Categorical Exclusion

Appendix E

Red Flag and Hazardous Materials

320 West 8th Street, Suite 100
Bloomington, Indiana 47404
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www.aztec.us

Date: May 29, 2020

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

From: Brynne Taylor
AZTEC Engineering Group, Inc. (AZTEC)
320 W. 8th Street, Suite 100
Bloomington, IN 47404
btaylor@aztec.us

Re: RED FLAG INVESTIGATION
Des. No. 1700735, Local Project
Trail Extension and New Multi-use Path
Route follows a portion of the Indiana Railroad alignment, then Fountain Drive, and North Crescent Road
Bloomington, Monroe County, Indiana

PROJECT DESCRIPTION

The project is located in Bloomington, Monroe County, Indiana, and involves extending the existing B-Line multiuse trail west and north to the intersection of North Crescent Road and 17th Street/West Vernal Pike, via a section of the Indiana Railroad right-of-way (ROW), Fountain Drive, and North Crescent Road. The terminus of the existing multiuse trail is located at the intersection of Adams Street and the Indiana Railroad ROW. The project also involves realigning a section of Fountain Drive, and the intersection of Fountain Drive and North Crescent Road.

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 _1.49_ Permanent ☒ # Acres _2.39_ Not Applicable ☐
Design is ongoing, and ROW needs have not been finalized.

Type of excavation: Based on the latest plans, excavation is limited to near surface except in the southernmost portion of the project along the Indiana Railroad ROW. Activities are anticipated to be excavations for the installation of new storm sewer structures, which will carry water south to a detention basin just north of the Indiana Railroad. In addition, new storm sewer structures will be installed to carry water from the Fountain Drive and Crescent Road intersection to the north to an existing karst feature. Activities may also include excavations associated with retaining walls and utilities. The estimated maximum depth of excavations will be 7.5 feet below ground surface, and excavation activities will be conducted using a track hoe.

Maintenance of traffic: Traffic will be limited to one lane during construction of the trail with flaggers. Road closures will occur (allowing for local access), with detours during realignment of the Fountain Drive and North Crescent Road intersection.

Work in waterway: Yes ☐ No ☒ Above ordinary high water mark: Yes ☐ No ☐
State Project: ☐ LPA: ☒
Any other factors influencing recommendations: N/A

INFRASTRUCTURE TABLE AND SUMMARY

Infrastructure 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	**8***	Recreational Facilities	**9***
Airports[1]	**1**	Pipelines	**1**
Cemeteries	**3**	Railroads	**7**
Hospitals	**N/A**	Trails	**7**
Schools	**3***	Managed Lands	**7**

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

Explanation:

Religious Facilities*: Although none are mapped on the GIS layer, eight (8) religious facilities were identified within the 0.5-mile search radius via Google Maps. The nearest facility, Pentecostal Faith Assembly, is 0.17 mile to the east of the project area. No impact is anticipated.

Recreational Facilities*: Five (5) mapped and four (4) unmapped recreational facilities are located within the 0.5-mile search radius. Although unmapped on the GIS layer, the nearest recreational facility found via Google Maps is the Girls Inc. of Monroe County, which is 0.22 mile to the southeast of the project area. No impact is expected.

Airports: Although not located within the 0.5-mile search radius, one (1) public airport, Monroe County Airport, is located within 3.8 miles (20,000 feet) of the project area. The public airport is located approximately 3.4 miles to the southwest of the project area; therefore, coordination with the Indiana Department of Transportation (INDOT) Aviation will occur.

Pipelines: One (1) pipeline is located within the 0.5-mile search radius. The pipeline, operated by Indiana Gas Company, is 0.20 mile to the southwest of the project area. No impact is expected.

Cemeteries: Three (3) cemeteries are located within the 0.5-mile search radius. The nearest cemetery, White Oak Cemetery, is 0.11 mile to the southeast of the project area. None of these cemeteries are within 100 feet of the limits of the project area, so a Cemetery Development Plan will not be required.

Railroads: Seven (7) railroad segments are located within the 0.5-mile search radius. The nearest segment, operated by Indiana Railroad, is adjoining the southernmost portion of the project area. Coordination with Indiana Railroad will occur.

Trails: Seven (7) trails are mapped within the 0.5-mile search radius. These include three (3) open trails, one (1) planned trail, and three (3) potential trails. The project connects with the existing northern terminus of the B-Line trail (open) and is adjacent to the potential Stinesville/Ellettsville Greenway alignment, and adjacent to the planned Bloomington North Trail. Coordination with the City of Bloomington Parks and Recreation Department and the Monroe County Plan Commission will occur.

Schools*: One (1) mapped and two (2) unmapped schools are situated within the 0.5-mile search radius. The nearest facility, Fairview Elementary School, is 0.47 mile to the southeast of the project area. Although the Aurora Alternative High School is mapped 0.46 mile to the east of the project area, the facility closed in 2010 and is no longer operated as a school. No impact is expected.

Managed Lands: Seven (7) managed lands are located within the 0.5-mile search radius. The nearest managed land, White Oak Cemetery, is 0.11 mile to the southeast. No impact is expected.

WATER RESOURCES TABLE AND SUMMARY

Water Resources 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	**1**	Canal Routes - Historic	**N/A**
Karst Springs	**4**	NWI - Wetlands	**5**
Canal Structures – Historic	**N/A**	Lakes	**11**
NPS NRI Listed	**N/A**	Floodplain - DFIRM	**3**
NWI-Lines	**N/A**	Cave Entrance Density	**N/A**
IDEM[1] 303d Listed Streams and Lakes (Impaired)	**N/A**	Sinkhole Areas	**1**
Rivers and Streams	**2**	Sinking-Stream Basins	**N/A**

[1]Indiana Department of Environmental Management

Explanation:

NWI-Points: One (1) NWI point is located within the 0.5-mile search radius. The point is located approximately 0.28 mile east of the project area. No impact is expected.

Karst Springs: Four (4) karst springs are located within the 0.5-mile search radius. The nearest karst spring is located approximately 0.19 mile east of the project area. No impact is expected.

NWI-Wetlands: Five (5) wetlands are located within the 0.5-mile search radius. The closest wetland is located approximately 0.28 mile to the northeast of the project area. No impact is expected.

Lakes: Eleven (11) lakes are located within the 0.5-mile search radius. One lake is located approximately 0.27 mile west of the project area. No impact is expected.

Floodplains – DFIRM: Three (3) floodplain polygons are located within the 0.5-mile search radius. The nearest floodplain polygon is located approximately 0.46 mile south of the project area. No impact is expected.

Sinkhole Areas: One (1) karst sinkhole area is located within the 0.5-mile search radius, and within the project limits. Coordination with INDOT Ecology and Waterway Permitting will occur.

Rivers and Streams: Two (2) streams are located within the 0.5-mile search radius. The closest stream is located approximately 0.36 mile south of the project area (Lower Salt Creek). No impact is expected.

URBANIZED AREA BOUNDARY SUMMARY

Explanation:

Urbanized Area Boundary (UAB): This project lies within the Bloomington (Monroe County) UAB. Post construction Storm Water Quality Best Management Practices (BMPs) may need to be considered. An early coordination letter with topographic and aerial maps showing the project area will be sent to the Bloomington (Monroe County) Municipal Separate Storm Sewer System (MS4) Coordinator at PO Box 1216, Bloomington, IN 47402-1216.

MINING AND MINERAL EXPLORATION TABLE AND SUMMARY

Mining/Mineral Exploration 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	**N/A**	Mines – Underground	**N/A**

Explanation:

No infrastructure resources related to mining/mineral exploration were identified within the 0.5-mile search radius.

HAZARDOUS MATERIAL CONCERNS TABLE AND SUMMARY

Hazardous Material Concerns 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	**2**	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	**7**	Confined Feeding Operations (CFO)	**N/A**
Voluntary Remediation Program	**N/A**	Brownfields	**3**
Construction Demolition Waste	**N/A**	Institutional Controls	**7**
Solid Waste Landfill	**N/A**	NPDES Facilities	**7**
Infectious/Medical Waste Sites	**N/A**	NPDES Pipe Locations	**N/A**
Leaking Underground Storage (LUST) Sites	**2***	Notice of Contamination Sites	**N/A**

Explanation:

Superfund Sites: Two (2) superfund sites are located within the 0.5-mile search radius; however, the two sites are associated with each other:

- The nearest site, Lemon Lane Landfill, Agency ID No. 42993, is 0.17 mile west of the project area. According to a file review conducted from the IDEM Virtual File Cabinet (VFC), the landfill was impacted with PCB-contaminated waste material, which in turn has impacted the shallow subsurface groundwater. The groundwater flow direction in the vicinity of the former landfill and for the project area has been determined to be to the southeast. Extensive work has been conducted associated with this project, including removal of over 80,000 tons of PCB-contaminated waste material, off-site incineration of over 4,000 PCB-laden capacitors, consolidation of remaining waste material, and placement of a Resource Conservation and Recovery (RCRA)-approved cap over the remaining material. This work was completed in December 2000, with ongoing groundwater monitoring continuing after this date. IDEM subsequently issued a letter dated October 19, 2016 stating that monitoring wells associated with the property were properly abandoned, with other remaining monitoring wells on the Lemon Lane Landfill property continuing to undergo quarterly sampling as well as

surface water monitoring at eight spring and stream locations downgradient of the landfill (all as part of the Long-Term Groundwater Monitoring Plan [LTGMP]). The EPA's Fourth Five-Year Review Report released on 5/18/2020 states the LTGMP was partially modified in May 2019, but quarterly sampling at several stations is still ongoing. Monitoring wells are not anticipated to be located within the project area; however, if wells are encountered in the project area, they should be maintained in place. If they cannot be maintained, then the contractor must contact the INDOT Project Manager who will notify the INDOT Permits Group for proper abandonment of the affected well(s). Coordination with IDEM will occur.

- The Illinois Central Spring Water Treatment Facility, Agency ID No. 42986, is located 0.19 mile south of the project area, and downgradient of the former Lemon Lane Landfill. This facility was constructed as an additional remedial component to the landfill Remedial Action Plan and began operation in May 2000 in conjunction with the activities completed at the landfill by December 2000. This facility is designed to capture the surface emergence of PCB-impacted groundwater originating from beneath the former Lemon Lane Landfill and is treated at the facility. In October 2010, 1,335 tons of additional PCB-contaminated soil and sediment was excavated near the spring and disposed of offsite, and the facility was upgraded to treat impacted waters from the original 1,000 gallons per minute (gpm) to a total of 6,000 gpm. It is estimated that the facility has treated over 2.3 billion gallons of PCB-contaminated spring water since May 2000. Based on the remedial activities at the former Lemon Lane Landfill, the ongoing LTGMP, and the continued operation of the Illinois Central Spring Water Treatment Facility, no impact is expected.

Underground Storage Tank (UST) Sites: Seven (7) UST sites are located within the 0.5-mile search radius. The nearest UST site is the Neidigh Construction Corporation, located 0.05 mile west of the project area. The Neidigh Construction Corporation is located at 2220 W. Vernal Pike (now renamed 2220 Fountain Drive), Bloomington, IN 47408 (Agency ID No. 45816 and Facility ID No. 24498). On April 14, 2020, IDEM issued a Public Notice of Release, Spill or Overfill from a UST system for the site. This notice contained a Leaking Underground Storage Tank (LUST) Initial Incident Report, dated April 9, 2020, that documented contamination identified during the March 30, 2020 UST closure assessment. The associated UST Closure Report documenting the activities conducted on March 30, 2020 was submitted to IDEM on April 30, 2020 by the consultant who conducted the UST closure (SESCO Group). Review of the closure report indicated that soil and groundwater samples were collected for analysis. The soil and groundwater analytical results indicated that limited potential petroleum contaminants slightly exceeded IDEM's applicable Remediation Closure Guide (RCG) screening levels. Based on the low concentrations of the residual petroleum impacts remaining (and lack of potential receptors), the consultant (SESCO Group) did not recommend further environmental investigation. AZTEC is in agreement that no further investigation is necessary and does not anticipate that the limited release from the USTs and associated residual petroleum impacts have migrated to within the limits of the B-Line project. No impact is expected.

Leaking Underground Storage (LUST) Sites*: Two (2) LUST sites, one (1) mapped and one (1) unmapped, are located within the 0.5-mile search radius. Tele-Communications of Indiana, Inc. (TCI), 1600 W 3rd Street, Agency ID No. 41652, is located 0.45 mile south of the project area. According to the IDEM VFC records review, TCI was formerly the site of a cable television provider, with one small gasoline UST on their property which was removed July 10, 1989. Based on the results presented in the closure report, IDEM issued a letter dated July 27, 1990 stating that no further corrective action is required for this property. Based on these findings, no impact is expected.

Brownfields: Three (3) Brownfields sites are located within the 0.5-mile search radius.

