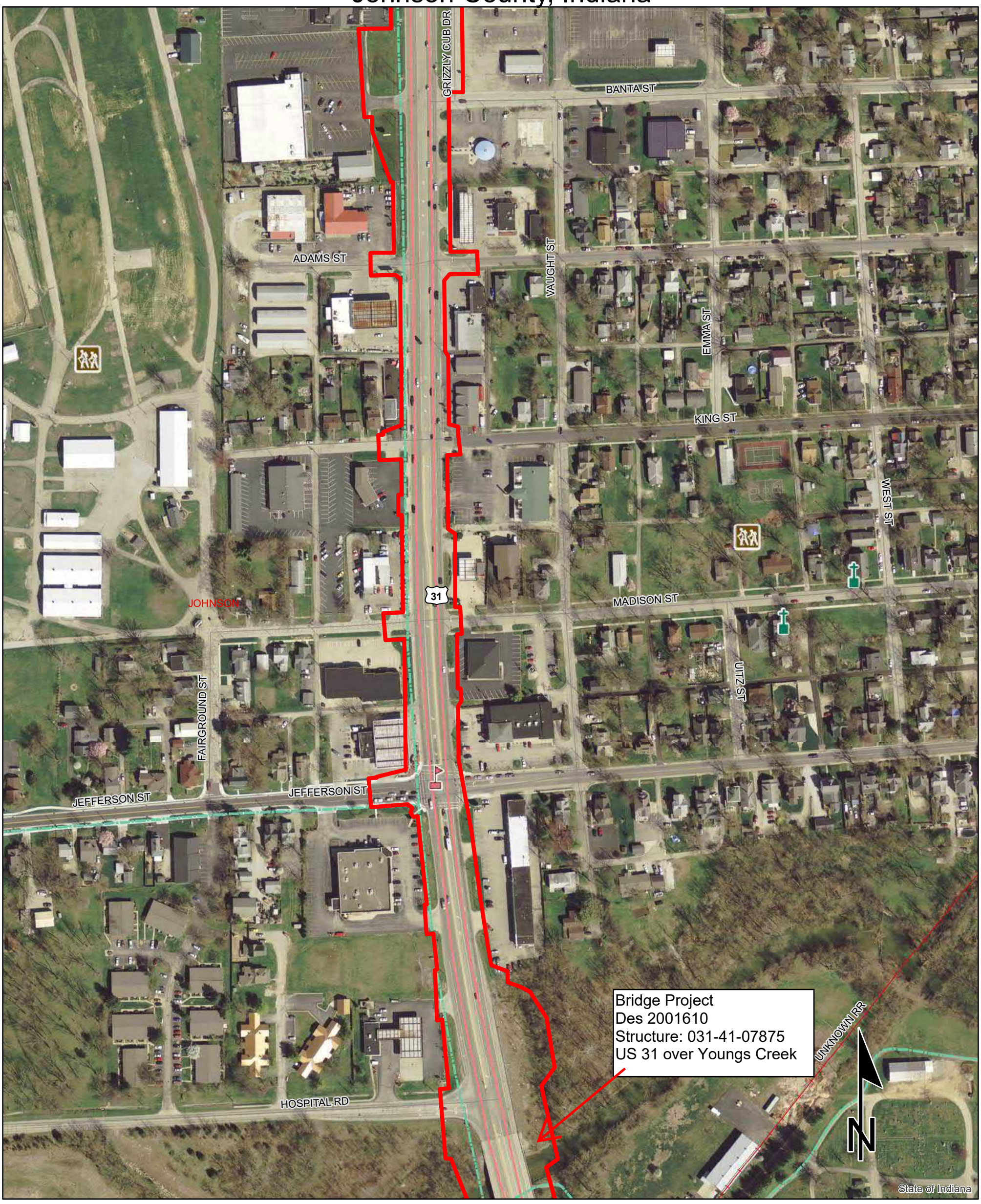
Red Flag Investigation - Infrastructure
US 31, from 4.35 mi N of to 1.05 mi S of SR 44/SR 144
Des. No. 1800082, 1800272, and 2001610
Corridor Improvement, Small Structure, and Bridge Project
Johnson County, Indiana



0.05 0.025 0 0.05 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

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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
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Red Flag Investigation - Infrastructure
US 31, from 4.35 mi N of to 1.05 mi S of SR 44/SR 144
Des. No. 1800082, 1800272, and 2001610
Corridor Improvement, Small Structure, and Bridge Project
Johnson County, Indiana

0.1 0.05 0 0.1 Miles

Sources:

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Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)

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Red Flag Investigation - Water Resources
US 31, from 4.35 mi N of to 1.05 mi S of SR 44/SR 144
Des. No. 1800082, 1800272, and 2001610
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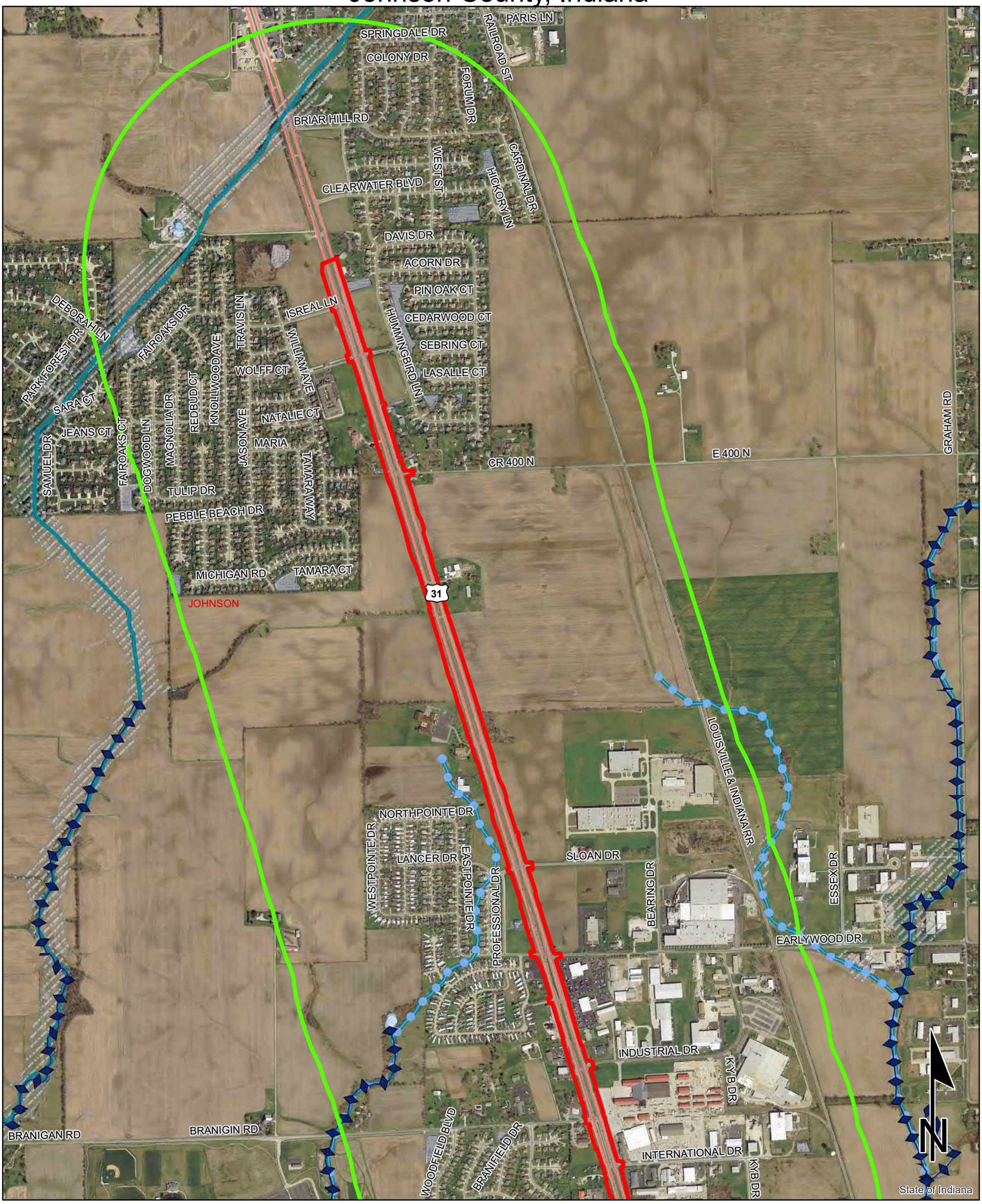

0.25 0.125 0 0.25 Miles

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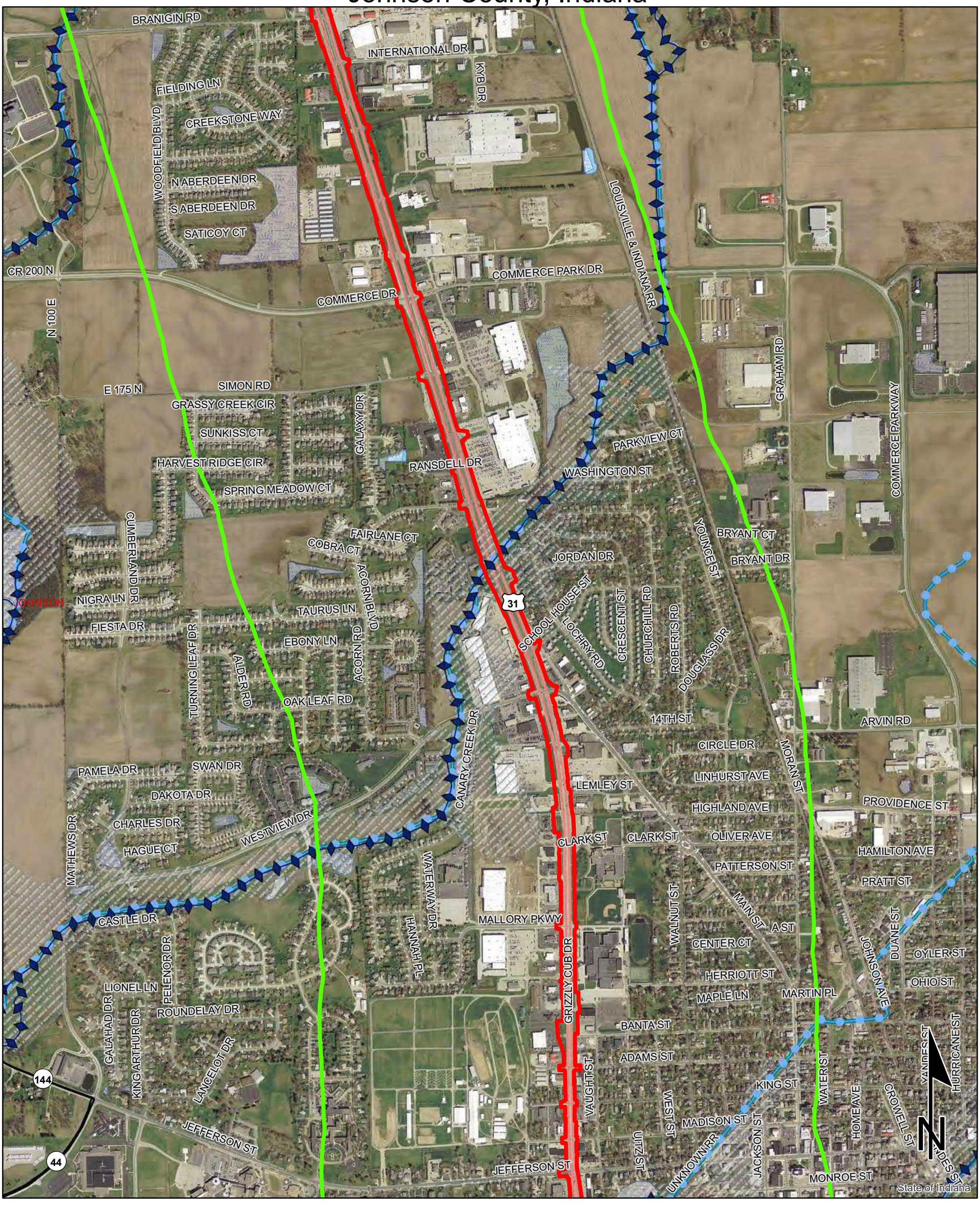

0.25 0.125 0 0.25 Miles

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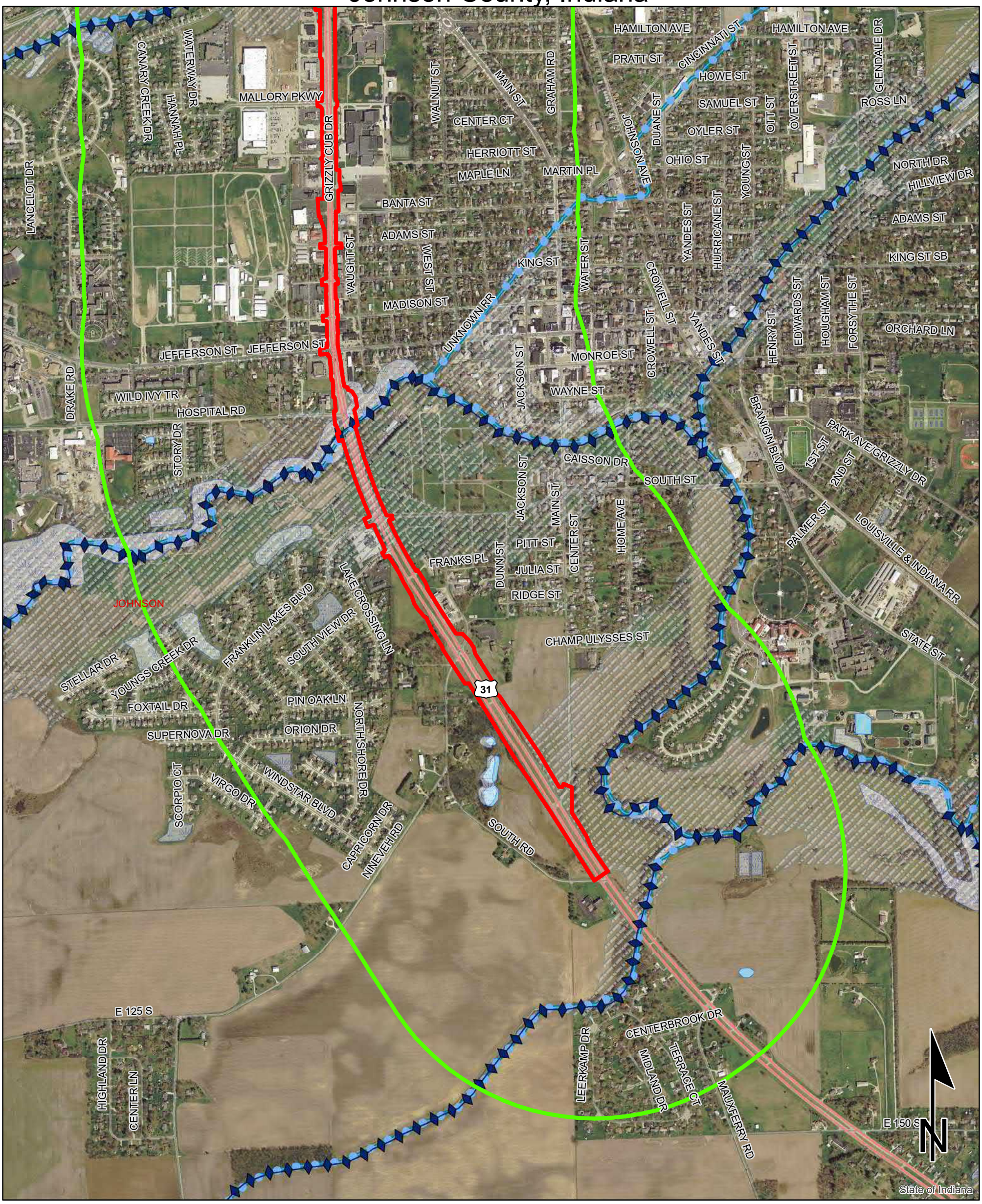

0.25 0.125 0 0.25 Miles

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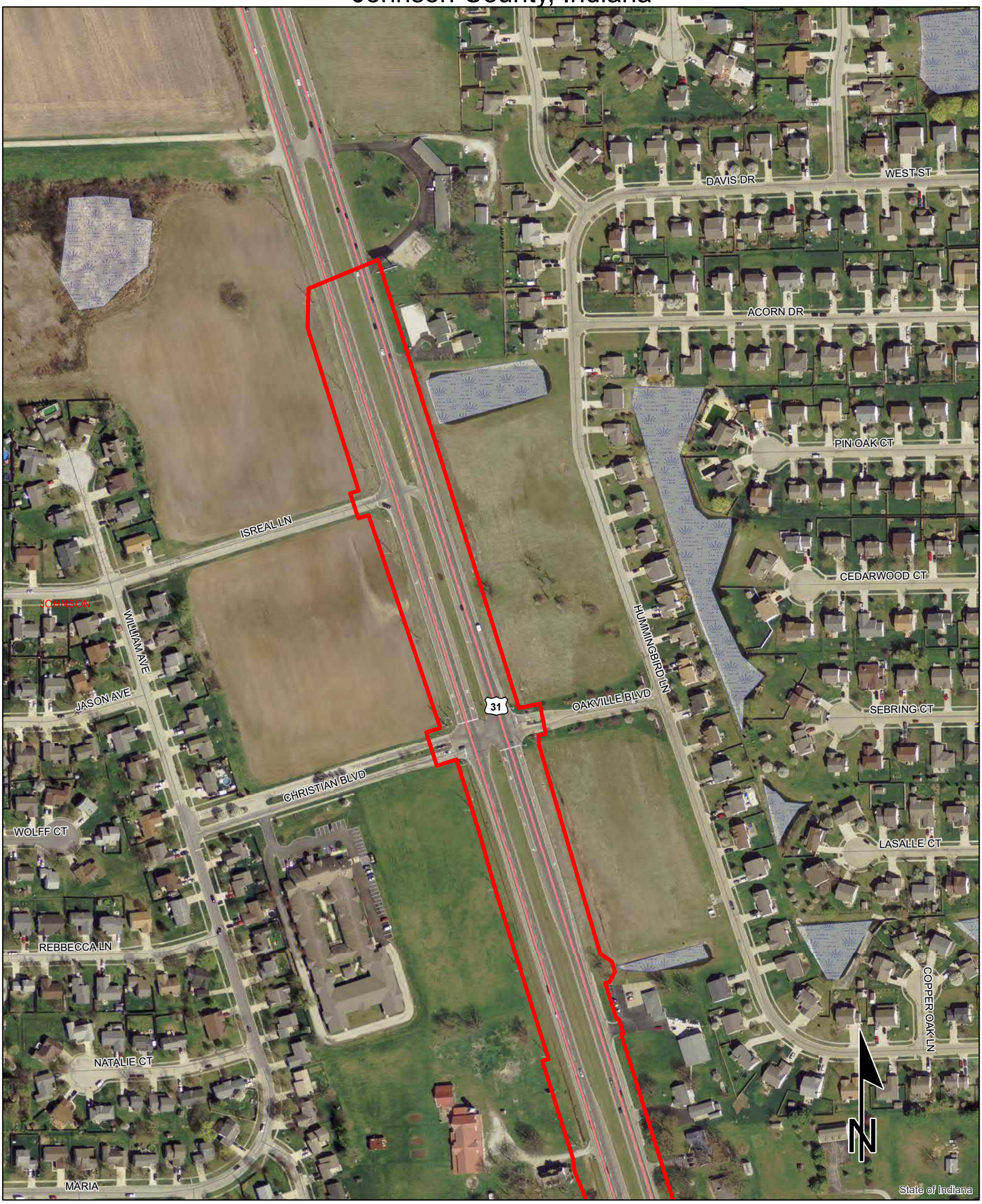

