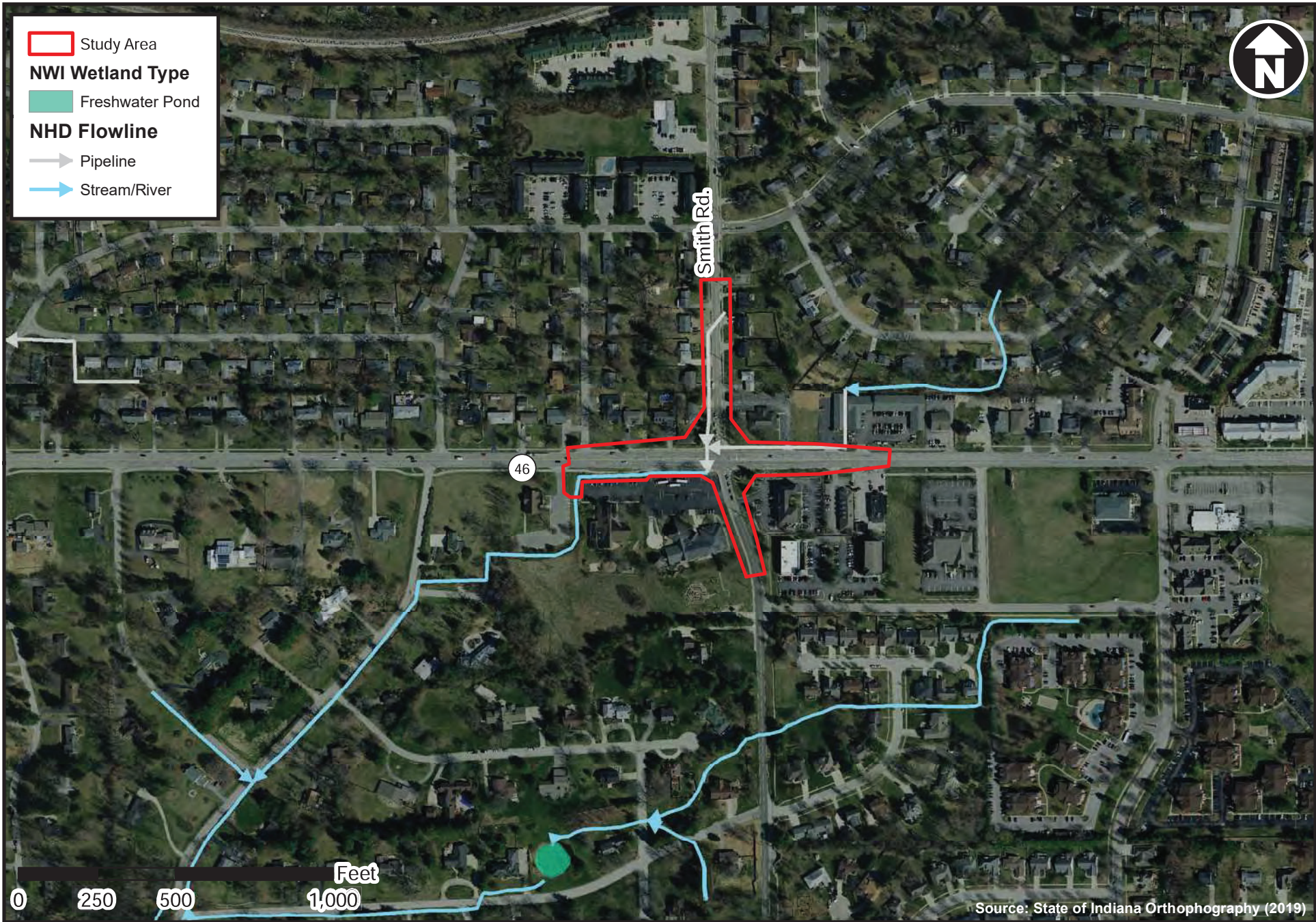
SR 46 and Smith Rd. Intersection Improvement (Des No 1800208) - Monroe Co., IN

12 Digit Hydrologic Unit Code (HUC) Watershed Map

Ellen Hogrebe; 6/14/2019

F - 8





SR 46 and Smith Rd. Intersection Improvement (Des No 1800208) - Monroe Co., IN
USGS National Hydrography Dataset Map & National Wetland Inventory Map

Ellen Hogrebe; 4/26/2019

SR 46 and Smith Rd. Intersection Improvement (Des No 1800208) - Monroe Co., IN National Flood Hazard Layer FIRMMette

39°10'3.67"N

Ellen Hogrebe; 5/14/2019

Study Area



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
		Area of Minimal Flood Hazard Zone X
OTHER AREAS		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