- The two Brownfields properties closest to the project area were formerly one site, referred to as *Brownfields III*. This property was divided into six (6) parcels. The three westernmost parcels are called the Bloomington III-Hopewell site, also known as the Ed Greene Property. The three easternmost parcels are called the Bloomington III-Vernal Pike site, which is also known as Brownfields III, LLC.
    - Ed Greene Property, N Hopewell & 8th Street, Agency ID No. 46909. Although the icon is mapped at the intersection of Hopewell and 8th Street, the site is actually located 0.05 mile north of this location at 498 Hopewell Street. This site is approximately 0.05 mile (250 feet) south-southwest from the project

area. This residential property was found to be impacted due to salvage of ballasts containing PCBs by the former property owner (likely obtained from the Lemon Lane Landfill). The records in the VFC indicated that various Phase I/II Environmental Site Assessment (ESAs) have been conducted, and there likely are some residual contaminants remaining in the subsurface (PCBs, metals, and semi-volatile organic compounds [SVOCs]), and possibly some may exceed applicable IDEM RISC default residential and industrial criteria. Currently the property has a soil cover with grass and vegetation to minimize dermal and ingestion exposure pathways. IDEM issued a site status letter, under Agency ID No. 100894 and dated July 3, 2007, concluding that this site had no potential exposure pathways, and that the residual soil contamination presents no current threat to human health or the environment. IDEM further stated that the site did not warrant a response action and does not plan to take a response action at the time of the dated letter. Additional review of the information regarding this site with reference to the project area indicated that the surface gradient is to the southeast and away from the project area (an obvious drainage swale is observed in current aerial photography that matches what was depicted in the environmental reports, and crosses through the central portion of the property). Also, as discussed with the Lemon Lane Landfill, the groundwater flow direction in the vicinity is to the southeast. The described contaminants of concern (COCs) are also not highly mobile, and would not be anticipated to migrate far vertically or laterally from the source area. No impact is expected.

- Brownfields III, LLC, 1309 W Vernal Pike, Agency ID No. 100894. Although the icon is mapped at the intersection of Adams Street and Vernal Pike, the site is actually located at 1309 W Vernal Pike. This site is 300 feet east of the Ed Greene Property, and 0.04 mile (200 feet) south of the project area. A Phase II ESA was completed by Fields Environmental Inc. (Fields) on November 20, 2003 in conjunction with work conducted with the Ed Greene property. In this report, Fields determined that the same environmental conditions exist on this property that presented problems with regards to redevelopment to the Ed Greene property (i.e. the presence of PCBs, metals, and SVOCs in the subsurface soils), and some exceed applicable IDEM RISC default residential and industrial criteria. The previously mentioned drainage swale continues to the east-southeast on the south side of this site, and this site is cross-gradient to downgradient from the project area. Also as previously mentioned, the COCs are not highly mobile. No impact is expected.

Institutional Controls: Seven (7) institutional controls facilities are located within the 0.5-mile search radius.

- The nearest control is collectively five institutional control polygons, which cover the previously mentioned Lemon Lane Landfill (Facility ID No. 7500018). An Environmental Restrictive Covenant (“ERC”) was placed on the property on August 26, 2014 based on the COCs described in the ‘Superfund’ section (i.e., PCBs). The ERC prohibits any soil excavation from the property, or construction of wells or other devices on the property to extract groundwater for consumption, irrigation, or any other use. Coordination with IDEM or EPA does not need to occur as project activities do not encroach upon the Lemon Lane Landfill property. No impact is expected.
- The other two institutional controls cover the Illinois Central Spring Water Treatment Facility (Facility ID No. 7500018). The same ERC that was placed on the Lemon Lane Landfill (as mentioned above) was placed on this property. As such, coordination with IDEM or EPA does not need to occur as project activities do not encroach upon this property. No impact is expected.

NPDES Facilities: Seven (7) NPDES facilities are located within the 0.5-mile search radius. The nearest facilities are as follows:

- JB Salvage, Inc., West Side Auto Parts, IN0064751, is mapped at 1803 W Vernal Pike, adjacent to the project area (0.01 mile or 60 feet across Fountain Drive). The permit expires April 30, 2024. Coordination with JB Salvage, Inc., will occur.

- I69 Section 5, DU 3A-Vernal Pike, Overpass Structure and Associated Roads, INR10K170, is mapped at W Vernal Pike & SR 37, approximately 0.05 mile east of the project area. The permit expires May 27, 2020. No impact is expected.

ECOLOGICAL INFORMATION SUMMARY

The Monroe 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 Environmental Services did indicate the presence of ETR species within the 0.5-mile search radius. Coordination with the United States Fish & Wildlife Service (USFWS) and the Indiana Department of Natural Resources (IDNR) will occur.

A review of the USFWS database did not indicate the presence of endangered bat species in or within 0.5 mile of the project area. The 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".

An inquiry using the USFWS Information for Planning and Consultation (IPaC) website did not indicate the presence of the federally endangered species, the Rusty Patched Bumble Bee, in or within 0.5 mile of the project area. No impact is expected.

RECOMMENDATIONS SECTION

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

INFRASTRUCTURE:
Airports: One (1) public airport, (Monroe County Airport), is located within 3.8 miles (20,000 feet) of the project area. Early coordination with INDOT Aviation will occur.

Railroads: One (1) railroad segment is located adjacent to the project area. Coordination with Indiana Railroad should occur.

Trails: Seven (7) trails are within the 0.5-mile search radius. These include three (3) open trails, one (1) planned trail, and three (3) potential trails. The project connects with the existing northern terminus of the B-Line trail (open) and is adjacent to the potential Stinesville/Ellettsville Greenway alignment, and adjacent to the planned Bloomington North Trail. Coordination with the City of Bloomington Parks and Recreation Department and the Monroe County Plan Commission will occur.

WATER RESOURCES:
Sinkhole Areas: One (1) karst sinkhole area is within the 0.5-mile search radius and is located within the project limits. Coordination with INDOT Ecology and Waterway Permitting will occur.

URBANIZED AREA BOUNDARY:
This project lies within the Bloomington (Monroe County) UAB. Post construction Storm Water Quality BMPs may need to be considered. An early coordination letter with topographic and aerial maps showing the project area should be sent to the Bloomington (Monroe County) MS4 Coordinator at PO Box 1216, Bloomington, IN 47402-1216.

MINING/MINERAL EXPLORATION: N/A

HAZARDOUS MATERIAL CONCERNS:
Superfund Sites: Lemon Lane Landfill, Agency ID No. 42993, is 0.17 mile west of the project area. According to a file review conducted from the IDEM Virtual File Cabinet (VFC), the landfill was impacted with PCB-contaminated waste material, which in turn has impacted the shallow subsurface groundwater. The groundwater flow direction in the vicinity of the former landfill and for the project area has been determined to be to the southeast. Extensive work has been conducted associated with this project, including removal of over 80,000 tons of PCB-contaminated waste material, off-site incineration of over 4,000 PCB-laden capacitors, consolidation of remaining waste material, and placement of a Resource Conservation and Recovery (RCRA)-approved cap over the remaining material. This work was completed in December 2000, with ongoing groundwater monitoring continuing after this date. IDEM subsequently issued a letter dated October 19, 2016 stating that monitoring wells associated with the property were properly abandoned, with other remaining monitoring wells on the Lemon Lane Landfill property continuing to undergo quarterly sampling as well as surface water monitoring at eight spring and stream locations downgradient of the landfill (all as part of the Long-Term Groundwater Monitoring Plan [LTGMP]). The EPA's Fourth Five-Year Review Report released on 5/18/2020 states the LTGMP was partially modified in May 2019, but quarterly sampling at several stations is still ongoing. Monitoring wells are not anticipated to be located within the project area; however, if wells are encountered in the project area, they should be maintained in place. If they cannot be maintained, then the contractor must contact the INDOT Project Manager who will notify the INDOT Permits Group for proper abandonment of the affected well(s). Coordination with IDEM will occur.

NPDES Facilities: JB Salvage, Inc., West Side Auto Parts, IN0064751, is mapped at 1803 W Vernal Pike, adjacent to the project area (0.01 mile or 60 feet across Fountain Drive). The permit expires April 30, 2024. Coordination with JB Salvage, Inc., will occur.

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".

INDOT Environmental Services concurrence: Aaron Aldred Digitally signed by Aaron Aldred Date: 2020.06.08 10:57:14 -04'00' (Signature)

Prepared by:

Brynne Taylor
Environmental Planner
AZTEC Engineering Group, Inc.

Steven P. Sutherland, RG, PG, CEM
Hazardous Materials Group Manager
AZTEC Engineering Group, Inc.

Graphics:

A map is attached 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.

SITE LOCATION: YES

INFRASTRUCTURE: YES

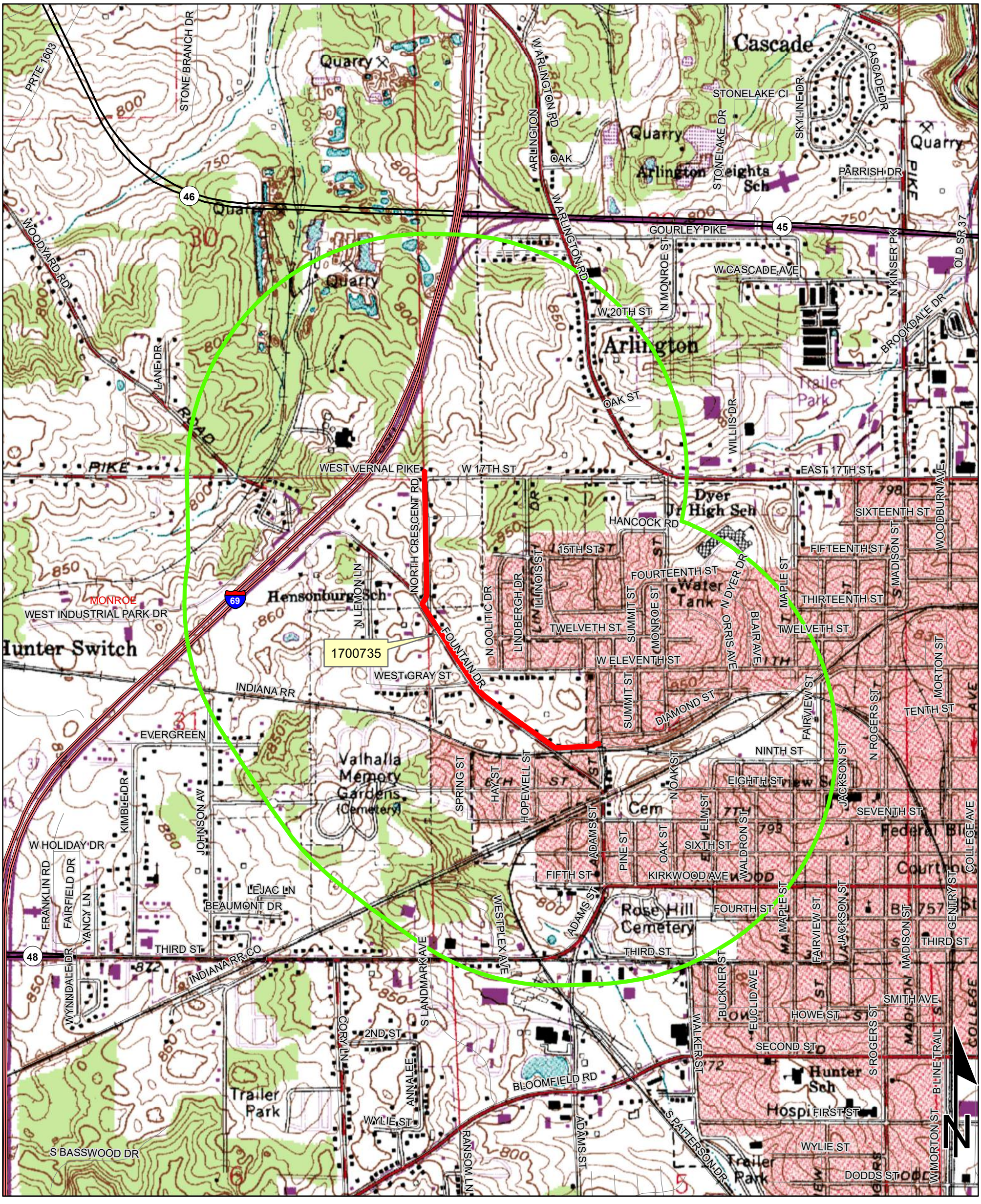
WATER RESOURCES: YES

URBANIZED AREA BOUNDARY: YES

MINING/MINERAL EXPLORATION: N/A

HAZARDOUS MATERIAL CONCERNS: YES

Red Flag Investigation - Site Location
B-Line Trail Extension
Des. No. 1700735, New Multiuse Pathway
Monroe County, Indiana