0.05 0.025 0 0.05 Miles

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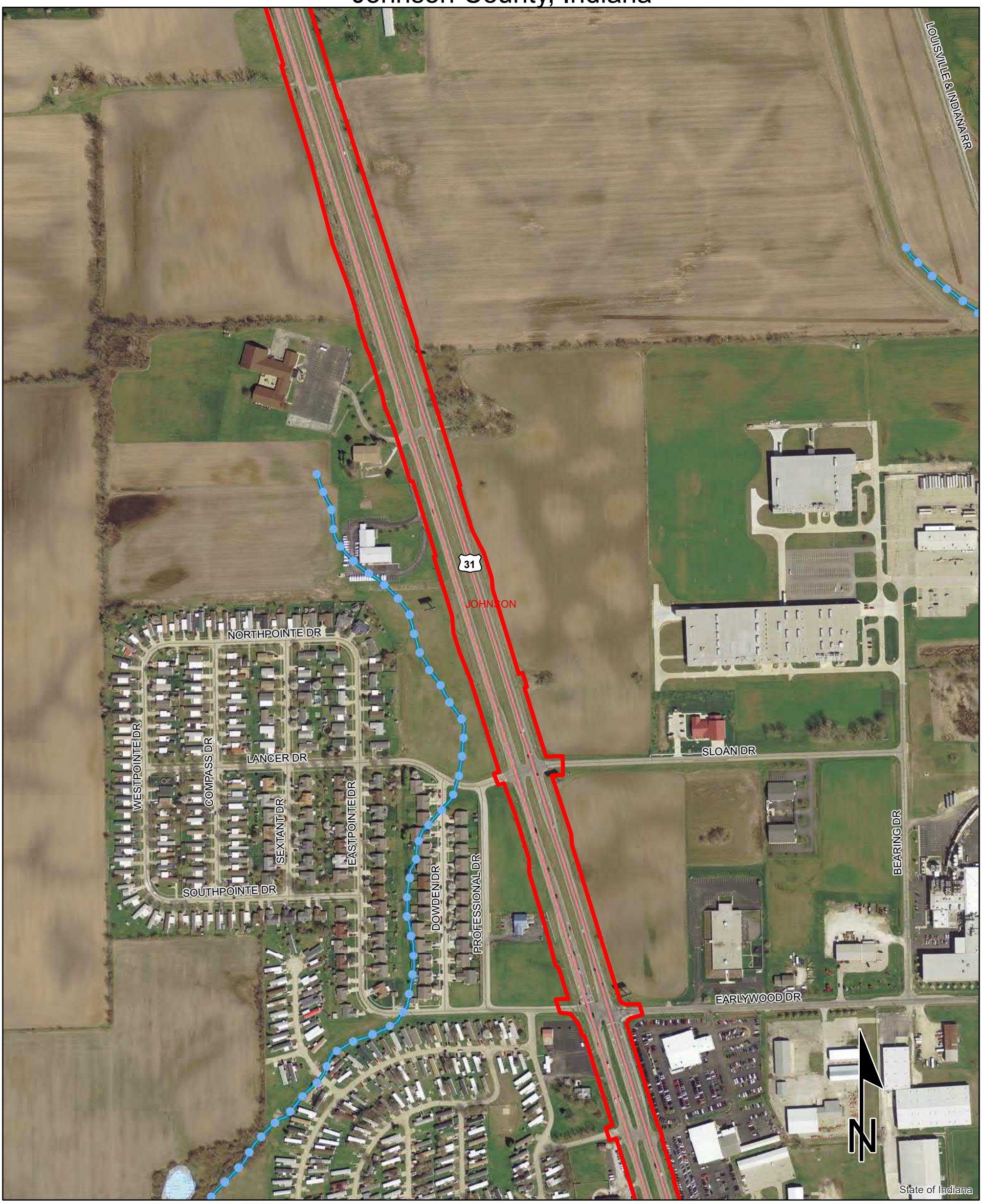

0.095 0.0475 0 0.095 Miles

Sources:
Non Orthophotography Data - Obtained from the State of Indiana Geographical Information Office Library
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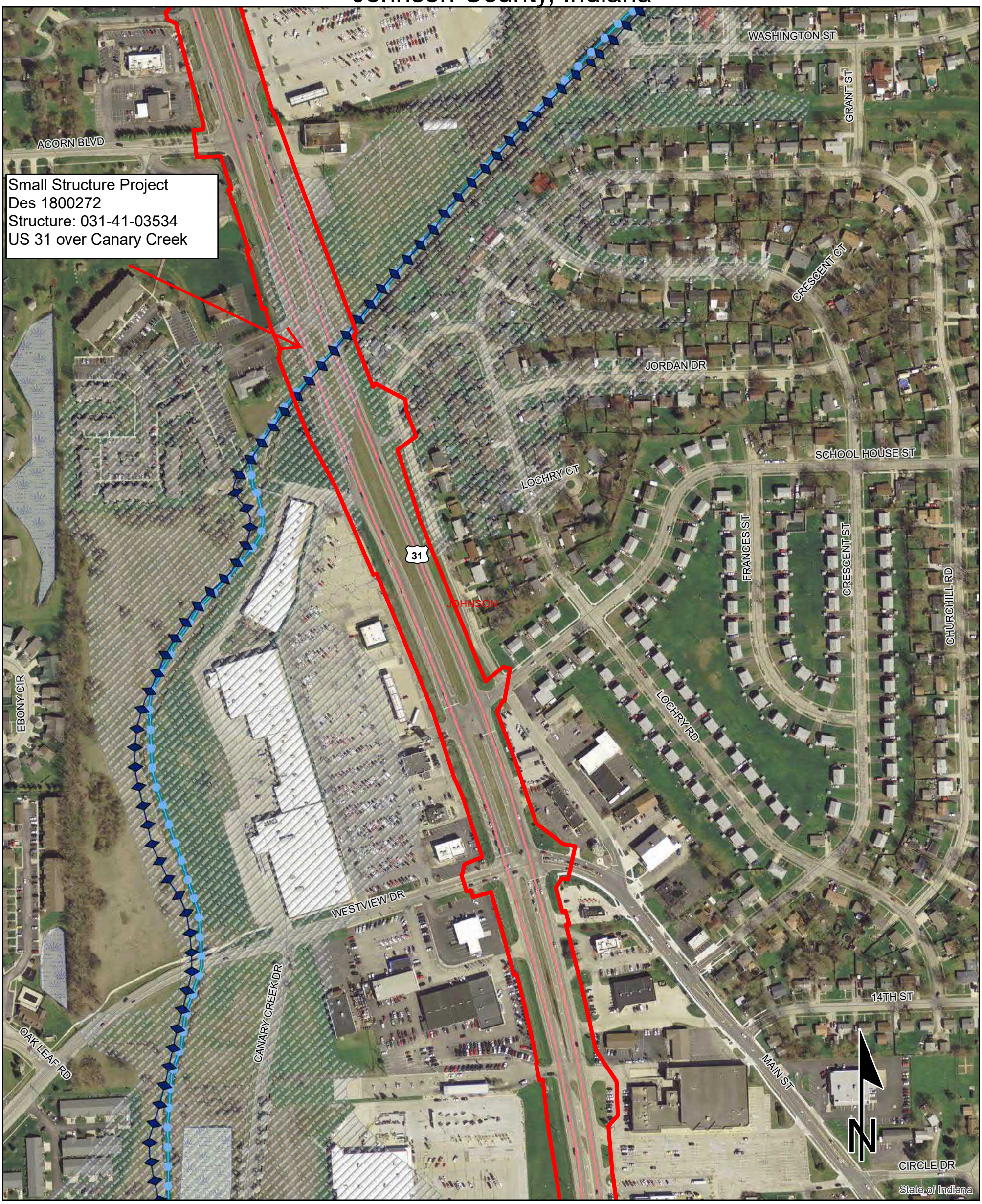
Johnson County, Indiana



0.065 0.0325 0 0.065 Miles

Sources:
Non Orthophotography
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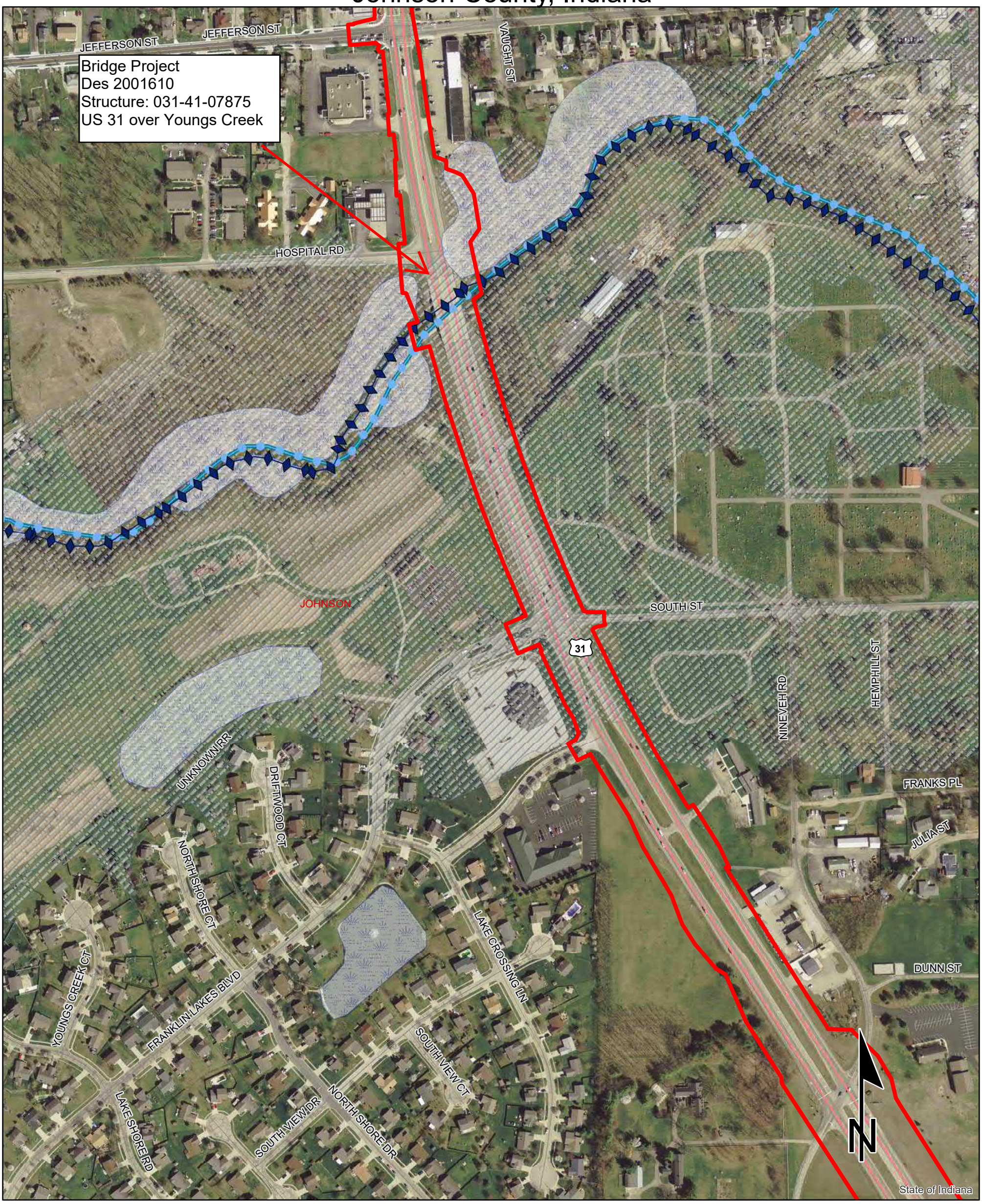
Johnson County, Indiana



0.075 0.0375 0 0.075 Miles

Sources:
Non Orthophotography Data - Obtained from the State of Indiana Geographical Information Office Library
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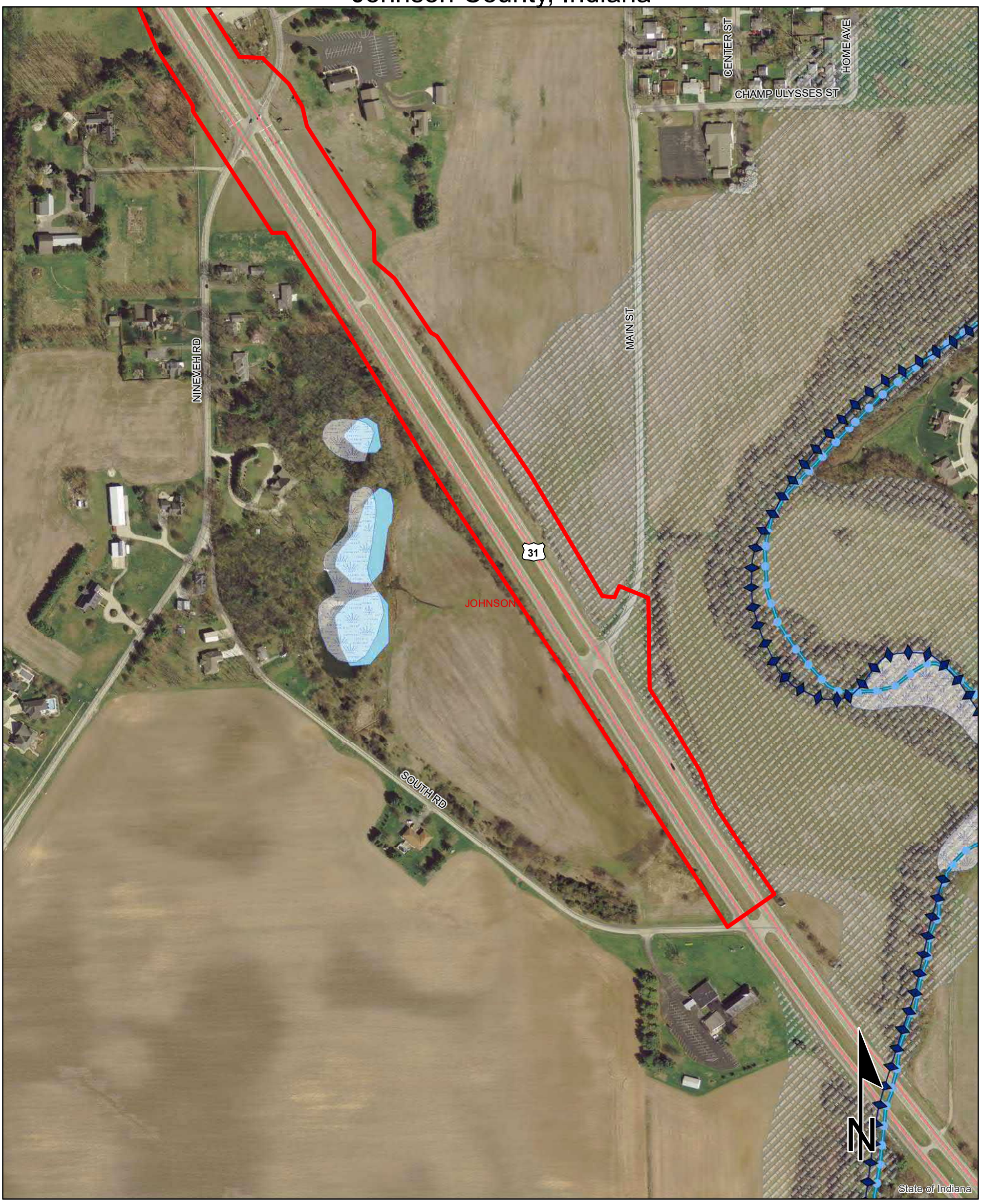
Johnson County, Indiana



0.075 0.0375 0 0.075 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)
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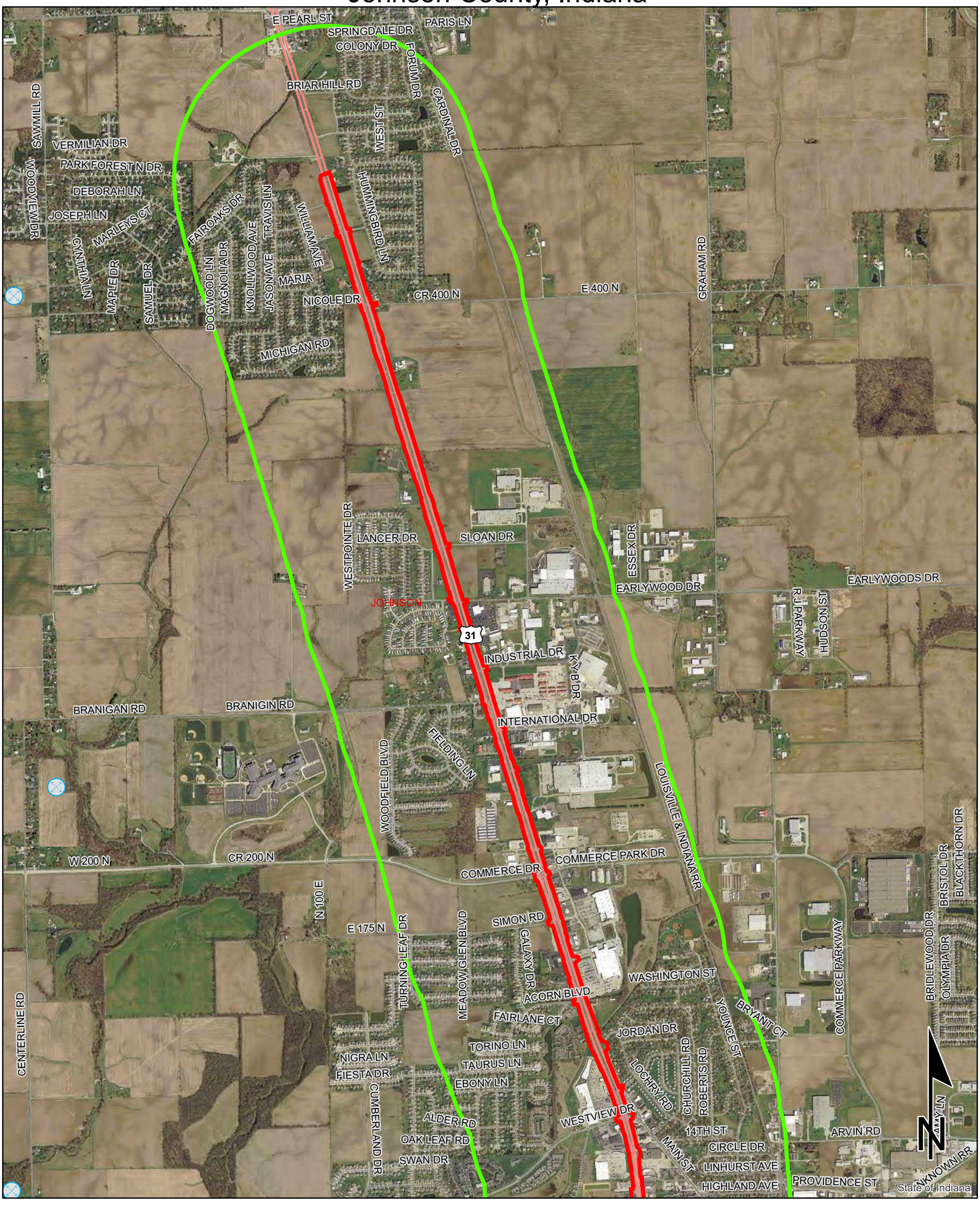
Red Flag Investigation - Mining/Mineral Exploration
US 31, from 4.35 mi N of to 1.05 mi S of SR 44/SR 144
Des. No. 1800082, 1800272, and 2001610
Corridor Improvement, Small Structure, and Bridge Project
Johnson County, Indiana



0.4 0.2 0 0.4 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

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- Oil and Gas Wells
- Mineral Resources
- Mine - Surface
- Mine - Underground
- County Boundary
- Project Area
- Half Mile Radius
- Toll
- Interstate
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- US Route
- Local Road

Red Flag Investigation - Mining/Mineral Exploration
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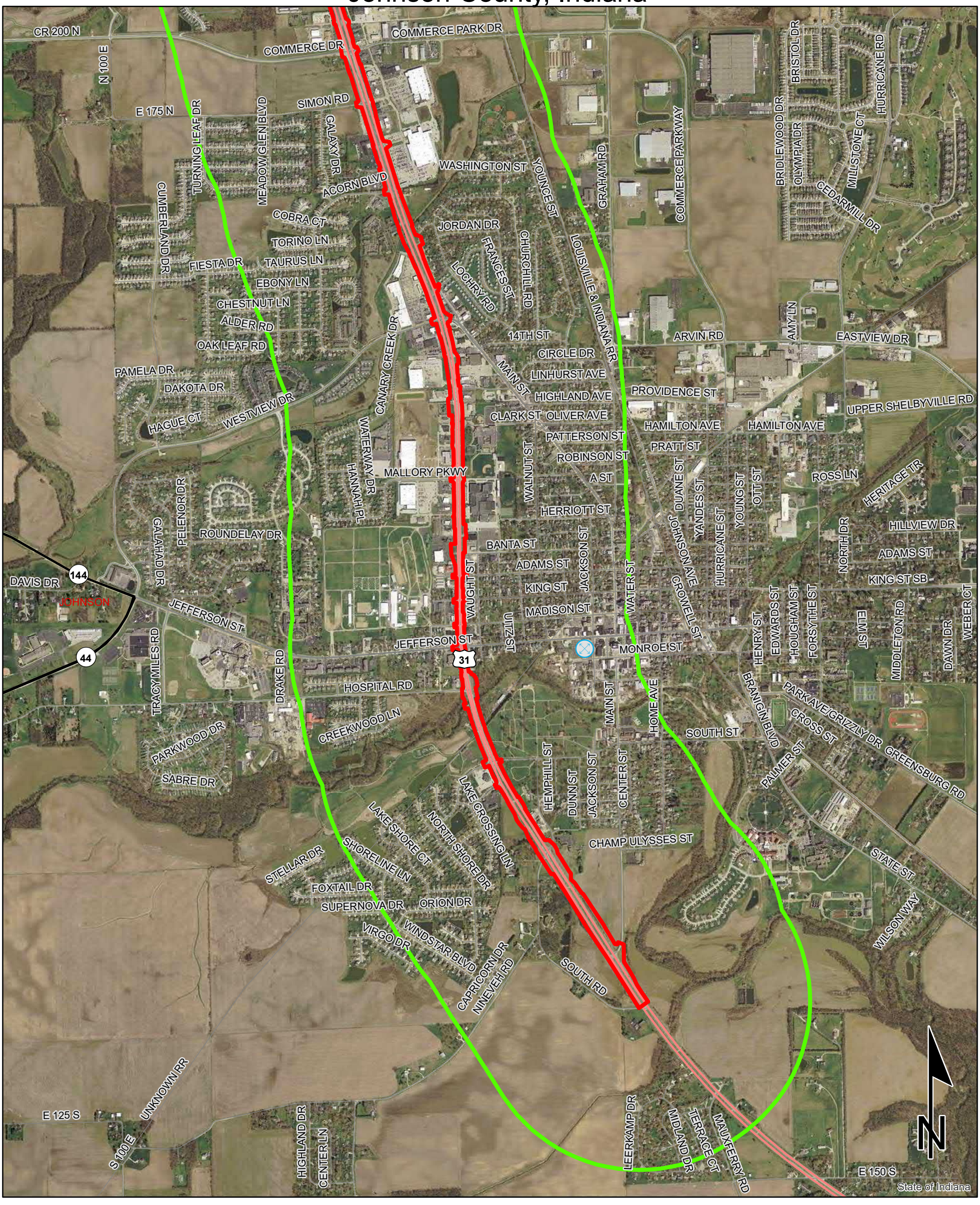