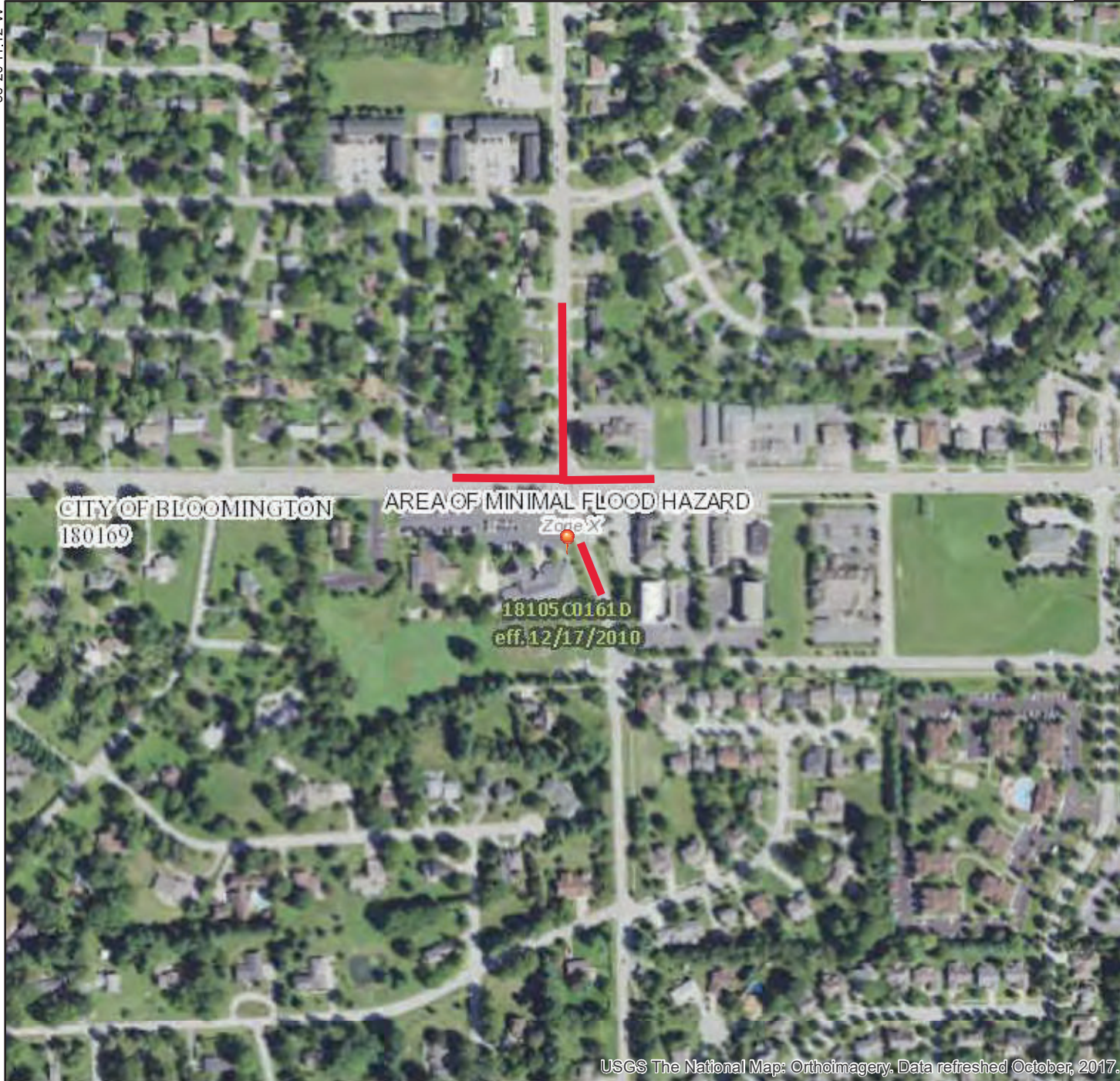
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

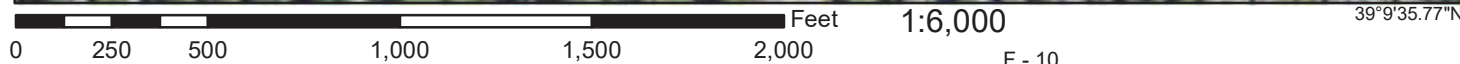
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **4/26/2019 at 3:31:14 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