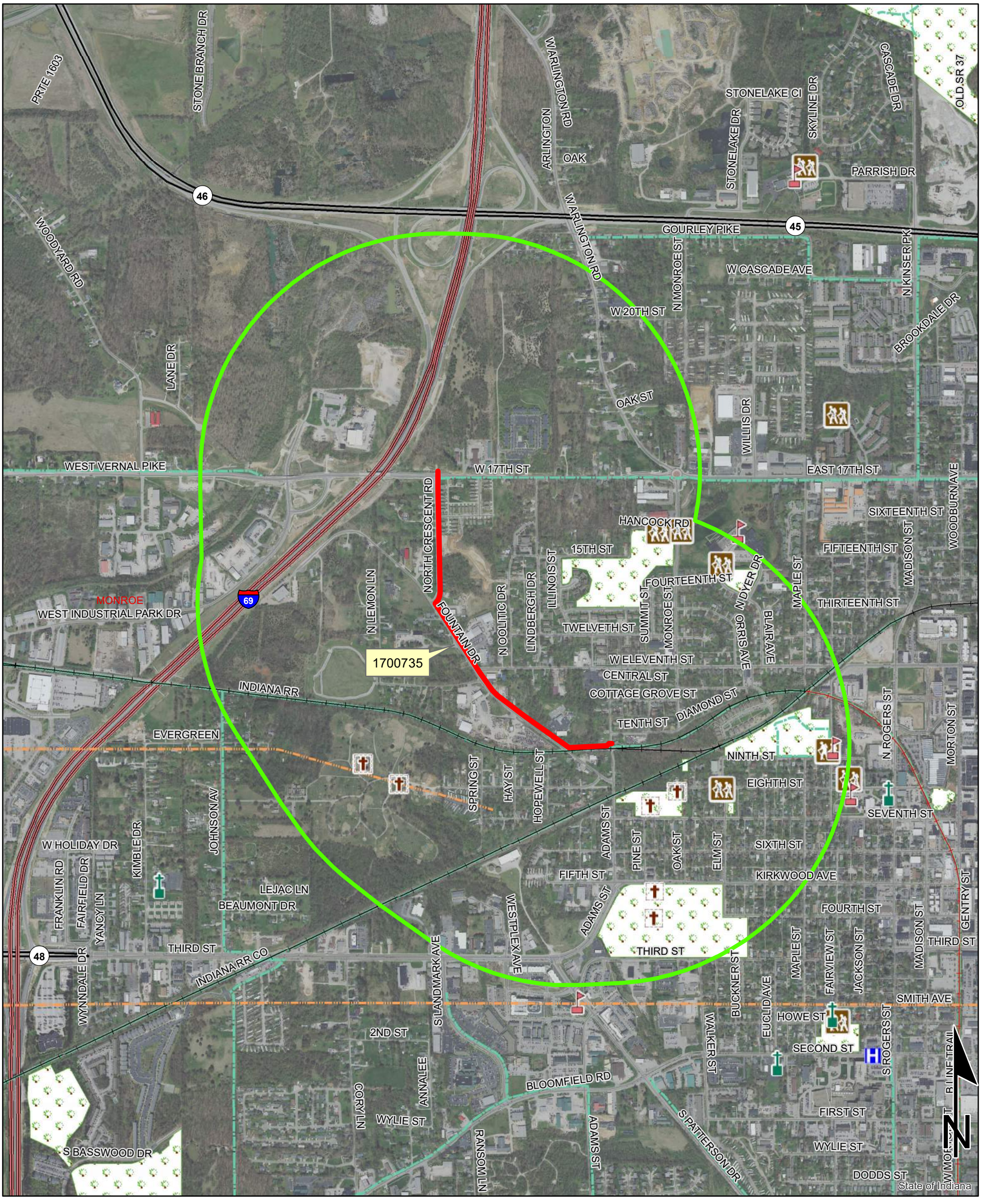
0.25 0.125 0 0.25 Miles

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

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

BLOOMINGTON QUADRANGLE
INDIANA
7.5 MINUTE SERIES
(TOPOGRAPHIC)

Red Flag Investigation - Infrastructure
B-Line Trail Extension
Des. No. 1700735, New Multiuse Pathway
Monroe County, Indiana



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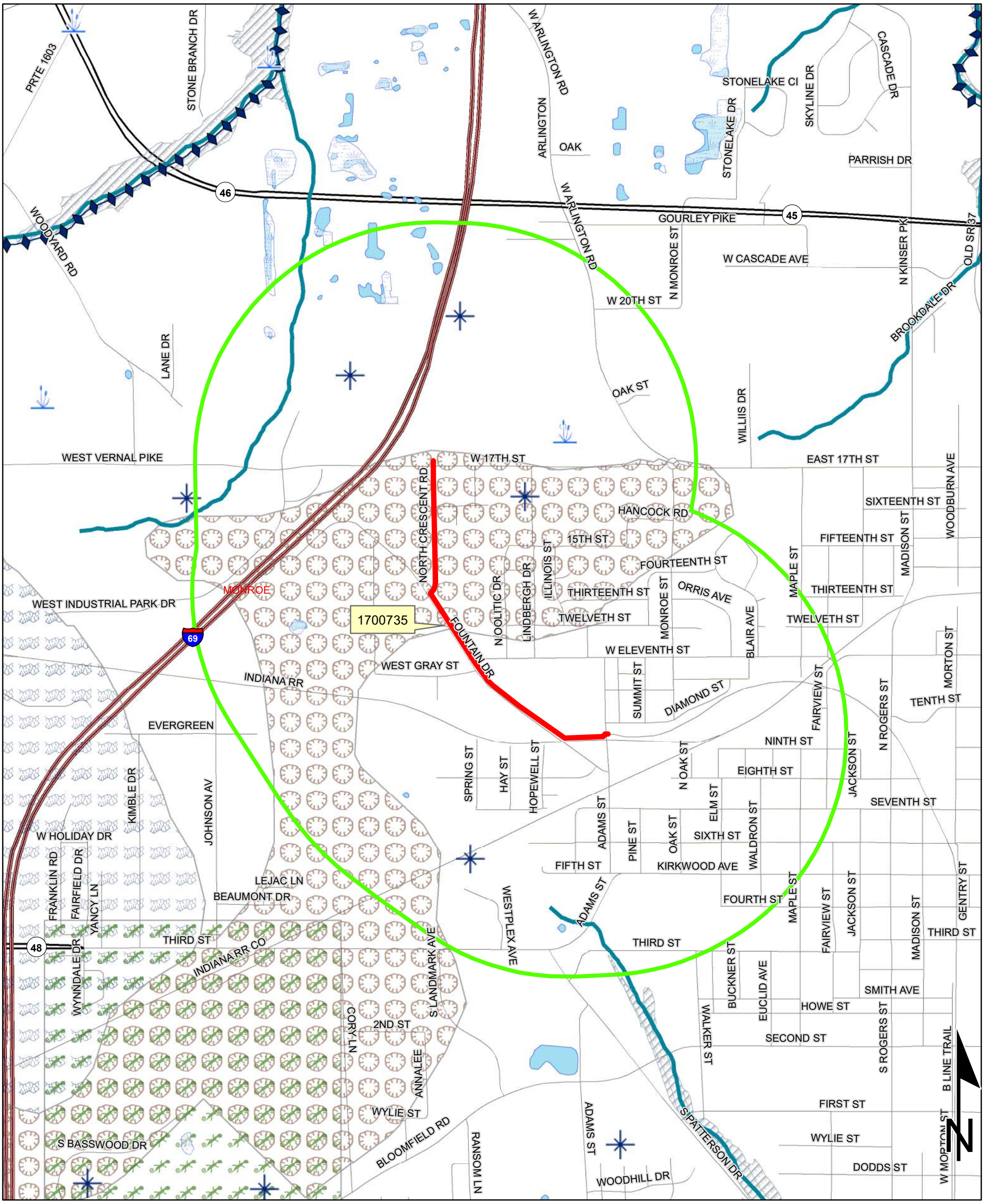
- Religious Facility
- Airport
- Cemeteries
- Hospital
- School
- Recreation Facility
- Pipeline
- Railroad
- Trails
- Managed Lands
- County Boundary
- Project Area
- Half Mile Radius
- Toll
- Interstate
- State Route
- US Route
- Local Road

Red Flag Investigation - Water Resources
B-Line Trail Extension
Des. No. 1700735, New Multiuse Pathway
Monroe County, Indiana



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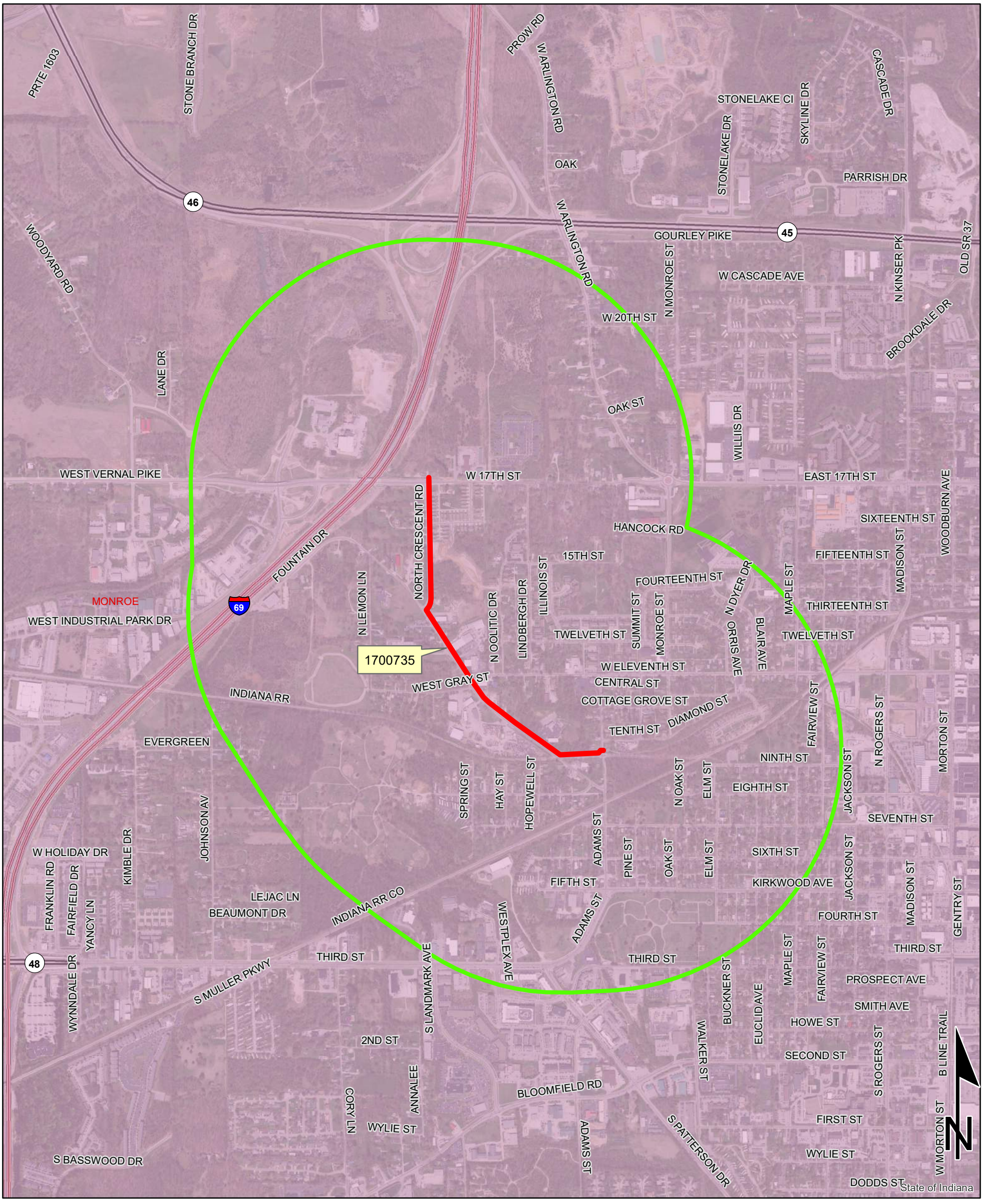
- NWI - Point
- Karst Spring
- NWI- Line
- Impaired_Stream_Lake
- NPS NRI listed
- River
- Canal Structure - Historic
- Canal Route - Historic
- Wetlands
- Lake
- Floodplain - DFIRM
- Cave Entrance Density
- Sinkhole Area
- Sinking-Stream Basin
- County Boundary
- Project Area
- Half Mile Radius
- Toll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

Red Flag Investigation - Urbanized Area Boundary
B-Line Trail Extension
Des. No. 1700735, New Multiuse Pathway
Monroe County, Indiana