0.35 0.175 0 0.35 Miles

Sources:

Non Orthophotography
Data - Obtained from the State of Indiana Geographical Information Office Library
Orthophotography - Obtained from Indiana Map Framework Data (www.indianamap.org)
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- Mineral Resources
- Mine - Surface
- Mine - Underground
- County Boundary
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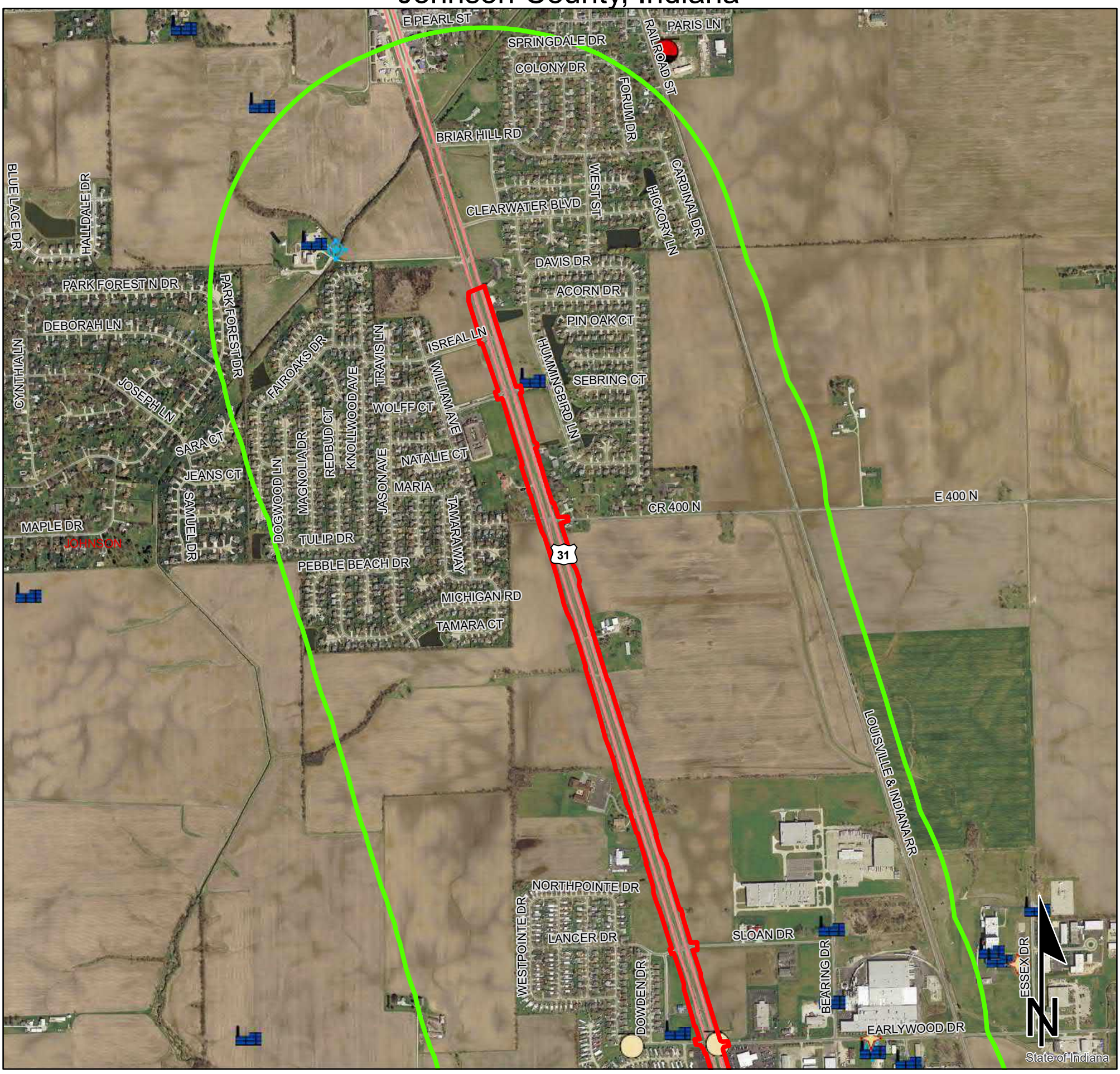
Red Flag Investigation - Hazardous Material Concerns
US 31, from 4.35 mi N of to 1.05 mi S of SR 44/SR 144
Des. No. 1800082, 1800272, and 2001610
Corridor Improvement, Small Structure, and Bridge Project
Johnson County, Indiana



- 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
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- Toll
- Interstate
- State Route
- US Route
- Local Road

0.25 0.125 0 0.25 Miles

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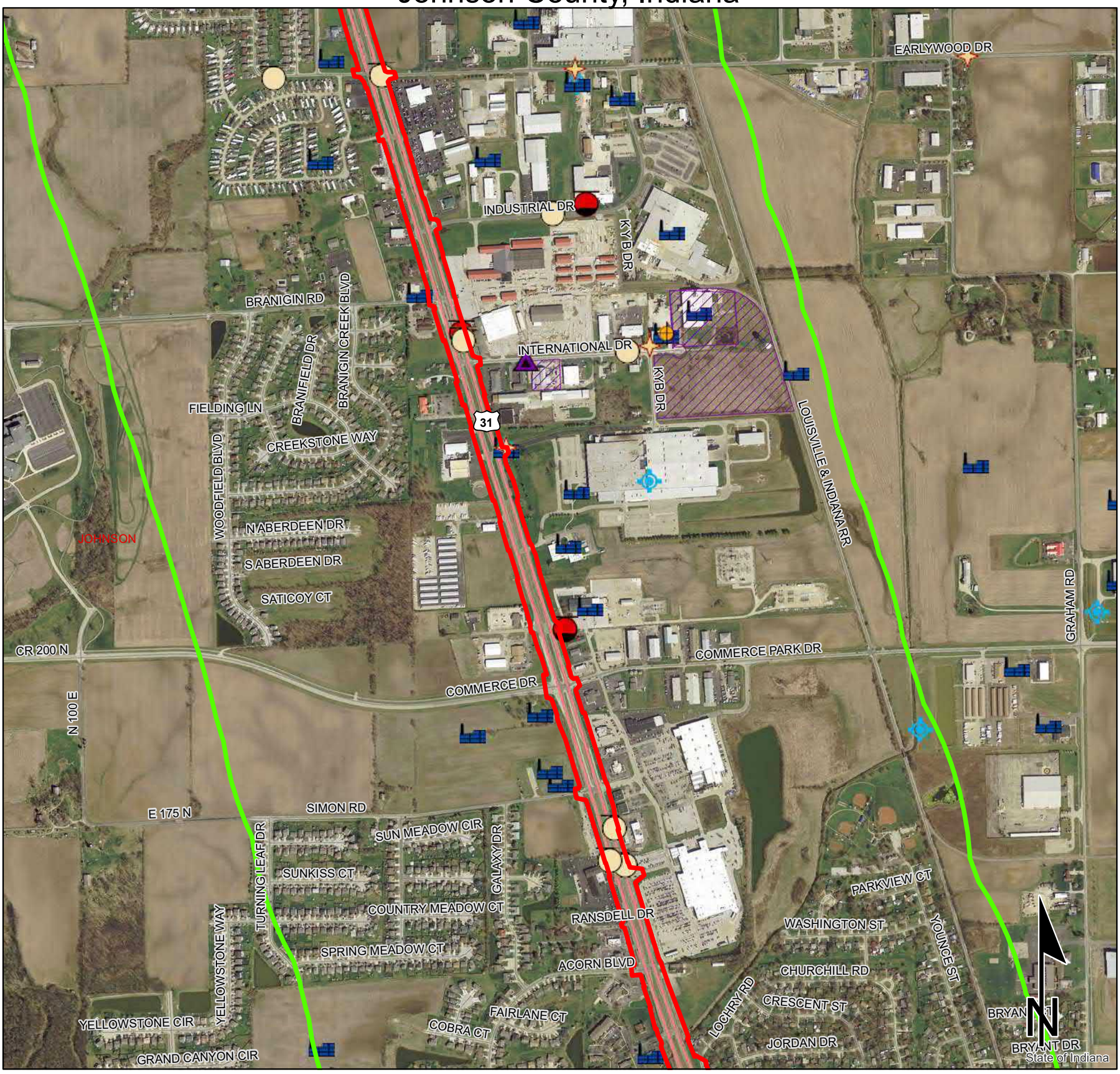

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0.2 0.1 0 0.2 Miles

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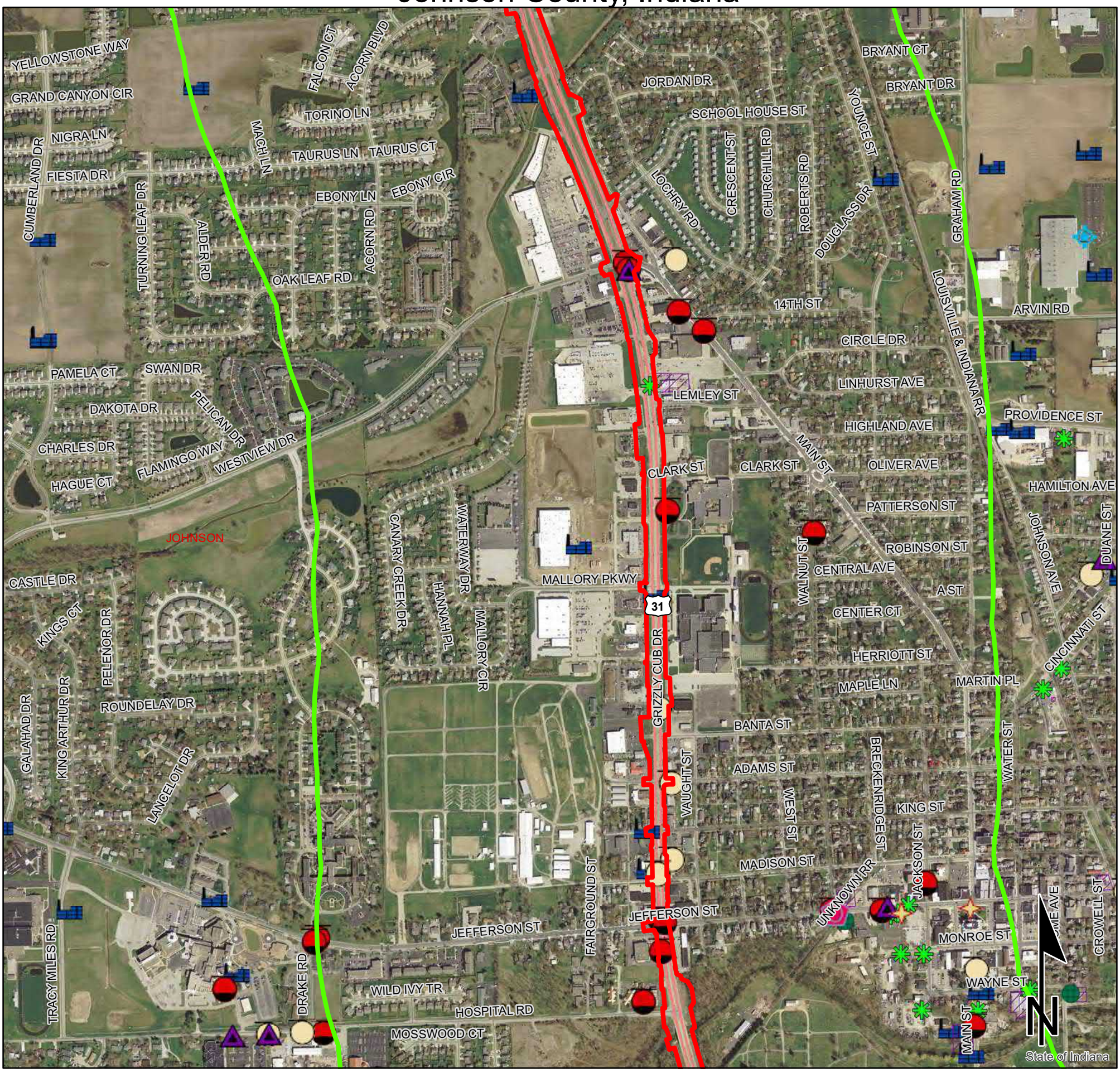

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0.2 0.1 0 0.2 Miles

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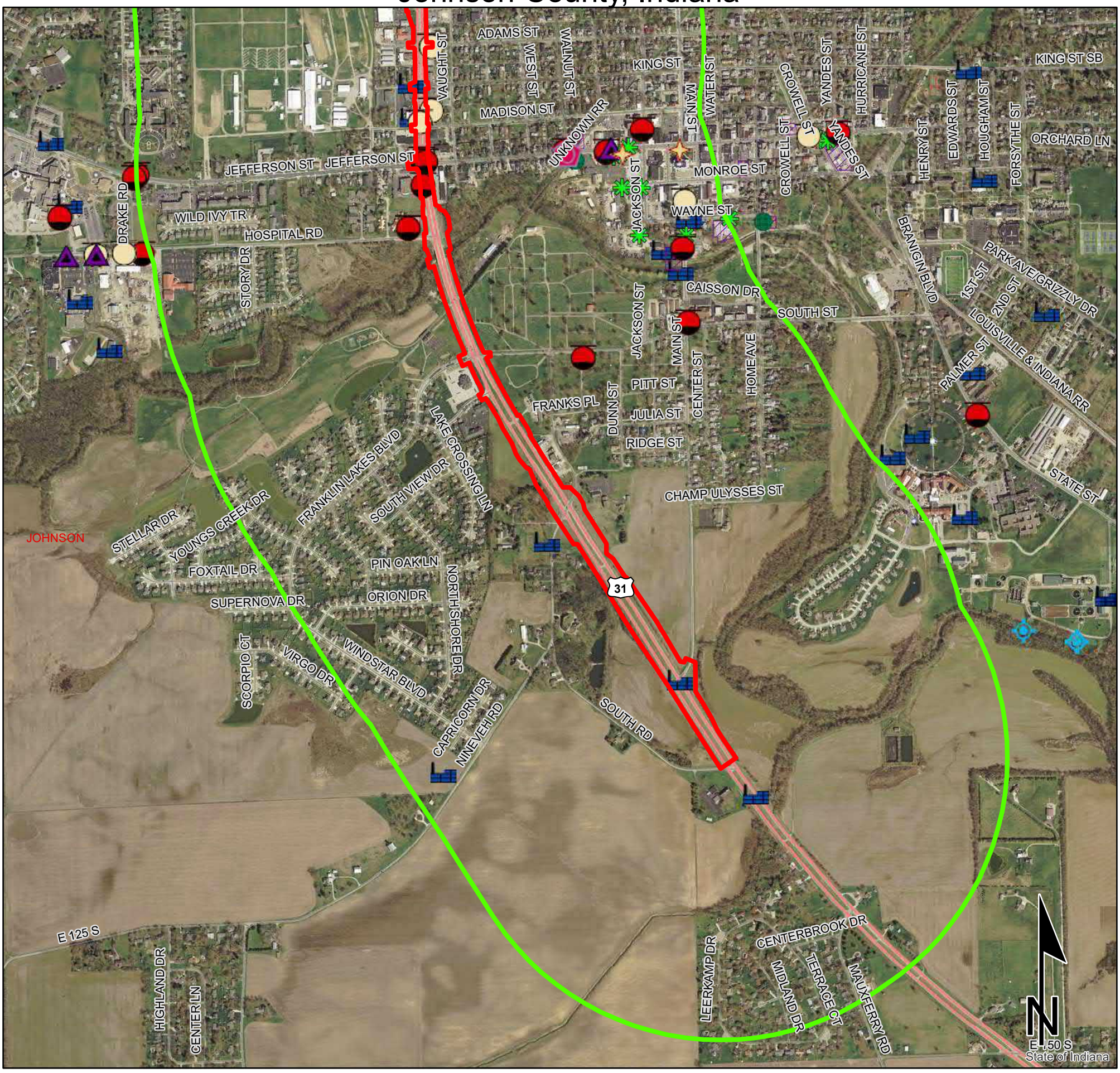

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0.25 0.125 0 0.25 Miles

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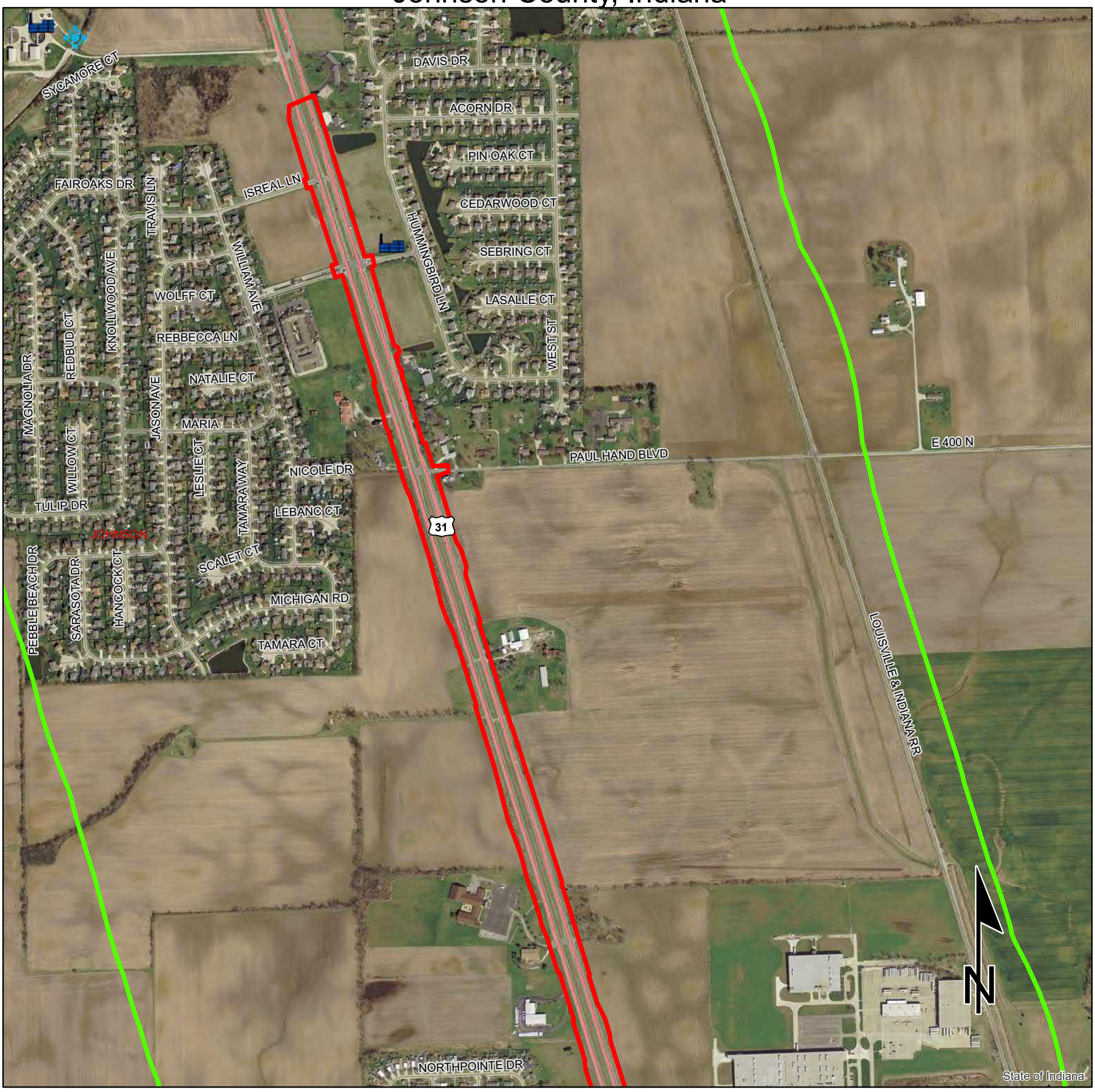