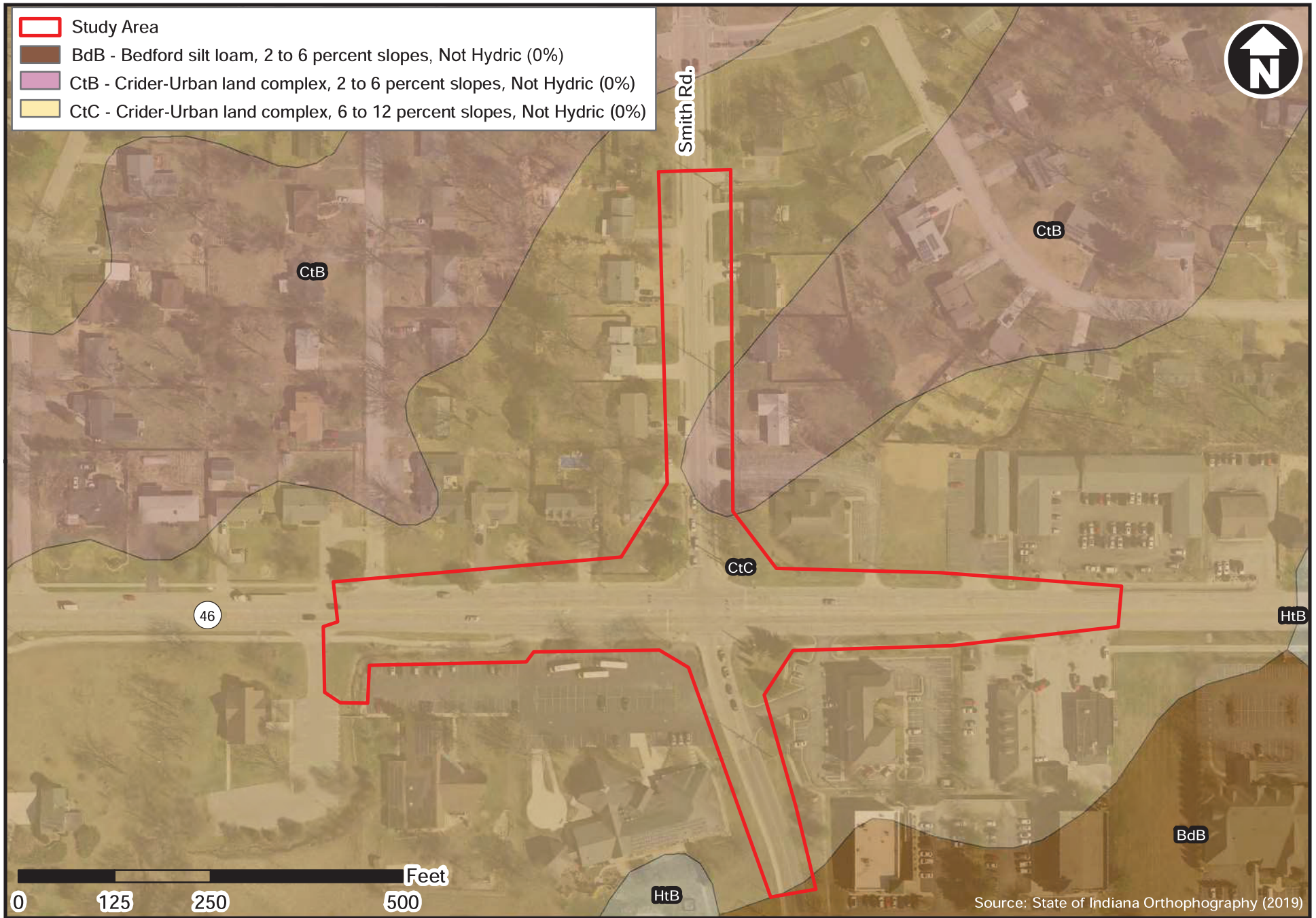
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

86°29'11.12"W



86°28'33.66"W





SR 46 and Smith Rd. Intersection Improvement (Des No 1800208) - Monroe Co., IN
NRCS SSURGO Soil Survey Map

Map Unit Description (Brief, Generated)

Monroe County, Indiana

[Minor map unit components are excluded from this report]

Map unit: BdB - Bedford silt loam, 2 to 6 percent slopes

Component: Bedford (85%)

The Bedford component makes up 85 percent of the map unit. Slopes are 2 to 6 percent. This component is on hills on karst uplands. The parent material consists of noncalcareous loess over loamy noncalcareous loess over clayey residuum weathered from limestone. Depth to a root restrictive layer, fragipan, is 21 to 35 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 21 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Map unit: CtB - Crider-Urban land complex, 2 to 6 percent slopes

Component: Crider (60%)

The Crider component makes up 60 percent of the map unit. Slopes are 2 to 6 percent. This component is on hills. The parent material consists of loess over clayey residuum. Depth to a root restrictive layer, bedrock, lithic, is 60 to 120 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Urban land (40%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