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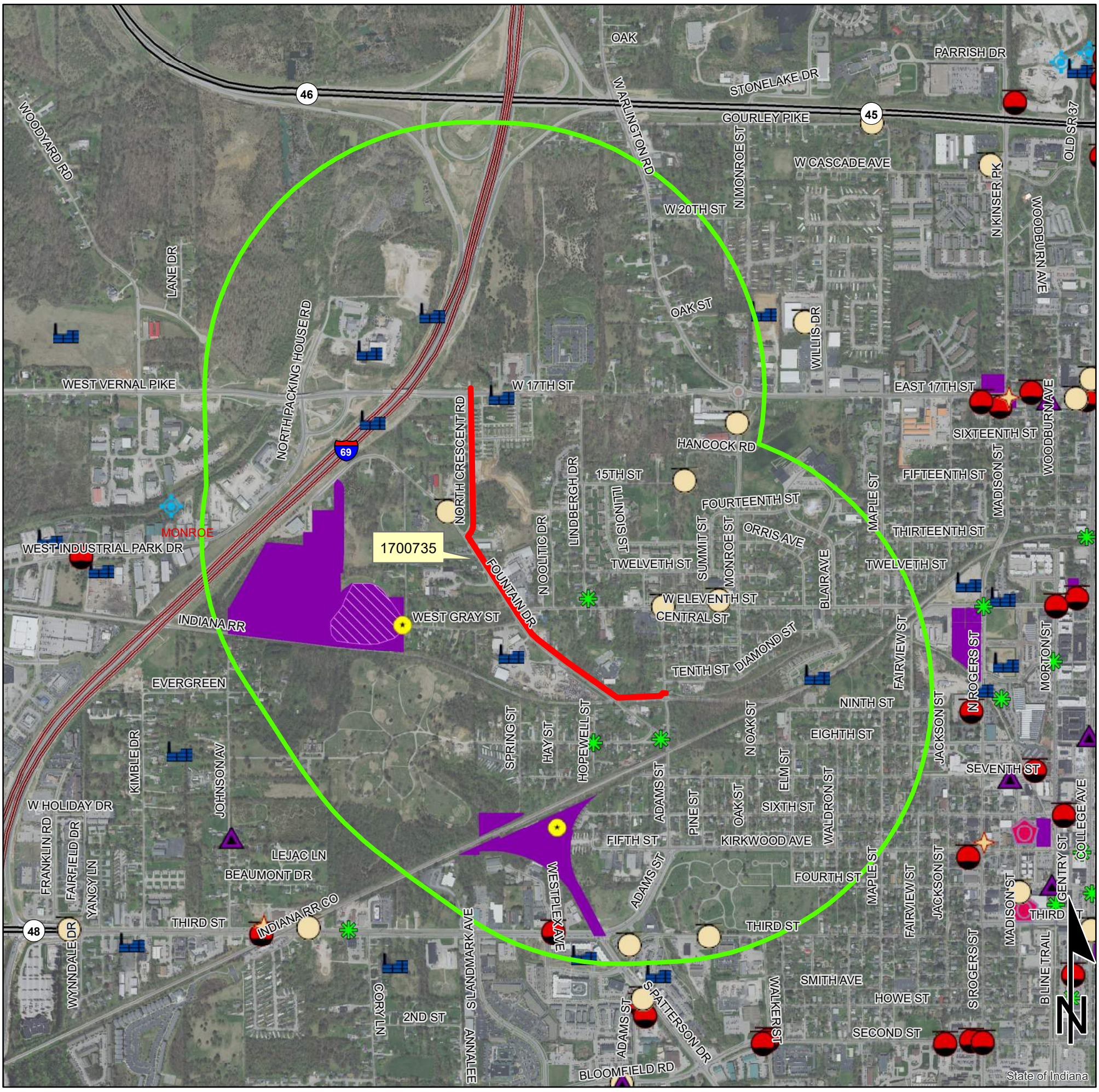
UAB
County Boundary
Project Area
Half Mile Radius
Toll
Interstate
State Route
US Route
Local Road

Red Flag Investigation - Hazardous Material Concerns
B-Line Trail Extension
Des. No. 1700735, New Multiuse Pathway
Monroe County, Indiana



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

0.25 0.125 0 0.25 Miles

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					
Conotyla 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	Tubercled Blossom	LE	SX	GX	SX
Fusconaia subrotunda	Longsolid	C	SX	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)					
Celastrina nigra	Dusky Azure		SE	G4	S1
Pieris virginiensis	West Virginia White		SR	G3?	S3
Insect: Odonata (Dragonflies & Damselflies)					
Rhionaeschna mutata	Spatterdock Darner		ST	G4	S2S3

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Indiana Department of Natural Resources
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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	Blanchard's Cricket Frog		SSC	G5	S4
Hemidactylium 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		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 platypterus	Broad-winged Hawk		SSC	G5	S3B
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
Setophaga citrina	Hooded Warbler		SSC	G5	S3B
Vermivora chrysoptera	Golden-winged Warbler	C	SE	G4	S1B
Mammal					
Lasiurus borealis	Eastern Red Bat		SSC	G3G4	S4
Lasiurus cinereus	Hoary Bat		SSC	G3G4	S4

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Indiana County Endangered, Threatened and Rare Species List

County: Monroe

Species Name	Common Name	FED	STATE	GRANK	SRANK
Mustela nivalis	Least Weasel		SSC	G5	S2?
Myotis lucifugus	Little Brown Bat	C	SE	G3	S2
Myotis septentrionalis	Northern Long Eared Bat	LT	SE	G1G2	S2S3
Myotis sodalis	Indiana Bat	LE	SE	G2	S1
Neotoma magister	Allegheny Woodrat		SE	G3G4	S2
Perimyotis subflavus	Tricolored Bat		SE	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		WL	G4?	S3
Carex timida	Timid Sedge		SE	G2G4	S1
Castanea dentata	American Chestnut		SE	G4	S1
Catalpa speciosa	Northern Catalpa		SR	G4?	S3
Cypripedium parviflorum var. pubescens	Large Yellow Lady's-slipper		WL	G5T5	S3
Epigaea repens	Trailing Arbutus		SR	G5	S3
Hydrastis canadensis	Golden Seal		WL	G3G4	S3
Juglans cinerea	Butternut		ST	G4	S2
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
Oxalis illinoensis	Illinois Woodsorrel		WL	G4Q	S3
Panax quinquefolius	American Ginseng		WL	G3G4	S3
Piptatherum racemosum	Black-fruit Mountain-ricegrass		SR	G5	S3
Platanthera flava var. herbiola	Pale Green Orchis		WL	G4?T4Q	S3
Potamogeton pusillus	Slender Pondweed		WL	G5	S2
Rorippa aquatica	Lake Cress		SE	G4?	S1
Tsuga canadensis	Eastern Hemlock		WL	G5	S3
Zizia aptera	Golden Alexanders		WL	G5	S3
High Quality Natural Community					
Forest - floodplain mesic	Mesic Floodplain Forest		SG	G3?	S1
Forest - upland dry Highland Rim	Highland Rim Dry Upland Forest		SG	GNR	S3
Forest - upland dry-mesic Highland Rim	Highland Rim Dry-mesic Upland Forest		SG	GNR	S3
Forest - upland mesic Highland Rim	Highland Rim Mesic Upland Forest		SG	GNR	S3
Primary - cave aquatic	Aquatic Cave		SG	GNR	SNR
Primary - cliff limestone	Limestone Cliff		SG	GU	S1
Other Significant Feature					

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Indiana County Endangered, Threatened and Rare Species List

County: Monroe

Species Name	Common Name	FED	STATE	GRANK	SRANK
Geomorphic - Nonglacial Erosional Feature - Water Fall and Cascade	Water Fall and Cascade			GNR	SNR

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Categorical Exclusion

Appendix F

Water Resources

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Indiana State Plane West Zone (FIPS zone 1302). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713- 3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was derived from the 2005 Indiana Orthophotography (IndianaMap Framework Data www.indianamap.org). This information was photogrammetrically compiled at a scale of 1:2400 from aerial photography dated spring 2005.

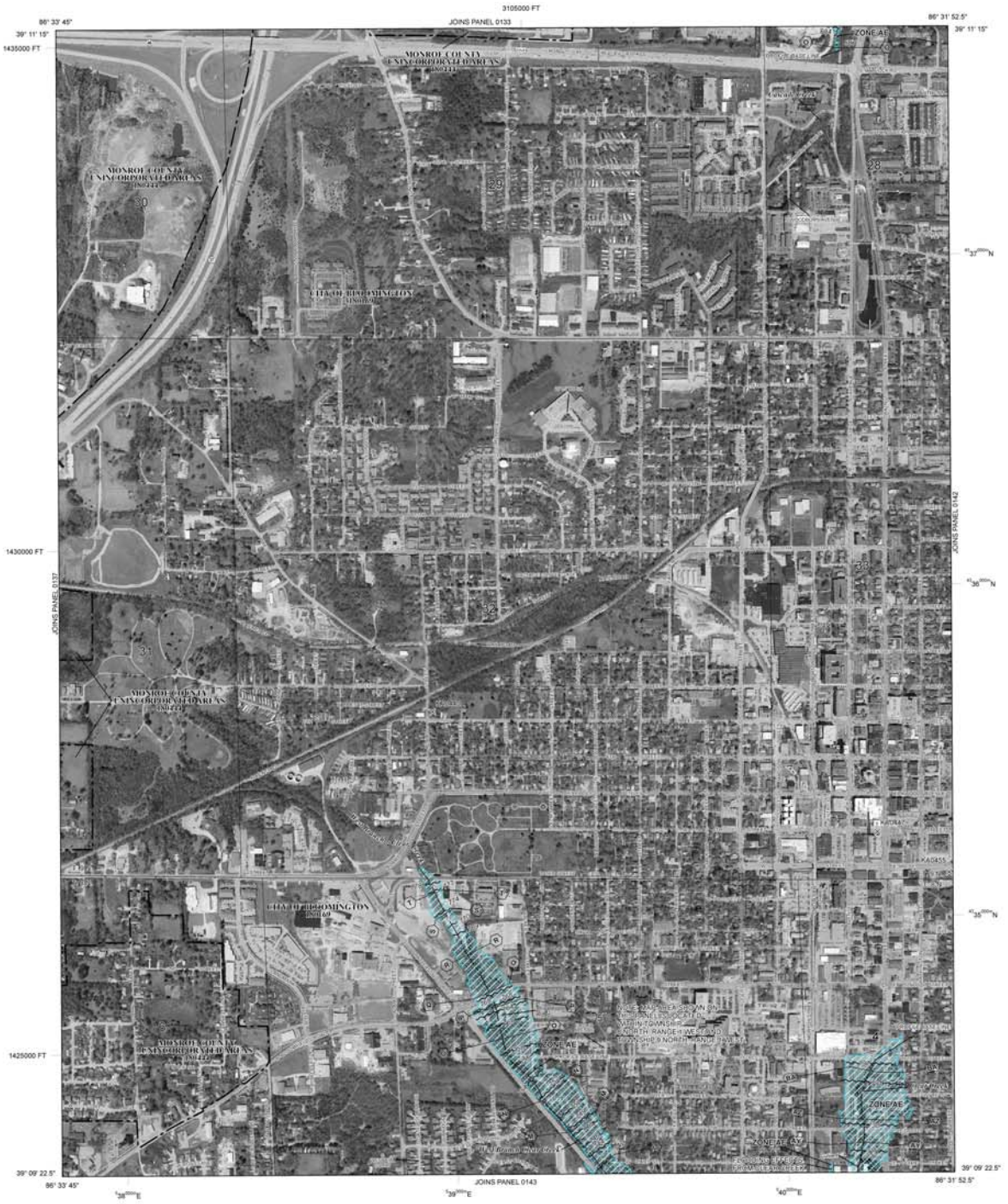
The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map,** how to order products, or the National Flood Insurance Program in general, please call the **FEMA Map Information eXchange (FMIX)** at **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% Annual Chance Floodplain Boundary

0.2% Annual Chance Floodplain Boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.