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0.15 0.075 0 0.15 Miles

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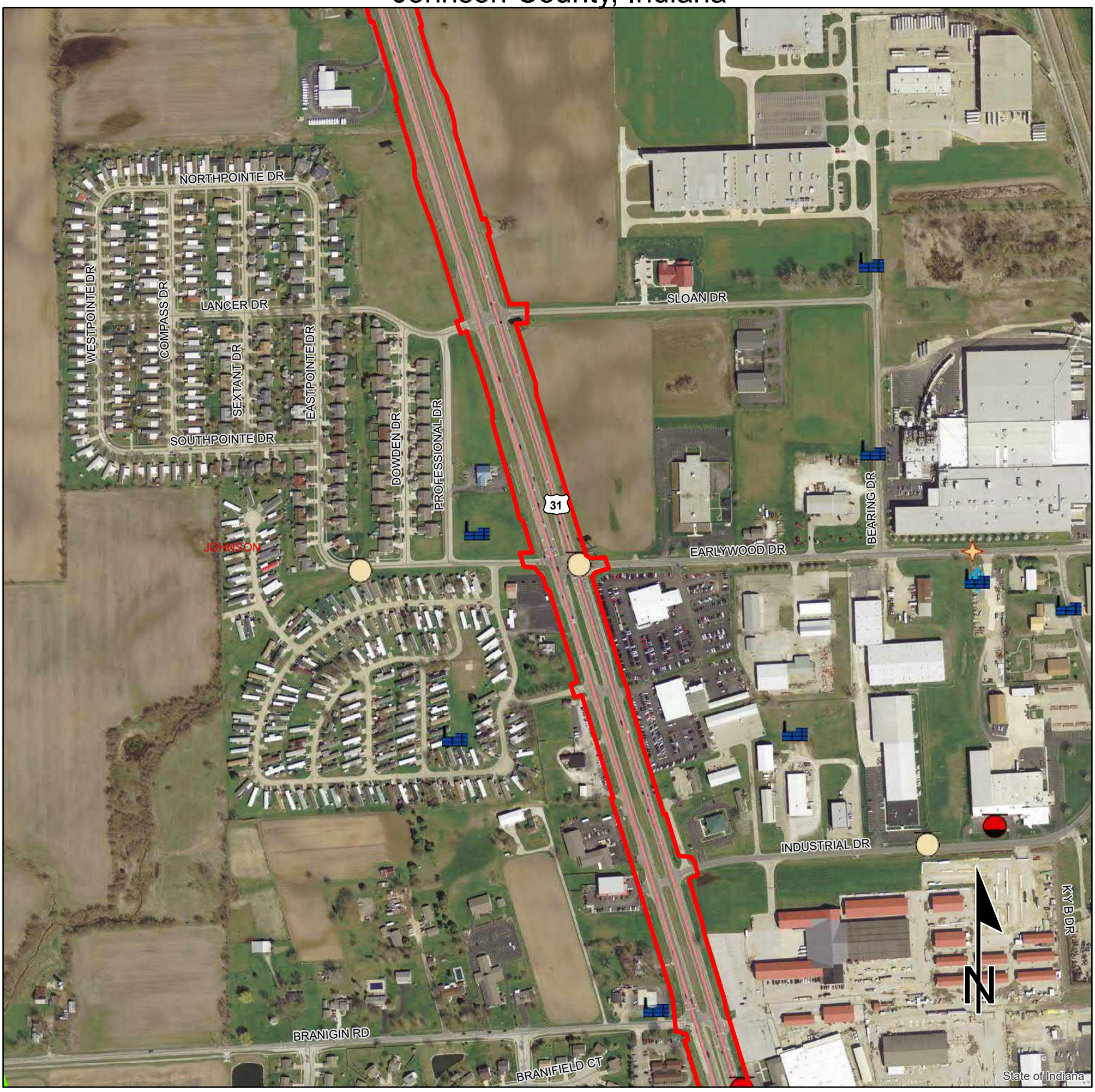

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0.1 0.05 0 0.1 Miles

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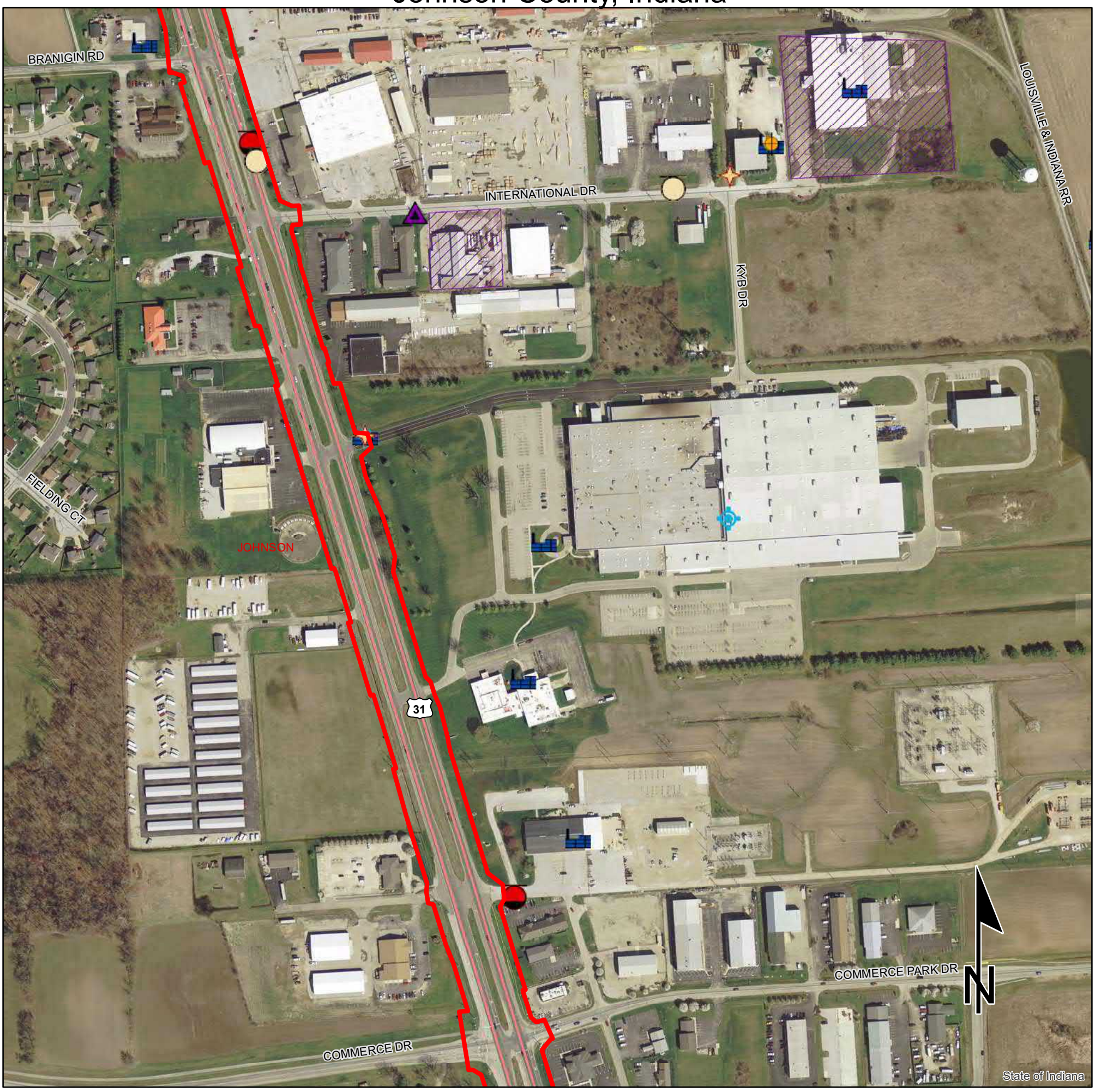
Corridor Improvement, Small Structure, and Bridge Project
Johnson County, Indiana



- 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
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- Septage Waste Site
- Solid Waste Landfill
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- Tire Waste Site
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- Voluntary Remediation Program
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- Institutional Controls
- County Boundary
- Project Area
- Half Mile Radius
- Toll
- Interstate
- State Route
- US Route
- Local Road

0.08 0.04 0 0.08 Miles

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

Red Flag Investigation - Hazardous Material Concerns
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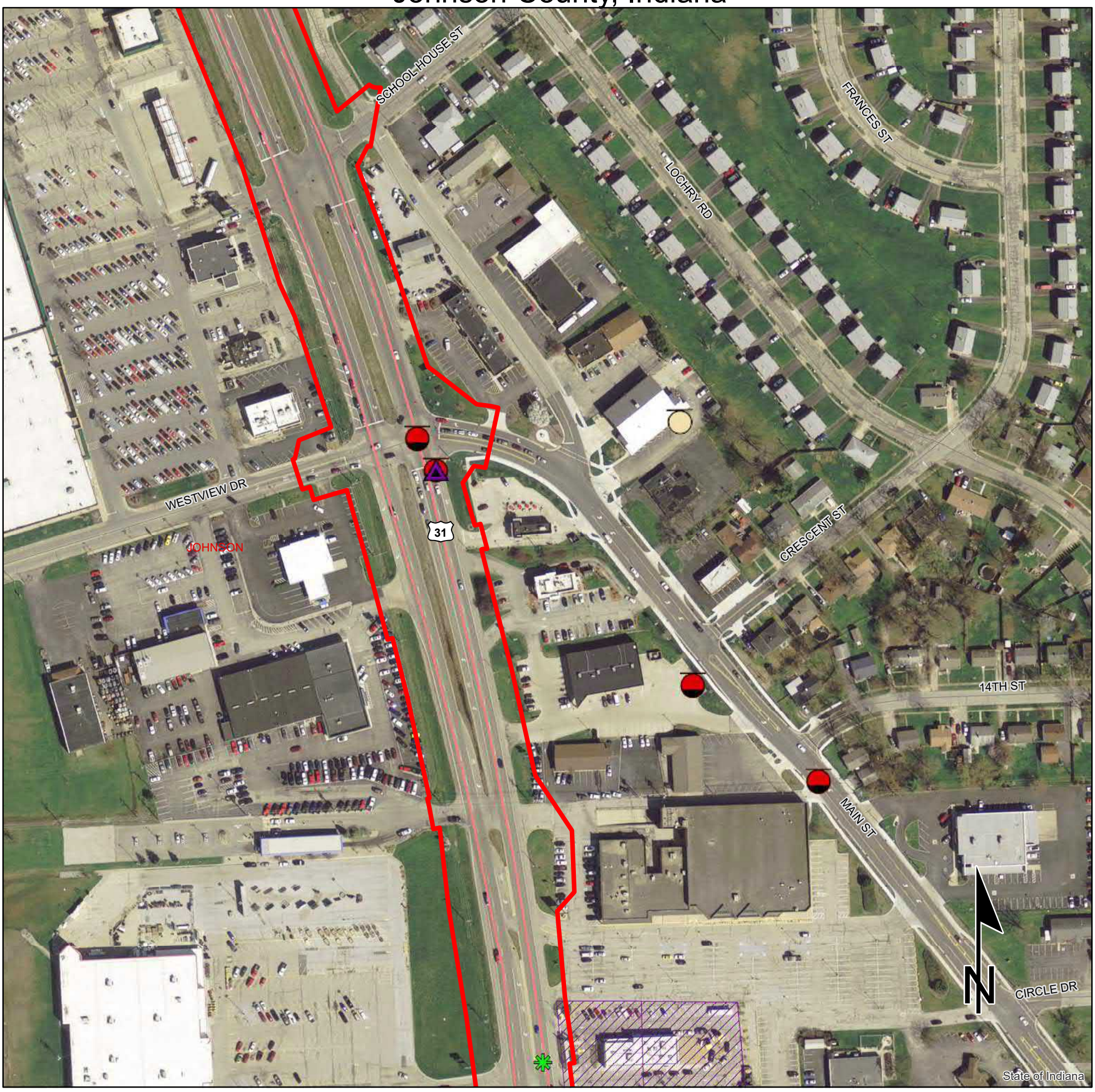

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0.04 0.02 0 0.04 Miles

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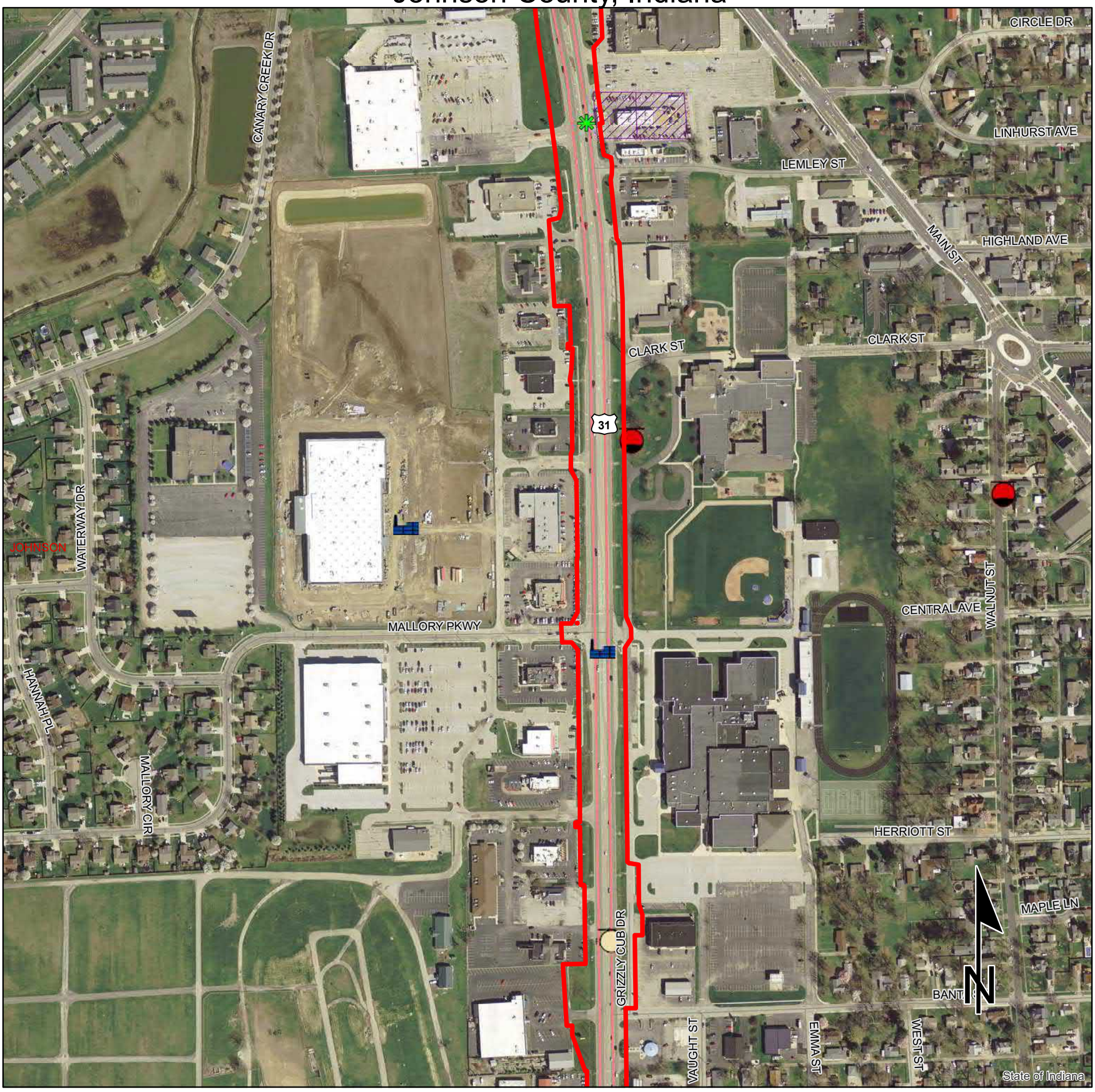

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0.08 0.04 0 0.08 Miles

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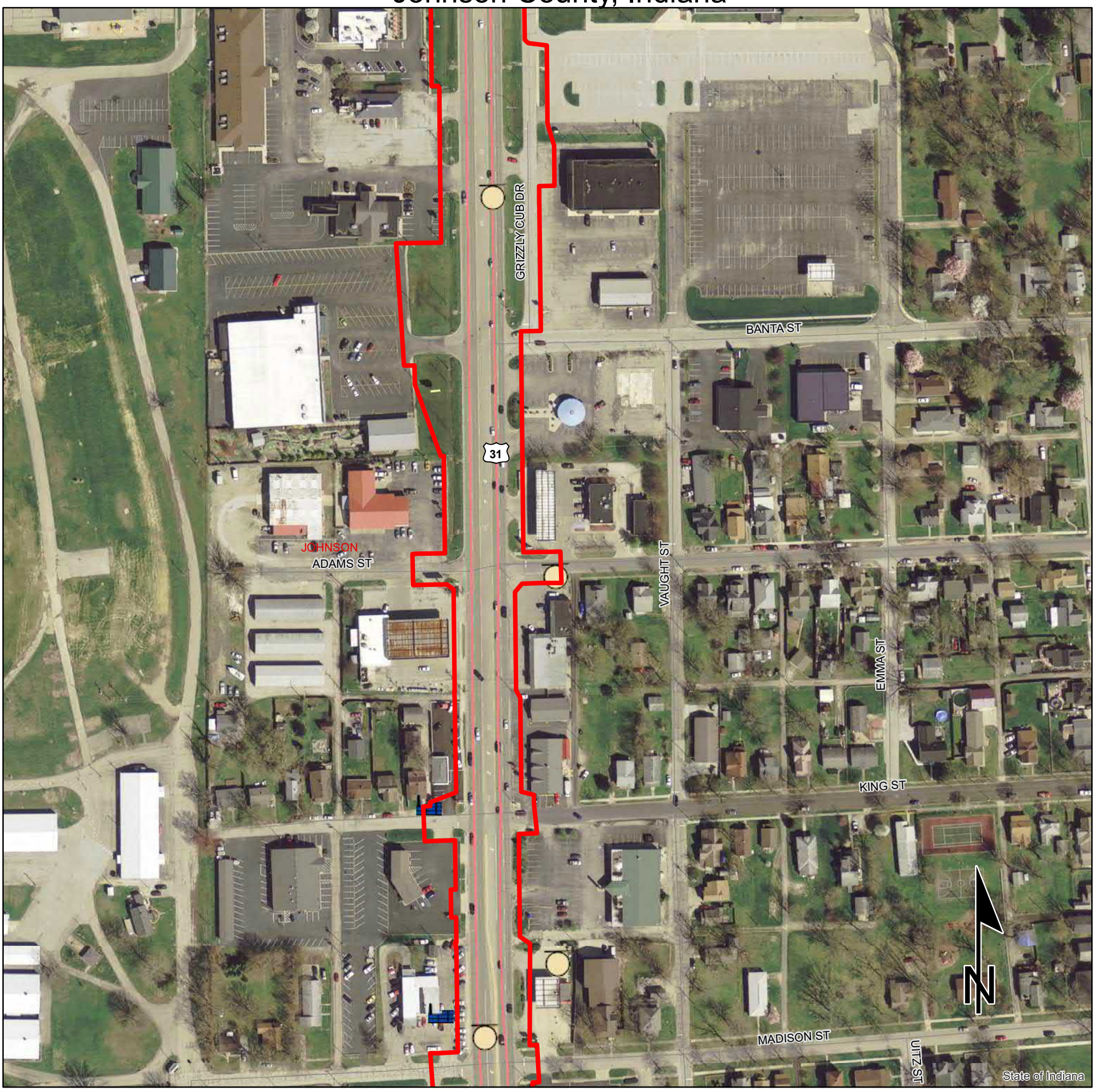

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0.04 0.02 0 0.04 Miles

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0.04 0.02 0 0.04 Miles

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0.1 0.05 0 0.1 Miles

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Lead Des 1800082

Appendix F

Water Resources

Waters Report
US 31
Roadway Reconstruction Project
Johnson County, Indiana
Des. No. 1800082 et al.