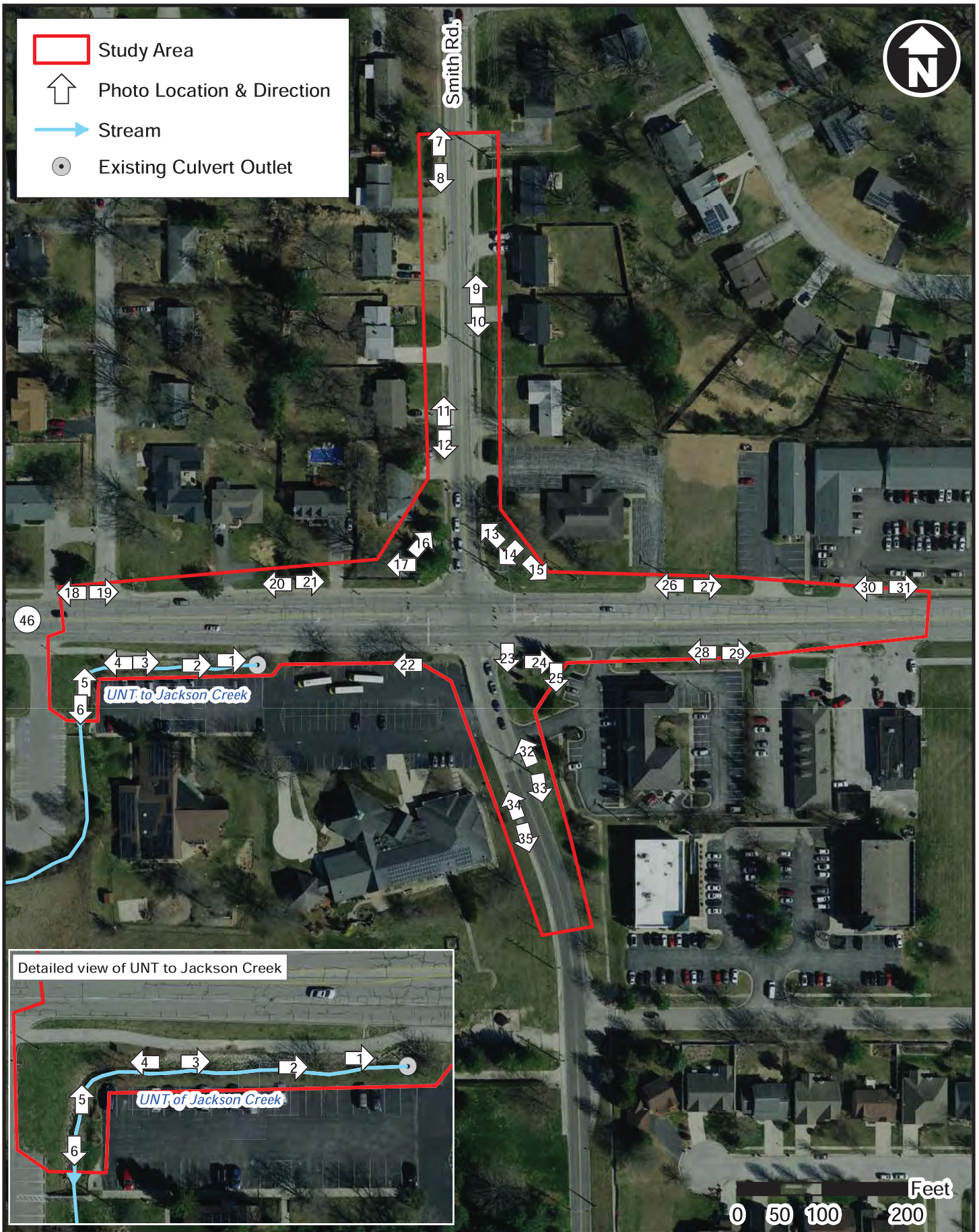
Map unit: CtC - Crider-Urban land complex, 6 to 12 percent slopes

Component: Crider (60%)

The Crider component makes up 60 percent of the map unit. Slopes are 6 to 12 percent. This component is on hills. The parent material consists of Thin loess, slope alluvium and clayey residuum. Depth to a root restrictive layer, bedrock, lithic, is 60 to 120 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Component: Urban land (40%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.



SR 46 and Smith Rd. (Des No 1800208) - Monroe Co., IN
Photo Orientation Map



1. View existing culvert outlet to UNT looking east (upstream).
10/1/2020



2. View of UNT looking east (upstream). 10/1/2020



3. View of UNT looking east (upstream). 10/1/2020



4. View of UNT looking west (downstream). 10/1/2020



5. View of UNT looking north (upstream). 10/1/2020



6. View of UNT looking south (downstream). 10/1/2020

Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD: Nov. 2, 2020

B. NAME AND ADDRESS OF PERSON REQUESTING PJD: Ellen Hogrebe Crawford, Murphy & Tilly, Inc. 8790 Purdue Road Indianapolis, IN 46268

C. DISTRICT OFFICE, FILE NAME, AND NUMBER:

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:

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

State: Indiana County/parish/borough: Monroe City: Bloomington

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

Lat.: 39.164240 Long.: -86.481232

Universal Transverse Mercator: 544817.12m E, 4335130.87 m N

Name of nearest waterbody: UNT to Jackson Creek

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

Office (Desk) Determination. Date:

Field Determination. Date(s):

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

Site number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
UNT to Jackson Creek	39.164082	-86.482149	267 linear feet (3.6 ft wide)	non-wetland waters; ephemeral flow	Non-section 10 water; subject to 404 jurisdiction

- 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:

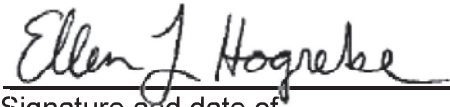
SUPPORTING DATA. Data reviewed for PJD (check all that apply)

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: General location map, aerial photograph, USGS topographic map, picture key map, NRCS soils map, NWI map, NHD map, 12 Digit HUC map, FEMA map _____.
- 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: 1:24,000, Unionville, Indiana Quadrangle.
- Natural Resources Conservation Service Soil Survey. Citation: <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>.
- National wetlands inventory map(s). Cite name: <http://www.fws.gov/wetlands/Data/Mapper.html>.
- State/local wetland inventory map(s): _____.
- FEMA/FIRM maps: 18105C0161D, eff. 12/17/2010.
- 100-year Floodplain Elevation is: _____.(National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): Indiana Aerial Photograph, 2019
or Other (Name & Date): Site photographs, July 24, 2019, October 1, 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



Signature and date of
person requesting PJD
(REQUIRED, unless obtaining
the signature is impracticable)¹

¹ 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.

Ellen Hoglebe

From: Sperry, Steve <SSPERRY@indot.IN.gov>
Sent: Tuesday, January 5, 2021 12:58 PM
To: Ellen Hoglebe; Metcalf, Karlei A
Cc: Curry, Jennifer; Cassie Reiter
Subject: Notice of WOTUS Approval, 1800208 SR 46 Intersection Improvement, North of Smith Road in Bloomington , Monroe Co.
Attachments: Permit Determination Questionnaire.docx

External Message: This email was sent from someone outside of CMT. Please use caution with links and attachments from unknown senders or receiving unexpected emails.

Ellen,

Thank you for submitting the waters report for the above referenced project.

Karlei,

The 11/2/2020 WOTUS report has been stamped approved and is posted to ProjectWise and can be found in the following location, [1800208 Waters Report Approved 1.5.2021.pdf](#) . It has also been posted to CMT's shared drive and can be accessed through the following link, [1800208 Waters Report Approved 1.5.2021.pdf](#)

The approved copy is the only report recognized by this Office. Copies that do not contain our approval stamp will not be accepted for permitting or any other use.

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. If it appears that impacts will occur and the designer is unable to implement measures to avoid them then action will need to be taken to minimize these impacts to the maximum practical extent. These steps must be taken before any mitigation can be considered. If it is determined that mitigation will be required the Project Manager or Project Designer will need to coordinate with the Ecology and Waterway Permitting Office in order to discuss how this will be provided.

The Project Manager or designer should notify the Ecology and Waterway Permitting Office if there is any change to the project footprint presented in the approved report. Changes may require additional fieldwork and a new report to cover areas not previously investigated.

The 11/2/2020 report is only valid for a period of five years from the date of the earliest fieldwork. If this approved report expires, prior to submittal of the waterway permit applications, a new report will need to be generated.

This e-mail serves as notice that the Project Designer is to complete the attached Permit Determination questionnaire. Once completed please have them submit it to [Steve Sperry](#).

Should you have any questions or need additional information please contact me.

Thanks
Steve

Stephen C. Sperry

Ecology and Permits Coordinator

Multidistrict East Team

INDOT, Division of Environmental Services



Indiana Floodplain Information Portal Report

Point of Interest

Approximate Address:

212 South SMITH RD
BLOOMINGTON, IN 47408

Effective Flood Zone:

X

Preliminary Flood Zone:

N/A

Best Available Flood Zone:

X

Approximate Flood Elevation:

772.3ft NAVD88



Source:

Zone AE Profile Delineation












Nearest Stream:

JACKSON CREEK

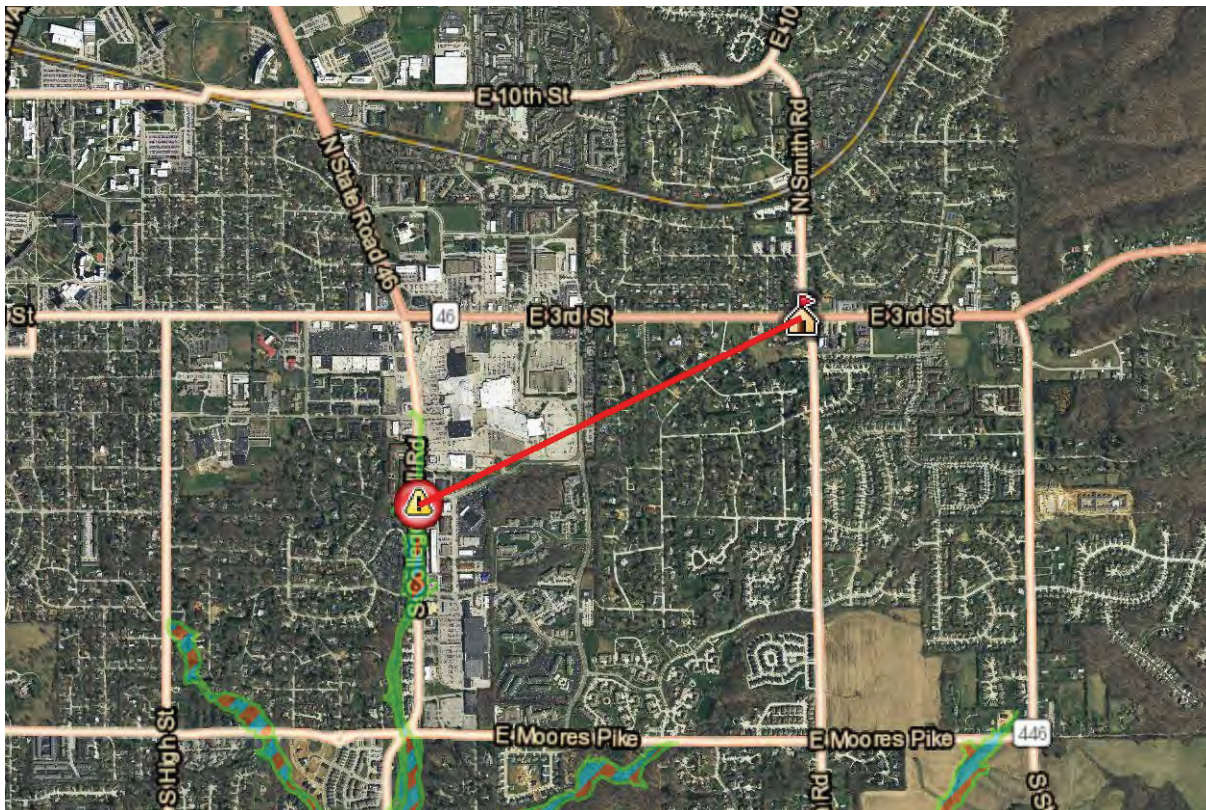
Map Legend

-  Point of Interest
-  Nearest Point on Stream

Best Available Flood Zone

-  FEMA Zone AE Floodway
-  DNR Detailed Floodway
-  DNR Approximate Floodway
-  FEMA Zone A
-  FEMA Zone AE
-  DNR Detailed Fringe
-  DNR Approximate Fringe
-  Additional Floodplain Area
-  FEMA Protected by Levee
-  FEMA Floodplain - Ponding (Depth)
-  FEMA Floodplain - Sheet Flow (Depth)

Site Map with Best Available Flood Zone



Approximate scale 1:36,000

Disclaimer

SR 46 & Smith Road Intersection Improvements
CE Level 2

APPENDIX G: PUBLIC INVOLVEMENT



NOTICE OF SURVEY LETTER



Indianapolis Headquarters | Avon | Fishers | New Haven | WBE & DBE Certified

Notice of Survey

March 5, 2019

SUBJECT: SR46 and North Smith Road Intersection Improvements
Des. No. 1800208

Dear Property Owner:

Our information indicates that you own or occupy property near the above referenced project. Our employees will be performing 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 permitted by law per 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, you will be contacted with additional information.

The survey work will include mapping the location of features such as trees, fences, watercourses, culverts, hardscapes, roadways/drives, utility markings, utility and sewer appurtenances, and obtaining ground elevations. This information is needed to perform a topographic survey of the corresponding roadway intersection. Please be assured of our sincere desire to cause you as little inconvenience as possible during this survey. Please feel free to contact me with any questions you may have concerning this project.

Sincerely,

A handwritten signature in black ink that reads "Nickolas M. Schmitt".

Nickolas M. Schmitt, PE, PS
Project Manager
Etica Group
317-268-1853

Cc: File: (Etica No.: 180097.07)