513 Base Flood Elevation line and value; elevation in feet*

(EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A A Cross section line

23 23 Transect line

Culvert

Bridge

45° 02' 08", 93° 02' 12" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere

3100000 FT 5000-foot ticks: Indiana State Plane West Zone (FIPS Zone 1302), Transverse Mercator projection

1000m N 1000-meter Universal Transverse Mercator grid values, zone 16

DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)

M1.5 River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
December 17, 2010

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

150 0 150 300 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0141D

FIRM

FLOOD INSURANCE RATE MAP

MONROE COUNTY, INDIANA AND INCORPORATED AREAS

PANEL 141 OF 400

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BLOOMINGTON, CITY OF	180169	0141	D
MONROE COUNTY	180444	0141	D

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER 18105C0141D

EFFECTIVE DATE DECEMBER 17, 2010

Federal Emergency Management Agency

WETLAND AND WATERWAY DETERMINATION
B-LINE TRAIL EXTENSION PROJECT

CRESCENT ROAD AND VERNAL PIKE
BLOOMINGTON, INDIANA

Prepared For:

AZTEC Engineering
4561 East McDowell Road
Phoenix, AZ 85008

Prepared By:

LITTLE RIVER CONSULTANTS, LLC
CLAYTON, INDIANA
Project 19-018

September 27, 2019

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EXHIBITS

APPENDICES

1.0 INTRODUCTION

1.1 Project Description

The subject project is located in central Monroe County, Indiana, on the northwest side of the city of Bloomington. The project involves the construction of a new shared use path that will connect the existing B-Line Terminus at Adams Street with the multiuse path on the 17th Street I-69 overpass. The current proposed route for the new trail is broken into 3 sections and would follow the railroad corridor from Adams Street to Fountain Drive (Vernal Pike), Fountain Drive from the railroad corridor to Crescent Road, and Crescent Road from Fountain Drive to 17th Street.

In preparation for this project, a wetland and stream determination was conducted for the proposed project area. The project vicinity is shown on Exhibit 1, and the location is shown on Exhibits 2 through 8. The project is located in the W1/2, S32, T9N, R1W. To access the site from Indianapolis, take SR 37 south to SR 45N/SR-46E. Exit onto SR 46 E and continue east to North Monroe Street and turn right, and then turn right again onto W Gourley Pike. Continue on Gourley Pike for 0.2 miles to W Arlington. Turn left onto W Arlington and take W Arlington south to 17th street to continue straight through the traffic circle onto Monroe Street. Take Monroe St. south to 10th street and turn right/west onto Adams Street. Go approximately 175 feet until you have reached the eastern edge of the southern study area. The southern study area follows the railroad tracks to W Vernal Pike and proceeds northwest for roughly 990 feet. Continue on W Vernal Pike to reach the central study area, and turn right/east onto Crescent Rd to reach the northern study area.

1.2 Methods

The purpose of the study was to identify and delineate wetland and waterway boundaries within the project limits. The wetland determination was based on interpretation of the technical criteria presented in the 1987 *U.S. Army Corps of Engineers Wetlands Delineation Manual* (1987 Corps Manual) and 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region Version 2.0* (Regional Supplement). Jurisdictional wetland and stream determinations were based on policies and procedures in place prior to the 2015 Clean Water Rule which was enjoined in Indiana as of the writing of this report.

Prior to conducting field work, Little River staff reviewed the U.S. Geological Survey (USGS) topographic mapping (Exhibit 2), U.S. Fish & Wildlife Service (USFWS), National Wetlands Inventory (NWI) Map, and National Hydrography Dataset (NHD) (Exhibit 3), Federal Emergency Management Agency (FEMA), Flood Insurance Rate Map (FIRM) (Exhibit 3), U.S. Department of Agriculture, Web Soil Survey (Exhibit 4), LiDAR hill shading (Exhibit 5), current aerial photography (Exhibit 6), and historical aerial photography (Exhibit 7). These resources were used to identify potential wetlands and waterways within the project limits.

Onsite data collection was conducted on July 23, 2019. The current condition of the study area was photo-documented. Photographs can be found in Appendix A. Wetland Data Sheets are included in Appendix B. The location of all photo points and data points are shown on Exhibit 8.

2.0 BACKGROUND INFORMATION

2.1 Land Use/Landscape

Land use within the southernmost study area is a mixture of wooded lots, commercial and residential, with associated stormwater facilities, grassed ditches, manicured lawns, and an existing sidewalk. Land use within the central and northern study area is entirely manicured lawns and landscaped areas. Overall land use is mainly suburban with medium density residential areas interspersed with commercial operations. Several sinkholes are present in the area including some immediately adjacent to the project area. Land use in the extended area to the north, south, and west is mainly low to medium density residential mixed in with light commercial as well as a cemetery to the southwest and SR 37 to the northwest. To the east, land use becomes higher density residential as it gets nearer to the center of Bloomington. The project takes place within the city limits of Bloomington. Large plots of wooded land are mostly absent on the landscape. Slopes in and near the project area are nearly flat, at 0 to 2 percent.

2.2 Desktop Review

The USGS quadrangle map (Exhibit 2) indicates enclosed depressions adjacent to the central study area as well as a potential enclosed depression in the southernmost study area, just north of the railroad tracks. The National Wetland Inventory map (Exhibit 3) shows no wetlands mapped within the project boundary. The Flood Insurance Rate Map (Exhibit 3) does not show any floodways or flood hazard areas in or near the study areas. The National Hydrography Dataset (Exhibit 3) shows no potential waterways in any of the study areas, however there are three underground conduits that intersect the southern study area and continue out of the study limits. The Soils Map (Exhibit 4) shows the area is dominated by Crider Urban land complex with minor amounts of Hosmer-Urban land complex, both of which have a hydric rating of 0. Current and historic aerial photographs (Exhibits 6 and 7) do not indicate potential wet areas within or adjacent to the project limits. The initial desktop review indicates the potential for wetland conditions due to the enclosed depressions which will be investigated during the field visit.

3.0 FINDINGS

The July 23, 2019 onsite inspection found no wetland areas. In the week prior to the onsite visit, the site received 1.85 inches of rainfall including 1.6 inches, on July 17, 2019. On July 18, 2019 the site received 0.10 inches of rainfall and on July 22, 2019 the site received 0.15 inches of rainfall.

3.1 Wetlands

The entire study area was inspected and one enclosed depression with the potential for wetland conditions was found. This enclosed depression is in the southern study area, however it acts as a stormwater BMP. A single data point was collected in the area near the BMP that displayed the highest potential for wetland conditions. There are no other enclosed depressions in the remaining study areas, but there is a karst sinkhole adjacent to the northern part of the southern study area and also to the northern part of the central study area that were identified in the red flag investigation back in 2017. These features should not be a problem as they are being avoided by construction.

Data Point (DP) 1 was collected in the southern study area at what appeared to be the lowest spot within the depressional area. Vegetation was sparse with 50% bare ground surrounding the data point. Dominant vegetation within the tree stratum was box elder (*Acer negundo* – FAC). Within the shrub stratum the dominant vegetation was elderberry (*Sambucus nigra* – FAC), and within the herbaceous layer, the dominant vegetation was virginia creeper (*Parthenocissus quinquefolia* – FACU) and clearweed (*Pilea pumila* – FACW) with a lesser contribution by pale avens (*Geum virginianum* – FACU). This plant community meets the technical definition of a wetland community by passing the dominance test, but is more facultative in nature than indicative of wet conditions. A soil pit was dug to a depth of 20 inches. The first 13 inches of the soil profile is a silt loam, with 10YR 3/2 matrix color and no redox features. From 13-20 inches the soil texture is a silty clay loam with 10YR 5/4 matrix color comprising 70% of the soil profile and 10YR 4/1 as a secondary matrix color comprising 28% of the matrix. The remaining amount of soil exhibited a 10YR 2/1 redox feature. This soil profile does not match the description of any hydric soil indicators in this region. After several minutes, there was no standing water or saturated soil observed in the pit, however primary indicators of hydrology including sediment deposits, drift lines, and watermarks were observed.

This data point only meets two of the three wetland criteria, and as such, it is not located within a wetland. The area the data point is within currently functions as a stormwater BMP, and to that effect there is a grated drop inlet that sits flush with the ground, (Drain 1 on Exhibit 8), and a large concrete stand pipe a few feet away, (Drain 2 on Exhibit 8). These two features are likely the reason that the area exhibits signs of frequent standing water, but not long enough to be a wetland. No other potential wetland areas were noted within the any of the study areas. Photographs of the soil profile, soil pit, and data point surroundings are included in Appendix A. The wetland data sheet is included in Appendix B.

3.2 Waterways

A review of National Hydrography Dataset (NHD) shows three underground conduits that intersect the southern study area. The underground conduits should not be impacted by the project. Onsite observations

confirmed there were no other waterways in the proposed project area. Side ditches along Vernal Pike and Crescent Rd are all grassed with no defined bed and bank or ordinary high-water mark.

4.0 PERMIT AND MITIGATION REQUIREMENTS

Jurisdictional “Waters of the U.S.”, including navigable waterways, their tributaries, and adjacent wetlands, are protected by Sections 404 and 401 of the CWA. Impacts to federal jurisdictional wetlands and streams are regulated in the State of Indiana by the US Army Corps of Engineers (USACE) and Indiana Department of Environmental Management (IDEM). Discharges of dredged or fill material into jurisdictional waters of the United States, including non-isolated wetlands, must obtain a permit from the USACE under the provisions of Section 404 of the CWA. Impacts to these waters also require Section 401 Water Quality Certification through IDEM before a Section 404 permit can be issued by the USACE. Isolated wetlands that are not regulated by the USACE, are still regulated as “Waters of the State”, and require a permit from IDEM under IC 13-18-22.

As currently planned, this project will not involve impacts to any wetlands or jurisdictional waterways, and as such, no Clean Water Act Section 404/401 permit, or State Isolated Wetland Permit, is needed.

5.0 REFERENCES

Cowardin, L. M., V. Carter, and F. C. Golet. 1979. *Classification of Wetlands and Deep Water Habitats of the United States.* U.S. Department of the Interior, Fish and Wildlife Service. Washington D. C. FWS/OBS-79/31.

U.S. Army Corps of Engineers (USACE), Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1*, U.S. Army Engineer Waterway Experiment Station, Vicksburg, Mississippi.

U.S. Army Corps of Engineers (USACE), Environmental Laboratory. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region Version 2.0*. U.S. Army Engineer Research and Development Center, Vicksburg, Mississippi.

United States Department of Agriculture, Natural Resources Conservation Service (USDA). Web Soil Survey.

Exhibits

NOTE: These Exhibits are part of the Wetland and Waterway Determination Report.