Report Completed on: September 21, 2021

Prepared for:
Crossroad Engineers

Prepared By:
Christian Radcliff
SJCA Inc.
9102 N Meridian Street, Suite 200
Indianapolis, IN 46260

p. 317.566.0629 e. cradcliff@sjcainc.com

Field Investigation Dates: October 13, 2020, October 14, 2020, and August 23, 2021

Site Location:
Sections 23, 15, 14, 11, 10, and 3, Township 12 North, Range 4 East, and Sections 34, 27, and 28, Township 13 North, Range 4 East
Franklin and Greenwood 1:24,000 Quadrangles
Johnson County, Indiana
Project Southern Terminus: Latitude: 39.464168, Longitude: -86.053924
Project Center: Latitude 39.496831, Longitude -86.066593
Project Northern Terminus: Latitude: 39.541025, Longitude: -86.083401
Des 1800272: Latitude: 39.498761, Longitude: -86.067014
Des 2001610: Latitude: 39.477707, Longitude: -86.063573

Project Description:
The Indiana Department of Transportation (INDOT) with funding from the Federal Highway Administration (FHWA) intend to proceed with an intersection improvement project (Lead Des 1800082), a small structure project (Des 1800272), and a bridge rehabilitation project (Des 2001610) on US 31 in the City of Franklin, Johnson County, Indiana. The proposed project southern terminus is approximately 1.05 miles south of SR 44/SR 144, and the project northern terminus is approximately 490 feet north of the intersection of US 31 and Israel Lane, approximately 4.45 miles north of SR 44/SR 144. The total length of the project is approximately 5.75 miles. The intersection improvement portion of this project (Lead Des 1800082) intends to make modifications to intersections and signal patterns at some intersections along US 31 and to add curbs and gutters throughout the project corridor. The current recommended plan is to use a combination of median U-turn, green T, J-turn, restricted crossing U-turn, and boulevard left intersection styles throughout the project corridor. Improvements to non-motorized transportation access will occur by updating and extending sidewalks, installing 10-foot wide paved trails parallel to both sides of US 31, and installing pedestrian crossing infrastructure at some intersections. This project also intends to replace the culvert carrying Canary Creek under US 31 (Des 1800272) and to rehabilitate the structures carrying US 31 over Youngs Creek (Des 2001610) in order to accommodate the proposed paths crossing each structure.

The investigated area is in central Johnson County. Land use in the vicinity of the project area is primarily commercial and agricultural. The major features in the investigated area are US 31, various cross-streets and drainage culverts, Youngs Creek, Canary Ditch, and various residential properties. The investigated area is generally urban and level, with some steep slopes within the roadside ditches along US 31. The investigated area was chosen because it encompasses the proposed right of way limits, which will contain within them the construction area. The investigated area occurs entirely within the US Army Corps of Engineers (USACE) Midwest region.

Vegetation in the project area is primarily herbaceous vegetation that is common within roadside ditches and within disturbed areas. A small portion of wooded vegetation forms a riparian area near Youngs Creek. Midstory vegetation can be found near the southern project terminus separating the roadway slope and adjacent farm fields. Hydrology in the project area is influenced primarily by runoff from US 31 and the surrounding agricultural fields and commercial properties. Culverts carrying drainage under US 31 are present throughout the investigated area. The nearest major hydrological feature is Youngs Creek, which is within the investigated area. The attached floodplains map indicates that there are mapped floodplains within the investigated area.

Soils:
According to the Soil Survey Geographic (SSURGO) Database for Johnson County, Indiana, the investigated area does contain soil areas with nationally listed hydric soils. Soils within and near the investigated area are characterized by well drained non-hydric soils to poorly drained hydric soils.

Table 1. Soil Types Within the Investigated Area

Soil Name	Map Abbreviation	Hydric Range
Brookston silty clay loam, 0 to 2 percent slopes	Br	66-99 (Hydric)
Crosby silt loam, fine-loamy subsoil, 0 to 2 percent slopes	CrA	1-32 (Hydric)
Crosby-Miami silt loams, 2 to 4 percent slopes, eroded	CsB2	1-32 (Hydric)
Eel silt loam, 0 to 2 percent slopes, frequently flooded	Ee	1-32 (Hydric)
Miami silt loam, 6 to 12 percent slopes, eroded	MnC2	1-32 (Hydric)
Miami clay loam, 6 to 12 percent slopes, severely eroded	MtC3	0 (Non-hydric)
Renselaer silty clay loam	Re	100 (Hydric)
Shoals silt loam	Sh	1-32 (Hydric)
Sloan clay loam	Sn	100 (Hydric)
Urban land – Brookston complex, 0 to 2 percent slopes	UbaA	33-65 (Hydric)
Urban land – Crosby silt loam complex, 0 to 2 percent slopes, eroded	UcfA	1-32 (Hydric)
Urban land – Miami silt loam complex, 2 to 6 percent slopes, eroded	UkbB2	1-32 (Hydric)
Whitaker silt loam, 0 to 2 percent slopes	Wh	1-32 (Hydric)
Brookston silty clay loam – Urban land complex, 0 to 2 percent slopes	YbvA	33-65 (Hydric)
Crosby silt loam, fine-loamy subsoil – Urban land complex, 0 to 2 percent slopes	YclA	1-32 (Hydric)
Fox-Urban and complex, 6 to 12 percent slopes, eroded	YfhC2	0 (Non-hydric)
Miami clay loam-Urban land complex, 6 to 12 percent slopes, severely eroded	YmdC3	0 (Non-hydric)
Miami silt loam-Urban land complex, 2 to 6 percent slopes, eroded	YmsB2	1-32 (Hydric)
Miami silt loam-Urban land complex, 6 to 12 percent slopes, eroded	YmsC2	1-32 (Hydric)
Ockley loam-Urban land complex, 0 to 2 percent slopes	YobA	0 (Non-hydric)
Rensselaer silty clan loam-Urban land complex, 0 to 2 percent slopes	YreA	66-99 (Hydric)
Whitaker-Urban land complex, 0 to 2 percent slopes	YwtA	1-32 (Hydric)

National Wetlands Inventory (NWI) Information:

There are twenty-five mapped wetlands and linear water features within 0.25 mile of the investigated area. These include six labeled PFO1A (Freshwater forested wetland), and nineteen labeled as PUBGx (Freshwater pond, excavated).

Table 2. Nearest Mapped NWI Features Near the Investigated Area

Wetland/Water Feature Type	Location
PFO1A	Within investigated area near Youngs Creek
PUBGx	0.01 mile west of investigated area

HUC 12:
Canary Ditch – Youngs Creek (051202040603) and Amity Ditch – Youngs Creek (051202040604)

National Hydrography Dataset (NHD) Information:
Two classified NHD flowlines are within the investigated area and are associated with Youngs Creek (Code 55800 – Artificial Path) and Canary Ditch (Code 46006 – Stream/River). Youngs Creek and Canary Ditch are discussed below. Ten unclassified NHD flowlines are within the investigated and are labeled as ephemeral drainage features.

Attached Documents:

- Maps (Project Location, Topographic, Aerial Imagery, NWI Map, Floodplain Map, Soil Series Map, Watershed Map, Water Resources Map)
- Photographs and Photograph Location and Orientation Map
- Wetland Data Sheets
- Preliminary Jurisdictional Determination Form

Field Reconnaissance:
Prior to the field investigation, the US Geological Survey topographic map, aerial imagery, the USGS National Hydrography Dataset (NHD), U.S. Fish and Wildlife Service (USFWS) NWI map, the Natural Resources Conservation Service (NRCS) Web Soil Survey for Johnson County, and the Indiana Geological Survey (IGS) LiDAR data were reviewed to identify potential water resources on the site.

The entire investigated area, as shown on the attached project graphics, was visually surveyed during the site visit for potential water features. Areas that were identified during the preliminary desktop review and in the field visit were investigated to determine the potential jurisdictional status of these features. Delineation of wetlands and water features was completed using the *Corps of Engineers Wetland Delineation Manual (1987)* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (2010).* Soils in the project area were evaluated using the *2017 Pocket Guide to Hydric Soil Field Indicators* and a Munsell soil chart. Vegetation in the investigated area was evaluated using various plant identification guides and the USACE *State of Indiana 2018 Wetland Plant List*. Sample points were collected at potential wetland features and associated upland areas to verify the presence or absence of wetland indicators. Jurisdictional recommendations were made according to the *US Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook*. Water features that were identified within the investigated area were documented using GPS location.

Streams:
Three streams were identified during the site visit.

Youngs Creek
Youngs Creek is a perennial stream that flows under the bridge carrying US 31 over Youngs Creek. It is accurately mapped on The NHD, on the NWI map as R2UBH (perennial riverine), and on the USGS topographic map as a solid blue-line stream. Youngs Creek exhibited a defined bed and bank, a bankfull width of 85 feet, an Ordinary High Water Mark (OHWM) width of 60 feet, and an OHWM depth of 18 inches. The feature shown on the USGS *Streamstats* application indicated that there is an upstream drainage

area of 56.572 square miles from the upstream side of the bridge. Youngs Creek was characterized by moderate flow, a silt substrate, moderate in-stream cover, the presence of riffle/run complexes, and low sinuosity. Youngs Creek is considered average quality due to these attributes. Youngs Creek flows from southwest to northeast in the vicinity of the investigated area and flows into Sugar Creek approximately 6.3 miles southeast of Youngs Creek within the investigated area. Sugar Creek has eventual connectivity with the East Fork White River, which is considered a navigable waterway and is jurisdictional under the USACE. Due to the presence of an OHWM, relatively permanent flow conditions, and eventual connectivity to a jurisdictional waterway, Youngs Creek is likely jurisdictional under the authority of the USACE. Photos of Youngs Creek are shown in photos 41 through 47 in the attached photo log.

UNT 1 to Youngs Creek

UNT 1 to Youngs Creek (UNT 1) is an intermittent stream that flows on the north side of Youngs Creek and west of US 31 into Youngs Creek. It is not shown on the NHD, the NWI map, or the USGS topographic map. UNT 1 exhibited a defined bed and bank, a bankfull width of 2 feet, an OHWM width of 2 feet, and an OHWM depth of 4 inches. This feature is not shown on the USGS *Streamstats* application, so it is assumed that there is an upstream drainage area of less than 1 square mile. UNT 1 was characterized by low flow, a silt and detritus substrate, moderate in-stream cover, a lack of riffle/run complexes, and low sinuosity. UNT 1 is considered poor quality due to these attributes. UNT 1 receives stormwater drainage from buried pipes and inlets that collect roadside runoff along the west side of US 31, a buried pipe then outlets north of Youngs Creek into UNT 1. UNT 1 begins at this culvert outlet and flows from north to south in the investigated area and flows into Youngs Creek. Youngs Creek has eventual connectivity with the East Fork White River, which is considered a navigable waterway and is jurisdictional under the USACE. Due to the presence of an OHWM, relatively permanent flow conditions, and eventual connectivity to a jurisdictional waterway, UNT 1 is likely jurisdictional under the authority of the USACE. Photos of UNT 1 are shown in photos 50 through 51 in the attached photo log.

Canary Ditch

Canary Ditch is a perennial stream that flows under the bridge carrying US 31 over Canary Ditch. It is accurately mapped on the NHD, on the NWI map as R2UBHx (perennial riverine, excavated), and on the USGS topographic map as a solid blue-line stream. Canary Ditch exhibited a defined bed and bank, a bankfull width of 40 feet, an OHWM width of 15 feet, and an OHWM depth of 12 inches. The feature shown on the USGS *Streamstats* application indicated that there is an upstream drainage area of 5.392 square miles from the upstream side of the bridge. Canary Ditch was characterized by moderate flow, a silt substrate, low in-stream cover, lack of canopy cover, the absence of riffle/run complexes, and low sinuosity. Canary Ditch is considered poor quality due to these attributes. Canary Ditch flows from northeast to southwest in the vicinity of the investigated area and flows into Youngs Creek approximately 1.35 miles southwest of Canary Ditch within the investigated area. Youngs Creek is likely jurisdictional under the USACE. Due to the presence of an OHWM, relatively permanent flow conditions, and eventual connectivity to a jurisdictional waterway, Canary Ditch is likely jurisdictional under the authority of the USACE. Photos of Canary Ditch are shown in photos 68 through 73 in the attached photo log.

Table 3. Stream Features Within Investigated Area

Stream Name	Photos	Lat/Long	OHWM Width (ft)	OHWM Depth (in)	USGS Blue-line?	Riffles? Pools?	Substrate	Quality	Likely Water of U.S.?
Youngs Creek	41-47	Lat: 39.477706 Long: -86.063546	60	18	Yes, Perennial	Yes	Silt	Average	Yes
UNT 1	50-51	Lat: 39.477789 Long: -86.063909	2	4	No, Intermittent	No	Silt and Detritus	Poor	Yes
Canary Ditch	68-73	Lat: 39.498767 Long: -86.067032	15	12	Yes, Perennial	No	Silt	Poor	Yes

Wetlands:
Fifteen wetlands were identified during the site visit. Thirty-six sample points were collected throughout the investigated area.

Sample Point 1
Sample Point 1 (SP1) was along the east side of US 31 near the southern project terminus. SP 1 was taken near the inlet of a box culvert that did not show signs hydrologic flow. This culvert corresponds with an unclassified flowline segment shown on the NHD map. Vegetation at this sample point was dominated by White Ash (*Fraxinus americana,* FACU), Honey Locust (*Gleditsia triacanthos,* FACU), Reed Canary Grass (*Phalaris arundinacea,* FACW), and Farewell Summer (*Symphyotrichum lateriflorum,* FACW). This vegetation community passed the prevalence index for hydrophytic vegetation. Hydrology indicators observed at this point included Geomorphic Position (D2). This does not meet wetland hydrology criteria. Soils at SP1 were 10 YR 3/2 (100%) with a texture of silty clay loam from 0-3 inches, 10 YR 3/1 (100%) with a texture of silty clay loam from 3-15 inches, and 10 YR 3/1 (96%) with redox concentrations of 2.5 YR 4/8 (4%) and a texture of silty clay loam from 15-20 inches. This does not meet any hydric soil criteria. This sample point met the criteria for hydrophytic vegetation, but it did not meet the conditions for wetland hydrology and hydric soils; therefore, it is not a wetland.

Sample Point 2/Wetland 1
Sample Point 2 (SP2) was a wetland point on the west side of US 31 within Wetland 1. SP2 was taken near the box culvert outlet that crosses under US 31, near SP1. This culvert corresponds with an unclassified flowline segment shown on the NHD map. Vegetation at this sample point was dominated by Reed Canary Grass (*Phalaris arundinacea,* FACW) and Lakebank Sedge (*Carex lacustris,* OBL). This vegetation community passed the rapid test, dominance test, and prevalence index for hydrophytic vegetation. Hydrology indicators observed at SP2 included Surface Soil Cracks (B6), Saturation Visible on Aerial Imagery (C9), Geomorphic Position (D2), and FAC-Neutral Test (D5). This meets the criteria for wetland hydrology. Soils at SP2 were 10 YR 3/1 (95%) with redox concentrations of 2.5 YR 4/8 (5%) with a texture of clay loam from 0-20 inches. This meets the hydric soil criteria of Redox Dark Surface (F6). This sample point met the criteria for hydrophytic vegetation, wetland hydrology, and hydric soils; therefore, it was within a wetland. Wetland 1 is an emergent wetland that extends west beyond the investigated area. Wetland 1 is approximately 0.208 acre within the investigated area and is considered poor quality due to its lack of biodiversity and relative lack of habitat that it provides for wetland flora and fauna. Wetland 1 appears to receive water from roadside runoff and from drainage from surrounding farm fields. Wetland 1 is likely not considered jurisdictional under the authority of the USACE because it lacks connectivity to other likely jurisdictional water features.

Sample Point 3
Sample Point 3 (SP3) was an upland point taken on the west side of US 31 and outside of Wetland 1. Vegetation at this sample point was dominated by Red Fescue (*Festuca rubra,* FACU). This vegetation community did not pass the rapid test, dominance test, or prevalence index for hydrophytic vegetation. Hydrology indicators observed at SP3 included Geomorphic Position (D2). This site does not meet the criteria for wetland hydrology. Soils at SP3 were 10 YR 3/2 (100%) with a texture of silty clay loam from 0-8 inches and 10 YR 3/1 (85%) and 10 YR 4/3 (15%) with a texture of silty clay loam from 8-16 inches. This does not meet any hydric soil criteria. This sample point did not meet the criteria for hydrophytic vegetation, hydric soils, or wetland hydrology; therefore, it is not within a wetland.

Sample Point 4
Sample Point 4 (SP4) was an upland point taken on the east side of US 31, along the toe of slope of the raised roadway. Vegetation at this sample point was dominated by Reed Canary Grass (*Phalaris arundinacea,* FACW) and Amur Honeysuckle (*Lonicera maackii,* NI). This vegetation community passed the prevalence index for hydrophytic vegetation. Hydrology indicators observed included Geomorphic

Position (D2). This does not meet wetland hydrology criteria. Soil at SP4 was 10 YR 3/1 (100%) with a texture of silty clay loam from 0-13 inches and 10 YR 3/1 (90%) with redox concentrations of 2.5 YR 3/1 (10%) with a texture of silty clay loam from 13-18 inches. This does not meet any hydric soil criteria. This sample point met the criteria for hydrophytic vegetation but did not meet the criteria for wetland hydrology or hydric soils; therefore, it was not within a wetland. The presence of hydrophytic vegetation is due to the dominance of the invasive Reed Canary Grass, which can form dense monocultures in many landforms. It appears that this depression along US 31 does not hold water long enough to develop hydric soils or more indicators of hydrology.

Sample Point 5

Sample Point 5 (SP5) was an upland point taken on the east side of US 31, along the toe of slope of the raised roadway. Vegetation at this sample point was dominated by White Mulberry (*Morus alba*, FAC), Silver Maple (*Acer saccharinum*, FACW), Rough-Leaf Dogwood (*Cornus drumondii*, FAC), Amur Honeysuckle (*Lonicera mackii*, NI), and Tall Scouring Rush (*Equisetum hyemale*, FACW). This vegetation community passed the dominance test, and prevalence index for hydrophytic vegetation. Hydrology indicators observed included Geomorphic Position (D2) and FAC-Neutral Test (D5). This meets wetland hydrology criteria. Soil at SP5 was 10 YR 3/1 (100%) with a texture of sandy clay loam from 0-14 inches and 10 YR 4/1 (100%) with a texture of sandy loam from 14-20 inches. This does not meet any hydric soil criteria. This sample point met the criteria for hydrophytic vegetation and wetland hydrology, but it did not meet the criteria for hydric soils; therefore, it was not within a wetland. It appears that water does not pool for a long enough period at this point to develop hydric soils.

Sample Point 6/Wetland 2

Sample Point 6 (SP6) was a wetland point on the west side of US 31 within a depression that contains Wetland 2. Vegetation at this sample point was dominated by White Ash (*Fraxinus americana*, FACU) and Narrow-Leaf Cattail (*Typha angustifolia*, OBL). This vegetation community passed prevalence index for hydrophytic vegetation. Hydrology indicators observed at SP6 included Geomorphic Position (D2) and FAC-Neutral Test (D5). This meets the criteria for wetland hydrology. Soils at SP6 were 10 YR 3/1 (95%) with redox concentrations of 2.5 YR 4/8 (5%) with a texture of silty clay loam from 0-6 inches, and 10 YR 4/1 (85%) with redox concentrations of 10 YR 5/8 (15%) with a texture of silty clay loam from 6-17 inches. This meets the hydric soil criteria of Depleted Matrix (F3). This sample point met the criteria for hydrophytic vegetation, wetland hydrology, and hydric soils; therefore, it was within a wetland. Wetland 2 is an emergent wetland that is contained within the roadside ditch. Wetland 2 is approximately 0.122 acre within the investigated area and is considered poor quality due to its lack of biodiversity and relative lack of habitat that it provides for wetland flora and fauna. Wetland 2 is likely considered jurisdictional under the authority of the USACE because it exhibits connectivity to Wetland 3 (see below), which is another likely jurisdictional water feature. Wetland 2 connects to Wetland 3 via a drainage pipe that crosses under a paved drive.

Sample Point 7

Sample Point 7 (SP7) was an upland point taken on the west side of US 31, outside of the ditch that contains Wetland 2. Vegetation at this sample point was dominated by Fire Cherry (*Prunus pensylvanica*, FACU), Tall Fescue (*Schedonorus arundinaceus*, FACU), and Red Fescue (*Festuca rubra*, FACU). This vegetation community did not pass the rapid test, dominance test, or prevalence index for hydrophytic vegetation. Hydrology indicators were not observed at SP7. Soil at SP7 was 10 YR 3/1 (100%) with a texture of clay loam from 0-10 inches and 10 YR 3/1 (75%) and redox concentrations of 10 YR 5/8 (25%) with a texture of clay loam from 10-17 inches. This does not meet any hydric soil criteria. This sample point did not meet the criteria for hydrophytic vegetation, wetland hydrology, or hydric soils; therefore, it was not within a wetland.

Sample Point 8
Sample Point 8 (SP8) was an upland point taken on the east side of US 31 within Roadside Ditch (RSD) 2. Vegetation at this sample point was dominated by Red Fescue (*Festuca rubra*, FACU) and Creeping Jenny (*Lysimachia nummularia*, FACW). This vegetation community did not pass the rapid test, dominance test, or prevalence index for hydrophytic vegetation. Hydrology indicators observed at SP8 included Geomorphic Position (D2). Soil at SP8 was 10 YR 3/2 (80%) with redox concentrations of 10 YR 5/8 (20%) and a texture of sandy clay loam from 0-8 inches and 10 YR 5/1 (70%) with redox concentrations of 10 YR 5/8 (30%) with a texture of sandy clay loam from 8-16 inches. This meets the criteria for Depleted Matrix (F3) and Redox Dark Surface (F6) for hydric soil. This sample point met the criteria for hydric soil but did not meet the criteria for hydrophytic vegetation and wetland hydrology; therefore, it was not within a wetland.