SR 46 & Smith Road Intersection Improvements
CE Level 2

APPENDIX H: AIR QUALITY



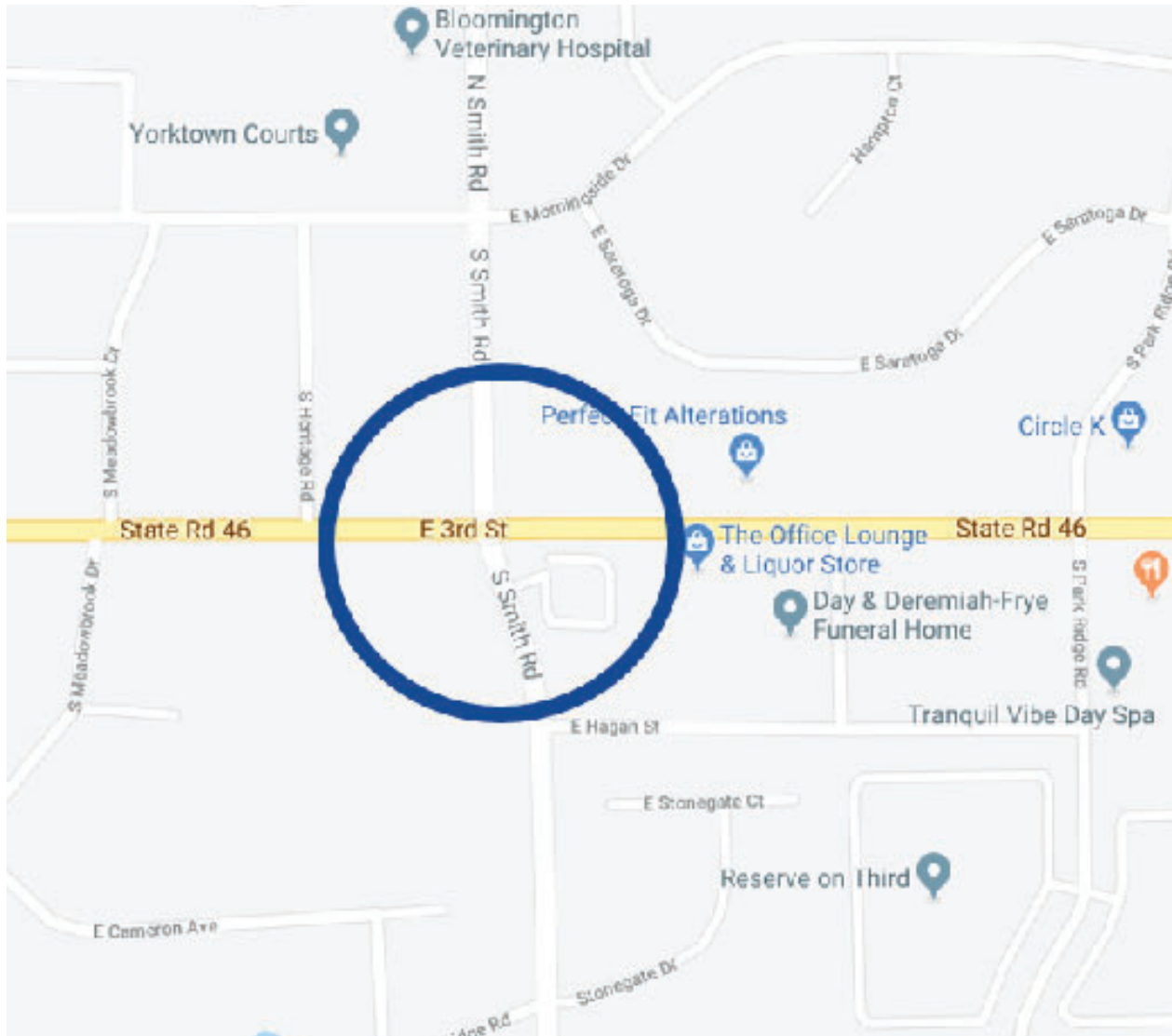
STATE ROAD 46 AT THE INTERSECTION OF SMITH ROAD

DES# 1800208

LETTING DATE: TBD

Intersection improvement with added turn lanes.

Project Phase	Fiscal Year	Federal Source	Federal Funding	State Match	TOTAL
RW	2021	NHPP	\$40,000	\$10,000	\$50,000
CN	Outlying Years	NHPP	\$465,259	\$116,315	\$581,844
TOTAL			\$505,259	\$126,315	\$631,844



Indiana Department of Transportation (IND T)
 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
Bloomington	40337 / 1700976	Init.	VA 1032	Bike/Pedestrian Facilities	Systematic safety improvements expected to include approximately 25	Seymour	0	STPBG		Bloomington MPO	CN	\$470,684.00	\$0.00		\$470,684.00			
Monroe County	40890 / 1702957	Init.	IR 1059	New Road Construction	Industrial Park Drive Extension/ Vernal Pike Connector Road	Seymour	.5	STPBG		Group III Program	CN	\$7,088,000.00	\$0.00			\$7,088,000.00		
										Local Funds	CN	\$0.00	\$3,474,000.00		\$1,702,000.00	\$1,772,000.00		
										Bloomington MPO	CN	\$6,808,000.00	\$0.00		\$6,808,000.00			
Monroe County	40894 / 1702958	Init.	IR 1020	Road Reconstruction (3R/4R Standards)	Hunters Creek Road - Phase II & III - from SR446 to 2.85 miles East of SR446	Seymour	.94	STPBG		Group IV Program	CN	\$3,090,800.00	\$0.00				\$3,090,800.00	
										Local Funds	CN	\$0.00	\$772,700.00				\$772,700.00	
Indiana Department of Transportation	41055 / 1800930	Init.	SR 43	Bridge Deck Overlay	Over Richland Creek, 00.12 mi S SR-48	Vincennes	0	STPBG		Bridge Construction	CN	\$519,200.00	\$129,800.00		\$649,000.00			
Indiana Department of Transportation	41061 / 1702627	Init.	SR 37	Bridge Deck Overlay	04.05 mile S of SR 45 over Abandoned RR and Clear Creek SBL	Seymour	0	NHPP		Bridge Construction	CN	\$4,655,877.60	\$1,163,969.40		\$5,819,847.00			
Indiana Department of Transportation	41061 / 1801171	Init.	SR 37	Bridge Thin Deck Overlay	03.65 miles S of SR 45 over Abandoned RR NBL	Seymour	0	NHPP		Bridge Construction	CN	\$316,046.40	\$79,011.60	\$395,058.00				
Indiana Department of Transportation	41349 / 1801525	Init.	SR 46	Intersect. Improv. W/ Added Turn Lanes	Intersection of SR 46 and 14th Street in Bloomington	Seymour	0	NHPP		Local Funds	CN	\$1,040,000.00	\$260,000.00	\$1,300,000.00				
										Mobility Construction	CN	\$2,000,000.00	\$500,000.00	\$2,500,000.00				
Indiana Department of Transportation	41465 / 1800199	Init.	SR 45	Intersect. Improv. W/ Added Turn Lanes	At the intersection of Pete Ellis Dr	Seymour	0	STPBG		Safety Construction	CN	\$1,833,912.80	\$458,478.20				\$2,292,391.00	
										Safety ROW	RW	\$80,000.00	\$20,000.00		\$100,000.00			
Indiana Department of Transportation	41515 / 1800198	Init.	SR 45	Intersect. Improv. W/ Added Turn Lanes	Intersection of SR 45/West Ison Rd and SR 45/South Bunger Rd	Seymour	.285	NHPP		Safety Construction	CN	\$654,579.20	\$163,644.80				\$818,224.00	
										Safety ROW	RW	\$20,000.00	\$5,000.00		\$25,000.00			
Monroe County	41862 / 1802977	Init.	IR 1062	New Road Construction	Fullerton Pike Phase III Approximately 500' West of Gordon Pike to Rockport Road	Seymour	2.35	STPBG		Local Funds	PE	\$0.00	\$635,000.00	\$635,000.00				
										Bloomington MP	PE	\$450,000.00	\$0.00	\$450,000.00				
Bloomington	41892 / 1900399	Init.	ST 1063	Partial 3-R	1ST Street from Fairview Street to College Avenue	Seymour	0	Multiple		Local Funds	PE	\$0.00	\$700,000.00		\$700,000.00			
										Local Funds	RW	\$0.00	\$90,000.00			\$90,000.00		

*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.

SR 46 & Smith Road Intersection Improvements CE Level 2

APPENDIX I: ADDITIONAL STUDIES



Land and Water Conservation Fund (LWCF) County Property List for Indiana (Last Updated December 2019)

ProjectNumber	SubProjectCode	County	Property
1800026	1800026	Monroe	Fairfax Beach & State Recreation Area, Monroe Res
1800033	1800033	Monroe	Paynetown State Recreation Area, Monroe Reservoir
1800039	1800039	Monroe	Fairfax Beach & State Recreation Area, Monroe Res
1800084	1800084	Monroe	Moore+s Creek State Recreation Area, Monroe Reserv
1800118	1800118E	Monroe	Fairfax SRA
1800129	1800129	Monroe	Karst Farm Park
1800157	1800157	Monroe	Southeast Park
1800158	1800158	Monroe	Crestmont Park
1800160	1800160	Monroe	Park Square Park (Highland Village Park)
1800171	1800171W	Monroe	Paynetown SRA
1800190	1800190A	Monroe	Cascades Community Park
1800190	1800190B	Monroe	Park Ridge East Park
1800190	1800190C	Monroe	Park Ridge West Park
1800190	1800190D	Monroe	Winslow Sports Complex
1800232	1800232	Monroe	Allens Creek State Recreation Area, Monroe Reservoir
1800363	1800363T	Monroe	Allens Creek SRA
1800423	1800423	Monroe	Bryan Park & Pool
1800487	1800487	Monroe	Thomson Park
1800490	1800490	Monroe	Jackson Creek County Park
1800504	1800504	Monroe	Thomson Park
1800509	1800509	Monroe	Thomson Park
1800572	1800572	Monroe	Will Detmer Park

Please note, some of the property names are cut off on the ends due to character limits. Also, park names may have changed and is not reflected on the list.

**Various - this may include multiple sites in multiple counties and should always be included in your searches by county. The Heritage Program, under various, may involve properties throughout most counties. If acquisition of publically owned land or impacts to publically owned land is anticipated, coordination with IDNR, Division of Outdoor Recreation should occur.*