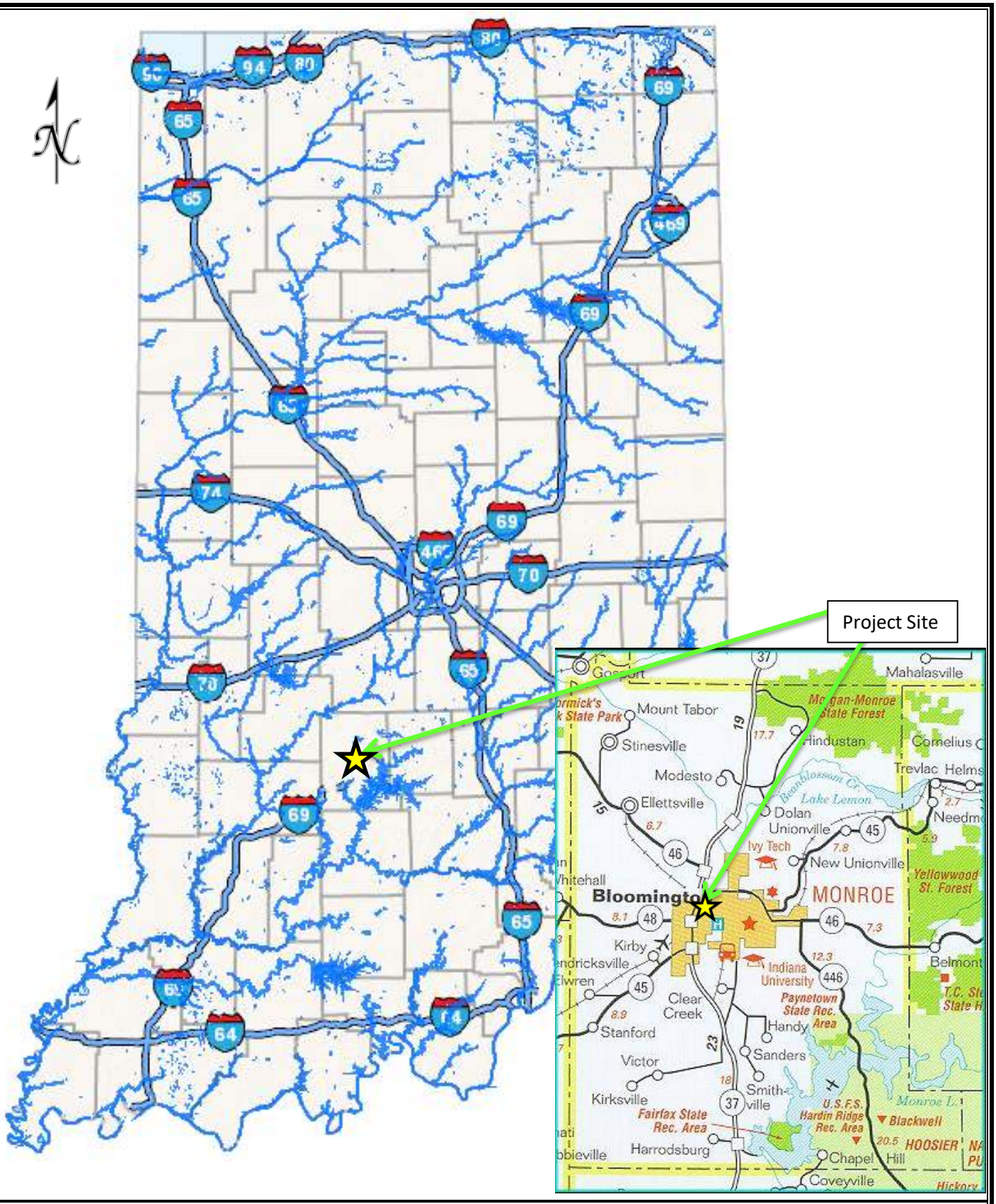


Exhibit 1 – Project Vicinity
Wetland and Waterways Determination

Created: August 27, 2019
Source: Indiana Transportation Map
Scale: No Scale

B-Line Expansion
Bloomington, Indiana
Project No: 19-018

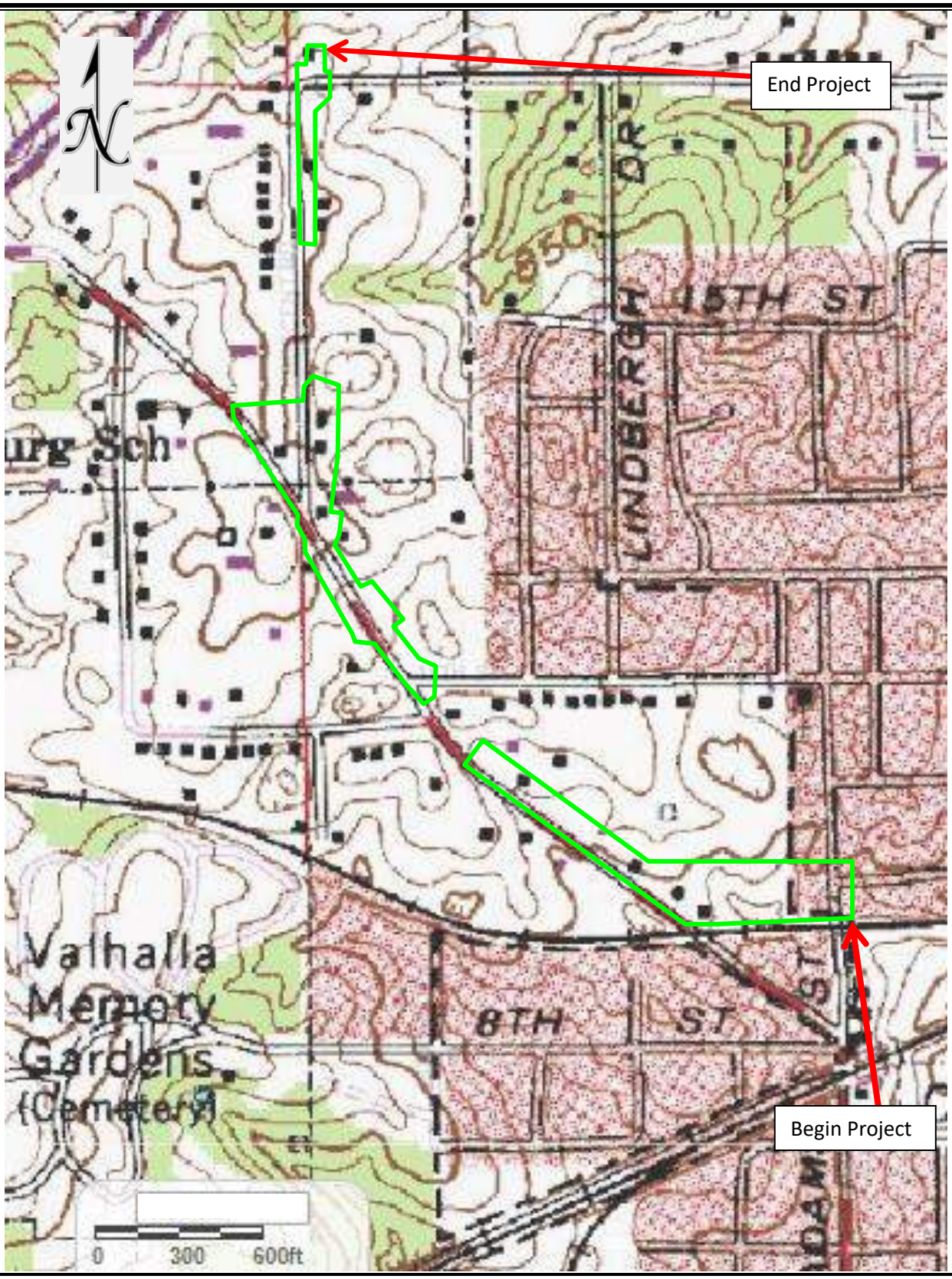


Exhibit 2 – USGS Quadrangle Map
Wetland and Waterways Delineation

Created: August 26, 2019
Source: IndianaMAP, USGS Bloomington Quad
Scale: As shown

B-Line Trail Expansion
Bloomington, IN
Project No: 19-018

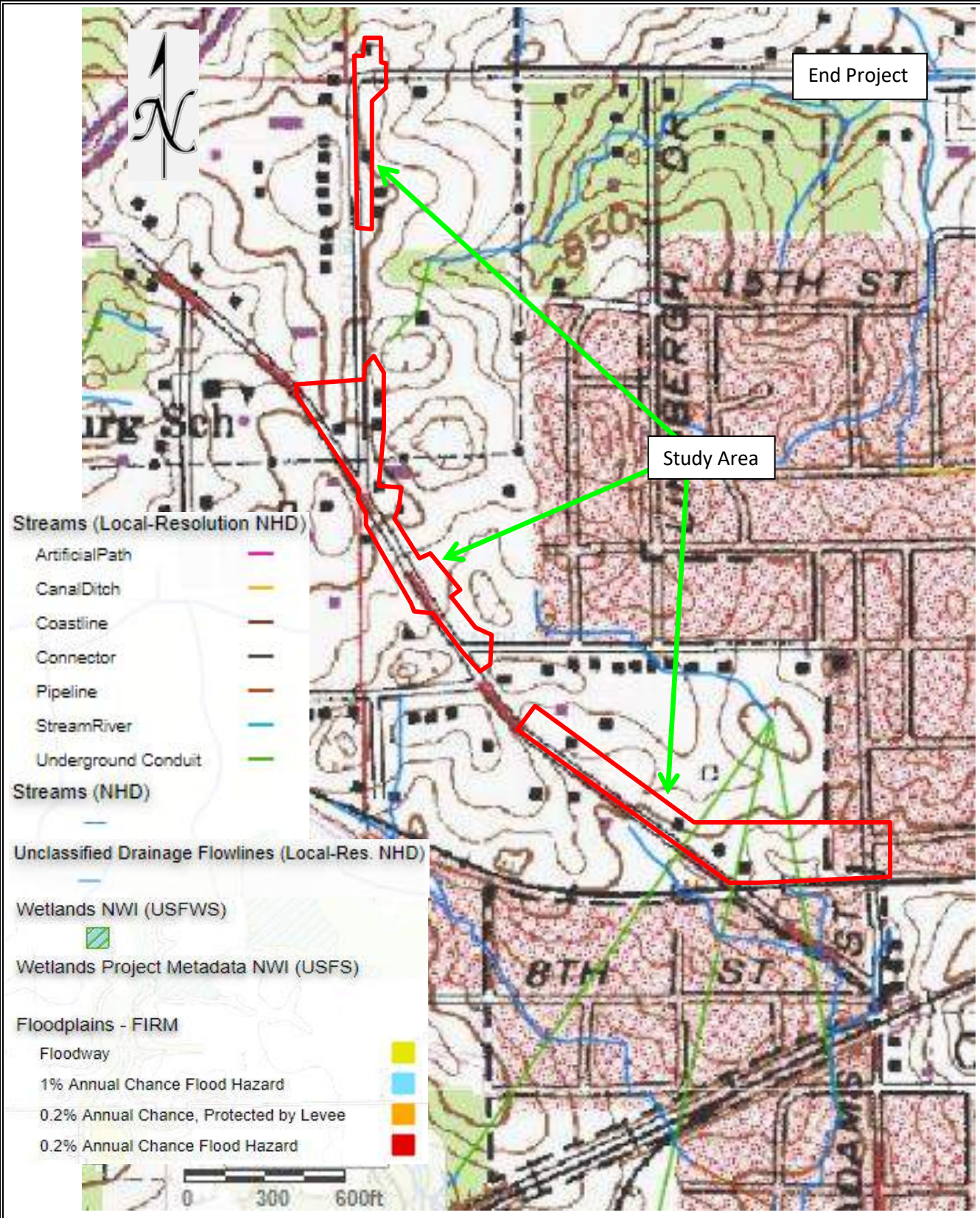
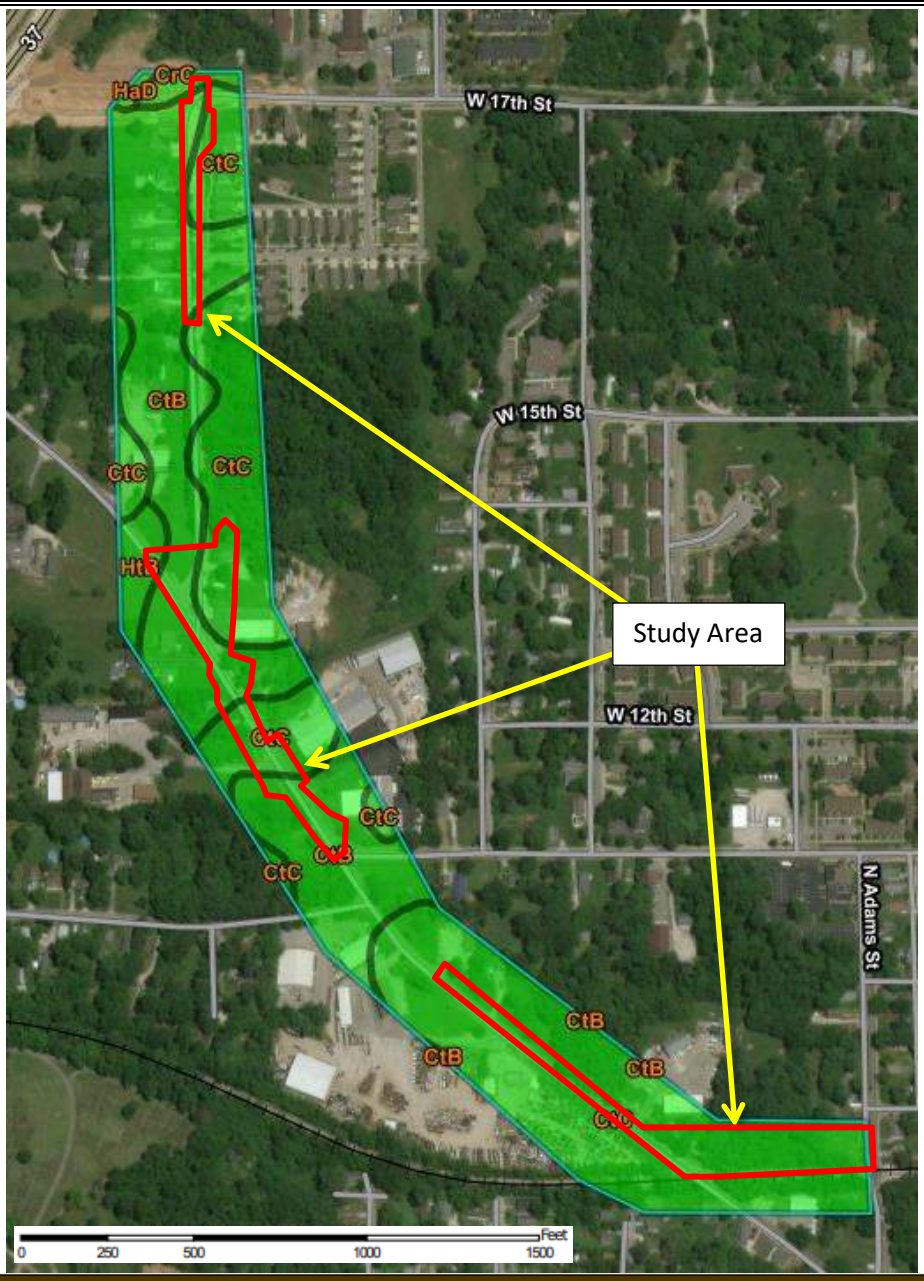