Sample Point 9/Wetland 3
Sample Point 9 (SP9) was a wetland point on the west side of US 31 within a roadside ditch that contains Wetland 3. Vegetation at this sample point was dominated by Black Willow (*Salix nigra*, OBL). This vegetation community passed the rapid test, dominance test, and prevalence index for hydrophytic vegetation. Hydrology indicators observed at SP9 included Geomorphic Position (D2), FAC-Neutral Test (D5), and Drainage Patterns (B10). This meets the criteria for wetland hydrology. Soils at SP9 were 10 YR 2/1 (90%) with redox features of 2.5 YR 4/8 (10%) with a texture of silty clay loam from 0-6 inches. A restrictive layer of fill was encountered at 6 inches. This meets the hydric soil criteria of Redox Dark Surface (F6) and Redox Depressions (F8). This sample point met the criteria for hydrophytic vegetation, wetland hydrology, and hydric soils; therefore, it was within a wetland. Wetland 3 is a scrub-shrub wetland that is contained within the roadside ditch. Riprap was present within this wetland and precluded vegetation from growing in some areas. A drainage pipe carries drainage from Wetland 2 to Wetland 3 and another drainage pipe carries drainage from Wetland 3 into Youngs Creek. Wetland 3 is approximately 0.124 acre within the investigated area and is considered poor quality due to its lack of biodiversity and relative lack of habitat that it provides for wetland flora and fauna. Wetland 3 is likely considered jurisdictional under the authority of the USACE because it exhibits connectivity to Youngs Creek (see above), which is another likely jurisdictional water feature.

Sample Point 10
Sample Point 10 (SP10) was an upland point taken on the west side of US 31 adjacent to Wetland 3. Vegetation at this sample point was dominated by Red Fescue (*Festuca rubra*, FACU) and Common Dandelion (*Taraxacum officinale*, FACU). This vegetation community did not pass the rapid test, dominance test, or prevalence index for hydrophytic vegetation. Hydrology indicators were not observed at SP10. Soil at SP10 was 10 YR 4/3 (100%) with a texture of silt from 0-3 inches. A restrictive layer of fill was encountered at 3 inches. This does not meet any hydric soil criteria. This sample point did not meet the criteria for hydrophytic vegetation, hydric soil, or wetland hydrology; therefore, it was not within a wetland.

Sample Point 11/Wetland 4
Sample Point 11 (SP11) was a wetland point on the east side of US 31 within Wetland 4. Vegetation at this sample point was dominated by Green Ash (*Fraxinus pennsylvanica*, FACW), Silver Maple (*Acer saccharinum*, FACW), Narrow-Leaf Cattail (*Typha angustifolia*, OBL), and Field Horsetail (*Equisetum arvense*, FAC). This vegetation community passed the dominance test and prevalence index for hydrophytic vegetation. Hydrology indicators observed at SP11 included Geomorphic Position (D2), FAC-Neutral Test (D5) and Drainage Patterns (B10). This meets the criteria for wetland hydrology. Soils at SP11 were 10 YR 5/2 (55%) with redox concentrations of 10 YR 4/6 (45%) with a texture of silt loam from 0-12 inches, and 10 YR 6/1 (85%) with redox concentrations of 10 YR 4/6 (15%) with a texture of silty clay loam from 12-16 inches. This meets the hydric soil criteria of Depleted Matrix (F3). This sample point met the criteria for hydrophytic vegetation, wetland hydrology, and hydric soils; therefore, it was within a wetland. Wetland 4

is an emergent wetland that is contained within the roadside ditch. A pipe connects this wetland to Youngs Creek. Wetland 4 is approximately 0.033 acre within the investigated area and is considered poor quality due to its lack of biodiversity and relative lack of habitat that it provides for wetland flora and fauna. Wetland 4 is likely considered jurisdictional under the authority of the USACE because it exhibits connectivity to Youngs Creek (see above), which is another likely jurisdictional water feature.

Sample Point 12
Sample Point 12 (SP12) was an upland point taken on the east side of US 31 adjacent to Wetland 4. Vegetation at this sample point was dominated by Reed Canary Grass (*Phalaris arundinacea*, FACW). This vegetation community passed the rapid test, dominance test, and prevalence index for hydrophytic vegetation. Hydrology indicators were not observed at SP12. Soil at SP12 was 10 YR 4/3 (100%) with a texture of silt loam from 0-10 inches. A restrictive layer of fill was encountered at 10 inches. This does not meet any hydric soil criteria. This sample point did not meet the criteria for hydrophytic vegetation, hydric soil, or wetland hydrology; therefore, it was not within a wetland.

Sample Point 13/Wetland 5
Sample Point 13 (SP13) was a wetland point on the west side of US 31 within Wetland 5. Vegetation at this sample point was dominated by Yellow Nutsedge (*Cyperus esculentus,* FACW) and Woodland Sedge (*Carex blanda,* FAC). This vegetation community passed the dominance test and prevalence index for hydrophytic vegetation. Hydrology indicators observed at SP13 included Drift Deposits (B3), Geomorphic Position (D2), and FAC-Neutral Test (D5). This meets the criteria for wetland hydrology. Soils at SP13 were 10 YR 4/2 (100%) with a texture of silty clay loam from 0-6 inches, 10 YR 5/2 (93%) with redox concentrations of 10 YR 4/6 (7%) with a texture of silty clay loam from 6-10 inches, and 10 YR 5/2 (85%) with redox concentrations of 10 YR 4/6 (15%) with a texture of silty clay loam from 10-16 inches. This meets the hydric soil criteria of Depleted Matrix (F3). This sample point met the criteria for hydrophytic vegetation, wetland hydrology, and hydric soils; therefore, it was within a wetland. Wetland 5 is an emergent wetland that is contained within the roadside ditch. Wetland 5 drains into Canary Ditch to the north. Wetland 5 is approximately 0.031 acre within the investigated area and is considered poor quality due to its lack of biodiversity and relative lack of habitat that it provides for wetland flora and fauna. Wetland 5 is likely considered jurisdictional under the authority of the USACE because it exhibits connectivity to Canary Ditch (see above), which is another likely jurisdictional water feature.

Sample Point 14
Sample Point 14 (SP14) was an upland point taken on the west side of US 31 adjacent to Wetland 5. Vegetation at this sample point was dominated by Yellow Foxtail (*Setaria pumila*, FAC) and Red Fescue (*Festuca rubra*, FACU). This vegetation community did not pass the rapid test, dominance test, or prevalence index for hydrophytic vegetation. Hydrology indicators were not observed at SP14. Soil at SP14 was 10 YR 4/2 (100%) with a texture of loam from 0-12 inches and 10 YR 5/3 (97%) with redox concentrations of 10 YR 4/6 (3%) with a texture of loam from 12-16 inches. This does not meet any hydric soil criteria. This sample point did not meet the criteria for hydrophytic vegetation, hydric soil, or wetland hydrology; therefore, it was not within a wetland.

Sample Point 15/Wetland 6
Sample Point 15 (SP15) was a wetland point on the west side of US 31 within Wetland 6. Vegetation at this sample point was disturbed by recent clearing, potentially in the form of dredging. SP15 was dominated by Narrow-Leaf Cattail (*Typha angustifolia*, OBL). This vegetation community passed the rapid test, dominance test, and prevalence index for hydrophytic vegetation. Hydrology indicators observed at SP15 included Saturation (A3), Sparsely Vegetated Concave Surface (B8), Geomorphic Position, and FAC-Neutral Test (D5). This meets the criteria for wetland hydrology. Soils at SP15 were 10 YR 6/2 (75%) with redox concentrations of 10 YR 4/6 (25%) and a texture of sandy clay loam from 0-16 inches. This meets the hydric soil criteria of Depleted Matrix (F3) and Redox Depressions (F8). This sample point met the

criteria for hydrophytic vegetation, wetland hydrology, and hydric soils; therefore, it was within a wetland. Wetland 6 is an emergent wetland that is contained within the roadside ditch. Wetland 6 does not exhibit connectivity to any other water features. Wetland 6 is approximately 0.033 acre within the investigated area and is considered poor quality due to its lack of biodiversity and relative lack of habitat that it provides for wetland flora and fauna. Wetland 6 is not likely considered jurisdictional under the authority of the USACE because it lacks connectivity to any jurisdictional resources.

Sample Point 16

Sample Point 16 (SP16) was an upland point taken on the west side of US 31 adjacent to Wetland 6. Vegetation at this sample point was dominated by Tall Fescue (*Schedonorus arundinaceus*, FACU) and Kentucky Bluegrass (*Poa pratensis*, FAC). This vegetation community did not pass the rapid test, dominance test, or prevalence index for hydrophytic vegetation. Hydrology indicators were not observed at SP16. Soil at SP16 was 10 YR 4/3 (100%) with a texture of silty clay loam from 0-4 inches and 10 YR 4/3 (70%) and 10 YR 6/8 (30%) with a texture of silty clay loam from 4-16 inches. This does not meet any hydric soil criteria. This sample point did not meet the criteria for hydrophytic vegetation, hydric soil, or wetland hydrology; therefore, it was not within a wetland.

Sample Point 17/Wetland 7

Sample Point 17 (SP17) was a wetland point on the west side of US 31 within Wetland 7. Vegetation at this sample point was dominated by Reed Canary Grass (*Phalaris arundinacea*, FACW) and Yellow Nutsedge (*Cyperus esculentus*, FACW). This vegetation community passed the rapid test, dominance test, and prevalence index for hydrophytic vegetation. Hydrology indicators observed at SP17 included Algal Mat or Crust (B4), Geomorphic Position (D2), and FAC-Neutral Test (D5). This meets the criteria for wetland hydrology. Soils at SP17 were 10 YR 5/2 (90%) with redox concentrations of 10 YR 5/8 (10%) and a texture of silt loam from 0-16 inches. This meets the hydric soil criteria of Depleted Matrix (F3) and Redox Depressions (F8). This sample point met the criteria for hydrophytic vegetation, wetland hydrology, and hydric soils; therefore, it was within a wetland. Wetland 7 is an emergent wetland that is contained within the roadside ditch. Wetland 7 does not exhibit connectivity to any other water features. Wetland 7 is approximately 0.022 acre within the investigated area and is considered poor quality due to its lack of biodiversity and relative lack of habitat that it provides for wetland flora and fauna. Wetland 7 is not likely considered jurisdictional under the authority of the USACE because it lacks connectivity to any jurisdictional resources.

Sample Point 18

Sample Point 18 (SP18) was an upland point taken on the west side of US 31 adjacent to Wetland 7. Vegetation at this sample point was dominated by Tall Fescue (*Schedonorus arundinaceus*, FACU) and Kentucky Bluegrass (*Poa pratensis*, FAC). This vegetation community did not pass the rapid test, dominance test, or prevalence index for hydrophytic vegetation. Hydrology indicators were not observed at SP18. Soil at SP18 was 10 YR 5/3 (100%) with a texture of silt loam from 0-4 inches and 10 YR 5/1 (75%) and 10 YR 3/6 (25%) with a texture of silt loam from 4-16 inches. This meets the hydric soil criteria for Depleted Matrix (F3). This sample point met the criteria for hydric soil but did not meet the criteria for hydrophytic vegetation or wetland hydrology; therefore, it was not within a wetland.

Sample Point 19

Sample Point 19 (SP19) was an upland point taken on the west side of US 31, within RSD 13. This sample point was collected to characterize the ditches in the vicinity of this point that all appear to have been recently dredged and seeded. The ditches to the north of this ditch all appear to exhibit similar conditions to this point. Vegetation at this sample point was dominated by Hard Fescue (*Festuca brevipila*, UPL). This vegetation community did not pass the rapid test, dominance test, or prevalence index for hydrophytic vegetation. Hydrology indicators observed at SP19 included Geomorphic Position (D2). This does not meet wetland hydrology criteria. Soil at SP19 was 10 YR 3/2 (95%) with redox concentrations of 10 YR 5/8

(5%) and a texture of sandy clay loam from 0-5 inches, and 10 YR 4/2 (90%) with redox concentrations of 10 YR 5/8 (10%) and a texture of clay loam from 5-14 inches, and 10 YR 4/1 (90%) with redox concentrations of 10 YR 5/8 (10%) and a texture of clay loam from 14-19 inches. This meets the hydric soil criteria for Depleted Matrix (F3) and Redox Depression (F8). This sample point met the criteria for hydric soil but did not meet the criteria for hydrophytic vegetation or wetland hydrology; therefore, it was not within a wetland.

Sample Point 20/Wetland 8

Sample Point 20 (SP20) was a wetland point on the east side of US 31 within Wetland 8. Vegetation at this sample point was dominated by Bearded Sedge (*Carex comosa,* OBL), Dark Green Bullrush (*Scirpus atrovirens*, OBL), and Barnyard Grass (*Echinochloa crus-galli*, FACW). This vegetation community passed the rapid test, dominance test, and prevalence index for hydrophytic vegetation. Hydrology indicators observed at SP20 included Sediment Deposits (B2), Surface Soil Cracks (B6), Geomorphic Positions (D2), and FAC-Neutral Test (D5). This meets the criteria for wetland hydrology. Soils at SP20 were 10 YR 3/1 (100%) with a texture of clay loam from 0-8 inches, 10 YR 3/1 (90%) and 10 YR 5/6 (7%) with redox concentrations of 10 YR 5/8 (3%) and a texture of clay loam from 8-10 inches, and 10 YR 5/1 (95%) with redox concentrations of 10 YR 5/8 (5%) and a texture of clay loam from 10-16 inches. This meets the hydric soil criteria of Depleted Below Dark Surface (A11). This sample point met the criteria for hydrophytic vegetation, wetland hydrology, and hydric soils; therefore, it was within a wetland. Wetland 8 is an emergent wetland that is contained within the roadside ditch. Wetland 8 does not exhibit connectivity to any other features. Wetland 8 is approximately 0.021 acre within the investigated area and is considered poor quality due to its lack of biodiversity and relative lack of habitat that it provides for wetland flora and fauna. Wetland 8 is not likely considered jurisdictional under the authority of the USACE because it lacks connectivity to any jurisdictional resources.

Sample Point 21

Sample Point 21 (SP21) was an upland point taken on the east side of US 31 adjacent to Wetland 8. Vegetation at this sample point was dominated by Tall Fescue (*Schedonorus arundinaceus*, FACU) and Red Fescue (*Festuca rubra,* FACU). This vegetation community did not pass the rapid test, dominance test, or prevalence index for hydrophytic vegetation. Hydrology indicators were not observed at SP21. Soil at SP21 was 10 YR 4/1 (100%) with a texture of loam from 0-16 inches. This does not meet any hydric soil criteria. This sample point did not meet the criteria for hydrophytic vegetation, hydric soil, or wetland hydrology; therefore, it was not within a wetland.

Sample Point 22/Wetland 9

Sample Point 22 (SP22) was a wetland point on the east side of US 31 within Wetland 9. Vegetation at this sample point was dominated by Bearded Sedge (*Carex comosa,* OBL) and Barnyard Grass (*Echinochloa crus-galli*, FACW). This vegetation community passed the rapid test, dominance test, and prevalence index for hydrophytic vegetation. Hydrology indicators observed at SP22 included Algal Mat or Crust (B4), Surface Soil Cracks (B6), Geomorphic Positions (D2), and FAC-Neutral Test (D5). This meets the criteria for wetland hydrology. Soils at SP22 were 10 YR 5/1 (60%) with redox concentrations of 10 YR 5/6 (40%) and a texture of clay loam from 0-14 inches, and 10 YR 6/1 (60%) with redox concentrations 10 YR 5/6 (40%) and a texture of clay loam from 14-16 inches. This meets the hydric soil criteria of Depleted Matrix (F3). This sample point met the criteria for hydrophytic vegetation, wetland hydrology, and hydric soils; therefore, it was within a wetland. Wetland 9 is an emergent wetland that is contained within the roadside ditch. Wetland 9 does not exhibit connectivity to any other features. Wetland 9 is approximately 0.041 acre within the investigated area and is considered poor quality due to its lack of biodiversity and relative lack of habitat that it provides for wetland flora and fauna. Wetland 9 is not likely considered jurisdictional under the authority of the USACE because it lacks connectivity to any jurisdictional resources.

Sample Point 23
Sample Point 23 (SP23) was an upland point taken on the east side of US 31 adjacent to Wetland 9. Vegetation at this sample point was dominated by Yellow Foxtail (*Setaria pumila*, FAC). This vegetation community passed the dominance test for hydrophytic vegetation. Hydrology indicators were not observed at SP23. Soil at SP23 was 10 YR 5/3 (100%) with a texture of loam from 0-5 inches, and 10 YR 5/1 (90%) with redox concentrations of 10 YR 4/6 (10%) and a texture of loam from 5-16 inches. This meets the criteria for Depleted Matrix (F3). This sample point met the criteria for hydrophytic vegetation and hydric soil, but it did not meet the criteria for wetland hydrology; therefore, it was not within a wetland. This site likely has developed hydric soil over time, but the elevation of this sample point likely forces water to drain into Wetland 9 instead of pool at this location.

Sample Point 24
Sample Point 24 (SP24) was an upland point taken on the west side of US 31. Vegetation at this sample point was dominated by Orchard Grass (*Dactylis glomerata,* FACU). This vegetation community did not pass the rapid test, dominance test, or prevalence index for hydrophytic vegetation. Hydrology indicators observed at SP24 included Surface Soil Cracks (B6) and Geomorphic Position (D2). This meets the criteria for wetland hydrology. Soil at SP24 was 10 YR 3/3 (100%) with a texture of clay loam from 0-4 inches, 10 YR 3/3 (95%) with redox concentrations of 2.5 YR 3/8 (5%) and a texture of clay loam from 4-10 inches, and 10 YR 4/2 (95%) with redox concentrations of 10 YR 5/8 (5%) and a texture of clay loam from 10-19 inches. This meets the criteria for Redox Depressions (F8). This sample point met the criteria for hydric soil and wetland hydrology, but it did not meet the criteria for hydrophytic vegetation; therefore, it was not within a wetland. This site likely does not hold water long enough to develop conditions that support hydrophytic vegetation.

Sample Point 25/Wetland 10
Sample Point 25 (SP25) was a wetland point on the west side of US 31 within Wetland 10. Vegetation at this sample point was dominated by Narrow-Leaf Cattail (*Typha angustifolia,* OBL). This vegetation community passed the rapid test, dominance test, and prevalence index for hydrophytic vegetation. Hydrology indicators observed at SP25 included Algal Mat or Crust (B4), Surface Soil Cracks (B6), Geomorphic Positions (D2), and FAC-Neutral Test (D5). This meets the criteria for wetland hydrology. Soils at SP25 were 10 YR 3/2 (100%) with a texture of sandy clay loam from 0-3 inches, 10 YR 4/1 (95%) with redox concentrations of 10 YR 5/8 (5%) and a texture of sandy clay loam from 3-10 inches, and 10 YR 4/1 (90%) with redox concentrations 10 YR 5/8 (10%) and a texture of sandy clay loam from 10-20 inches. This meets the hydric soil criteria of Depleted Matrix (F3) and Redox Depressions (F8). This sample point met the criteria for hydrophytic vegetation, wetland hydrology, and hydric soils; therefore, it was within a wetland. Wetland 10 is an emergent wetland that is contained within the roadside ditch. Wetland 10 exhibits connectivity Powell legal drain to the south (see Photo 116) and to Wetland 11 to the north (see below) but does not exhibit connectivity to any likely jurisdictional features. Wetland 10 is approximately 0.265 acre within the investigated area and is considered poor quality due to its lack of biodiversity and relative lack of habitat that it provides for wetland flora and fauna. Wetland 10 is not likely considered jurisdictional under the authority of the USACE because it lacks connectivity to any jurisdictional resources.

Sample Point 26
Sample Point 26 (SP26) was an upland point taken on the west side of US 31 and adjacent to Wetland 10. Vegetation at this sample point was dominated by Orchard Grass (*Dactylis glomerata*, FACU) and Tall Fescue (*Schedonorus arundinaceus,* FACU). This vegetation community did not pass the rapid test, dominance test, or prevalence index for hydrophytic vegetation. Hydrology indicators were not observed at SP26. Soil at SP26 was 10 YR 3/2 (100%) with a texture of silty clay loam from 0-3 inches, 10 YR 3/2 (80%) and 10 YR 4/3 (20%), with a texture of silty clay loam from 3-6 inches, 10 YR 3/2 (100%) with a texture of silty clay loam from 6-11 inches, and 10 YR 3/1 (98%) with redox concentrations of 10 YR 5/8

(2%) and a texture of silty clay loam from 11-18 inches. This does not meet any hydric soil criteria. This sample point did not meet the criteria for hydrophytic vegetation, hydric soil, or wetland hydrology; therefore, it was not within a wetland.

Sample Point 27/Wetland 11

Sample Point 27 (SP27) was a wetland point on the west side of US 31 within Wetland 11. Vegetation at this sample point was dominated by Narrow-Leaf Cattail (*Typha angustifolia,* OBL). This vegetation community passed the rapid test, dominance test, and prevalence index for hydrophytic vegetation. Hydrology indicators observed at SP27 included Algal Mat or Crust (B4), Drainage Patterns (B10), Geomorphic Positions (D2), and FAC-Neutral Test (D5). This meets the criteria for wetland hydrology. Soils at SP27 were 10 YR 3/1 (95%) with redox concentrations of 2.5 YR 5/8 (5%) and a texture of silty clay loam from 0-10 inches, and 10 YR 4/1 (90%) with redox concentrations of 10 YR 5/8 (10%) and a texture of sandy clay loam from 10-18 inches. This meets the hydric soil criteria of Redox Dark Surface (F6) and Redox Depressions (F8). This sample point met the criteria for hydrophytic vegetation, wetland hydrology, and hydric soils; therefore, it was within a wetland. Wetland 11 is an emergent wetland that is contained within the roadside ditch. Wetland 11 exhibits connectivity to Wetland 10 to the south (see above) and Wetland 12 to the north (see below), but it does not exhibit connectivity to any likely jurisdictional features. Wetland 11 is approximately 0.063 acre within the investigated area and is considered poor quality due to its lack of biodiversity and relative lack of habitat that it provides for wetland flora and fauna. Wetland 11 is not likely considered jurisdictional under the authority of the USACE because it lacks connectivity to any jurisdictional resources.

Sample Point 28

Sample Point 28 (SP28) was an upland point taken on the west side of US 31 and adjacent to Wetland 11. Vegetation at this sample point was dominated by Orchard Grass (*Dactylis glomerata*, FACU), Tall Fescue (*Schedonorus arundinaceus,* FACU), and Yellow Foxtail (*Setaria pumila*, FAC). This vegetation community did not pass the rapid test, dominance test, or prevalence index for hydrophytic vegetation. Hydrology indicators were not observed at SP28. Soil at SP28 was 10 YR 3/2 (100%) with a texture of silty clay loam from 0-11 inches, and 10 YR 3/2 (98%) with redox concentrations of 10 YR 5/8 (2%) and a texture of sandy clay loam from 11-18 inches. This does not meet any hydric soil criteria. This sample point did not meet the criteria for hydrophytic vegetation, hydric soil, or wetland hydrology; therefore, it was not within a wetland.

Sample Point 29/Wetland 12

Sample Point 29 (SP29) was a wetland point on the west side of US 31 within Wetland 12. Vegetation at this sample point was dominated by Barnyard Grass (*Echinochloa crus-galli*, FACW) and Narrow-Leaf Cattail (*Typha angustifolia,* OBL). This vegetation community passed the rapid test, dominance test, and prevalence index for hydrophytic vegetation. Hydrology indicators observed at SP29 included Algal Mat or Crust (B4), Surface Soil Cracks (B6), Geomorphic Positions (D2), and FAC-Neutral Test (D5). This meets the criteria for wetland hydrology. Soils at SP29 were 10 YR 3/1 (95%) with redox concentrations of 2.5 YR 5/8 (5%) and a texture of silty clay loam from 0-5 inches, and 10 YR 4/1 (90%) with redox concentrations of 10 YR 5/8 (10%) and a texture of sandy clay loam from 5-11 inches. A restrictive layer of fill was encountered at 11 inches. This meets the hydric soil criteria of Depleted Matrix (F3), Redox Dark Surface (F6), and Redox Depressions (F8). This sample point met the criteria for hydrophytic vegetation, wetland hydrology, and hydric soils; therefore, it was within a wetland. Wetland 12 is an emergent wetland that is contained within the roadside ditch. Wetland 12 exhibits connectivity to Wetland 11 to the south (see above) and Wetland 13 to the north (see below), but it does not exhibit connectivity to any likely jurisdictional features. Wetland 12 is approximately 0.225 acre within the investigated area and is considered poor quality due to its lack of biodiversity and relative lack of habitat that it provides for wetland flora and fauna. Wetland 12 is not likely considered jurisdictional under the authority of the USACE because it lacks connectivity to any jurisdictional resources.

Sample Point 30
Sample Point 30 (SP30) was an upland point taken on the west side of US 31 and adjacent to Wetland 12. Vegetation at this sample point was dominated by Orchard Grass (*Dactylis glomerata*, FACU) and Tall Fescue (*Schedonorus arundinaceus*, FACU). This vegetation community did not pass the rapid test, dominance test, or prevalence index for hydrophytic vegetation. Hydrology indicators were not observed at SP30. Soil at SP30 was 10 YR 3/2 (100%) with a texture of silty clay loam from 0-12 inches, and 10 YR 3/2 (98%) with redox concentrations of 10 YR 5/8 (2%) and a texture of silty clay loam from 12-18 inches. This does not meet any hydric soil criteria. This sample point did not meet the criteria for hydrophytic vegetation, hydric soil, or wetland hydrology; therefore, it was not within a wetland.

Sample Point 31/Wetland 13
Sample Point 31 (SP31) was a wetland point on the west side of US 31 within Wetland 13. Vegetation at this sample point was dominated by Japanense Bristlegrass (*Setaria faberi*, FAC) and Redtop (*Agrostis gigantea*, FACW). This vegetation community passed the dominance test and prevalence index for hydrophytic vegetation. Hydrology indicators observed at SP31 included Geomorphic Positions (D2) and FAC-Neutral Test (D5). This meets the criteria for wetland hydrology. Soils at SP31 were 10 YR 3/1 (100%) and a texture of clay loam from 0-1 inches, and 10 YR 4/2 (85%) with redox concentrations of 10 YR 5/8 (15%) and a texture of clay loam from 1-6 inches. A restrictive layer of fill was encountered at 6 inches. This meets the hydric soil criteria of Depleted Matrix (F3) and Redox Depressions (F8). This sample point met the criteria for hydrophytic vegetation, wetland hydrology, and hydric soils; therefore, it was within a wetland. Wetland 13 is an emergent wetland that is contained within the roadside ditch. Wetland 13 exhibits connectivity to Wetland 12 to the south (see above), but it does not exhibit connectivity to any likely jurisdictional features. Wetland 13 is approximately 0.037 acre within the investigated area and is considered poor quality due to its lack of biodiversity and relative lack of habitat that it provides for wetland flora and fauna. Wetland 13 is not likely considered jurisdictional under the authority of the USACE because it lacks connectivity to any jurisdictional resources.

Sample Point 32
Sample Point 32 (SP32) was an upland point taken on the west side of US 31 and adjacent to Wetland 13. Vegetation at this sample point was dominated by White Mulberry (*Morus alba*, FAC), White Ash (*Fraxinus americana*, FACU), Orchard Grass (*Dactylis glomerata*, FACU), Kentucky Blue Grass (*Poa pratensis*, FAC), Tall Fescue (*Schedonorus arundinaceus*, FACU), and Red Fescue (*Festuca rubra*, FACU). This vegetation community did not pass the rapid test, dominance test, or prevalence index for hydrophytic vegetation. Hydrology indicators were not observed at SP32. Soil at SP32 was 10 YR 3/2 (100%) with a texture of clay loam from 0-8 inches, and 10 YR 3/2 (90%) with redox concentrations of 10 YR 5/8 (10%) and a texture of clay loam from 8-9 inches. A restrictive layer of fill was encountered at 9 inches. This does not meet any hydric soil criteria. This sample point did not meet the criteria for hydrophytic vegetation, hydric soil, or wetland hydrology; therefore, it was not within a wetland.

Sample Point 33/Wetland 14
Sample Point 33 (SP33) was a wetland point on the west side of US 31 within Wetland 14. Vegetation at this sample point was dominated by Barnyard Grass (*Echinochloa crus-galli*, FACW), Redtop (*Agrostis gigantea*, FACW), Softstem Bullrush (*Schoenoplectus tabernaemontani*, OBL), and Common Spikerush (*Eleocharis palustris*, OBL). This vegetation community passed the rapid test, dominance test, and prevalence index for hydrophytic vegetation. Hydrology indicators observed at SP33 included Algal Mat or Crust (B4), Geomorphic Position (D2) and FAC-Neutral Test (D5). This meets the criteria for wetland hydrology. Soils at SP33 were 10 YR 3/2 (90%) with redox concentrations of 5 YR 5/8 (10%) and a texture of clay loam from 0-6 inches, and 10 YR 4/2 (85%) with redox concentrations of 10 YR 5/8 (15%) and a texture of clay loam from 6-18 inches. This meets the hydric soil criteria of Depleted Matrix (F3) and Redox Depression (F8). This sample point met the criteria for hydrophytic vegetation, wetland hydrology, and hydric soils; therefore, it was within a wetland. Wetland 13 is an emergent wetland that is contained within

the roadside ditch. Wetland 14 exhibits connectivity to Wetland 13 to the south (see above), but it does not exhibit connectivity to any other likely jurisdictional features. Wetland 14 is approximately 0.150 acre within the investigated area and is considered poor quality due to its lack of biodiversity and relative lack of habitat that it provides for wetland flora and fauna. Wetland 14 is not likely considered jurisdictional under the authority of the USACE because it lacks connectivity to any jurisdictional resources.

Sample Point 34

Sample Point 34 (SP34) was an upland point taken on the west side of US 31 and adjacent to Wetland 14. Vegetation at this sample point was dominated by Orchard Grass (*Dactylis glomerata*, FACU) and Tall Fescue (*Schedonorus arundinaceus*, FACU). This vegetation community did not pass the rapid test, dominance test, or prevalence index for hydrophytic vegetation. Hydrology indicators were not observed at SP34. Soil at SP34 was 10 YR 3/2 (100%) with a texture of clay loam from 0-4 inches, 10 YR 3/2 (95%) with redox concentrations of 10 YR 5/8 (5%) and a texture of clay loam from 4-9 inches, and 10 YR 4-1 (88%) with redox concentrations of 10 YR 5/8 (12%) and a texture of clay loam from 9-18 inches. This meets the criteria for Depleted Matrix (F3) and Redox Depressions (F8). This sample point met the criteria for hydric soil, but it did not meet the criteria for hydrophytic vegetation or wetland hydrology; therefore, it was not within a wetland. The presence of hydric soil is likely due to the close proximity to the ditch wetland boundary of Wetland 14.

Sample Point 35/Wetland 15

Sample Point 35 (SP35) was a wetland point on the west side of US 31 within Wetland 15. Vegetation at this sample point was dominated by Barnyard Grass (*Echinochloa crus-galli*, FACW). This vegetation community passed the rapid test, dominance test, and prevalence index for hydrophytic vegetation. Hydrology indicators observed at SP35 included Surface Soil Cracks, Geomorphic Position (D2), and FAC-Neutral Test (D5). This meets the criteria for wetland hydrology. Soils at SP35 were 10 YR 3/2 (95%) with redox concentrations of 5 YR 5/8 (5%) and a texture of clay loam from 0-6 inches, and 10 YR 4/2 (90%) with redox concentrations of 10 YR 5/8 (10%) and a texture of clay loam from 6-16 inches. This meets the hydric soil criteria of Depleted Matrix (F3), Redox Dark Surface (F6), and Redox Depressions (F8). This sample point met the criteria for hydrophytic vegetation, wetland hydrology, and hydric soils; therefore, it was within a wetland. Wetland 15 is an emergent wetland that is contained within the roadside ditch. Wetland 15 does not exhibit connectivity to any likely jurisdictional features. Wetland 15 is approximately 0.045 acre within the investigated area and is considered poor quality due to its lack of biodiversity and relative lack of habitat that it provides for wetland flora and fauna. Wetland 15 is not likely considered jurisdictional under the authority of the USACE because it lacks connectivity to any likely jurisdictional resources.

Sample Point 36

Sample Point 36 (SP36) was an upland point taken on the west side of US 31 and adjacent to Wetland 15. Vegetation at this sample point was dominated by Orchard Grass (*Dactylis glomerata*, FACU) and Red Fescue (*Festuca rubra*, FACU). This vegetation community did not pass the rapid test, dominance test, or prevalence index for hydrophytic vegetation. Hydrology indicators were not observed at SP36. Soil at SP36 was 10 YR 3/2 (100%) with a texture of clay loam from 0-8 inches, and 10 YR 4/2 (75%) with redox concentrations of 10 YR 5/8 (25%) and a texture of clay loam from 8-18 inches. This meets the criteria for Depleted Matrix (F3). This sample point met the criteria for hydric soil, but it did not meet the criteria for hydrophytic vegetation or wetland hydrology; therefore, it was not within a wetland. The presence of hydric soil is likely due to the close proximity to the ditch wetland boundary of Wetland 15.

Table 4. Sample Point Summary Table

Data Point	Photos	Vegetation	Soils	Hydrology	Wetland
SP1	1-3	Yes	No	No	No
SP2	4-6	Yes	Yes	Yes	Yes
SP3	7-9	No	No	No	No
SP4	12-14	Yes	No	No	No
SP5	15-16	Yes	No	Yes	No
SP6	24-26	Yes	Yes	Yes	Yes
SP7	27-29	No	No	No	No
SP8	30-31	No	Yes	No	No
SP9	32-33	Yes	Yes	Yes	Yes
SP10	34-35	No	No	No	No
SP11	36-38	Yes	Yes	Yes	Yes
SP12	39-40	Yes	No	No	No
SP13	64-65	Yes	Yes	Yes	Yes
SP14	66-67	No	No	No	No
SP15	79-80	Yes	Yes	Yes	Yes
SP16	81-82	No	No	No	No
SP17	88-89	Yes	Yes	Yes	Yes
SP18	90-91	No	Yes	No	No
SP19	94-95	No	Yes	No	No
SP20	105-106	Yes	Yes	Yes	Yes
SP21	107-108	No	No	No	No
SP22	111-112	Yes	Yes	Yes	Yes
SP23	113-114	Yes	Yes	No	No
SP24	115-116	No	Yes	Yes	No
SP25	121-122	Yes	Yes	Yes	Yes
SP26	123-124	No	No	No	No
SP27	130-131	Yes	Yes	Yes	Yes
SP28	132-133	No	No	No	No
SP29	134-135	Yes	Yes	Yes	Yes
SP30	136-137	No	No	No	No
SP31	140-141	Yes	Yes	Yes	Yes
SP32	142-143	No	No	No	No
SP33	145	Yes	Yes	Yes	Yes
SP34	146-147	No	Yes	No	No
SP35	149-151	Yes	Yes	Yes	Yes
SP36	152-153	No	Yes	No	No

Table 5. Wetland Summary Table

Wetland Name	Photos	Lat/Long	Type	Total Area (Acres)	Quality	Likely Water of the US?
Wetland 1	4-6	Lat: 39.454435 Long: -86.054530	Emergent	0.208	Poor	No
Wetland 2	24-27	Lat; 39.475596 Long: -86.062991	Emergent	0.122	Poor	Yes
Wetland 3	32-34, 48	Lat: 39.476692 Long: -86.063447	Scrub-Shrub	0.124	Poor	Yes
Wetland 4	36-39	Lat: 39.477507 Long: -86.063221	Emergent	0.033	Poor	Yes
Wetland 5	64-66	Lat: 39.498389 Long: -86.067151	Emergent	0.031	Poor	Yes
Wetland 6	79-80	Lat: 39.500794 Long: -86.068177	Emergent	0.033	Poor	No
Wetland 7	88-90	Lat: 39.506153 Long: -86.070222	Emergent	0.022	Poor	No
Wetland 8	105-107	Lat: 39.521514 Long: -86.075613	Emergent	0.021	Poor	No
Wetland 9	111-113	Lat: 39.523420 Long: -86.076321	Emergent	0.041	Poor	No
Wetland 10	121-123, 125-126, 128	Lat: 39.527898 Long: -86.078585	Emergent	0.265	Poor	No
Wetland 11	129-131	Lat: 39.531509 Long: -86.079980	Emergent	0.063	Poor	No
Wetland 12	134-136	Lat: 39.531927 Long: -86.080138	Emergent	0.225	Poor	No
Wetland 13	140-142	Lat: 39.535777 Long: -86.081628	Emergent	0.037	Poor	No
Wetland 14	144-146	Lat: 39.540883 Long: -86.083663	Emergent	0.150	Poor	No
Wetland 15	149-152, 164-165	Lat: 39.540881 Long: -86.083627	Emergent	0.045	Poor	No

Open Water:
No open water bodies were identified within or immediately adjacent to the investigated area in the desktop review. The field visit confirmed that no open water features are within the investigated area.

Other Features and Roadside Ditches:
The investigated area was assessed for the presence of other water features. Other water features include roadside ditches, areas of concentrated flow, or other unusual drainage features. These features may be considered jurisdictional if they exhibit a Significant Nexus to a Traditionally Navigable Waterway. Twenty-two roadside ditches (RSDs) were observed along US 31 and were investigated for the presence of wetland features or characteristics of a stream. These RSDs appear to only carry stormwater drainage that collects off of US 31 during rain events. No RSDs exhibited jurisdictional wetland characteristics, a consistent OHWM, a defined bed or bank, or Significant Nexus to a Traditionally Navigable Waterway. These RSDs did not show evidence of frequent flow and did not hold water at the time of investigation.

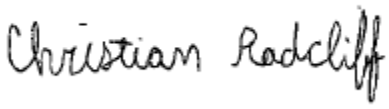
Powell legal drain was identified during the field investigation (see Photos 116-118). Powell legal drain does not show up on the USGS topographic map, on the NWI map, or on the NHD map. A box culvert appears to carry stormwater and farm drainage from the east of US 31, under US 31, into Powell legal drain. This legal drain appears to be a manmade feature that begins at the culvert outlet and carries stormwater

drainage southwest toward an agricultural field. Powell legal drain is riprap lined, does not show evidence of frequent flow, and did not hold water at the time of investigation. It appears that Powell legal drain is an ephemeral drainage feature and is therefore not likely to be a jurisdiction feature.

Conclusions:
The site investigation identified 15 wetlands, 3 streams, and 22 roadside ditches. Youngs Creek, UNT 1 to Youngs Creek, and Canary Ditch are all likely jurisdictional resources. Wetlands 2, 3, 4, are likely jurisdictional due to their connectivity to Youngs Creek. Wetland 5 is likely jurisdictional due to its connectivity to Canary Ditch. All roadside ditches appeared to be ephemeral features that do not have relatively permanent flow patterns and are not likely jurisdictional. Every effort should be taken to avoid and minimize impacts to these waterways. If impacts are necessary, then mitigation may be required. The USACE should be contacted immediately if impacts will occur. The final determination of jurisdictional waters is ultimately made by the appropriate regulatory staff of the US Army Corps of Engineers. This report is our best judgment based on the guidelines set forth 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.