Exhibit 3 – Wetland and Floodplain Map
Wetland and Waterways Delineation

Created: August 26, 2019
Source: USFWS National Wetland Inventory Map
FEMA Flood Insurance Rate Map
Scale: As shown

B-Line Trail Expansion
Bloomington, IN
Project No: 19-018



Tables — Hydric Rating by Map Unit — Summary By Map Unit

Summary by Map Unit — Monroe County, Indiana (IN105)

Summary by Map Unit — Monroe County, Indiana (IN105)

Map unit symbol	Map unit name	Rating
CrC	Crider silt loam, 6 to 12 percent slopes	0
CtB	Crider-Urban land complex, 2 to 6 percent slopes	0
CtC	Crider-Urban land complex, 6 to 12 percent slopes	0
HaD	Hagerstown silt loam, 12 to 18 percent slopes	0
HtB	Hosmer-Urban land complex, 2 to 12 percent slopes	0

Exhibit 4 – Soil Survey
Wetland and Waterways Delineation

Created: August 26, 2019
Source: NRCS Web Soil Survey
Scale As Shown

B-Line Trail Expansion
Bloomington, IN
Project No: 19-018

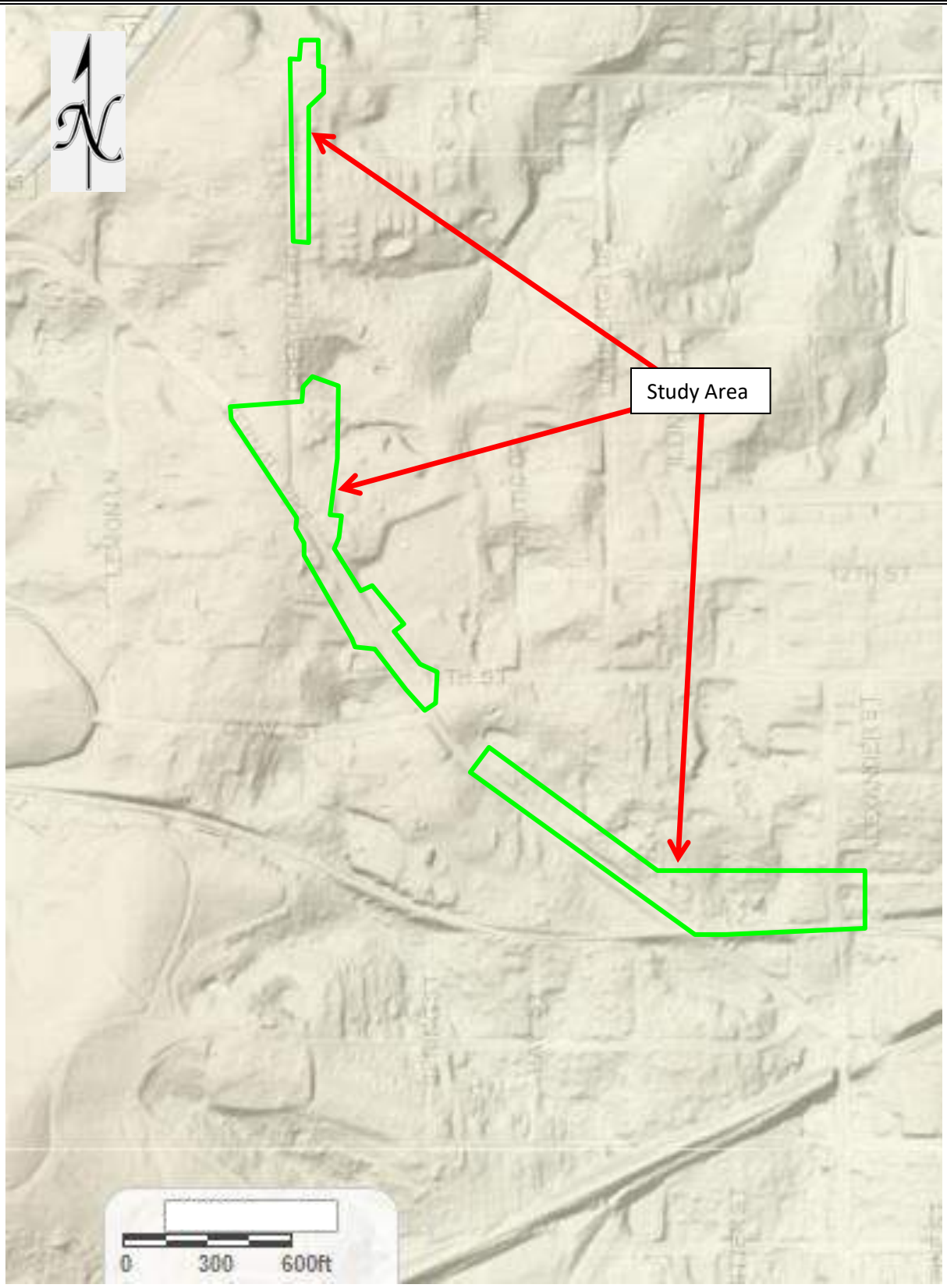


Exhibit 5 – LiDAR Color Hillshade
Wetland and Waterways Delineation

Created: August 26, 2019
Source: IndianaMAP, LiDAR Color Hillshade
Scale: As shown

B-Line Trail Expansion
Bloomington, IN
Project No: 19-018

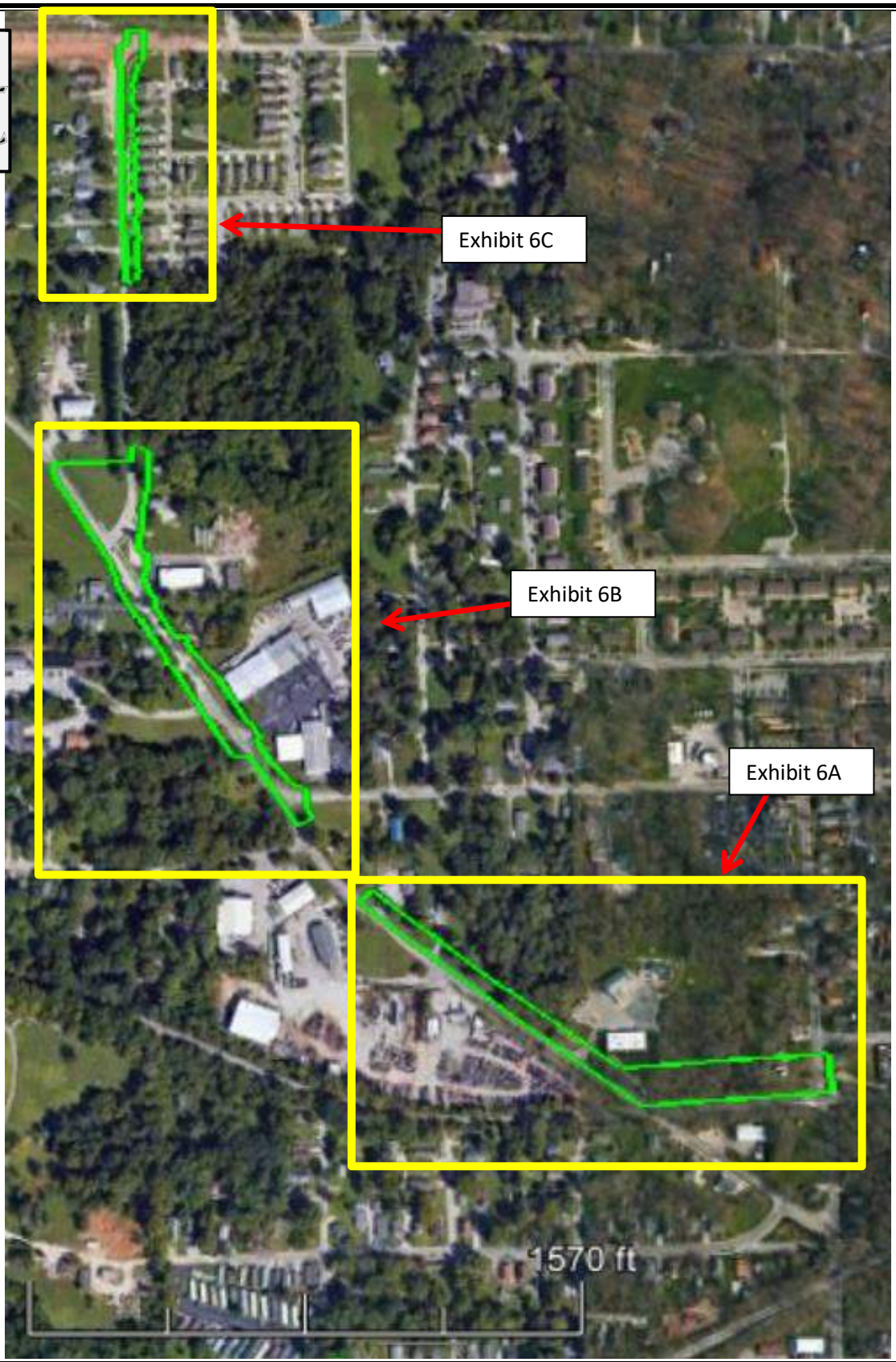


Exhibit 6 – Aerial Photograph
Wetland and Waterways Delineation

Created: August 26, 2019
Source: GoogleEarth, Image Date March 2016
Scale: As Shown

B-Line Trail Expansion
Bloomington, IN
Project No: 19-018

Exhibit 6A - Aerial Photograph
Wetland and Waterways Delineation

Created: August 26, 2019
Source: GoogleEarth, Image Date March 2016
Scale: As Shown

B-Line Trail Expansion
Bloomington, IN
Project No: 19-018

Exhibit 6B – Aerial Photograph
Wetland and Waterways Delineation

Created: August 26, 2019
Source: GoogleEarth, Image Date March 2016
Scale: As Shown

B-Line Trail Expansion
Bloomington, IN
Project No: 19-018

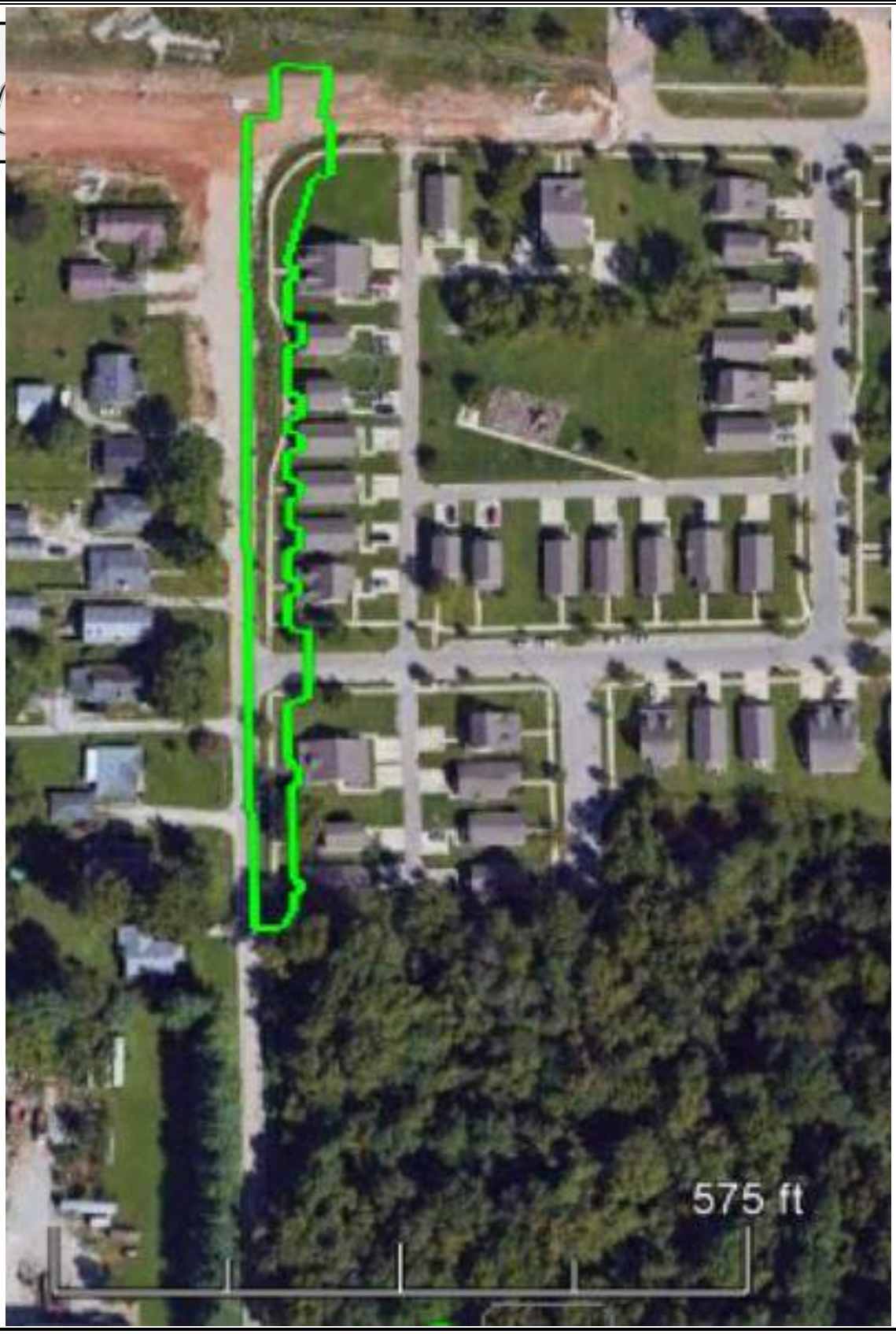


Exhibit 6C – Aerial Photograph
Wetland and Waterways Delineation

Created: August 26, 2019
Source: GoogleEarth, Image Date March 2016
Scale: As Shown