Christian Radcliff



Ecologist
SJCA Inc.
Date: September 21, 2021

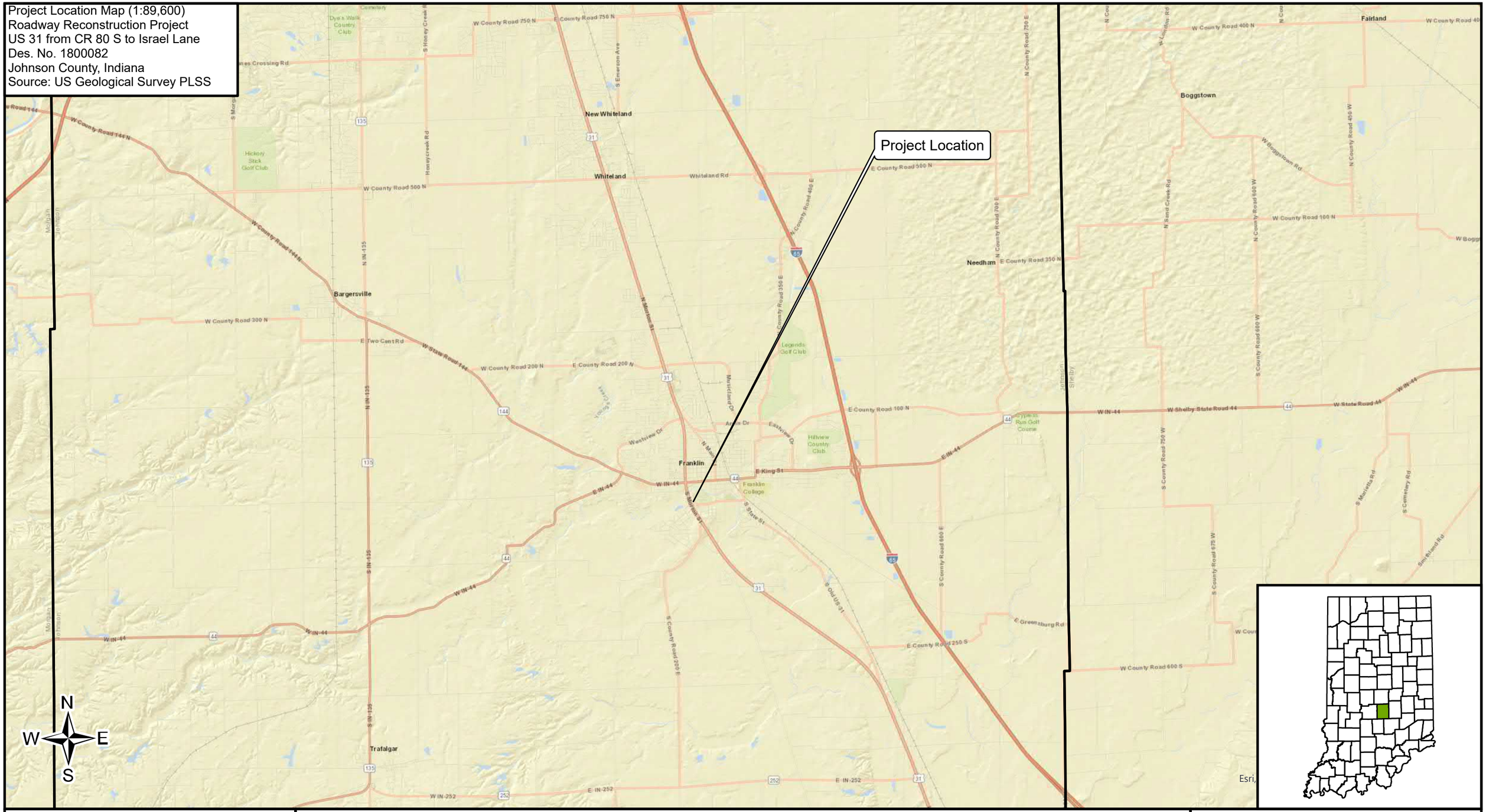
Supporting Documentation:

- Maps
- Photos
- Wetland Delineation Data Sheets

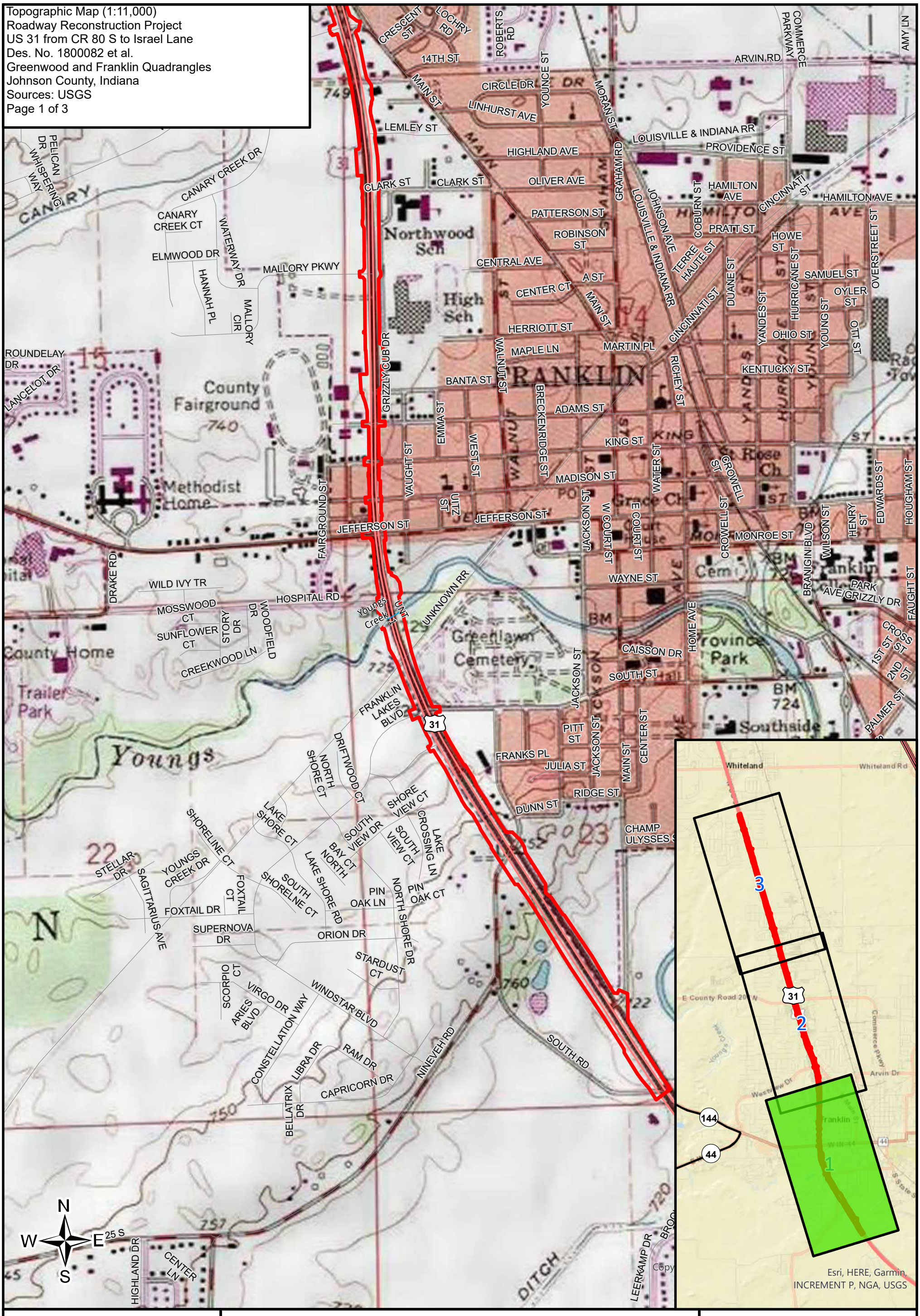
Some maps have been removed to avoid duplication. Please see Appendix B for project area maps.

The photos and wetland delineation data sheets have been removed to reduce the overall size of the document. These items can be made available upon request.

Project Location Map (1:89,600)
Roadway Reconstruction Project
US 31 from CR 80 S to Israel Lane
Des. No. 1800082
Johnson County, Indiana
Source: US Geological Survey PLSS



Topographic Map (1:11,000)
Roadway Reconstruction Project
US 31 from CR 80 S to Israel Lane
Des. No. 1800082 et al.
Greenwood and Franklin Quadrangles
Johnson County, Indiana
Sources: USGS



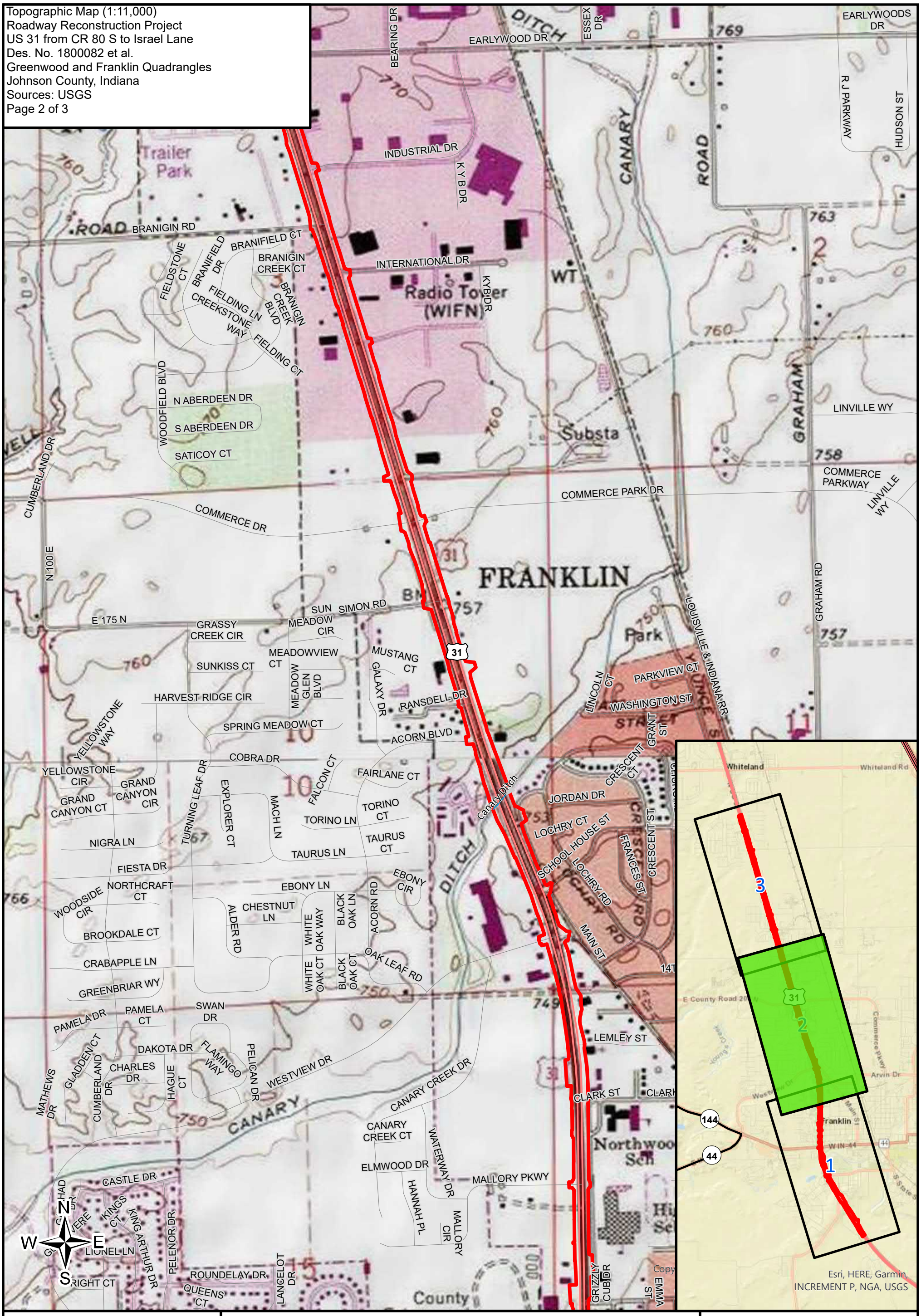
0 850 1,700 Feet

Investigated Area

9/21/2021

SJCA

Topographic Map (1:11,000)
Roadway Reconstruction Project
US 31 from CR 80 S to Israel Lane
Des. No. 1800082 et al.
Greenwood and Franklin Quadrangles
Johnson County, Indiana
Sources: USGS



0 850 1,700 Feet

Investigated Area

9/21/2021

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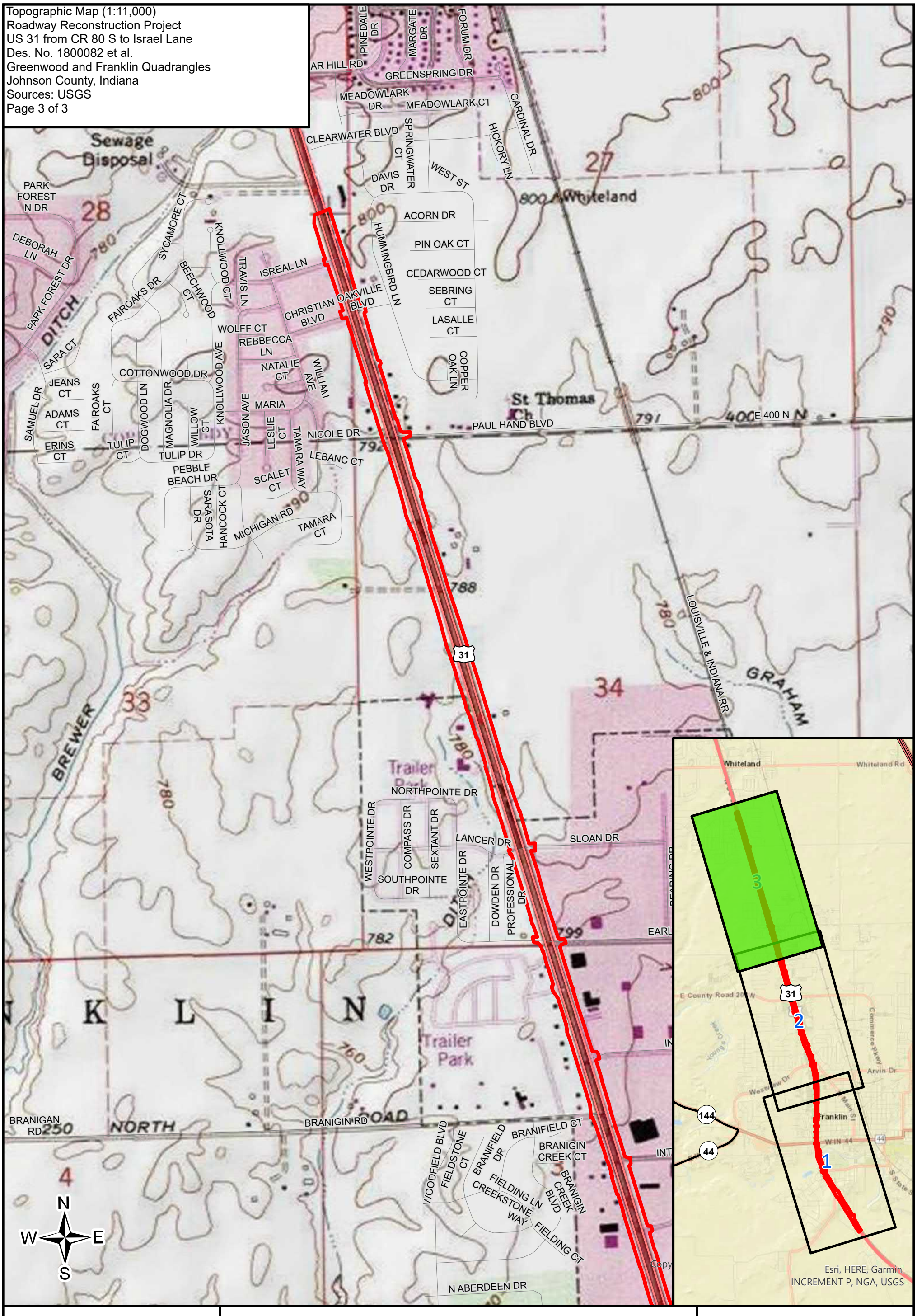
approx 10/13/2021 pg 1

Topographic Map (1:11,000)
Roadway Reconstruction Project
US 31 from CR 80 S to Israel Lane
Des. No. 1800082 et al.
Greenwood and Franklin Quadrangles
Johnson County, Indiana
Sources: USGS



0 850 1,700 Feet

Investigated Area

9/21/2021

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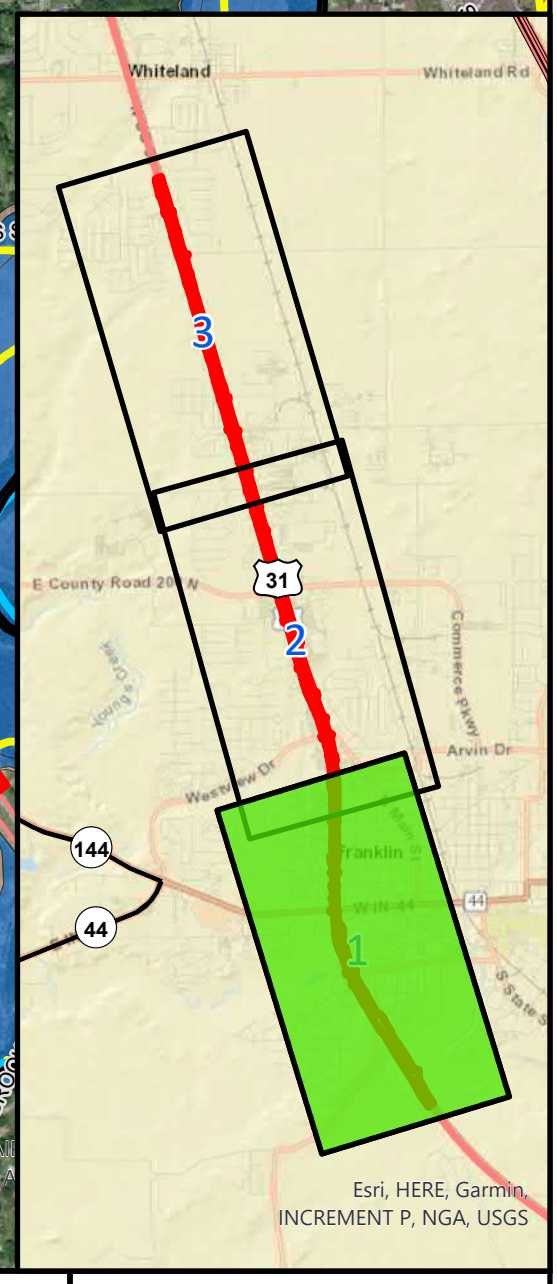
approx 10/13/2021 rev2

Water Features Map (1:11,000)
Roadway Reconstruction Project
US 31 from CR 80 S to Israel Lane
Des. No. 1800082 et al.
Johnson County, Indiana
Sources: NRCS, IDNR, USFWS

NHD Flowline associated with structure labeled as US 31 over UNT to Hazlett Ditch.



Feet
0 850 1,700

Investigated Area
NWI Wetlands
NHD Flowline - Classified
NHD Flowline - Unclassified
0.2% Annual Chance Flood Hazard
0.2% Annual Chance, Protected by Levee
1% Annual Chance Flood Hazard

9/21/2021

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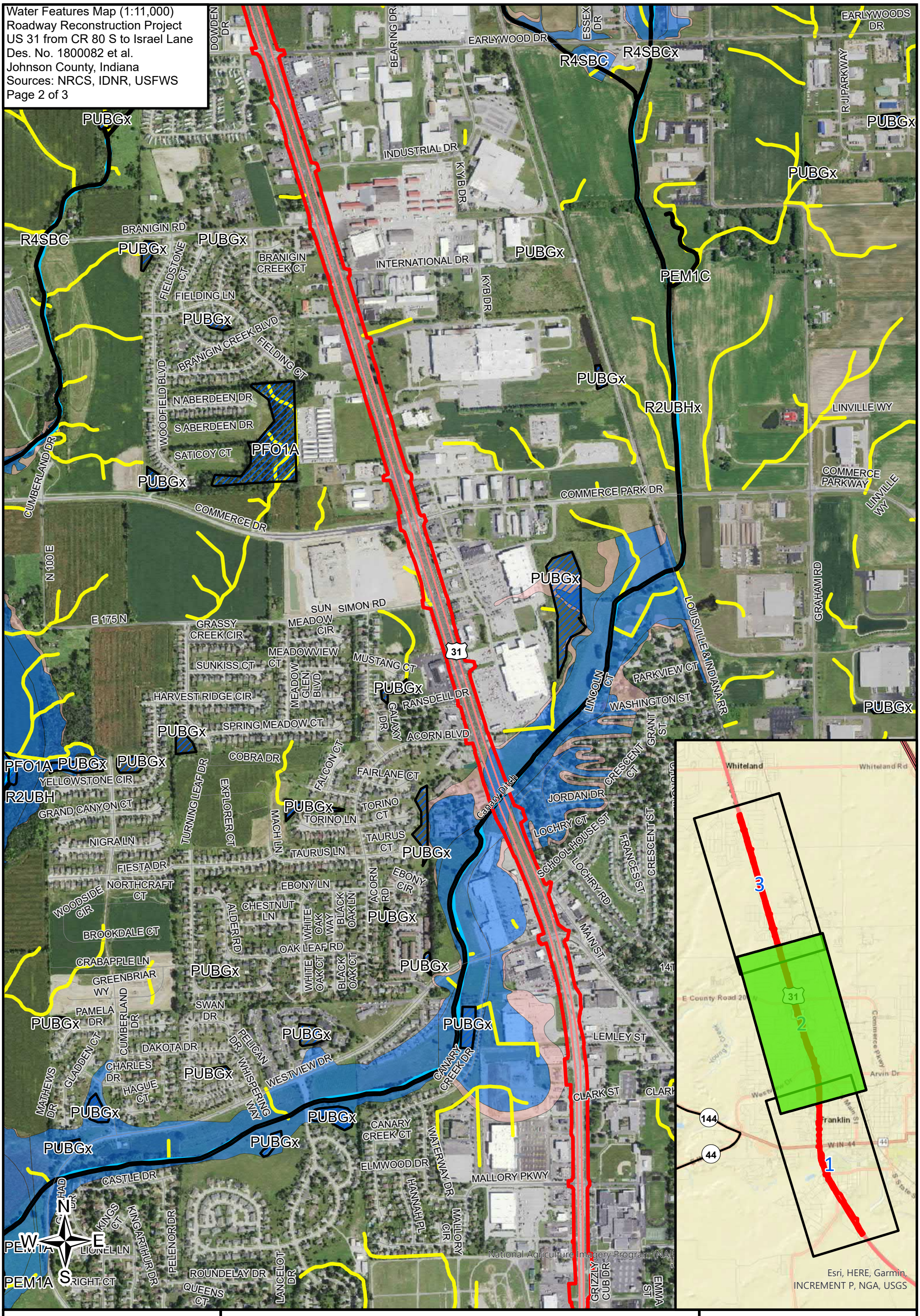
Water Features Map (1:11,000)
Roadway Reconstruction Project
US 31 from CR 80 S to Israel Lane
Des. No. 1800082 et al.
Johnson County, Indiana
Sources: NRCS, IDNR, USFWS



0 850 1,700 Feet

- Investigated Area
- NWI Wetlands
- NHD Flowline - Classified
- NHD Flowline - Unclassified
- 0.2% Annual Chance Flood Hazard
- 0.2% Annual Chance, Protected by Levee
- 1% Annual Chance Flood Hazard

9/21/2021

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approx 10/13/2021 pg 4