B-Line Trail Expansion
Bloomington, IN
Project No: 19-018

Exhibit 7 – Historic Aerial Photographs
Wetland and Waterways Delineation

Created: August 26, 2019
Source: Google Earth (2005)
Scale: As Shown

B-Line Trail Expansion
Bloomington, IN
Project No: 19-018

Exhibit 7A – Historic Aerial Photographs
Wetland and Waterways Delineation

Created: August 26, 2019
Source: Google Earth (2005)
Scale: As Shown

B-Line Trail Expansion
Bloomington, IN
Project No: 19-018

Exhibit 7B – Historic Aerial Photographs
Wetland and Waterways Delineation

Created: August 26, 2019
Source: Google Earth (2005)
Scale: As Shown

B-Line Trail Expansion
Bloomington, IN
Project No: 19-018

Exhibit 7C – Historic Aerial Photographs
Wetland and Waterways Delineation

Created: August 26, 2019
Source: Google Earth (2005)
Scale: As Shown

B-Line Trail Expansion
Bloomington, IN
Project No: 19-018

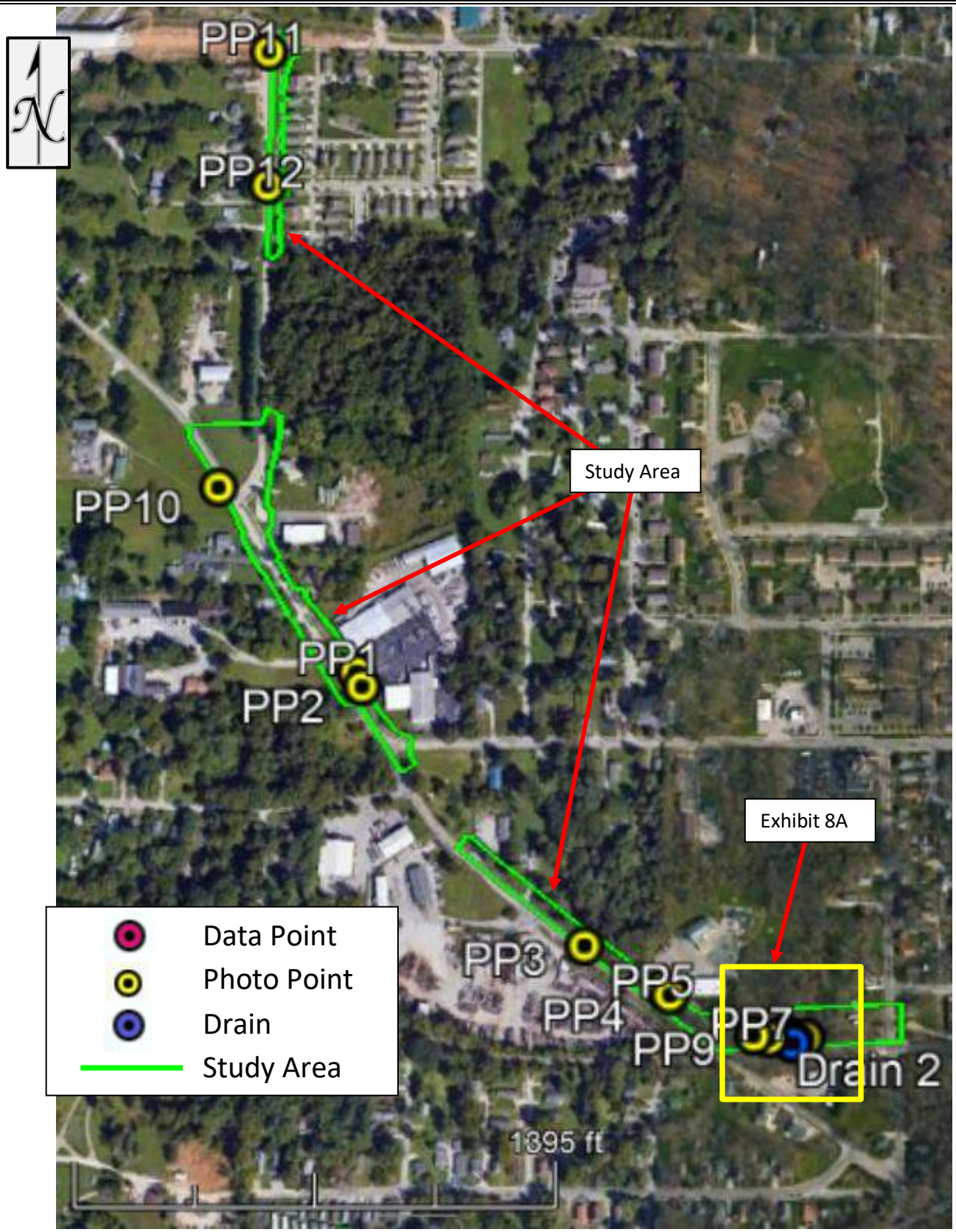


Exhibit 8 – Feature Locations
Wetland and Waterways Delineation

Created: August 26, 2019
Source: GoogleEarth, Imagery Data March 2016
GPS Data: Trimble Geo XT 2008 Series
Scale: As Shown

B-Line Trail Expansion
Bloomington, IN
Project No: 19-018

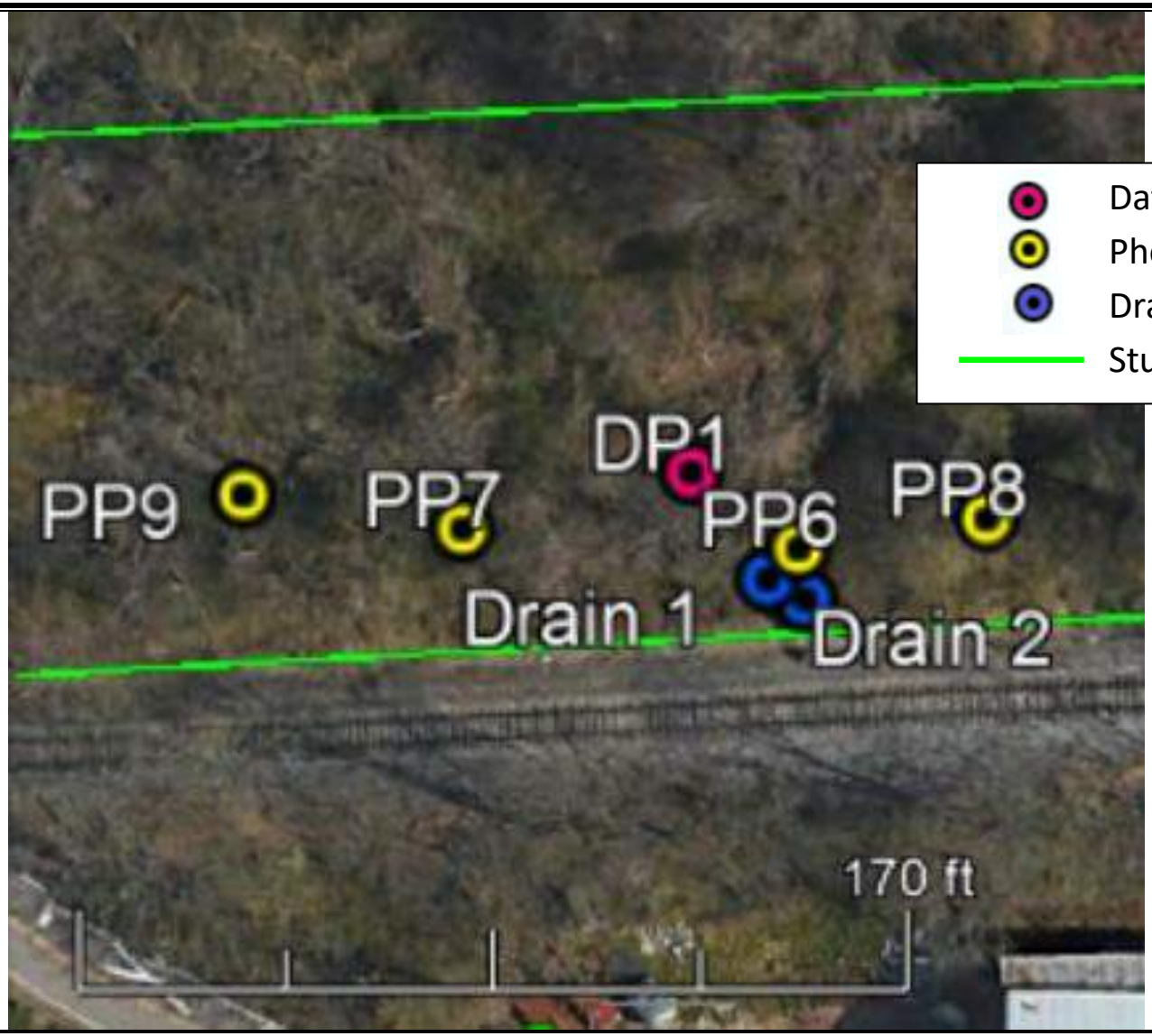


Exhibit 8A – Feature Locations
Wetland and Waterways Delineation

Created: August 26, 2019
Source: GoogleEarth, Imagery Data March 2016
GPS Data: Trimble Geo XT 2008 Series
Scale: As Shown

B-Line Trail Expansion
Bloomington, IN
Project No: 19-018

Appendix A

Photographs

NOTE: This Appendix A is part of the Wetland and Waterway Determination Report.

PP1 – Looking N at grassed side ditch along E Vernal Pike

PP2 – Looking S at grassed side ditch along E Vernal Pike

PP3 – Looking N at grassed side ditch along E Vernal PIke

PP4 – Private property stormwater management feature

PP5 – Private property stormwater management feature

PP6 –Concrete stand pipe

PP6 –Buried drop inlet

PP7 – Looking east at Potential Wetland Area and Data Point 1

PP8 – Looking west at Potential Wetland Area and Data Point 1

PP9 – Storm Drain Outlet at West Edge of Potential Wetland Area

PP10 – Looking north along W Vernal Pike

PP11 – Looking south along W Crescent

PP11 – Looking south along E Crescent

PP12 – looking north along E Crescent

PP12 – Looking north along W Crescent

PP12 – Looking south along E Crescent

PP12 – Looking S along W Crescent

Data Point 1 Soil Pit and Hydrology

Data Point 1 Soil Profile

Data Point 1 Location

Appendix B

Wetland Data Sheets

NOTE: This Appendix A is part of the Wetland and Waterway Determination Report.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: B-Line Trail Expansion City/County: Bloomington/Monroe Sampling Date: 07/23/2019

Applicant/Owner: Aztec Engineering State: IN Sampling Point: DP1

Investigator(s): Rachele Baker, John Taulman Section, Township, Range: S32, T9N, R1W

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

Slope (%): 0-2 Lat: 39.170888 Long: -86.550818 Datum: WGS 84

Soil Map Unit Name: Crider-Urban land complex NWI classification: non-wetland

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 100 sq ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer negundo	20	Yes	FAC
2.			
3.			
4.			
5.			
	20 = Total Cover		
Sapling/Shrub Stratum (Plot size: 100 sq ft)			
1. Sambucus nigra	10	Yes	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 25 sq ft)			
1. Parthenocissus quinquefolia	30	Yes	FACU
2. Pilea pumila	15	Yes	FACW
3. Geum virginianum	10	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	55 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	30	x 3 =	90
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	75 (A)		240 (B)

Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

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

This plant community is dominated by facultative species and the prevalence index is <3. Even though the vegetation passes the dominance test it is not a strong indicator of wetland conditions.

SOIL

Sampling Point: DP1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR3/2	100					SiL	
13-20	10YR5/4	70	10YR2/1	2	C	M	SiCL	
13-20	10YR4/1	28					SiCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Remarks: