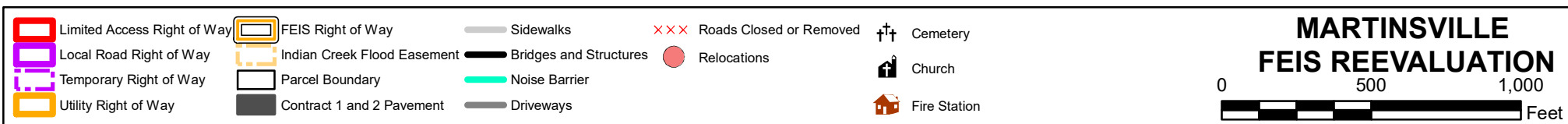
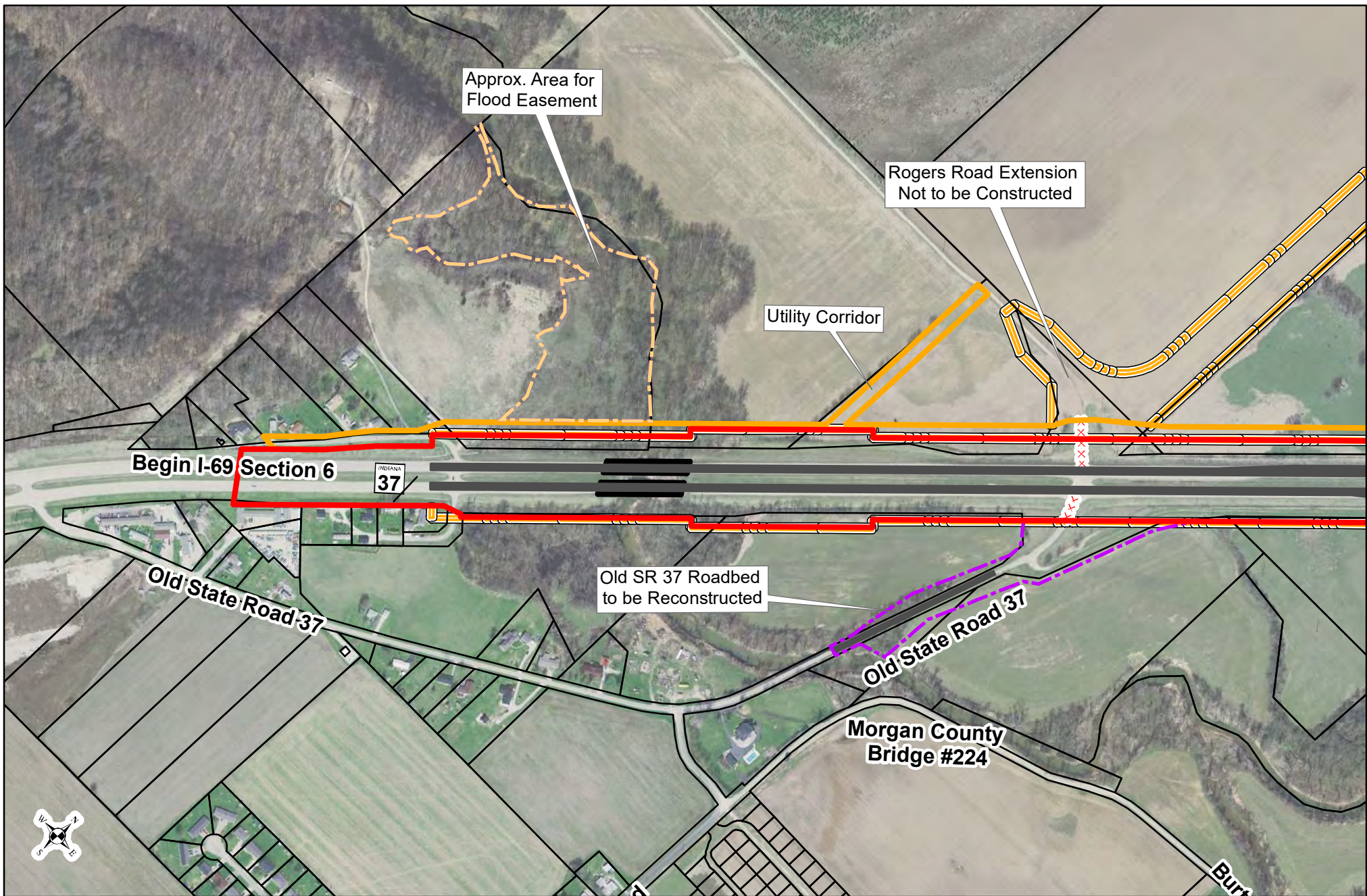


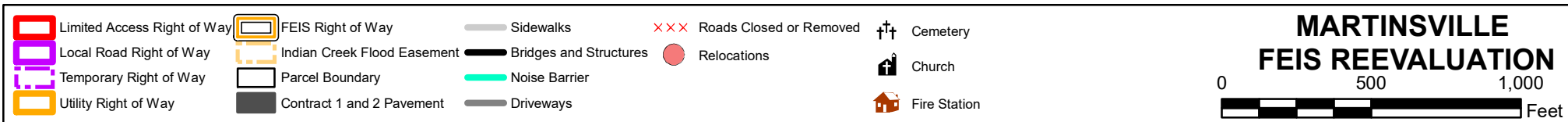
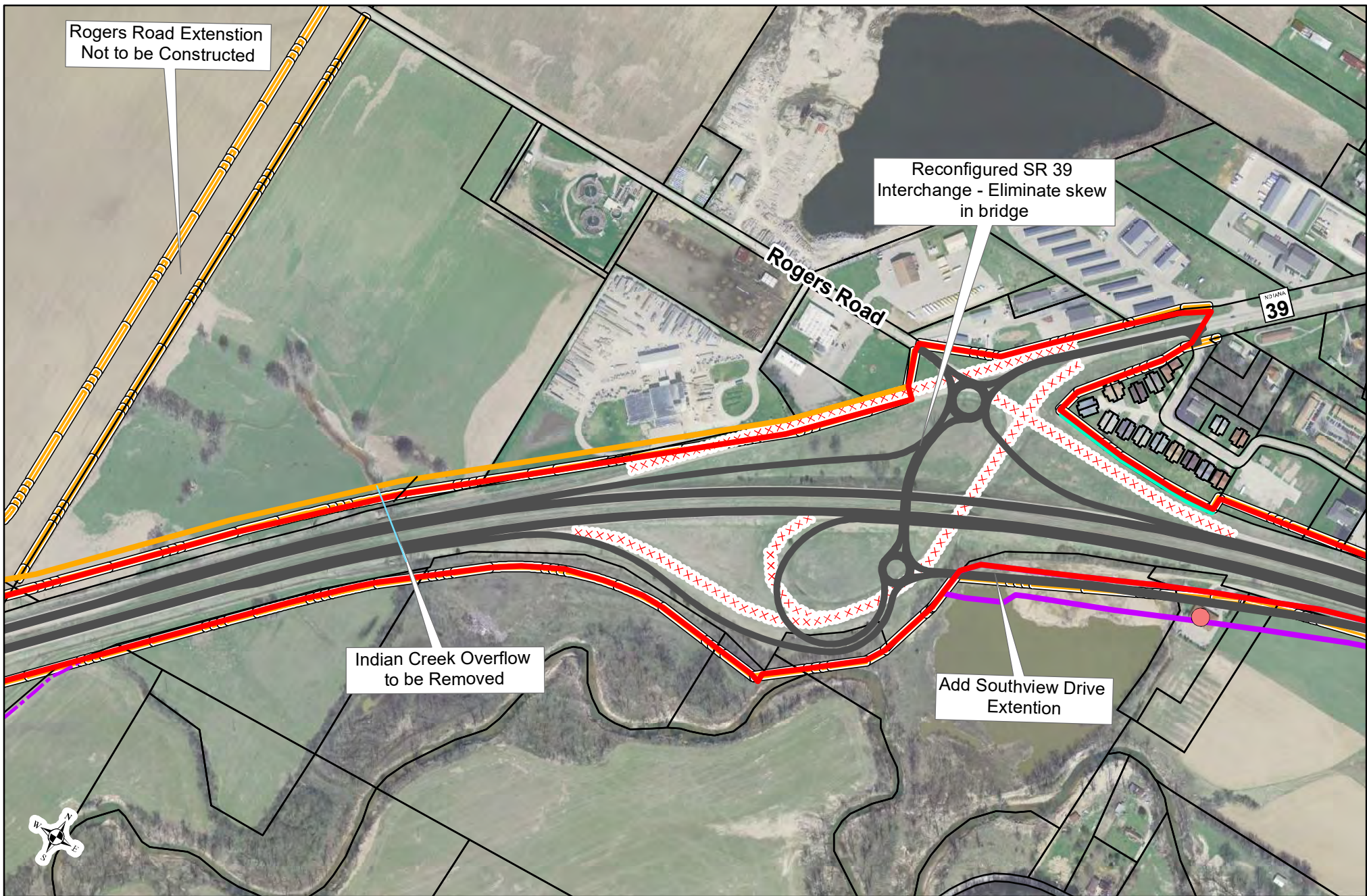


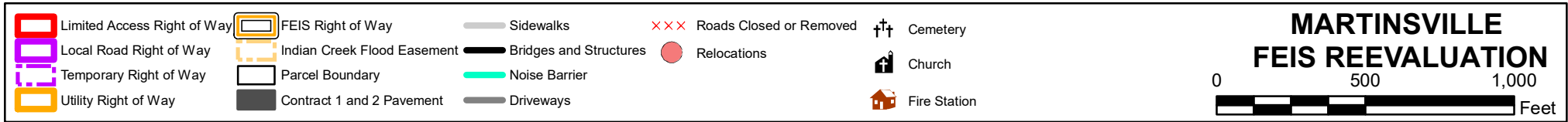
Appendix A – Maps

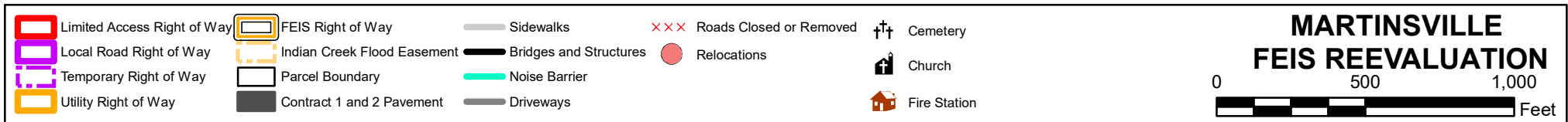


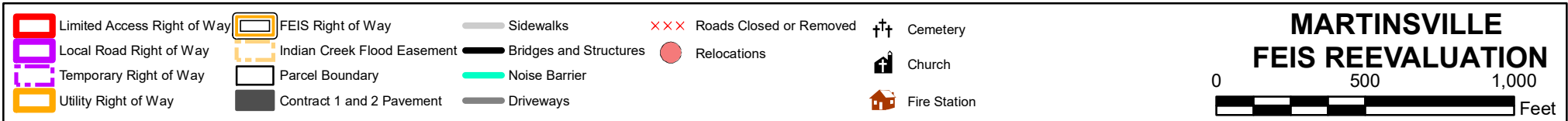
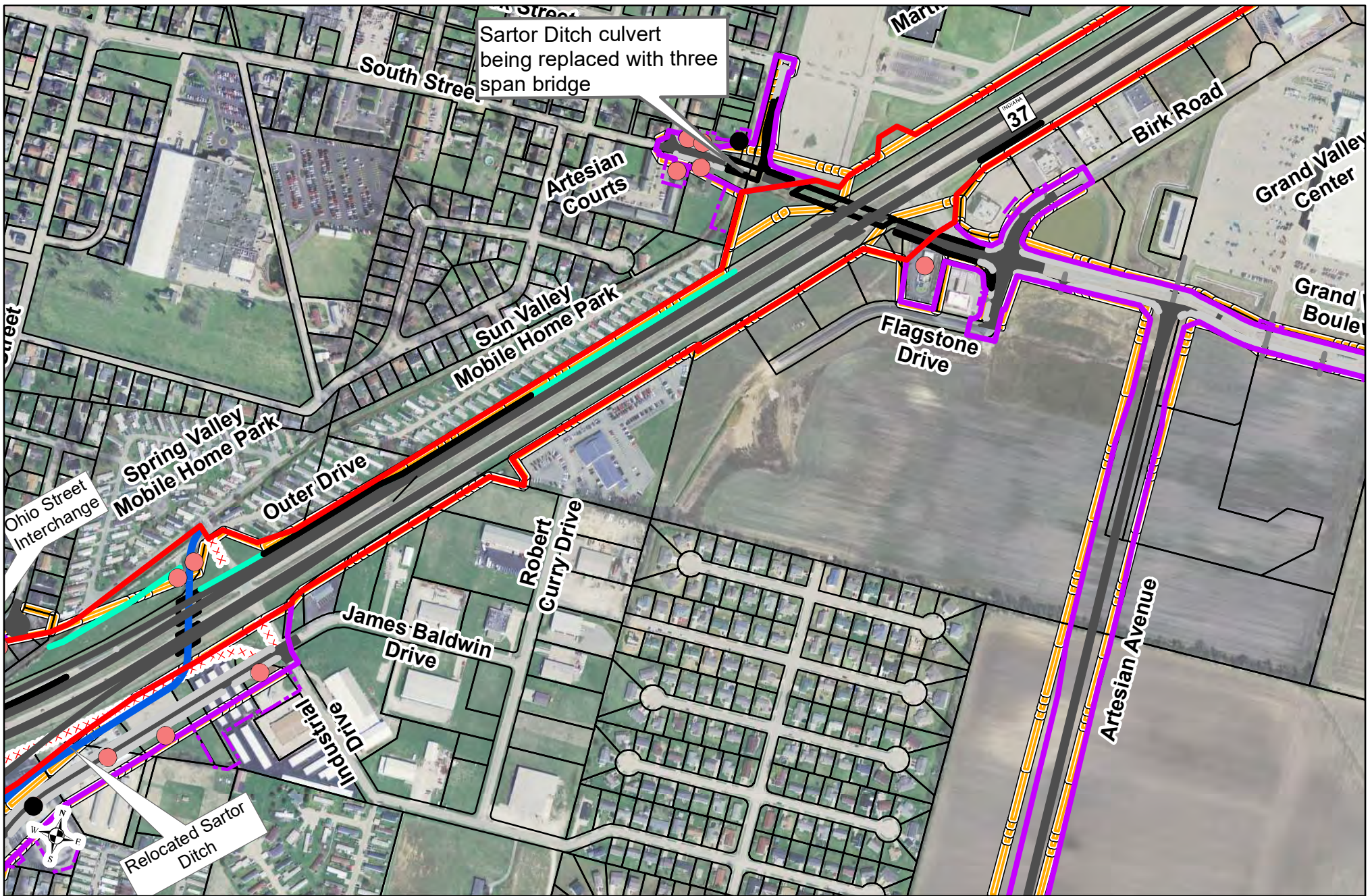
Appendix A1: Segment 6.1

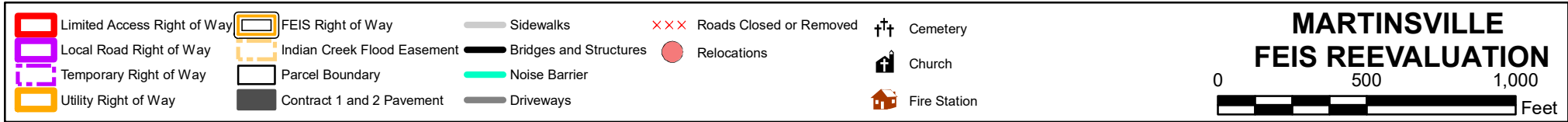


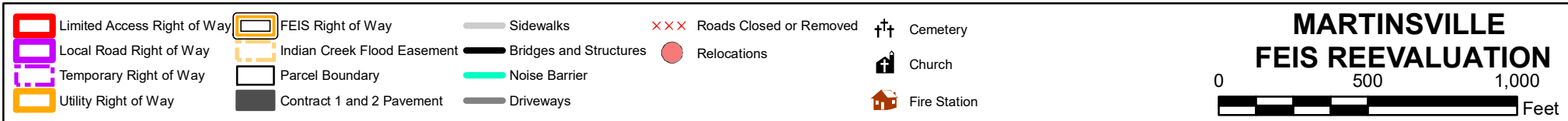
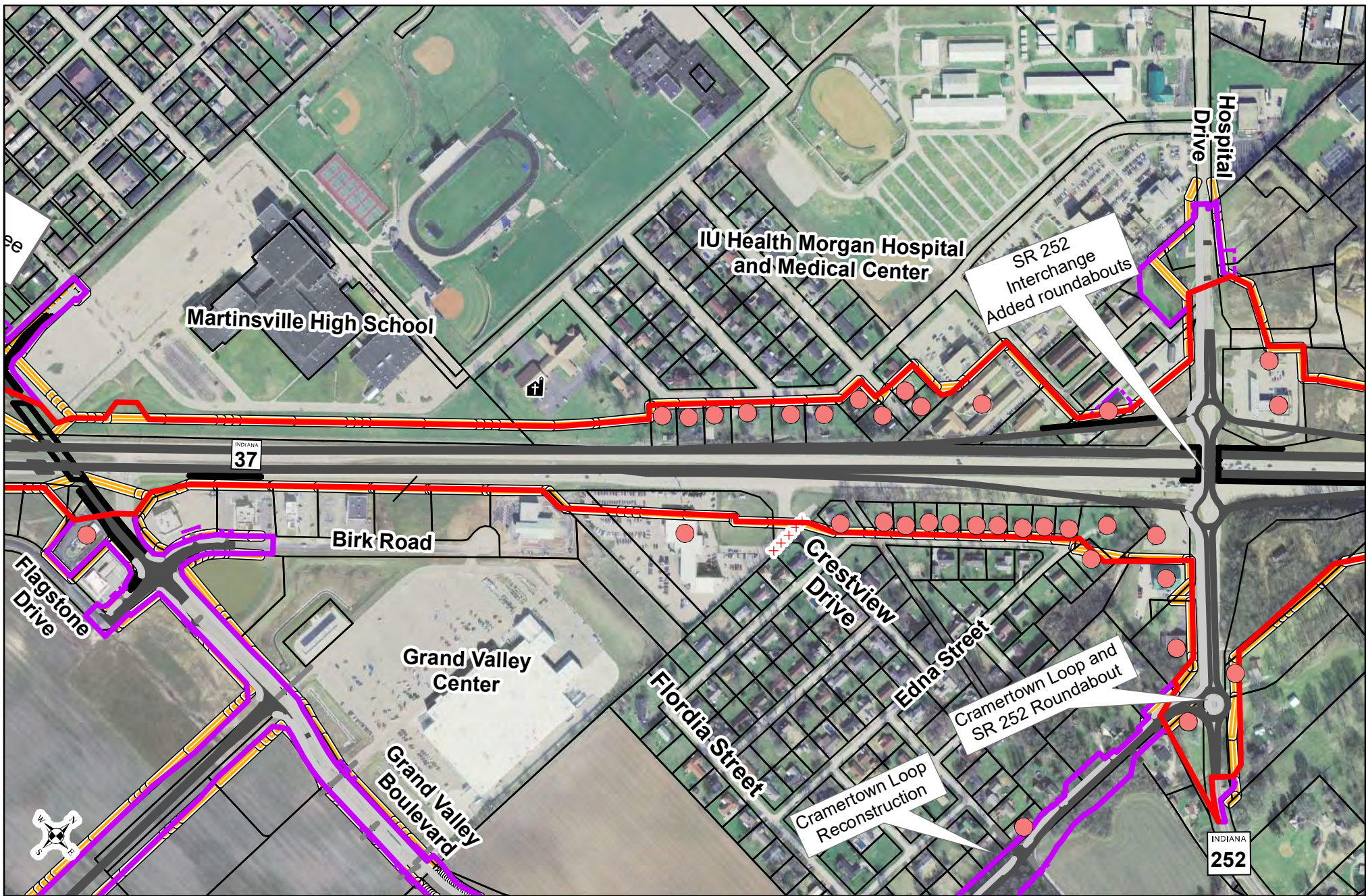


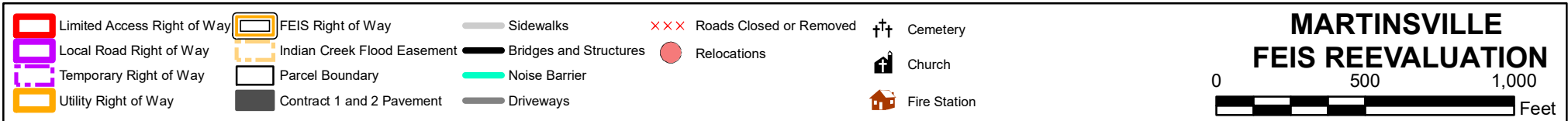
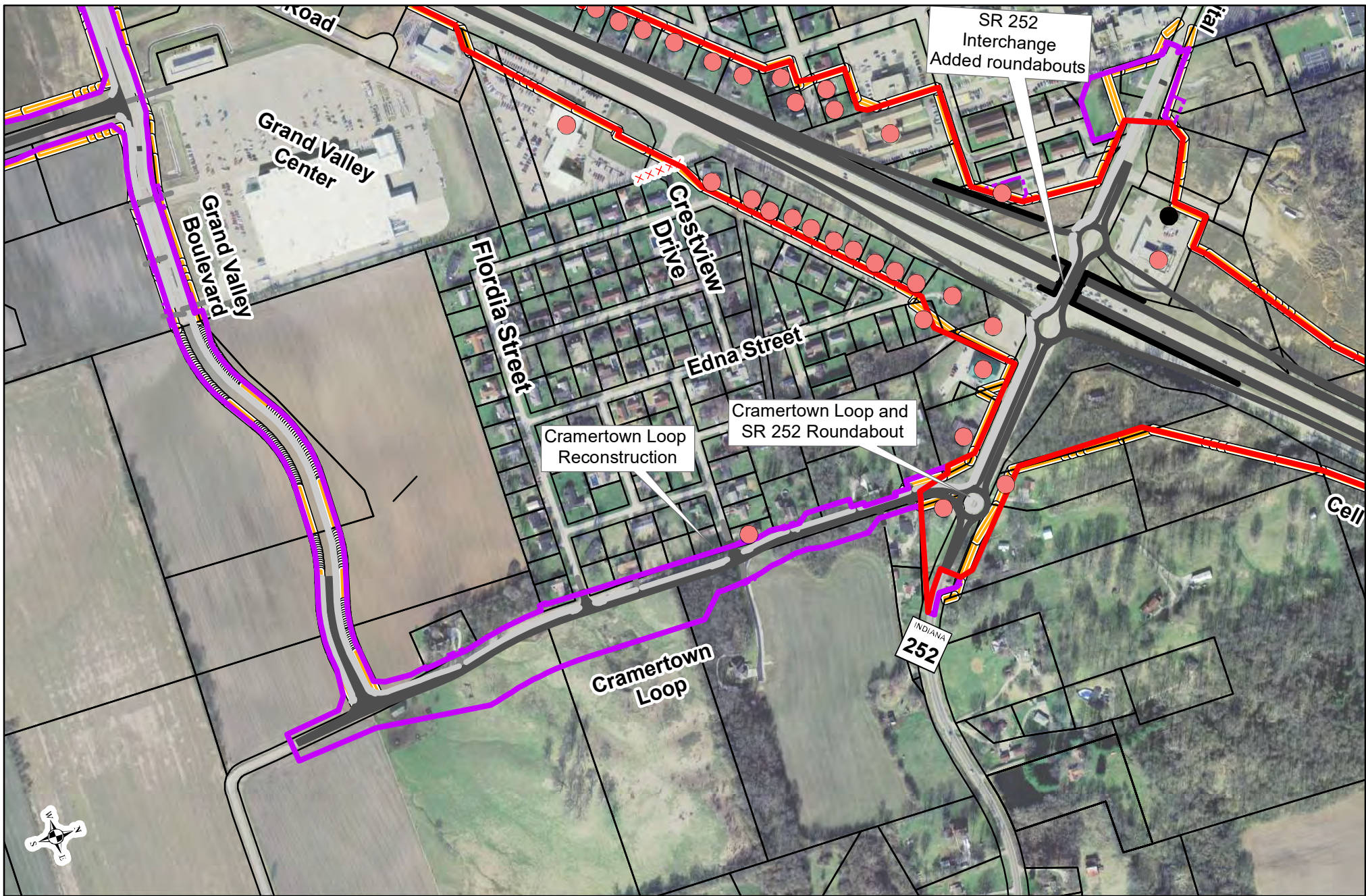


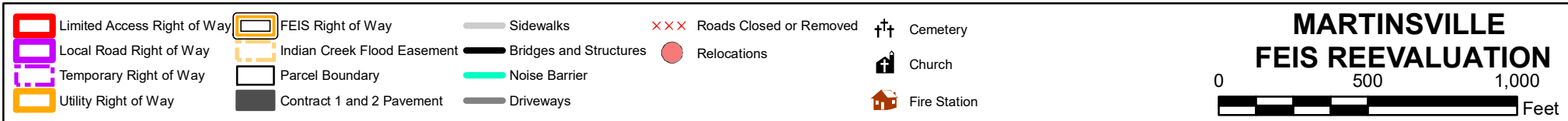
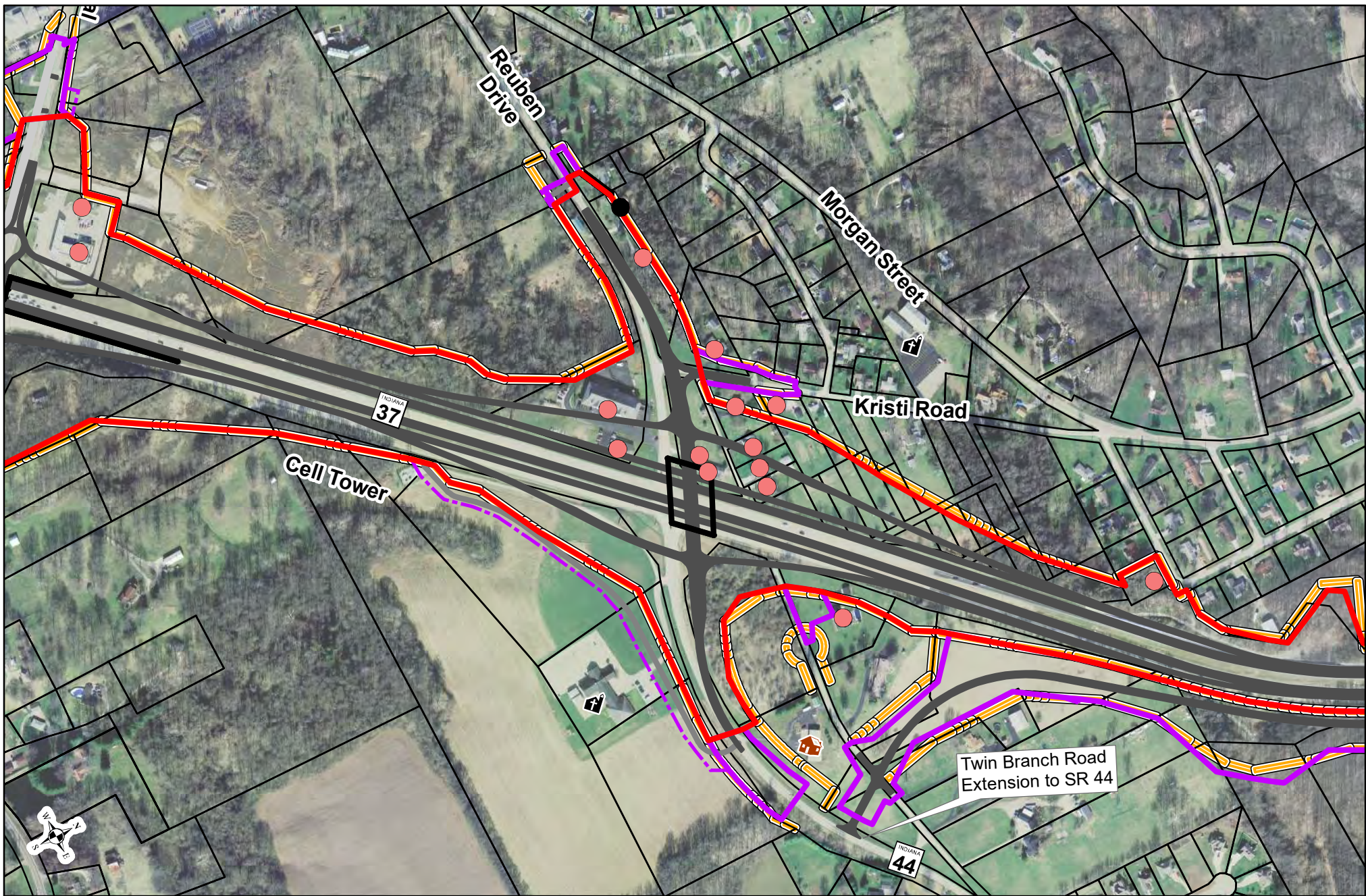


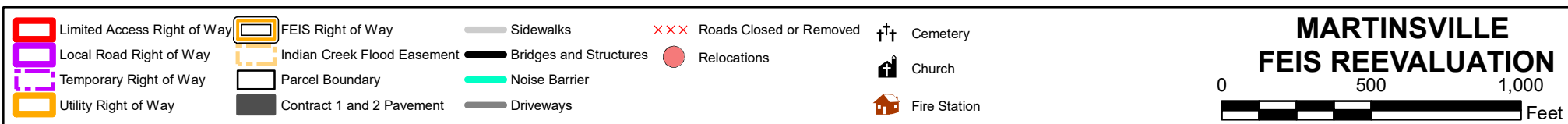
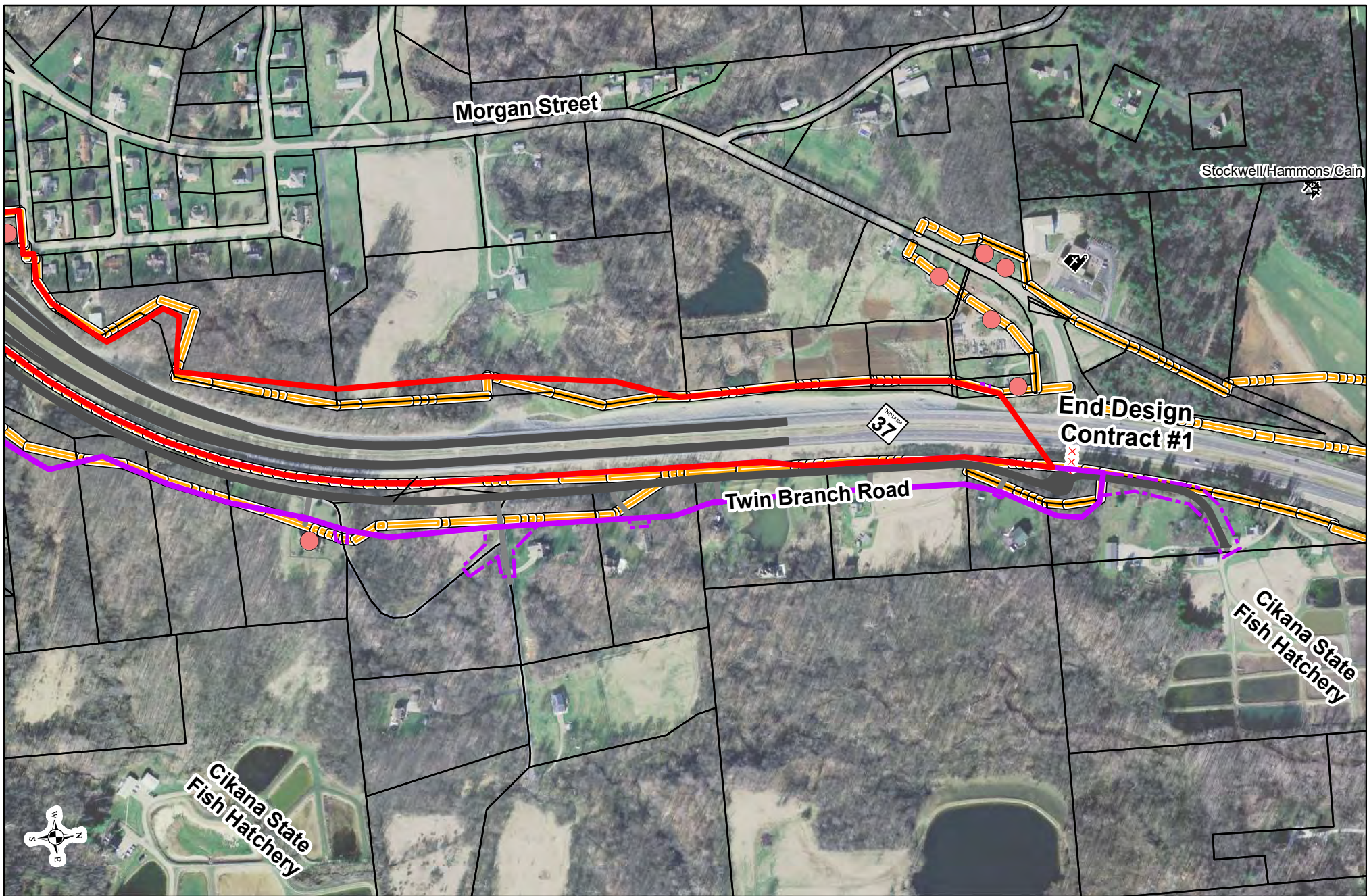






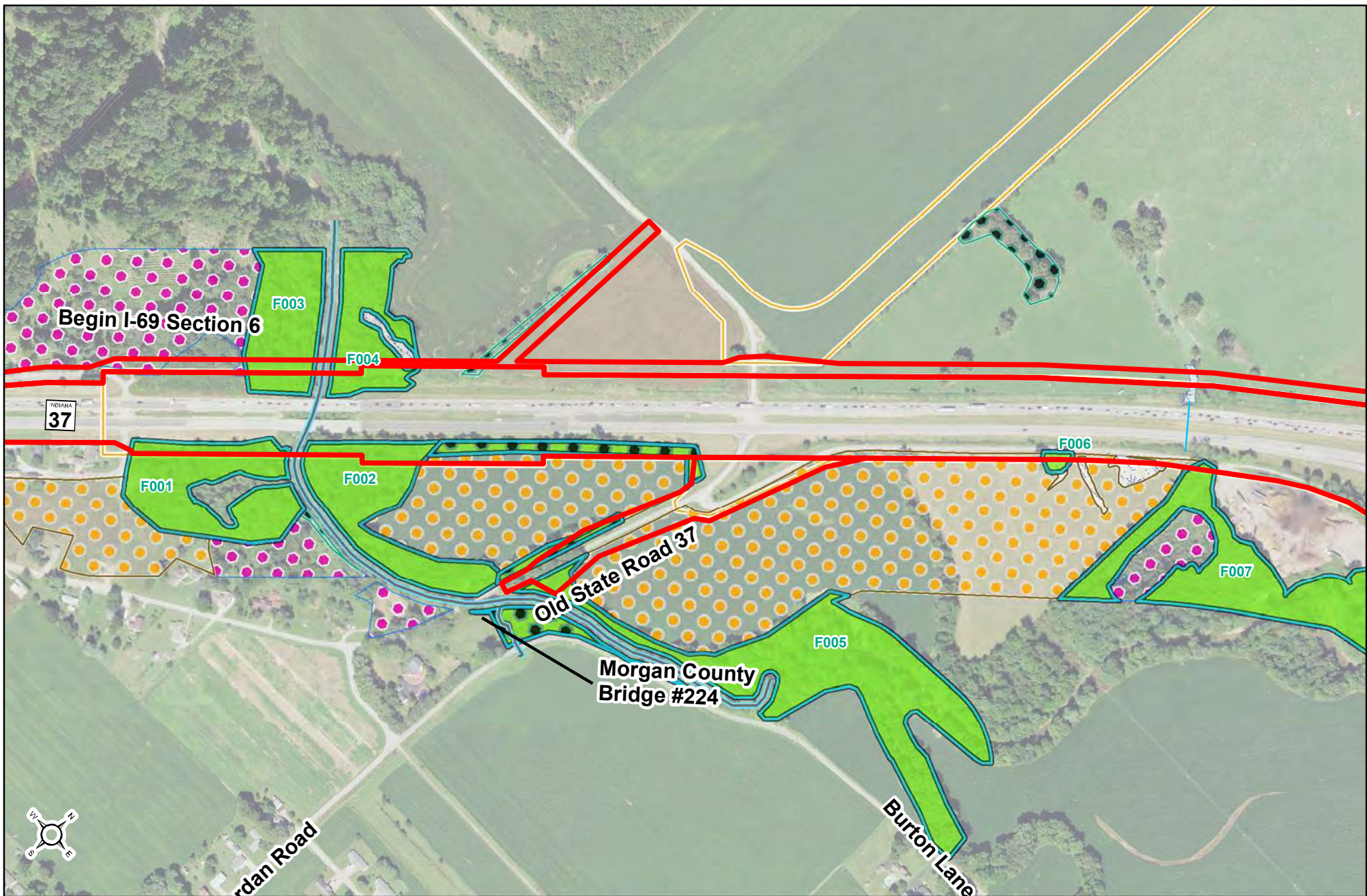






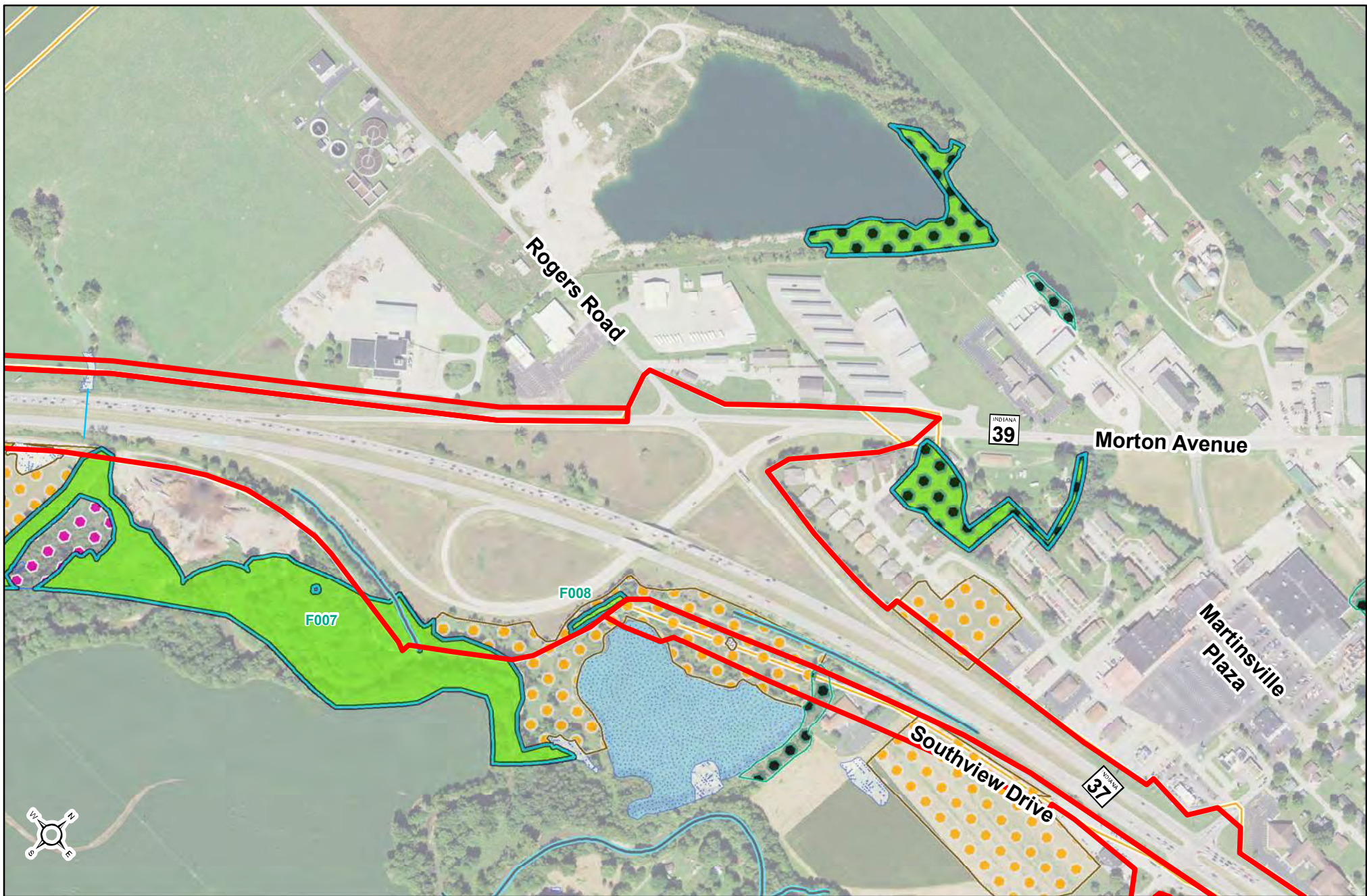


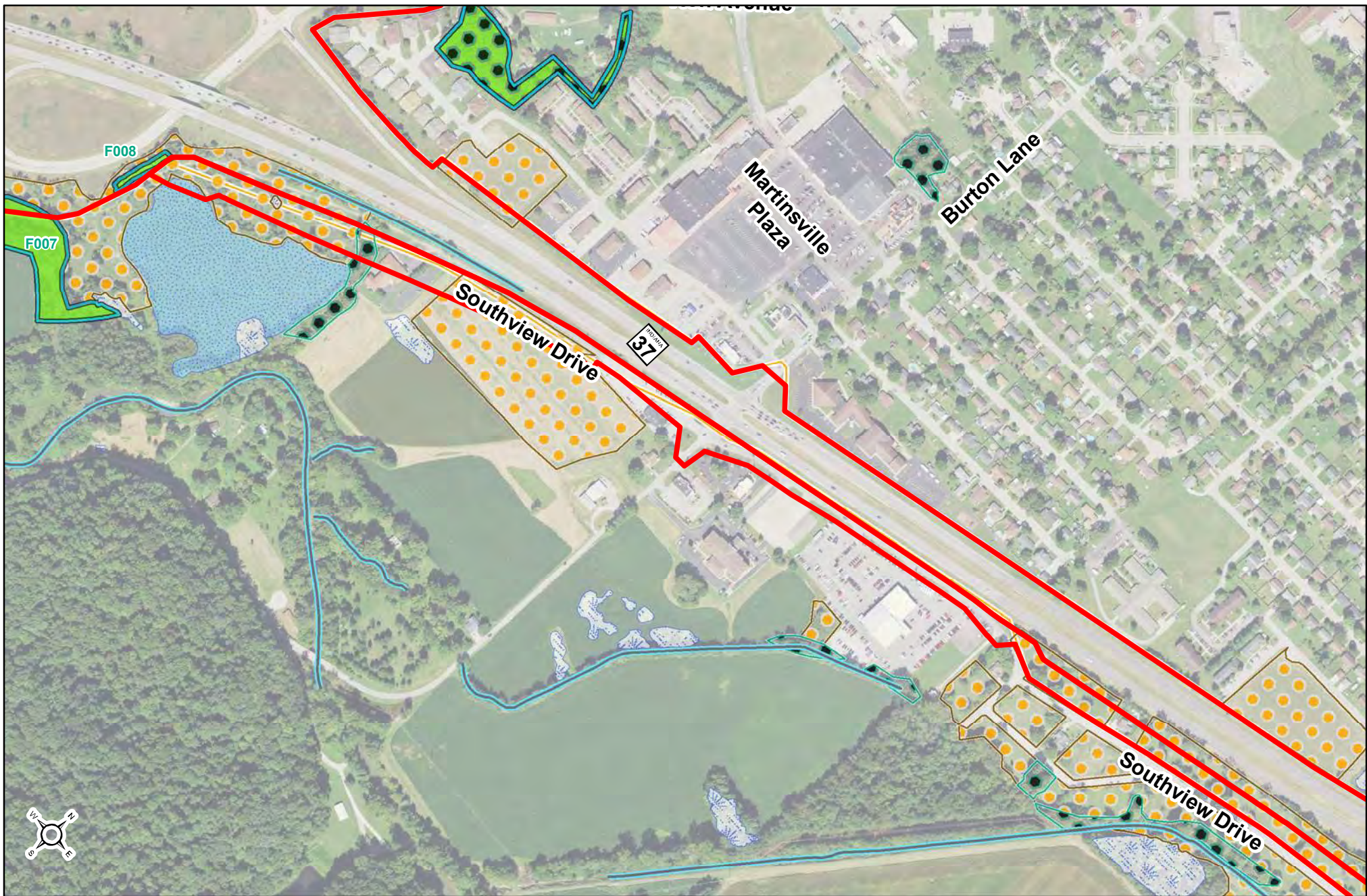
Appendix A2: Natural Resources and Habitat



| | | | | |
|----------------------------|---------------------------|------------------------------------|------------------------------|-------------------------------------|
| FEIS Right of Way | Elm / Ash / Cottonwood | Early- to Mid- Successional Forest | Dry-Mesic Upland Forest | Wetland Boundary (Field Identified) |
| Re-evaluation Right of Way | Maple / Beech / Birch | Forest Fragment | Mesic Floodplain Forest | Open Water (Field Identified) |
| | Non-Native Dominant Stand | Old Field | Mesic Upland Forest | Classified Forest and Wildlands |
| | Oak / Hickory | Core Forest | Public/Private Managed Lands | Delineated Streams |
| | White / Red / Jack Pine | | | |



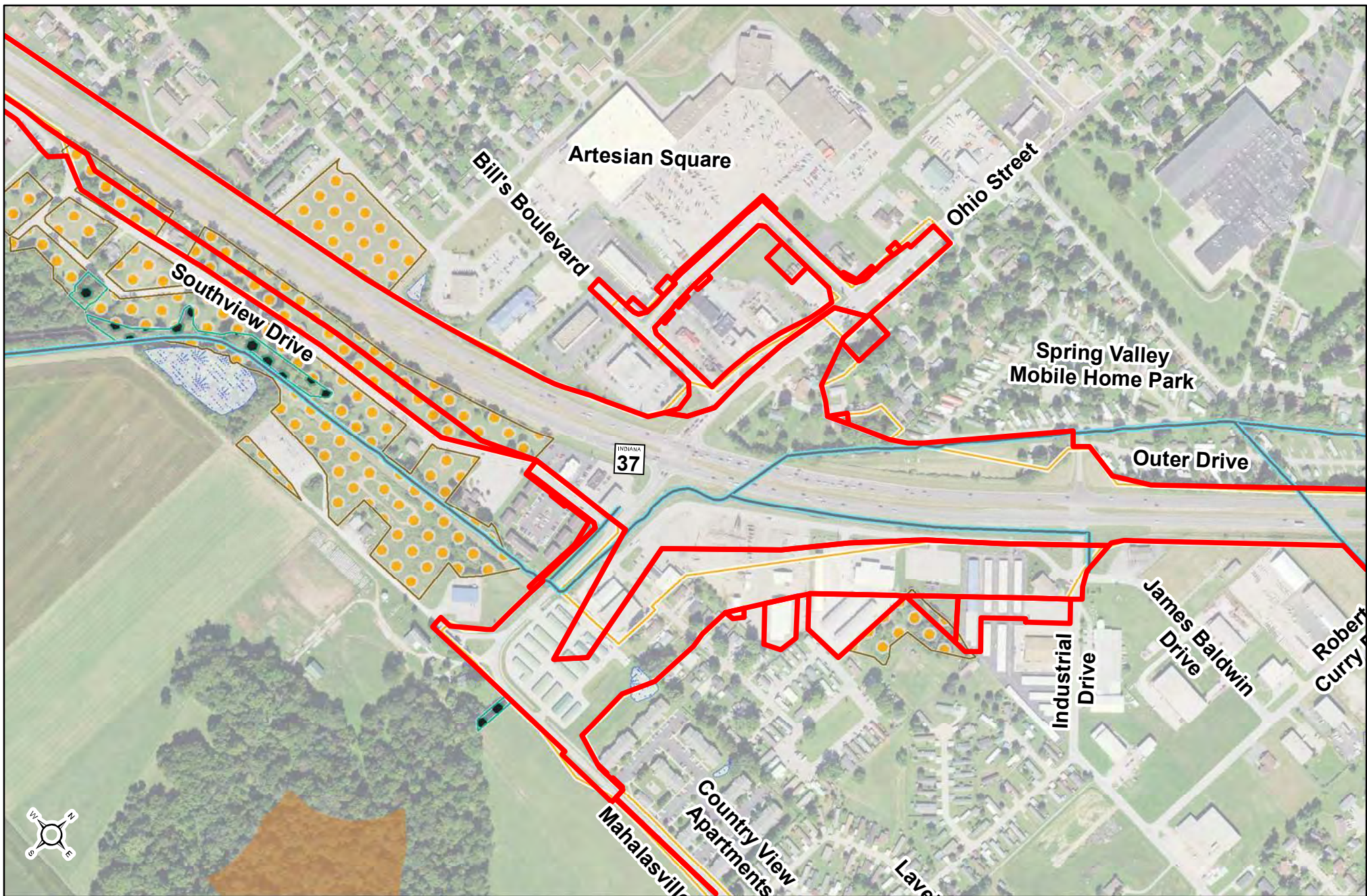


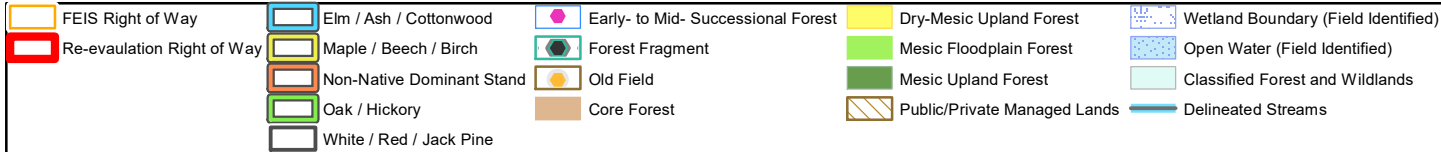


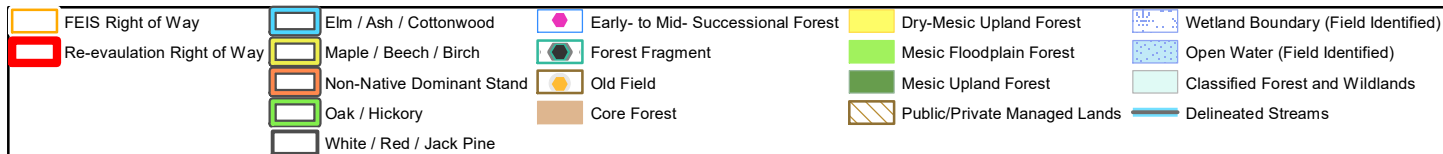
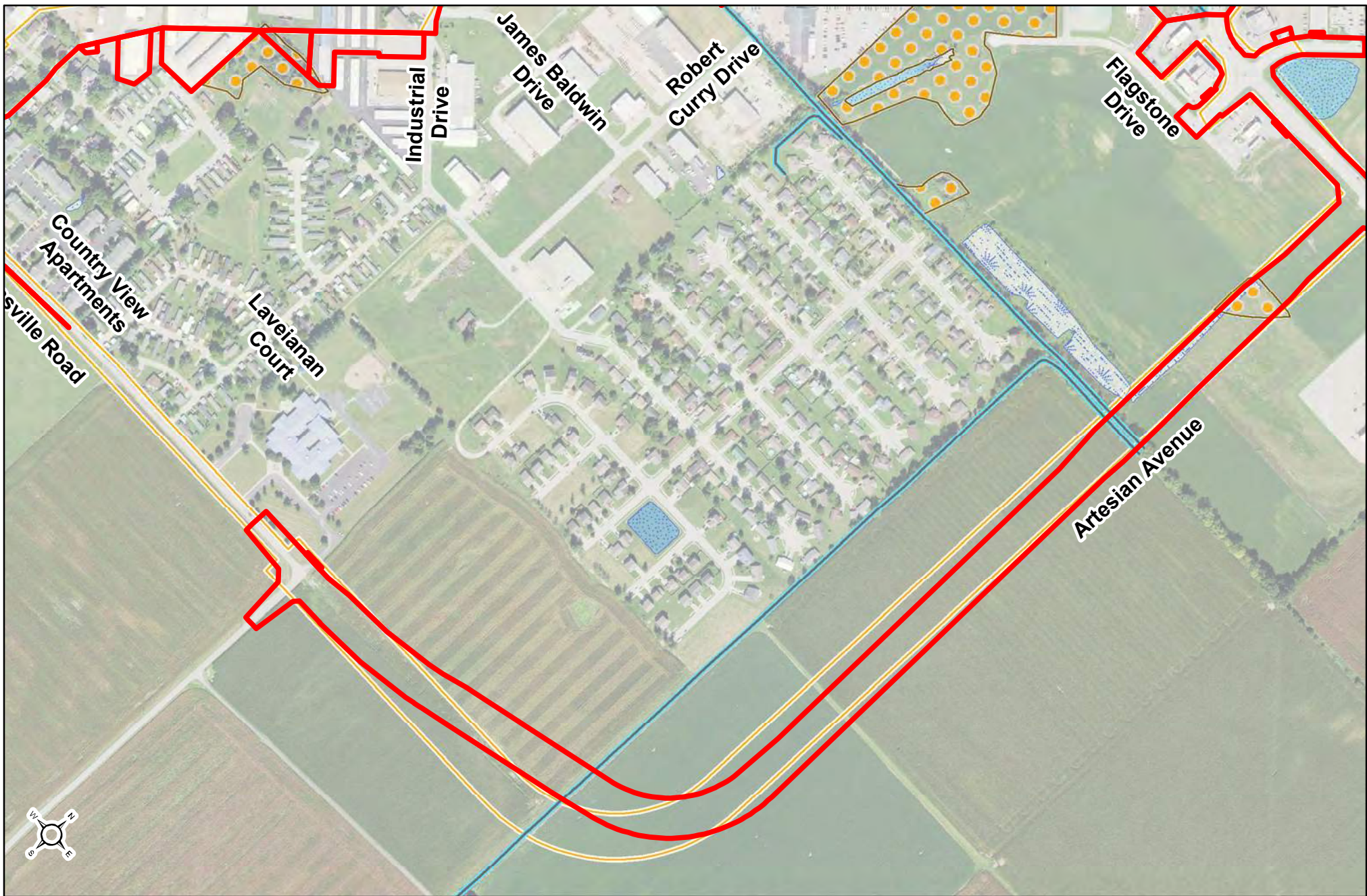
| | | | | |
|----------------------------|---------------------------|------------------------------------|------------------------------|-------------------------------------|
| FEIS Right of Way | Elm / Ash / Cottonwood | Early- to Mid- Successional Forest | Dry-Mesic Upland Forest | Wetland Boundary (Field Identified) |
| Re-evaluation Right of Way | Maple / Beech / Birch | Forest Fragment | Mesic Floodplain Forest | Open Water (Field Identified) |
| | Non-Native Dominant Stand | Old Field | Mesic Upland Forest | Classified Forest and Wildlands |
| | Oak / Hickory | Core Forest | Public/Private Managed Lands | Delineated Streams |
| | White / Red / Jack Pine | | | |

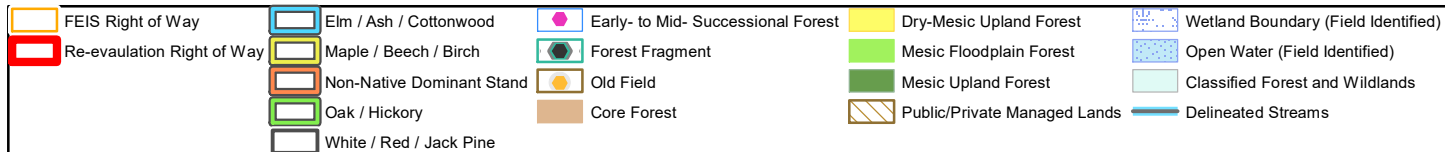
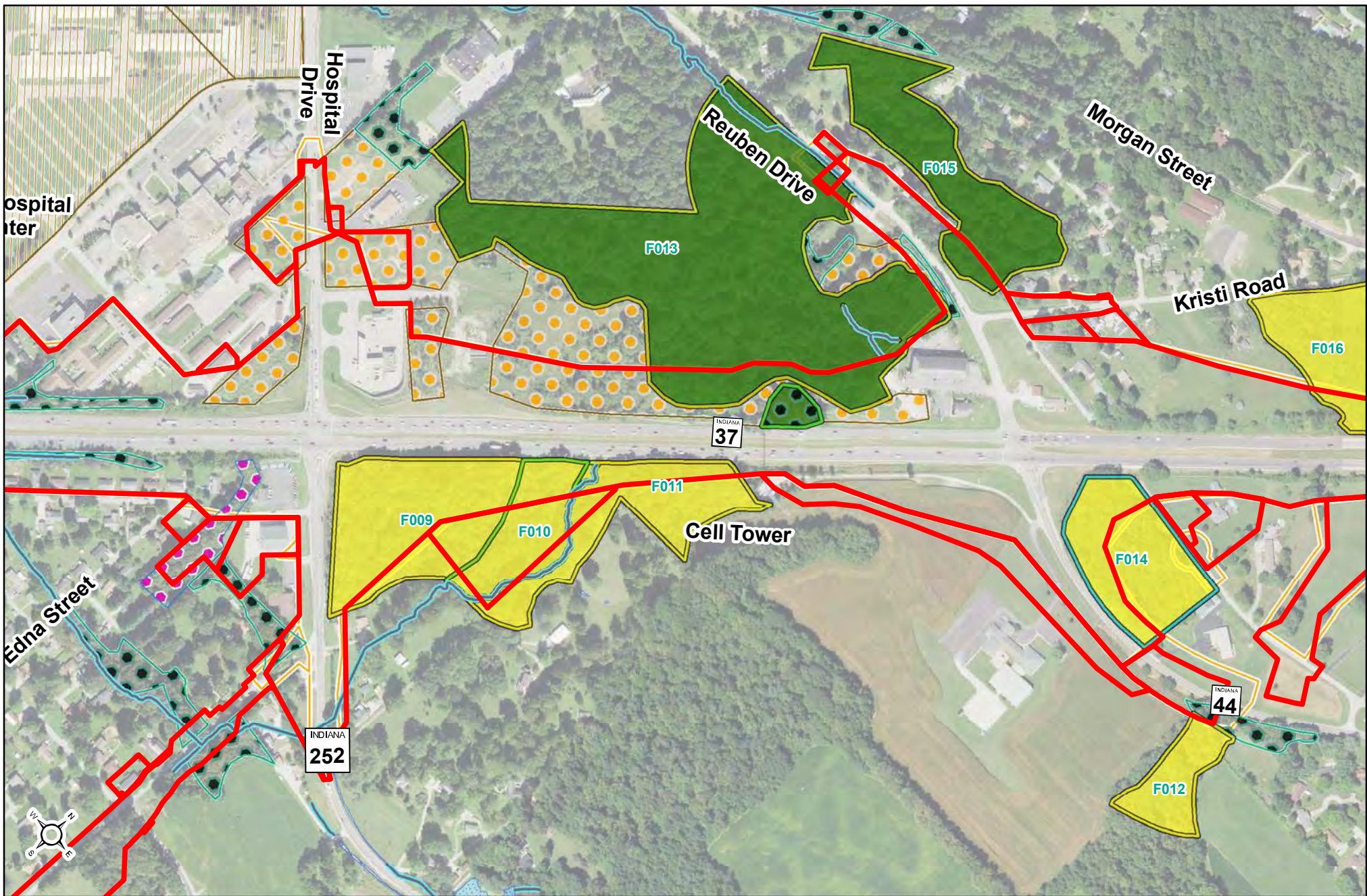
**MARTINSVILLE
FEIS REEVALUATION**

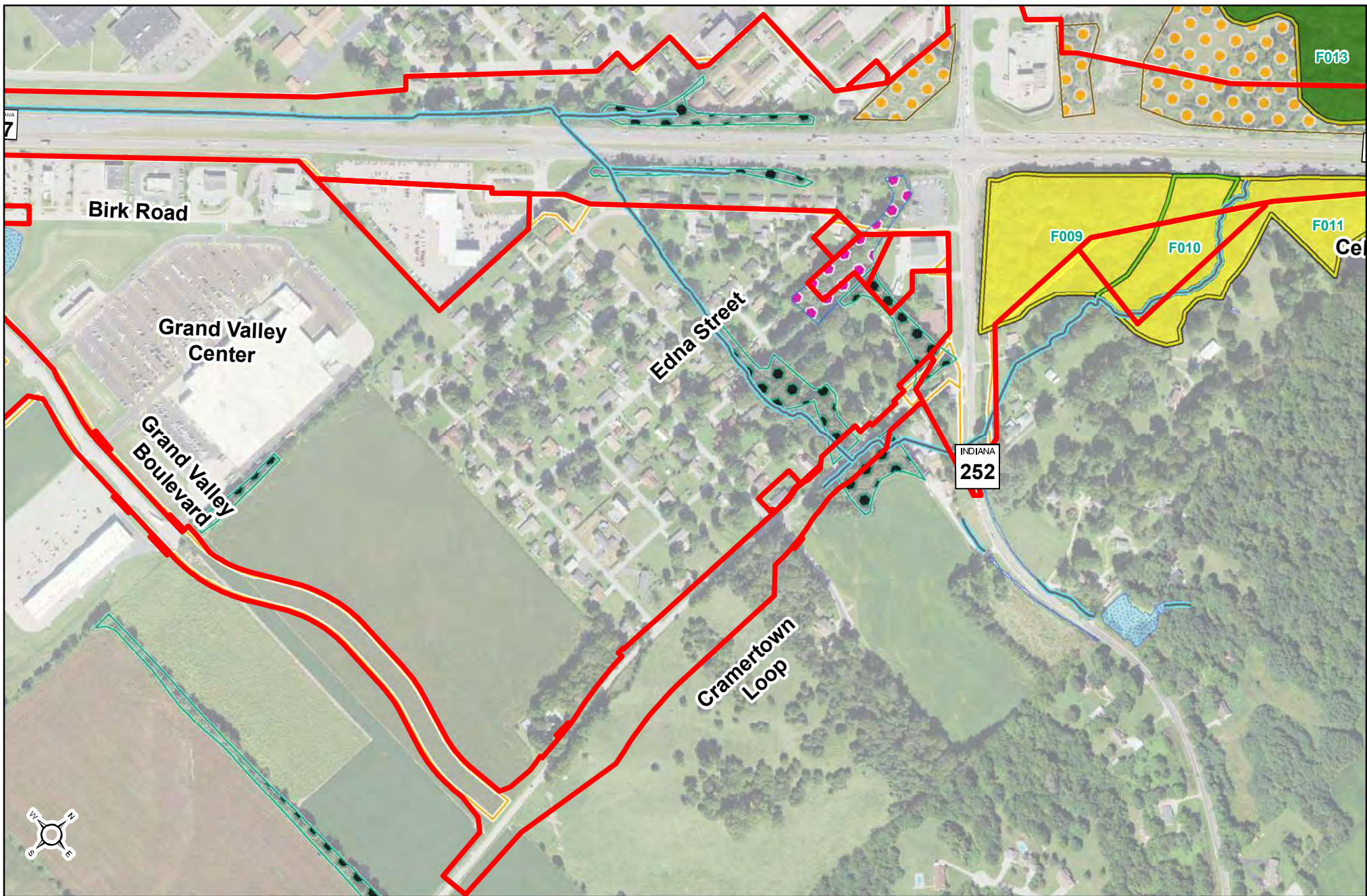
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Feet





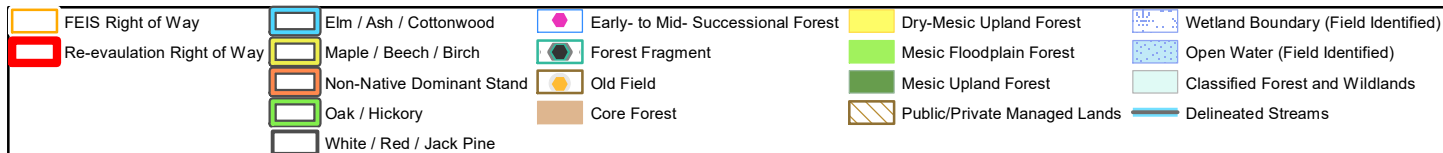
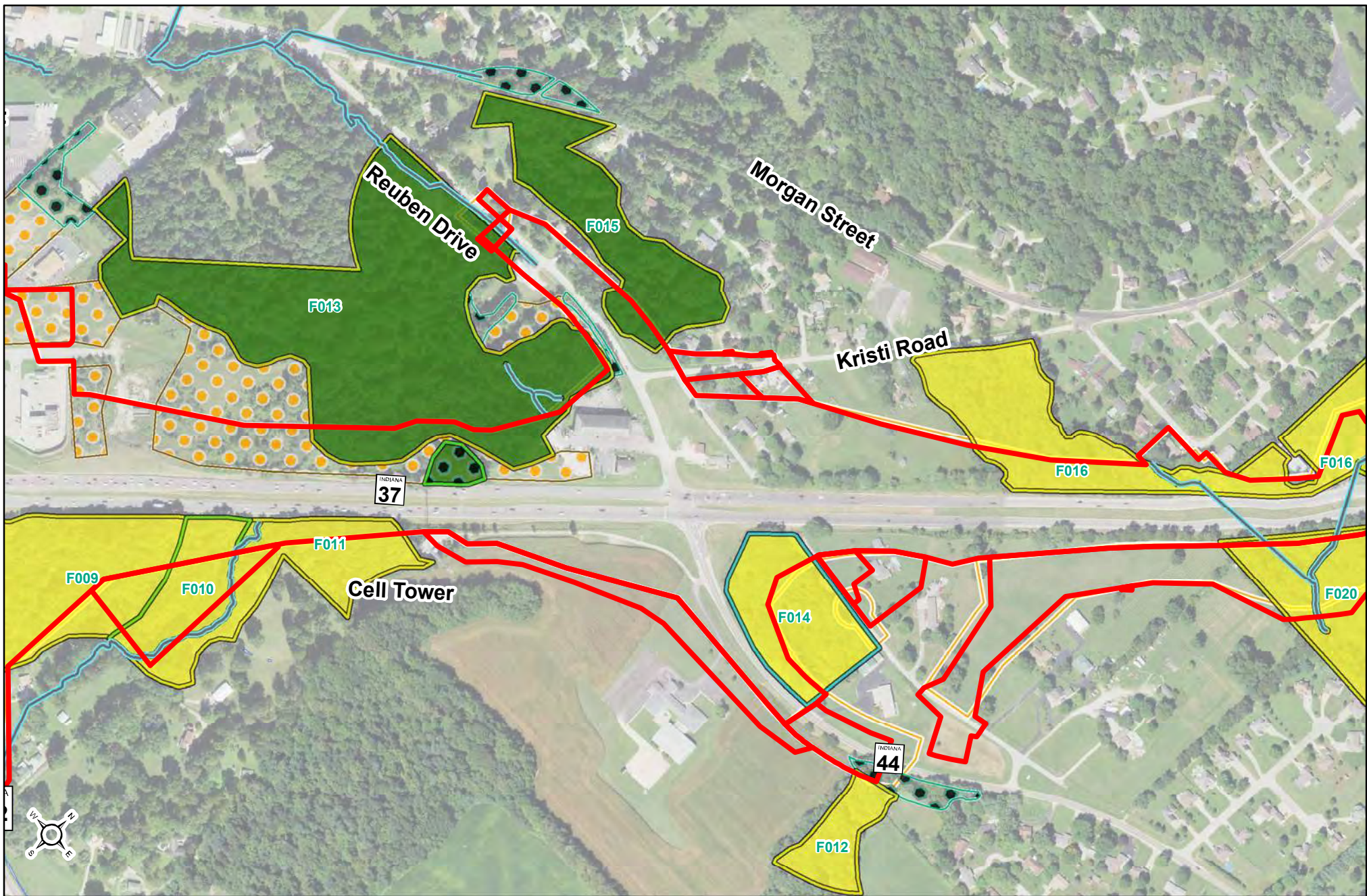


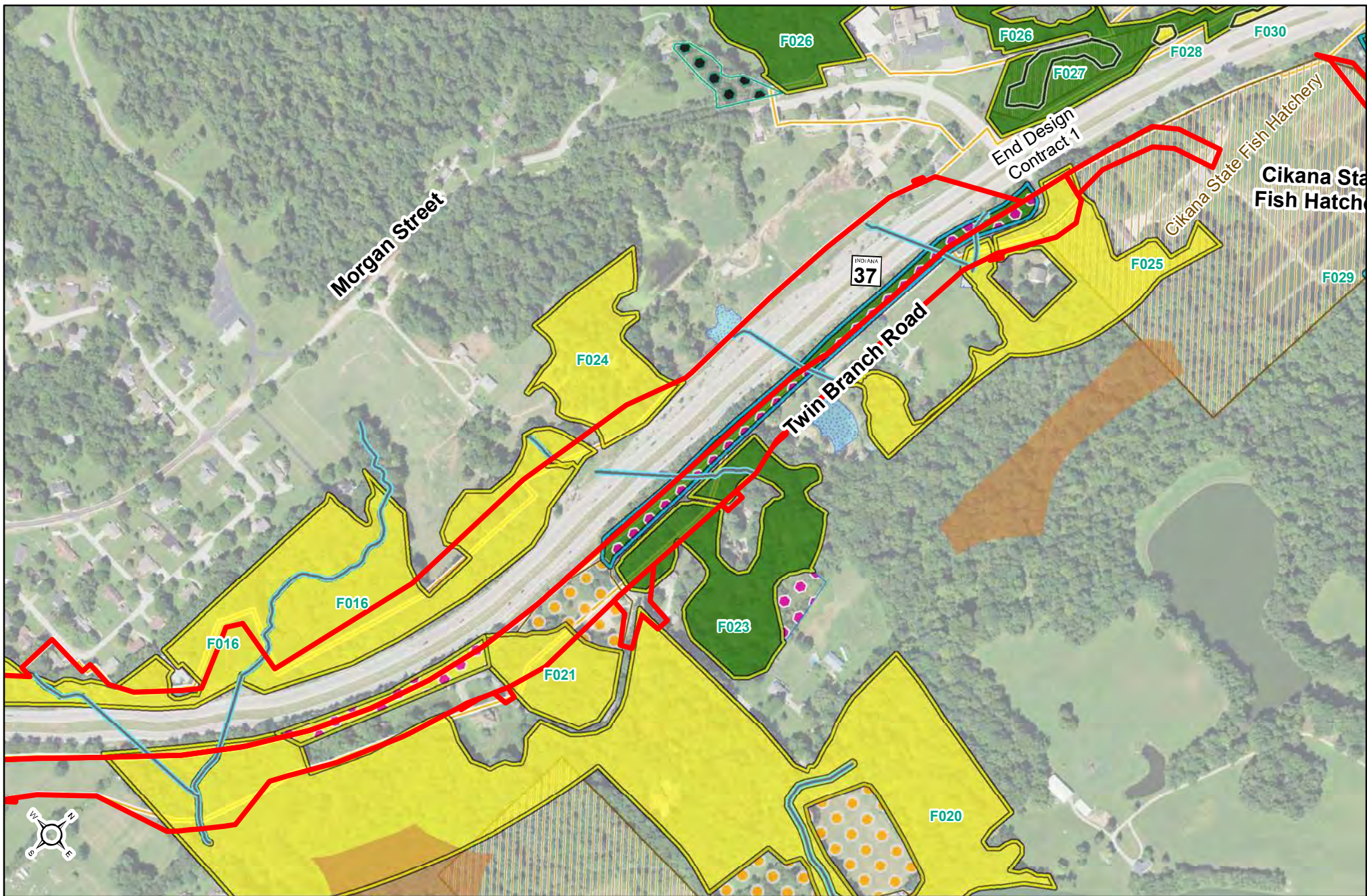




| | | | | |
|----------------------------|---------------------------|------------------------------------|------------------------------|-------------------------------------|
| FEIS Right of Way | Elm / Ash / Cottonwood | Early- to Mid- Successional Forest | Dry-Mesic Upland Forest | Wetland Boundary (Field Identified) |
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| | Non-Native Dominant Stand | Old Field | Mesic Upland Forest | Classified Forest and Wildlands |
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| | White / Red / Jack Pine | | | |







| | | | | |
|----------------------------|---------------------------|------------------------------------|------------------------------|-------------------------------------|
| FEIS Right of Way | Elm / Ash / Cottonwood | Early- to Mid- Successional Forest | Dry-Mesic Upland Forest | Wetland Boundary (Field Identified) |
| Re-evaluation Right of Way | Maple / Beech / Birch | Forest Fragment | Mesic Floodplain Forest | Open Water (Field Identified) |
| | Non-Native Dominant Stand | Old Field | Mesic Upland Forest | Classified Forest and Wildlands |
| | Oak / Hickory | Core Forest | Public/Private Managed Lands | Delineated Streams |
| | White / Red / Jack Pine | | | |





Appendix B – Table of Reevaluation Area Impacts

| Impact Criteria | RPA | Segment 6.1 Reevaluation | Difference |
|---|--------|-----------------------------|------------|
| Right of Way (acres) | | | |
| Existing Right of Way | 235.1 | 251.9 | 16.8 |
| New Right of Way | 161.6 | 159.4 | -2.2 |
| Total Right of Way | 396.7 | 411.3 | 14.6 |
| Relocations | | | |
| Residential - Single Family Home | 55 | 52 | -3 |
| Residential - Duplex Unit | 3 | 3 | 0 |
| Residential - Mobile Home | 2 | 3 | 1 |
| Residential - Apartment Unit | 1 | 1 | 0 |
| Business | 24 | 24 | 0 |
| Non-Profit | 1 | 2 | 1 |
| Total Relocations | 86 | 85 | -1 |
| Section 4(f) | | | |
| Park (acres) | 0 | 0 | 0 |
| Historic or NRHP Eligible (acres) | 0 | 0 | 0 |
| Total Wetland (acres) | | | |
| Emergent Wetland | 0.243 | 0.195 | -0.048 |
| Forested Wetland | 0.260 | 0.284 | 0.024 |
| Scrub/Shrub Wetland | 0.101 | 0.455 | 0.354 |
| Open Water | 0.090 | 0.107 | 0.017 |
| Total Wetland Impacts | 0.695 | 1.041 | 0.346 |
| Total Stream (linear feet) ¹ | | | |
| Ephemeral | 9,725 | 9,653 | -72 |
| Intermittent | 3,639 | 3,208 | -431 |
| Perennial | 2,202 | 2,347 | 145 |
| Total Stream Impacts | 15,566 | 15,208 | -358 |
| Floodplain (acres) ² | 52.3 | 57.7 | 5.4 |
| Floodway (acres) ³ | 46.9 | 43.5 | -3.4 |
| Wellhead Protection Areas (acres) | 0 | 0 | 0 |
| Agricultural Land (acres) | 40.2 | 35.9 | -4.3 |
| Managed Lands (acres) | 2.0 | 1.2 | -0.8 |

¹ Includes only permanent impacts.

² Includes areas within regulated Sartor Ditch floodway which are mapped as floodplain.

³ Does not include regulated floodway of Sartor Ditch which is not mapped as floodway.

| Impact Criteria | RPA | Segment 6.1 Reevaluation | Difference |
|-----------------------|------|-----------------------------|------------|
| Publicly Owned | 2.0 | 1.2 | -0.8 |
| Privately Owned | 0 | 0 | 0 |
| Upland Forest (acres) | 32.0 | 35.1 | 3.1 |
| Core Forest (acres) | 0 | 0 | 0 |



Appendix C – Wetland and Stream Reports



Appendix C1: Wetland Delineation

Wetland Delineation Report

For I-69 Section 6 Design Contract 1 In Morgan County, Indiana

**DES#
0500430 & 1800324**

September 06, 2018

Prepared for:



**Government Center North, Room N642
100 North Senate Avenue
Indianapolis, Indiana 46204-2249**

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I. Project Description

In general, the project consists of upgrading existing SR 37 to Interstate standards in Morgan County, Indiana starting just south of the SR 39 interchange in Martinsville, Indiana and ending just south of the existing SR 37 and Morgan Street intersection. The total length of Section 6 Design Contract 1 of the I-69 Section 6 project is approximately 5.5 miles.

The project is located in Morgan County (see Exhibit 1 for general location map). The majority of this project is along the existing SR 37 roadway (see Exhibit 2 and 3 respectively for USGS Topographic and Aerial Photograph maps showing the project location). There are 10 jurisdictional wetlands and 1 open water area that have been identified within the proposed I-69 Section 6 Design Contract 1 Permit Limits. Appendix A contains impact site forms for each of the 10 jurisdictional wetlands and 1 open water impact associated with this project. USACE Routine Wetland Determination Data Forms for each of the wetland impact sites are located in Appendix A. Also included in Appendix A are wetland assessment data summary sheets completed using the Indiana Wrapped Assessment Protocol (InWRAP) developed by Taylor University.

II. Section 404 “Waters of the United States,” “Waters of the State,” and Wetlands

In 1972 Congress amended the Federal Water Pollution Control Act of 1948 (Clean Water Act) to include Section 404 which regulates the discharge of fill or dredged material into all “waters of the United States.” Guidelines for implementation of the Section 404 program were jointly developed by the United States Environmental Protection Agency (USEPA) and the United States Army Corps of Engineers (USACE). Administration of the program, including issuance of discharge permits, is the responsibility of the USACE. The EPA is however “authorized to prohibit the specification (including the withdrawal of specification) of any defined area as a disposal site” as well as “deny or restrict the use of any defined area for specification (including the withdrawal of specification) as a disposal site...” Section 6 Design Contract 1 of the I-69 Project is within the jurisdiction of the USACE Louisville District office.

“Waters of the United States” is an all encompassing term used to include a wide range of both deep water aquatic habitats and special aquatic sites. Special aquatic sites are defined as “geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values” [40 CFR 230.3(q-1)]. Six special aquatic site categories have been identified by the EPA [40 CFR 230.40 - 230.45]:

- | | |
|-----------------------------|-------------------------------|
| (1) sanctuaries and refuges | (4) vegetated shallows |
| (2) wetlands | (5) coral reefs |
| (3) mudflats | (6) riffle and pool complexes |

Wetlands as defined by the EPA [40 CFR 230.3(t)] and the USACE [33 CFR 328.3(b)] include “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.”

The Indiana Department of Environmental Management (IDEM) regulates “Waters of the State.” IDEM is responsible for issuing Water Quality Certifications (WQC) in Indiana. IDEM is charged with maintaining the chemical, physical and biological integrity of Indiana waters through its WQC

program. Section 401 of the Clean Water Act requires any applicant for a federal permit through the USACE to conduct any activity that may result in a discharge of pollutants to water (including wetlands) to first obtain a WQC. If the USACE determines that a federal permit is not needed under Section 404 of the Clean Water Act, authorization by IDEM is still likely needed. This is likely to be the case of “isolated wetlands” where the USACE has determined that it has no basis for federal jurisdiction. IDEM regulates impacts to isolated wetlands under its Isolated Wetlands Regulatory Program (327 IAC 2).

III. Wetland Determination Methodology

Wetland determinations and delineations were performed in accordance with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* and all subsequent USACE guidance releases. Non-wetland “waters of the United States” were determined and described in accordance with the definitions in 33 CFR 328.3 and the wetland delineation manual. Classifications assigned to those wetlands identified and described in this study follow the classification system developed for the Fish and Wildlife Service, U. S. Department of the Interior, by Cowardin *et al.* (1979).

The *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* was developed to establish a universal methodology for determining and delineating jurisdictional wetlands in the Midwest. In keeping with the intent of the wetland definition, this methodology was based on a three parameter approach which requires that any one given site exhibit hydrophytic vegetation, hydric soils and wetland hydrology to qualify as a jurisdictional wetland. While normally all three criteria are required in order for such a designation, atypical or problem areas may exist where circumstances are such that only two criteria are necessary. Atypical situations include unauthorized discharges within wetland, or clearing of vegetation within a wetland, episodic acts of nature (beaver dams, fires, avalanches, etc.) and/or man-induced wetlands (impoundments).

Hydrophytic Vegetation

The *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* defines hydrophytic vegetation as the “*sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present.*” The USACE places emphasis on the assemblage of plant species rather than on indicator species to assess a sites hydrophytic status. The “prevalence of vegetation” for a specific area is based on the dominant plant species, which characterize the community. The task of determining whether the dominant plant species represent that of a wetland community was simplified through the development of the *National List of Plant Species That Occur in Wetlands* by the U.S. Fish and Wildlife Service (USFWS) in cooperation with the USACE, EPA, and the Soil Conservation Service. The five primary indicator categories used to classify a species’ probability of occurring in a wetland are:

Obligate Wetland (OBL) - Occur almost always (estimated probability >99%) under natural conditions in wetlands

Facultative Wetland (FACW) - Usually occur in wetlands (estimated probability 67% - 99%), but occasionally found in non-wetlands.

Facultative (FAC) - Equally likely to occur in wetlands or non-wetlands (estimated probability 34% - 66%).

Facultative Upland (FACU) - Usually occur in non-wetlands (estimated probability 67% - 99%), but occasionally found in wetlands (estimated probability 1% - 33%).

Obligate Upland (UPL) - Occur in wetland in another region, but occur almost always (estimated probability >99%) under natural conditions in non-wetlands in the region specified.

The hydrophytic vegetation criteria is said to be satisfied if more than 50% of the dominant species for each of the vegetative strata are OBL, FACW or FAC (except FAC-).

Hydric Soils

The National Technical Committee for Hydric Soils defines hydric soils as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part. The anaerobic conditions hydric soils are subjected to during periodic or permanent inundation or saturation results in the chemical reduction of certain soil components, which are exhibited in the physical attributes of the soil.

Soils are typically described in terms of characteristics such as color, mottling, texture and structure. Soil color documentation is based on the Munsell notation system, which uses a combination of *hue*, *value* and *chroma* variables as descriptors. *Hue* expresses a color's relation to red, yellow, green, blue, and purple, and is designated by a number from 0 to 10 followed by a letter abbreviation (R = red, YR = yellow-red, Y = yellow). Within each letter range, the hue becomes more yellow and less red as the number increases. The range of hues for gleyed soils includes yellow (5Y), green-yellow (5GY), green (5G), blue-green (5BG) and blue (5B). *Value* indicates a color's lightness and is designated by a number from 0 (absolute black) to 10 (absolute white). *Chroma* indicates a color's strength or departure from a neutral of the same lightness. Within the Munsell Soil Color Chart chroma ranges from 0 for neutral to 8. Soil color is typically determined using a moist soil sample. Neutral colored soils with no hue and a chroma of zero are designated with the letter N on the gley page.

Mottling, the presence of brightly contrasting spots of color within the soil matrix, is often indicative of a fluctuating water table. Mottles are also color graded using the Munsell system. A soil's texture (e.g., sand, loamy sand, sandy loam, loam, silt loam, clay loam, clay) and structure (e.g. platy, prismatic, blocky, granular, etc.) are features which influence its porosity and permeability. These in turn determine the frequency and duration of saturation and inundation for a soil.

The USACE manual stipulates that unmottled mineral soils with a matrix chroma of 1 or less, and mottled mineral soils with a matrix chroma of 2 or less immediately below the A-horizon or at a depth of 10 inches (whichever is shallower) are indicative of hydric conditions. Gleyed (gray) soils resulting from the reduction of iron under waterlogged conditions are also an indicator of hydric soils when observed within the upper 10 inches. Other hydric soil indicators include the detection of hydrogen sulfide from permanently saturated soils, the presence of iron and manganese concretions, and a positive α - α -dipyridil test for reducing conditions. Organic peat or muck soils (Histosols) are exclusively hydric.

Wetland Hydrology

The USACE defines wetland hydrology as the sum total of wetness characteristic in areas that are inundated or have saturated soils for a sufficient duration to support hydrophytic vegetation. The

climate (temperature, precipitation, and evaporation), local geology (parent material and soil properties), topography, surface drainage patterns, water table, and vegetative cover (evapotranspiration) are all factors which influence the hydrology and potential wetness of an area. Because inundation or soil surface saturation may only occur seasonally, indirect indicators of past hydrologic conditions must be sought to satisfy the criteria. Primary indicators of wetland hydrology include drainage patterns, drift lines, sediment deposition, watermarks on trees or other features, visual observation of saturated soils, and inundation. In addition to on-site evidence, recorded information such as stream gauge data, flood maps, historical records or previous hydraulic reports may also be of assistance in determining the frequency and duration of inundation. Oxidized root channels in the upper 12 inches, the presence of water stained leaves, local soil survey data, the FAC-neutral vegetation test and morphologic plant adaptations are secondary indicators of wetland hydrology. The Regional Supplemental Manual determination methodology requires that one primary indicator or two secondary indicators be identified as evidence of hydrology.

IV. Preliminary Review

Prior to the on-site investigation, standard sources of information were reviewed to assess the potential for encountering "Waters of the United States" and "Waters of the State," including wetlands, within the proposed Section 6 Design Contract 1 project area.

USGS Topographic Maps

Section 6 Design Contract 1 of the I-69 Project area is located in Morgan County, Indiana. The project area is located on the Martinsville Indiana USGS Quadrangle Maps (See Exhibit 2).

Soil Survey Data

The United States Department of Agriculture Soil Survey of Monroe and Morgan counties, Indiana were consulted to identify the mapped soil series that occur in each of the 11 jurisdictional wetland impact areas identified. The following is a list of the soil series that were identified in the wetland impact areas within the Section 6 Design Contract 1 Permit Limits.

I-69 Section 6 Design Contract 1 Permit Limits Wetland and Open Water Impact Sites Soils

| | |
|-----------------------|---------------------------|
| Genesee silt loam | Shoals silt loam |
| Whitaker loam | Princeton fine sandy loam |
| Martinsville loam | Rensselaer clay loam |
| Elkinsville silt loam | |

National Wetland Inventory Maps

Digital USFWS National Wetland Inventory (NWI) maps identified 6 wetlands within the I-69 Section 6 Design Contract 1 Permit Limits. The 6 NWI wetlands within the Section 6 Design Contract 1 Permit Limits consisted of the following wetland types:

- 3 – Palustrine Forested Wetlands (PFO)
- 1 – Emergent Wetlands (PEM)
- 2 – Palustrine Unconsolidated Bottom Wetlands (PUB)

FEMA Flood Maps

Indiana Department of Natural Resources (IDNR) Division of Water Digital Flood Insurance Rate Maps (FIRM) for Morgan County was reviewed for this project. The FIRM map identified the floodplain areas of 2 streams within the I-69 Section 6 Design Contract 1 Permit Limits (Figure 1).

The Indian Creek and Sartor Ditch 100-year floodplains are crossed by the Section 6 Design Contract 1 Permit Limits.

V. Field Investigation

On-site field reviews were conducted in 2015, 2017, and 2018. During the field reviews, the entire I-69 Section 6 Design Contract 1 area was reviewed to identify possible wetland impacts. Eleven jurisdictional wetland complexes were identified during the field reviews that will be impacted by the Section 6 Design Contract 1 Permit Limits. These wetlands and ponds are located in the Upper White 8-digit watersheds.

VI. Investigation Findings

Wetlands

A total of 10 jurisdictional wetland complexes will be impacted by the proposed I-69 Section 6 Design Contract 1 Permit Limits. These 11 wetland complexes consist of 3 palustrine forested, 3 palustrine scrub shrub, 4 palustrine emergent, and 1 palustrine unconsolidated bottom wetland areas. The total area of wetland impacts associated with Section 6 Design Contract 1 of the I-69 project will be 0.9 acres. Table 1 below identifies the wetland impacts within the Permit Limits.

| Table 1. Summary of Wetland and Pond Impacts within the I-69 Section 6 Design Contract 1 Permit Limits | | | | | |
|--|-----------------|-----------------------|-----------------------|--------------|---------------------------|
| ID # | Wetlands | Permanent Impact Area | Temporary Impact Area | Jurisdiction | Classification (Cowardin) |
| S6W001A | Forested | 0.034 ac. | 0.000 ac. | Yes | PFO |
| S6W002A | Forested | 0.031 ac. | 0.047 ac. | Yes | PFO |
| S6W003A | Emergent | 0.000 ac. | 0.009 ac. | Yes | PEM |
| S6W004A | Emergent | 0.010 ac. | 0.056 ac. | Yes | PEM |
| S6W005A | Emergent | 0.055 ac. | 0.035 ac. | Yes | PEM |
| S6W007A | Forested | 0.065 ac. | 0.107 ac. | Yes | PFO |
| S6W008A | Open Water Pond | 0.107 ac. | 0.000 ac. | Yes | PUB |
| S6W009A | Emergent | 0.030 ac. | 0.000 ac. | Yes | PEM |
| S6W021A | Scrub/Shrub | 0.042 ac. | 0.063 ac. | Yes | PSS |
| S6W037A | Scrub/Shrub | 0.060 ac. | 0.000 ac. | Yes | PSS |
| S6W137A | Scrub/Shrub | 0.290 ac. | 0.000 ac. | Yes | PSS |
| TOTAL IMPACTS | | 0.724 ac. | 0.884 ac. | | |

Wetland Impacts

The wetlands being permanently impacted have a total area of 0.617 acre and the open water being permanently impacted has a total area of 0.107 acre. The wetlands being temporarily impacted have a total area of 0.0884 ac. and there will be no temporary impacts to open water areas. The wetlands and open water are located throughout the Section 6 Design Contract 1 Permit Limits (see Exhibits 2 and 3). Appendix A contains detailed impact site information on each of the wetland and pond impact areas. InWRAP was performed on all of the wetlands being impacted by the Section 6 Design Contract 1 Permit Limits (Appendix A contains the InWRAP Summary table for each wetland impact). Below is a brief description of each of the wetland and pond impact areas.

Wetland Impact S6W001

This wetland is classified as a PFO wetland, and has a total size of 0.31 acre. This wetland showed 95% herbaceous cover and 50% woody plant cover. Dominant herbaceous species for this wetland include *Symphyotrichum lanceolatum* and *Sanicula canadensis*. Dominant woody species included *Acer negundo*, *Acer saccharinum*, and *Juglans nigra*. Hydrology is likely due to frequent flooding from Indian Creek, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as fair based on InWRAP summaries for this wetland. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to Indian Creek. The Section 6 Design Contract 1 Permit Limits will permanently impact 0.034 acre of this wetland and no temporary impacts will occur to this wetland.

Wetland Impact S6W002

This wetland complex consists of two wetland polygons totaling 0.210 acre. Polygon S6W002A is classified as a PFO wetland, 0.17 acre in size. Polygon S6W002B is classified as a PEM wetland, 0.04 acre in size. Polygon S6W002A showed 85% herbaceous cover with dominant species including *Carex cristatella*, *Toxicodendron radicans*, *Carex squarrosa*, and, *Elymus virginicus*. Polygon S6W002A showed 20% Sapling/Shrub cover with dominant species including *Cornus racemose*. Polygon S6W002A showed 95% woody plant cover with dominant species including *Acer saccharinum* and *Fraxinus pennsylvanica*. Polygon S6W002B showed 100% herbaceous cover with dominant species including *Symphyotrichum lanceolatum*. Hydrology is likely due to backwater flooding of Indian Creek and roadside runoff from SR 37. Animal habitat, botanical diversity and hydrologic function are all ranked as fair for the PFO polygon (S6W002A) and poor, poor, and fair respectively for the PEM wetland polygon (S6W002B) within this complex based on InWRAP summaries. This wetland falls under the jurisdiction of both the USACE and IDEM due to its hydrologic connectivity to a tributary of Indian Creek. The Section 6 Design Contract 1 Permit Limits would permanently impact 0.031 acre of the PFO portion (S6W002A) of this wetland complex and temporarily impact 0.047 acre of the PFO portion of (S6W002A) of this wetland complex.

Wetland Impact S6W003

This wetland is classified as a PEM wetland, and has a total size of 0.14 acre. This wetland showed 100% herbaceous cover. Dominant herbaceous species for this wetland include *Symphyotrichum lanceolatum* and *Carex spp.* Hydrology is likely due to backwater flooding of Indian Creek and roadside runoff from SR 37. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor, and fair respectively based on InWRAP summaries completed for this wetland. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Indian Creek. The Section 6 Design Contract 1 Permit Limits will have no permanent impacts to this wetland; however, 0.009 acre of this wetland will be temporarily impacted.

Wetland Impact S6W004

This wetland is classified as a PEM wetland, and has a total size of 0.35 acre. This wetland showed 100% herbaceous cover. Dominant herbaceous species for this wetland include *Juncus effusus* and *Carex spp.* Hydrology is likely due to backwater flooding of Indian Creek and roadside runoff from SR 37. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor, and fair respectively based on InWRAP summaries completed for this wetland. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Indian Creek. The Section 6 Design Contract 1 Permit Limits will permanently impact 0.010 acre of this wetland and temporarily impact 0.056 acre of this wetland.

Wetland Impact S6W005

This wetland is classified as a PEM wetland, and has a total size of 0.11 acre. This wetland showed 100% herbaceous cover. Dominant herbaceous species for this wetland include *Phalaris arundinacea*, *lemna minor*, and *Typha latifolia*. Hydrology is likely due to backwater flooding of Indian Creek and roadside runoff from SR 37. Animal habitat, botanical diversity and hydrologic function are all rated as poor based on InWRAP summaries completed for this wetland. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to Indian Creek. The Section 6 Design Contract 1 Permit Limits will permanently impact 0.055 acre of this wetland and temporarily impact 0.035 acre of this wetland.

Wetland Impact S6W007

This wetland is classified as a PFO wetland, and has a total size of 0.172 acre. This wetland showed 0% herbaceous cover, 20% sapling/shrub cover, and 50% woody tree cover. Dominant sapling/shrub species for this wetland include *Morus alba*, *Plantanus occidentalis*, and *Salix nigra*. Dominant tree species for this wetland include *Plantanus occidentalis*, and *Acer saccharinum*. Hydrology is likely due to roadside runoff from the SR 37. Animal habitat, botanical diversity and hydrologic function are all rated as fair based on InWRAP summaries completed for this wetland. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to Indian Creek. The Section 6 Design Contract 1 Permit Limits will permanently impact 0.065 acre of this wetland and temporarily impact 0.107 acre of this wetland.

Wetland Impact S6W008

This wetland complex consists of three wetland polygons totaling 8.138 acres in size. Polygon S6W008A is a PFO wetland totaling 0.178 acre in size. Polygon S6W008B is a PUB wetland totaling 7.651 acres in size. Polygon S6W008C is a PFO wetland totaling 0.309 acres in size. Polygon S6W008A showed 30% tree cover with dominant species of *Acer sccharinum*, *Platanus occidentalis*, and *Salix nigra*. Polygon S6W008A showed 5% sapling/shrub cover with dominant species of *Acer negundo*. Polygon S6W008A showed 6% herbaceous cover with dominant species of *Xanthium strumarium*. Polygon S6W008B is an open deep water pit that appears to be an old sand and gravel pit with no vegetation growing within the open water. Polygon S6W008C showed 50% tree cover with dominant species of *Salix nigra* and *Acer saccharium*. Polygon S6W008C showed 5% sapling/shrub cover with dominant species of *Salix nigra*. Polygon S6W008C showed 10% herbaceous cover with dominant species of *Justicia americana*. Hydrology of this wetland complex is likely due to backwater flooding of Indian Creek. Animal habitat, botanical diversity and hydrologic function are all ranked as fair, fair and good respectively for the PFO S6W008A; fair, poor, and poor respectively for S6W008B; and fair, poor, and good respectively for S6W008C based on InWRAP summaries. This wetland falls under the jurisdiction of both the USACE and IDEM due to its hydrologic connectivity to Indian Creek. The Section 6 Design Contract 1 Permit Limits would only impact the open water portion (S6W008B) of this wetland complex. The Section 6 Design Contract 1 would permanently impact 0.107 acre of the PUB portion (S6W008B) of this wetland complex and no temporary impacts would occur to this wetland complex.

Wetland Impact S6W009

This wetland is classified as a PEM wetland, and has a total size of 0.030 acre. This wetland showed 35% herbaceous cover. Dominant herbaceous species for this wetland include *Phalaris arundinacea* and *Juncus torreyi*. Hydrology is likely due to backwater flooding of Indian Creek and roadside runoff from SR 37. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor, and good respectively based on InWRAP summaries completed for this wetland. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to Indian

Creek. The Section 6 Design Contract 1 Permit Limits will permanently impact 0.030 acre of this wetland and no temporary impacts will occur to this wetland.

Wetland Impact S6W021

This wetland is classified as a PSS wetland, and has a total size of 0.210 acre. This wetland showed 65% herbaceous cover and 55% sapling/shrub cover. Dominant herbaceous species for this wetland include *Carex spp.* and *Scirpus cyperinus*. Dominant sapling/shrub species for this wetland includes *Salix interior*. Hydrology is likely due to runoff from local roads and parking lots. Animal habitat, botanical diversity and hydrologic function are rated as poor, fair, and fair respectively based on InWRAP summaries completed for this wetland. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to Sartor Ditch. The Section 6 Design Contract 1 Permit Limits will permanently impact 0.042 acre of this wetland and temporarily impact 0.063 acre of this wetland.

Wetland Impact S6W037

This wetland is classified as a PSS wetland, and has a total size of 0.060 acre. This wetland showed 100% herbaceous cover and 30% sapling/shrub cover. Dominant herbaceous species for this wetland includes *Equisetum hyemale*. Dominant sapling/shrub species for this wetland includes *Salix interior*. Hydrology is likely due to runoff from local roads and SR 37. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor, and fair respectively based on InWRAP summaries completed for this wetland. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to Clear Creek. The Section 6 Design Contract 1 Permit Limits will permanently impact 0.060 acre of this wetland and not temporary impacts will occur to this wetland.

Wetland Impact S6W137

This wetland is classified as a PSS wetland, and has a total size of 0.290 acre. This wetland showed 22% herbaceous cover and 5% sapling/shrub cover. Dominant herbaceous species for this wetland includes *Symphyotrichum lanceolatum*, *Carex spp.*, and *unknown spp.* Dominant sapling/shrub species for this wetland includes *Salix interior*. Hydrology is likely due to runoff from local roads and SR 37. Animal habitat, botanical diversity and hydrologic function all rated as poor based on InWRAP summaries completed for this wetland. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to Clear Creek. The Section 6 Design Contract 1 Permit Limits will permanently impact the entire 0.290 acre of this wetland.

VII. Regulatory Involvement

A Waters of the U.S. Jurisdictional Determination Report was submitted to the USACE in September 2018

The Corps of Engineers exercises regulatory authority over activities involving the discharge of fill or dredged material into "Waters of the United States" and is responsible for enforcing compliance with the Environmental Protection Agency 404(b)(1) guidelines as a prerequisite to issuance of a Section 404 permit. Any and all parties proposing construction activities involving deposition of fill or dredged material, disruption or destruction through land clearing, and/or alteration of hydrology are required by law to submit for and obtain a permit through the Corps of Engineers before such activities can proceed. In general, Section 404 permits issued by the Louisville District Corps of Engineers office fall into three categories for Indiana: Individual permits, nationwide permits, and the regional general permit.

Regulatory authority for Section 401 of the Clean Water Act is the responsibility of the Indiana Department of Environmental Management (IDEM). IDEM is charged with maintaining the chemical, physical and biological integrity of Indiana waters through its Water Quality Certification (WQC) program. Section 401, in concert with the Corps Section 404 program, insures that project activities impacting “Waters of the United States” and/or “Waters of the State”, including wetlands, are conducted in compliance with the states water quality policies.

Section 404 individual permits (IP) are required for projects where the scope of work would result in significant and/or unique environmental impacts to “Waters of the United States” not covered in any of the pre-authorized nationwide permits. Briefly, the individual permit process involves: (1) submitting the appropriate application, (2) issuance of a public notice, (3) a 30 day comment period, (4) a review by federal, state and local agencies, as well as, special interest groups and the public, (5) a review of comments received, (6) possible request for additional information (7) a possible public hearing, and (8) the decision to issue or deny the permit. This process can take up to six or more months.

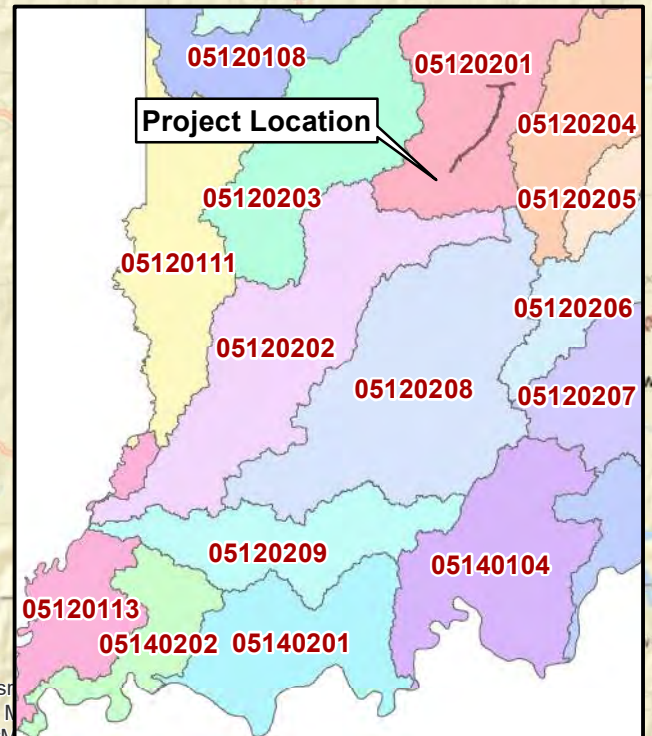
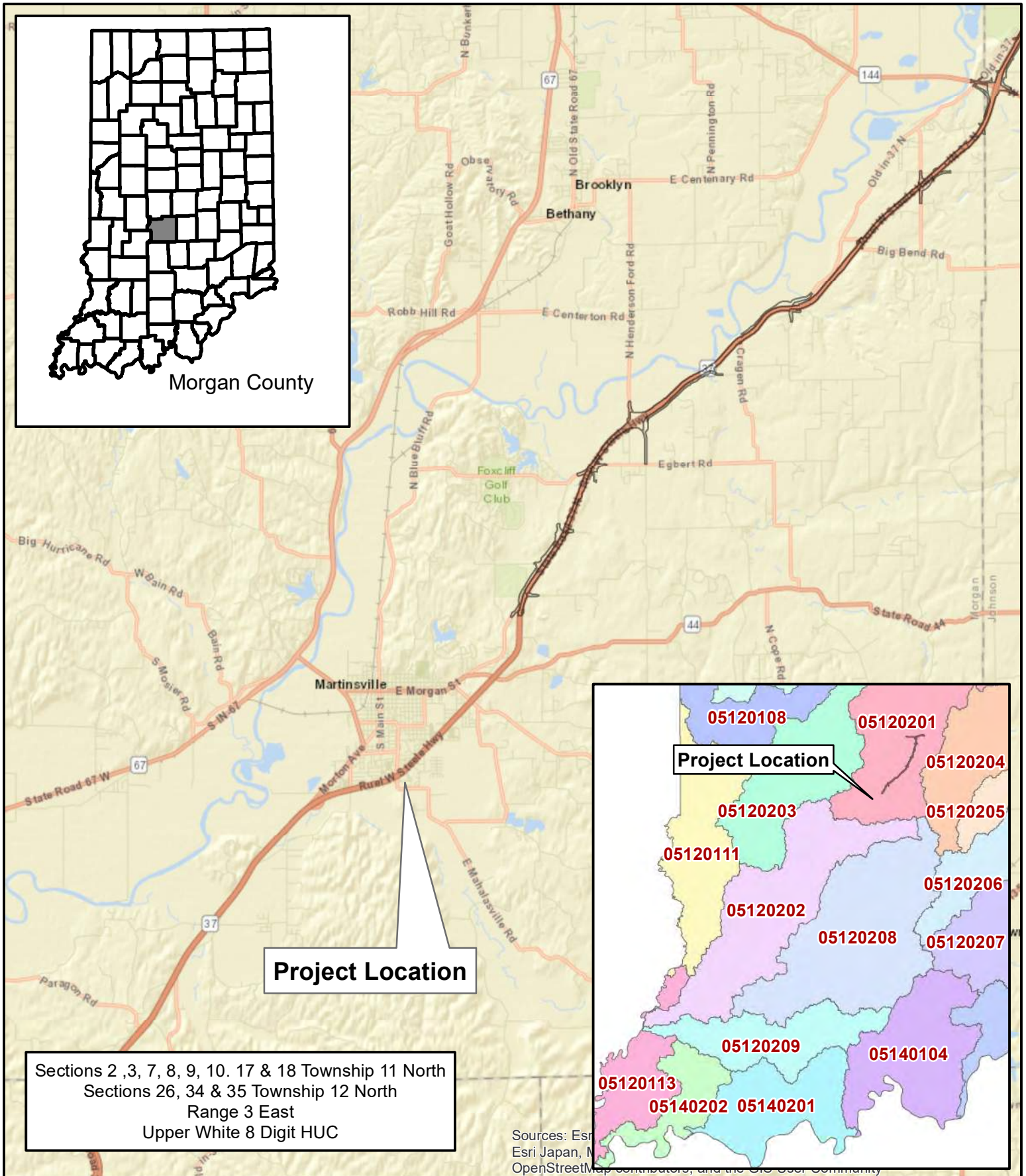
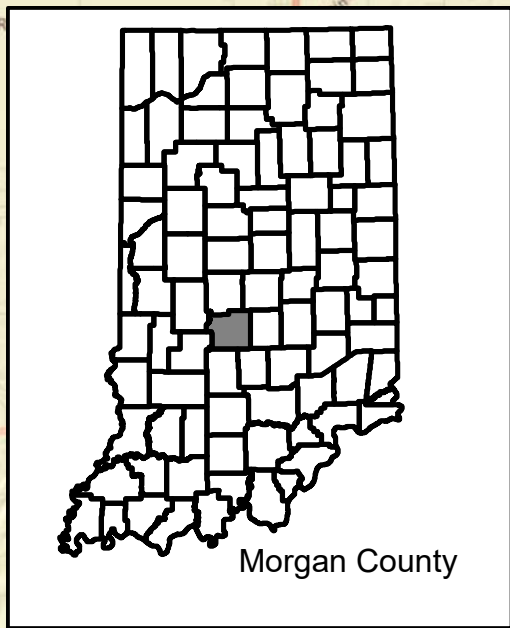
Section 404 nationwide permits have been established to streamline the permitting process by pre-authorizing a variety of common activity, which by their very nature result in only minor impacts to “Waters of the United States”. Nationwide permits are advantageous because unlike the individual permit they forgo the need to issue a public notice, do not require a 30 day comment period, and are not subject to a public hearing. Projects meeting the qualifications for a specific nationwide permit must however still comply with the Section 404 general and specific conditions required, including notification of the District Engineer when applicable. Issuance of several of the nationwide permits also requires Section 401 Water Quality Certification (WQC) through the IDEM.

The Section 404 regional general permit (RGP) for Indiana was re-issued on December 12, 2014. It authorizes activities related to construction of new facilities or structures, which have minimal individual and cumulative impacts. This permit is applicable to activities involving (1) loss of waters of the US in special aquatic sites, including wetlands, is limited to 1.0 acre or less, (2) loss of waters of the US is limited to 1,500 linear feet of stream channel, not to exceed 1.0 acre, (3) dredging in navigable waters is limited to 10,000 cubic yards, and (4) structures and fill for docking and mooring are limited to similar permitted structures and fills in the vicinity. Under this regional general permit, discharges impacting less than 0.10 acre do not require USACE notification, but still necessitate that an application be submitted to the IDEM for WQC and the IDNR Division of Water for a Construction in a Floodway Permit, if applicable. Typical response time for the IDEM public notice period (21 days) and review process is 120 days from date of application. Upon receiving the IDEM’s Section 401 approval, the Corps begins its formal review of the project. Response from the Corps is typically within 45 days.

VIII. Summary

The wetland field reviews in 2015, 2017, and 2018 for the proposed I-69 Section 6 Design Contract 1 project in Morgan County, Indiana resulted in the identification of 10 jurisdictional wetlands and 1 open water wetland that will be impacted within the Permit Limits. Approximately 0.130 acre of forested wetlands, 0.392 acre of scrub shrub wetlands, 0.095 acre of emergent wetlands, and 0.109 acre of open water wetlands will be permanently impacted by the I-69 Section 6 Design Contract 1 Permit Limits. Approximately 0.154 acre of forested wetlands, 0.630 acre of scrub shrub wetlands, and 0.100 acre of emergent wetlands will be temporarily impacted by the I-69 Section 6 Design Contract 1 Permit Limits. Normal circumstances were considered to exist at the wetland impact sites and no atypical situations or potential problems were identified on-site. Coordination with the

USACE and the IDEM on this project is ongoing. Mitigation for the permanent impacts to the 0.282 acre of forested will be completed at a 3:1 ratio, mitigation for the 0.433 acre of scrub shrub wetlands and 0.186 acre of emergent wetlands will be completed at a 2:1 mitigation ratio, and mitigation for the 0.001 acre of open water pond will be completed at a 1:1 ratio.



General Location Map

Wetland Delineation Report
Exhibit 1

I-69 Section 6 Design Contract 1
Martinsville to Indianapolis
Morgan County

Location:

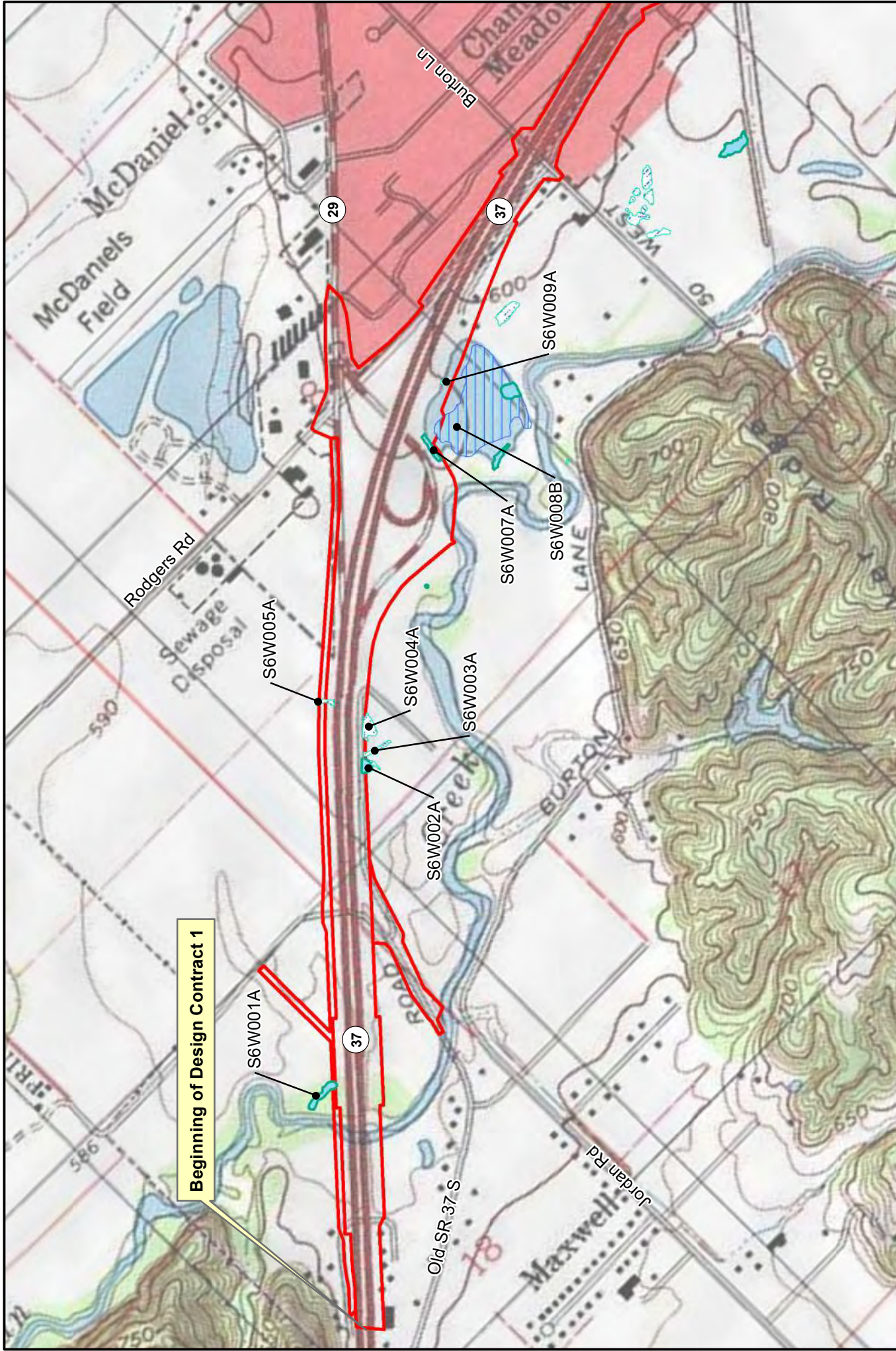
Martinsville
Washington Township
Morgan County



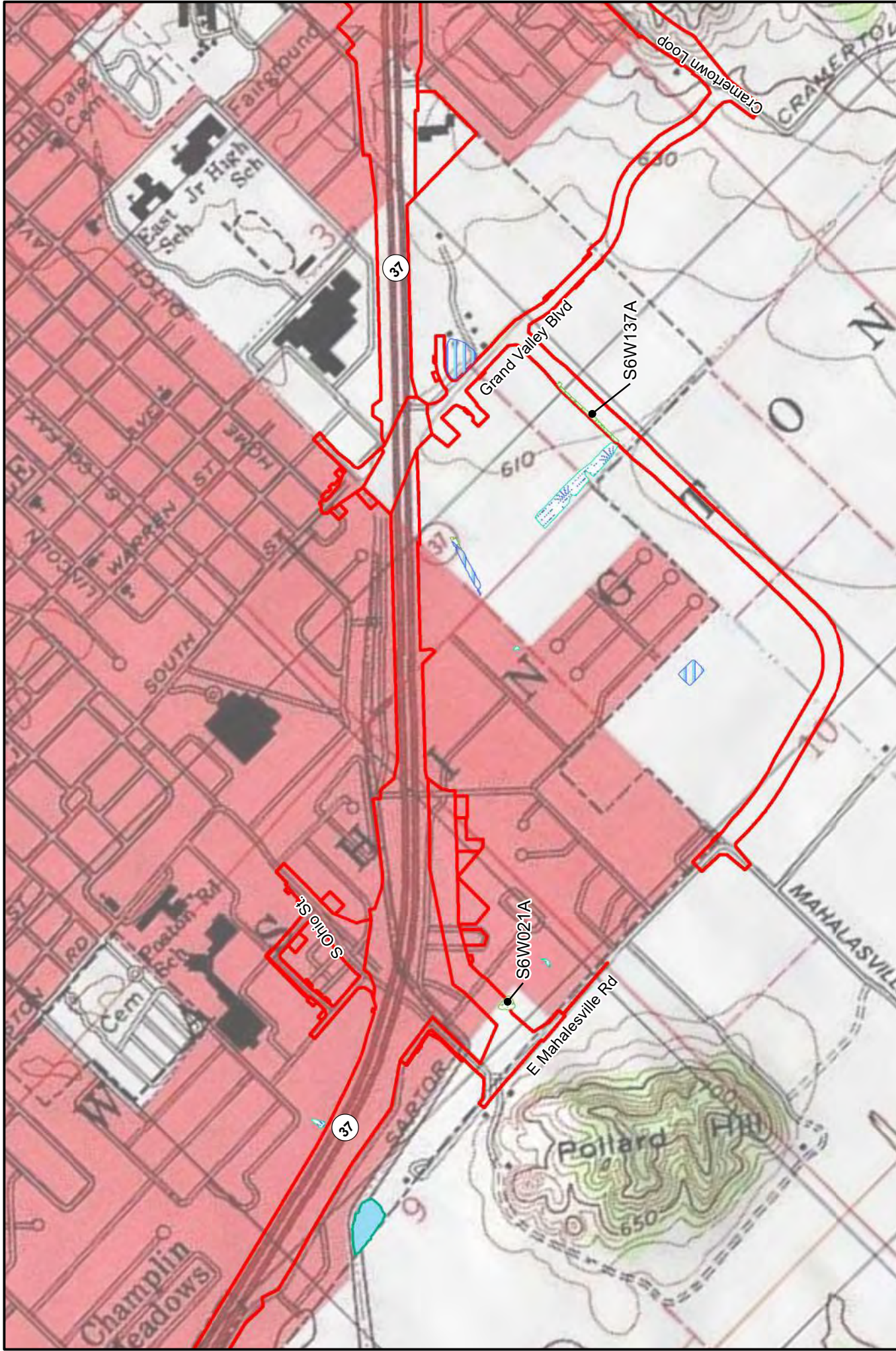
0 1 2
Miles





Date: 9/7/2018

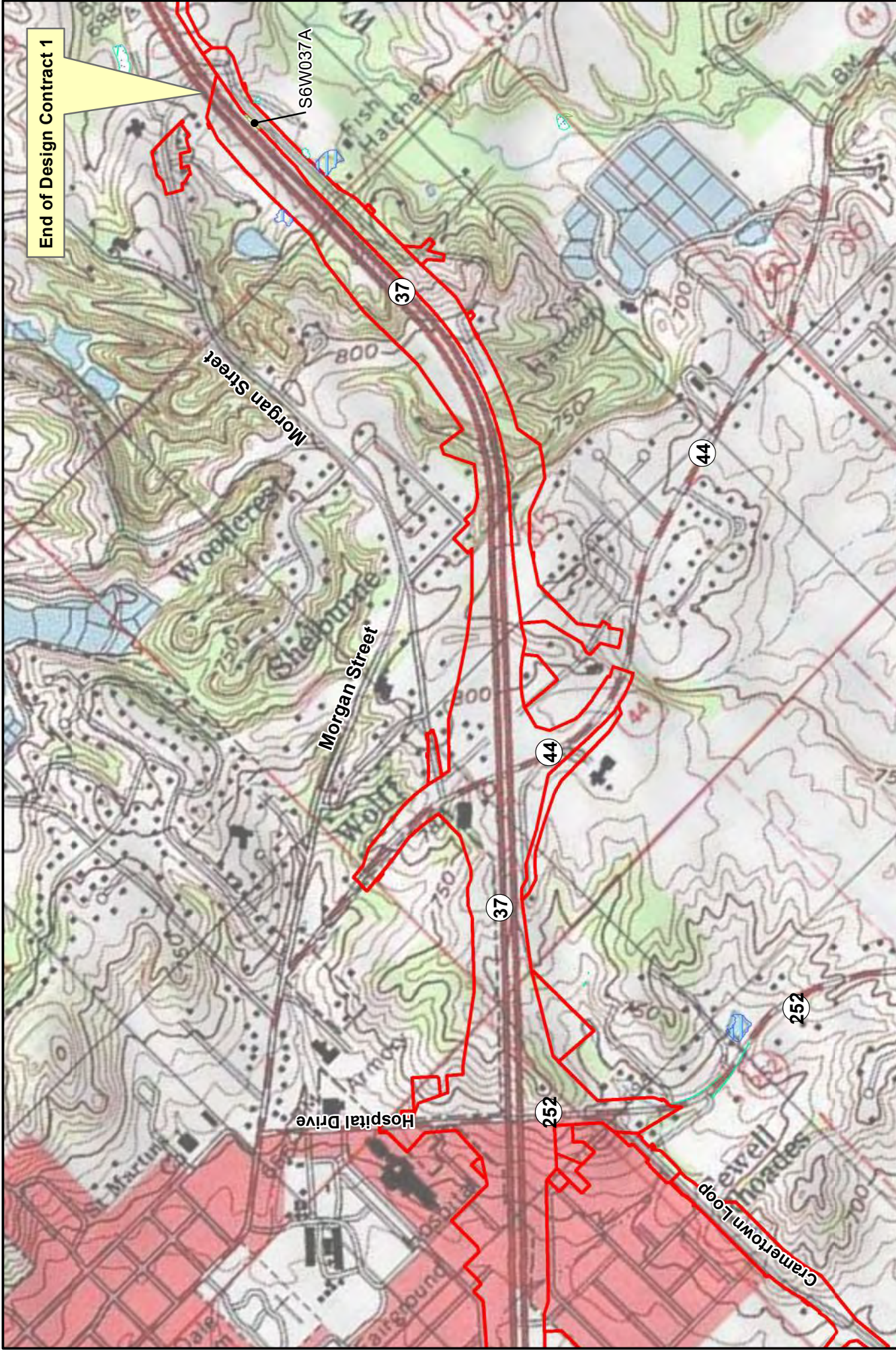
1 in = 2 miles



| | | |
|--|---|--|
| <p>USGS Topographic Map Wetland Delineation Report Exhibit 2 Map 1 of 3</p> | <p>I-69 Section 6 Design Contract 1 Martinsville to Indianapolis Morgan County</p> | <p>Legend</p> <ul style="list-style-type: none"> PEM - Emergent PSS - Scrub-Shrub PFO - Forested PUB - Unconsolidated Bottom L1U1BHX - Lacustrine <p>Location: Martinsville, Washington Township Morgan County 1:24,000 USGS Quaedangle - Martinsville Quad</p> |
| <p>0 500 1,000 Feet 1 inch = 1,000 feet</p> <p>Date: 9/7/2018</p> | | |



| | | |
|--|--|--|
|     <p>0 500 1,000 Feet 1 inch = 1,000 feet Date: 9/7/2018</p> | <p>USGS Topographic Map Wetland Delineation Report Exhibit 2 Map 2 of 3</p> <p>I-69 Section 6 Design Contract 1 Martinsville to Indianapolis Morgan County</p> | <p>Legend</p> <ul style="list-style-type: none">PEM - EmergentPSS - Scrub-ShrubPFO - ForestedPUB - Unconsolidated BottomL1UIBHx - Lacustrine <p>Project Area</p> <p>Streams</p> <p>Location: Martinsville, Washington Township Morgan County 1:24,000 USGS Quadrange - Martinsville Quad</p> |
|--|--|--|



End of Design Contract 1

S6W037A

Morgan Street

Morgan Street

Hospital Drive

Cramertown Loop

37

37

44

44

252

252

Legend
 PUB - Unconsolidated Bottom
 PSS - Scrub-Shrub
 PFC - Forested
 L1U1BHx - Lacustrine
 Project Area
 Streams

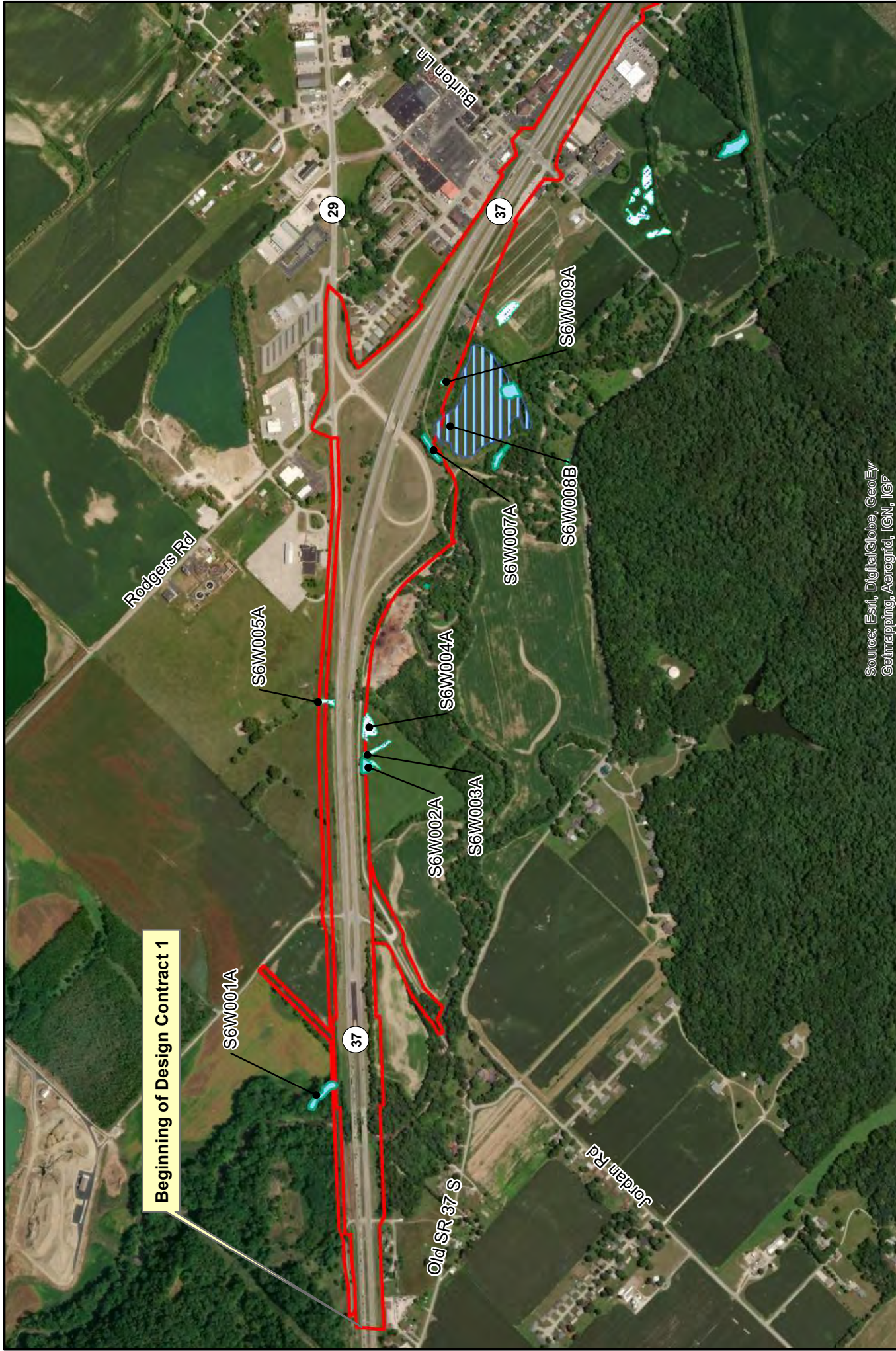
USGS Topographic Map
 Wetland Delineation Report
 Exhibit 2 Map 3 of 3

I-69 Section 6 Design Contract 1
 Martinsville to Indianapolis
 Morgan County

Location: Martinsville, Washington Township
 Morgan County
 1:24,000 USGS Quadrange - Martinsville Quad



0 500 1,000 Feet 1 inch = 1,000 feet Date: 9/7/2018



Source: Esri, DigitalGlobe, GeoEye, Aerogrid, IGN, IGP

| | | |
|---|--|---|
| | <p>Project Aerial Wetland Delineation Report Exhibit 3 Map 1 of 3</p> | <p>Legend</p> <ul style="list-style-type: none"> PEM - Emergent PSS - Scrub-Shrub PFO - Forested PUB - Unconsolidated Bottom L1UIBHx - Lacustrine <p>Location: Martinsville, Washington Township Morgan County</p> |
| <p>I-69 Section 6 Design Contract 1 Martinsville to Indianapolis Morgan County</p> | <p>Scale: 1 inch = 1,000 feet Date: 9/7/2018</p> | <p>Map Information:</p> <ul style="list-style-type: none"> 0 500 1,000 Feet North Arrow |



End of Design Contract 1

S6W037A

Morgan Street

Morgan Street

Hospital Drive

Gramertown Loop

Source: Esri, DigitalGlobe, GeoEye, Getmapping, Aerogrid, IGN, IGP

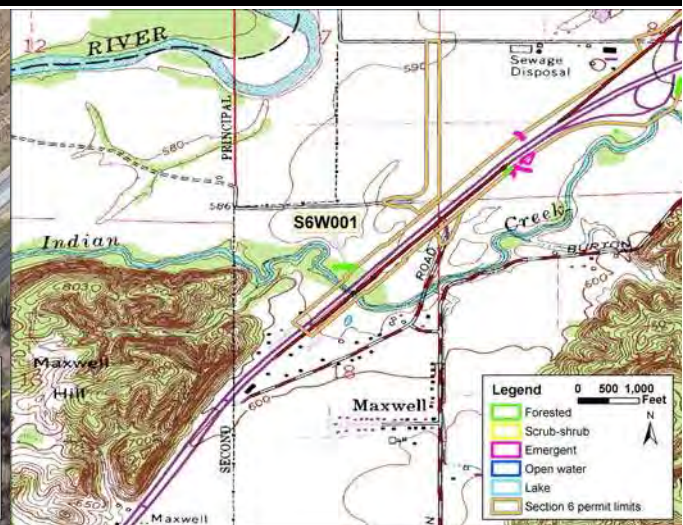
| | | |
|--|--|--|
| Legend PEM - Emergent PSS - Scrub-Shrub PFC - Forested PUB - Unconsolidated Bottom L1UIBHx - Lacustrine Project Area Streams | Project Aerial Wetland Delineation Report Exhibit 3 Map 3 of 3 | |
| Location: Martinsville, Washington Township Morgan County | I-69 Section 6 Design Contract 1 Martinsville to Indianapolis Morgan County | |

Appendix A
Wetland Impact Site Forms
And
USACE Routine Wetland Delineation Forms

Wetland S6W001



Wetland Location on 2015 Aerial Photograph



Wetland Location on Martinsville USGS Quadrangle

Basin: Indian Creek - Sand Creek
14-digit HUC: 05120201170070
Physiographic Region: Martinsville Hills
Ecoregion: Interior Plateau
Natural Region: Highland Rim
Size of wetland complex (acres): 0.3087
USACE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Quadrangle: Martinsville
County: Morgan
Township: T11N
Range: R1E
Section: 18
Quarter: N
Latitude: 39.394297
Longitude: -86.459918

| Polygon ID | Community Type | Cowardin Class | Polygon Area (acres) | Animal Habitat Measure | Botanical Measure | Hydrology Measure | Alternative | Area Impacted (acres) | Percent Polygon Impacted |
|------------|-------------------|----------------|----------------------|------------------------|-------------------|-------------------|-------------|-----------------------|--------------------------|
| S6W001A | Floodplain Forest | PFO | 0.31 | fair | fair | fair | RPA | 0.03 | 11.0% |

This site is classified as a PFO wetland, 0.31 acre in size. The Section 6 Design Contract 1 Permit Limits would permanently impact 0.0 acre and temporarily impact 0.034 acre of this wetland. This wetland showed 95% herbaceous cover and 50% woody plant cover. Dominant herbaceous species for this wetland include *Symphytotrichum lanceolatum* and *Sanicula canadensis*. Dominant woody species included *Acer negundo*, *Acer saccharinum*, and *Juglans nigra*. Hydrology is likely due to frequent flooding from Indian Creek. Animal habitat, botanical diversity, and hydrology function are all rated as fair based on InWRAP summaries for the site.

Wetland S6W001



Polygon S6W001A

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W001A City/County: Morgan Sampling Date: 10/21/2015
 Applicant/Owner: INDOT/Lochmueller State: Indiana Sampling Point: IC25A-1D1
 Investigator(s): Rusty Yeager, Kate Lucier Section, Township, Range: Sec 18-T11N-R1E
 Landform (hillslope, terrace, etc.): oxbow hillslope top Local relief (concave, convex, none): concave
 Slope (%): 6-12 Lat: 39.394180 Long: -86.459918 Datum: NAD83
 Soil Map Unit Name: Genesee silt loam NWI classification: PFO1A

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

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

| | | | |
|---|-----------------|----------------|--|
| Hydrophytic Vegetation Present? | Yes <u>X</u> | No <u> </u> | Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> |
| Hydric Soils Present? | Yes <u> </u> | No <u>X</u> | |
| Wetland Hydrology Present? | Yes <u> </u> | No <u>X</u> | |
| Remarks: Although predominant hydrophytic vegetation is present, this data point lacks positive hydrology and hydric soil indicators. | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>60</u> (A/B) | | | | | | | | | | | | | | |
|--|------------------|-------------------|------------------|---|-------------------|--------------|----------------------|----------------|------------------------|-----------------|-----------------------|------------------|------------------------|------------------|----------------------|----------------|-------------------------------|----------------|
| 1. <u>Acer negundo</u> | <u>30</u> | <u>Yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | |
| 2. <u>Acer saccharinum</u> | <u>10</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 3. <u>Juglans nigra</u> | <u>10</u> | <u>Yes</u> | <u>FACU</u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>50</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | | | | Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>30</u></td> <td>x 2 = <u>60</u></td> </tr> <tr> <td>FAC species <u>80</u></td> <td>x 3 = <u>240</u></td> </tr> <tr> <td>FACU species <u>35</u></td> <td>x 4 = <u>140</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>145</u> (A)</td> <td><u>440</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>3.03</u> | Total % Cover of: | Multiply by: | OBL species <u>0</u> | x 1 = <u>0</u> | FACW species <u>30</u> | x 2 = <u>60</u> | FAC species <u>80</u> | x 3 = <u>240</u> | FACU species <u>35</u> | x 4 = <u>140</u> | UPL species <u>0</u> | x 5 = <u>0</u> | Column Totals: <u>145</u> (A) | <u>440</u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u>0</u> | x 1 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACW species <u>30</u> | x 2 = <u>60</u> | | | | | | | | | | | | | | | | | |
| FAC species <u>80</u> | x 3 = <u>240</u> | | | | | | | | | | | | | | | | | |
| FACU species <u>35</u> | x 4 = <u>140</u> | | | | | | | | | | | | | | | | | |
| UPL species <u>0</u> | x 5 = <u>0</u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u>145</u> (A) | <u>440</u> (B) | | | | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>0</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | | | | Hydrophytic Vegetation Indicators: 1-Rapid Test for Hydrophytic Vegetation: <u>X</u> 2-Dominance Test is >50% <u>X</u> 3-Prevalence Index is <=3 ¹ 4-Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic | | | | | | | | | | | | | | |
| 1. <u>Symphyotrichum lanceolatum</u> | <u>30</u> | <u>Yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | |
| 2. <u>Sanicula canadensis</u> | <u>25</u> | <u>Yes</u> | <u>FACU</u> | | | | | | | | | | | | | | | |
| 3. <u>Ambrosia trifida</u> | <u>10</u> | <u>No</u> | <u>FAC</u> | | | | | | | | | | | | | | | |
| 4. <u>Rudbeckia laciniata</u> | <u>10</u> | <u>No</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 5. <u>Laportea canadensis</u> | <u>5</u> | <u>No</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 6. <u>Pilea pumila</u> | <u>5</u> | <u>No</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 7. <u>Smilax hispida</u> | <u>5</u> | <u>No</u> | <u>FAC</u> | | | | | | | | | | | | | | | |
| 8. <u>Viola sororia</u> | <u>5</u> | <u>No</u> | <u>FAC</u> | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>95</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Vine Stratum (Plot Size: <u>30'</u> radius) | | | | Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>0</u> = Total Cover | | | | | | | | | | | | | | | | | | |

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

SOIL

Sampling Point IC25A-1D1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-5 | 10YR3/2 | 100 | | | | | silty clay loam | |
| 5-20 | 10YR4/3 | 100 | | | | | silty clay loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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 Soils³

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other Soil (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:

Redoximorphic indicators were not noted.

HYDROLOGY

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

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ 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? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

Evidence of Indian Creek flood events is noted in the area, but does not appear to provide sustain hydrology conditions for the higher portions of this floodplain region represented by this data point. Data point is 5+ feet above the bottom of the adjacent oxbow wetland feature

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W001A City/County: Morgan Sampling Date: 10/21/2015
 Applicant/Owner: INDOT/Lochumuller State: Indiana Sampling Point: IC25A-1W1
 Investigator(s): Rusty Yeager, Kate Lucier Section, Township, Range: Sec 18-T11N-R1E
 Landform (hillslope, terrace, etc.): floodplain oxbow Local relief (concave, convex, none): concave
 Slope (%): 0-2 Lat: 39.394294 Long: -86.459924 Datum: NAD83
 Soil Map Unit Name: Genesee silt loam NWI classification: PFO1A

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

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

| | | | |
|--|--------------|----------------|--|
| Hydrophytic Vegetation Present? | Yes <u>X</u> | No <u> </u> | Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> |
| Hydric Soils Present? | Yes <u>X</u> | No <u> </u> | |
| Wetland Hydrology Present? | Yes <u>X</u> | No <u> </u> | |
| Remarks: This data point represents the majority of this oxbow feature which generally lacks shrub and herbaceous vegetation, but exhibits primary indicators of hydrology and hydric soils. The wetland feature represented by this data point has been designated as | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B) |
|--|------------------|-------------------|------------------|--|
| 1. <u>Acer saccharinum</u> | <u>50</u> | <u>Yes</u> | <u>FACW</u> | |
| 2. <u>Acer negundo</u> | <u>25</u> | <u>Yes</u> | <u>FAC</u> | |
| 3. <u>Platanus occidentalis</u> | <u>25</u> | <u>Yes</u> | <u>FACW</u> | |
| 4. <u>Ulmus americana</u> | <u>10</u> | <u>No</u> | <u>FACW</u> | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| <u>110</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>85</u> x 2 = <u>170</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>110</u> (A) <u>245</u> (B) Prevalence Index = B/A = <u>2.23</u> |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| <u>0</u> = Total Cover | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Indicators: 1-Rapid Test for Hydrophytic Vegetation: <u>X</u> 2-Dominance Test is >50% <u>X</u> 3-Prevalence Index is <=3 ¹ 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| <u>0</u> = Total Cover | | | | |
| Vine Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| <u>0</u> = Total Cover | | | | |

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

Trees were located around the periphery of this oxbow feature. The central portion of the wetland represented by the data point is devoid of herbaceous vegetation due to extended period of deep inundation.

SOIL

Sampling Point IC25A-1W1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|----|----------------|----|-------------------|------------------|-----------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-20 | 10YR4/2 | 90 | 5YR4/6 | 10 | C | M | silty clay loam | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |

¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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 Soil (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 ☐**Remarks:**

A depleted matrix (F3) was confirmed based on the presence of reddish redoximorphic features throughout the soil pedon.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☒ Water Marks (B1)
☐ Sediment Deposits (B2)
☒ 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 ☒ Depth (inches): _____
 Water Table Present? Yes ☐ No ☒ Depth (inches): _____
 Saturation Present? Yes ☐ No ☒ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

In May 2015 the site was observed to be saturated to the surface throughout.

I-69 Wetland Quality Assessment Profile

Date Report Generated: 9/6/2018
Data reference # S6W001
Wetland Site **S6W001**
Date of site visit: 10/21/15
Total wetland area: 0.3087 acres

| | |
|--|-------------|
| Polygon Information | |
| Polygon ID | S6W001A |
| Polygon Size (acres) | 0.31 |
| Wetland Community Type | FF |
| Red Flag (Special) Indicators | |
| Special Hydrologic Conditions | N |
| Special Community Type | N |
| Rare-Threatened-Endangered Species | N |
| Animal Habitat Measures | |
| Wetland size and connectivity | 3 |
| Surrounding land use | 3 |
| Standing water | 1 |
| Dead woody material | 2 |
| Zonation and interspersion | 1 |
| Stratification | 1 |
| Tree canopy | 3 |
| Mature trees | 3 |
| Animal Habitat Measure Score (min = 8, max = 24) | 17 |
| Animal Habitat Measure Rating | fair |
| Botanical Measures (all except exotics dependent upon community type) | |
| Number of dominant plant taxa observed | 2 |
| Conservatism rating | 2 |
| Total hydrophytic taxa observed | 3 |
| Number of indicator taxa | 1 |
| Exotic species rating | 2 |
| Botanical Measure Score (min = 5, max = 15) | 10 |
| Botanical Measure Rating | fair |
| Hydrology Measures | |
| Water quality protection (= no. of yes answers) | 2 |
| Flood and storm water storage (= no. of yes answers) | 4 |
| Site/Hydrology Score (min = 11, max = 33) | 23 |
| Site/Hydrology Rating | fair |

In-WRAP Summary Sheet

Date Report Generated: Thursday, September 6, 2018

Wetland Site Name: N/A

Data Reference #: S6W001

Date of Site Visit: Wednesday, October 21, 2015

Tier 1 Summary:

a. Total Wetland Area (acres): 0.3087

b. Wetland size and connectivity - contribution to animal habitat:

Valuable More Favorable Favorable Neutral

c. Surrounding land use - numerical rank (max. = 1): 0.76

d. Value surrounding area adds to animal habitat:

Valuable Favorable Low

Tier 2 SUMMARY:

Polygon ID S6W001A

a. Indiana Wetland community type: Floodplain Forest

b. Standing water - contribution to animal habitat:

Valuable Favorable Neutral

c. Disturbances to site:

d. Exotic species rating:

Good Medium Poor

e. Special Hydrologic Conditions Observed: None

f. Special Community Type: None

g. Rare-Threatened-Endangered Species: None

h. Polygon Quality Descriptor:

Good Medium Poor

Tier 3A SUMMARY:

a. Dead woody material as indicator of animal habitat:

Valuable Favorable Neutral

b. Water quality protection - numerical rank (6 max.): 2

Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max) 4

Good Medium Poor

Tier 3B SUMMARY:

a. Zonation and interspersions as indicator of animal habitat:

Valuable Favorable Neutral

b. Stratification as indicator of animal habitat:

Valuable Neutral

c. Number of dominant plant taxa observed: 5

Good Medium Poor

d. Average coefficient of conservatism: 3.8

Good Medium Poor

e. Tree canopy as indicator of animal habitat:

Valuable Neutral

f. Mature trees as indicator of animal habitat:

Valuable Favorable Neutral

g. Total hydrophytic taxa observed: 27

Good Medium Poor

h. Number of indicator taxa: 0

Good Medium Poor

Tier 1: Assessment Overview**1.1 Site Identification:**Wetland Site Name: N/AOwnership (if known): N/AUSGS Topographic Quadrangle: MartinsvilleUSGS Watershed map 14-Digit HUC: Indian Creek - Sand Creek

Identify each NWI Polygon within the Wetland Site (Polygon specific data)

| NWI Polygon ID Number | Cowardin Classification | Polygon Size (acres) |
|-----------------------|-------------------------|----------------------|
| S6W001A | PFO1 | 0.3087 |

1.2 Site VisitTeam Members: Rusty Yeager & Kate LucierAgency: Lochmueller GroupDate assessed: 10/21/2015

Time assessed: _____

Weather conditions: _____

Note any unusual weather events that may have influenced the current conditions within this wetland system (e.g. recent heavy rains, an unusually dry season, an especially early spring etc.)

1.3 Wetland SizeSize of site under assessment: 0.3087Size of wetland complex: 0.3087**1.4 Site Setting**

Degree of isolation from other wetlands or wetland complexes:

☒ The site is connected upstream and downstream with other wetlands☐ The site is only connected upstream with other wetlands☐ The site is only connected downstream with other wetlands☐ Other wetlands are nearby (within 0.25 mile) but not connected☐ The wetland site is isolated

General assessment of adjacent land use / land cover in the area within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

| | | | |
|-----------|---------------------------------------|----------|---|
| <u>70</u> | Native Vegetation - woodland | <u>0</u> | Road / highway / railroad bed / parking lot |
| <u>0</u> | Native Vegetation - old field / scrub | <u>0</u> | Industrial |
| <u>30</u> | Agricultural - tilled | <u>0</u> | Residential - single family |
| <u>0</u> | Agricultural - pasture | <u>0</u> | Commercial or multifamily residential |
| <u>0</u> | Recreation - green space, mowed | | |

NWI Polygon # S6W001A

Data Reference# S6W001

(see table on page one)

Tier 2: Individual Polygon: Preliminary Assessment

(to be completed on-site for each NWI polygon present in the wetland)

2.1 Wetland Geomorphic Setting and Surface Water Flow (check one):

☐ Depressional ☐ Slope ☒ Floodplain ☐ Lacustrine
☐ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? No

Is standing water is present, is the water greater than 2 meters n depth? No

Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

☐ Permanently Flooded ☐ Artificially Flooded
☒ Seasonally Flooded
☐ Saturated (surface water seldom present) ☐ Artificailly Drained

2.4 Soil Type

☐ Organic (i.e. peat, etc.) ☒ Mineral ☐ Both Mineral and Organic Present

2.5 Wetland Community Type for this NWI polygon (see Key to Wetland Communities of Indiana):

Floodplain Forest

2.6 Disturbances of Hydrology (check all that apply):

☐ Ditching ☐ Culvert
☐ Tiles ☐ Other Human Distrubances to the
☐ Dams Hydrology (explain):
☐ Road or Railroad Embankment

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common):

☐ Garlic Mustard ☐ Glossy Buckthorn
☐ *Phragmites* ☐ S Reed Canary Grass
☐ Purple Loosestrife ☐ S Other (list):

2.8 Presence of Special Hydrologic Conditions (i.e. seeps, wet slopes, floating mat):

None

2.9 Presence of Special Community Types:

☐ Bog ☐ Fen ☐ Wet Sand / Muck Flats or Marl Seeps

2.10 Presence of Known Federal or Indiana Rar, Threatened or Endangered Species:

☒ None observed or known to be presen
☐ RTES Present (list):

2.11 Wetland Polygon Quality Descriptor (see: Wetland Quality Descriptions and check one):

☐ Good ☒ Medium ☐ Poor

Tier 3a: Individual Polygon: Rapid Hydrology Indicators**3a.1 Notable Features that influence water quality and hydrology:**

Estimated herbaceous plant cover (percentage) in the polygon ___ 100-75 ___ 75-50 ___ 50-25 ☒ <25
 Estimated woody plant foliar coverage in the polygon ☒ 100-75 ___ 75-50 ___ 50-25 ___ <25
 Amount of dead woody material on the soil surface ___ nil ☒ scattered ___ frequent

3a.2 Water Quality Protection Questions:

1. Y ☐ N ☒ Does the wetland have a significant amount of vegetative (specifically herbaceous and woody plant) density to potentially uptake dissolved nutrients?
2. Y ☐ N ☒ Managed water (e.g. municipal or road stormwater drainage, agricultural drainage outlet, industrial or municipal wastewater) is not discharged into the wetland polygon?
3. If wetland in question is a depressional wetland answer 3a, in not, answer 3b.
 Y ☐ N ☒ 3a. Does the wetland have a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland?
☒ N ☐ 3b. Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface body of water down gradient?
4. ☒ Y ☐ N Does the wetland lack steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within 100 meters of its border?
5. Y ☐ N ☒ Are there recreational lakes, fishable or navigable watercourses, or water supply sources down gradient in the local watershed?
6. Y ☐ N ☒ Is a vegetative buffer area or another wetland polygon (areas where overland flow could be filtered) located upland and adjacent to the wetland polygon? If yes, describe buffer area width and slope.
 width of buffer area (in meters) ___ 0 ___ approximate slope (percent) ___ 0 ___

3a.3 Flood and Stormwater Storage / Attenuation Questions:

1. If wetland in question is a depressional wetland answer 1a, in not, answer 1b
 Y ☐ N ☒ 1a. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
☒ Y ☐ N 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. ☒ Y ☐ N Does the wetland lack man-made structure that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. ☒ Y ☐ N Is the flood potential high in the local watershed in which the wetland is located (history of flood damages)?
4. Y ☐ N ☒ Is the wetland located in a watershed where the majority of the upland soils are clay and impermeable, or is bedrock within two feet of the top of the soil profile?
5. ☒ Y ☐ N Is the wetland located in a local watershed which has highly modified runoff conditions due to existing development?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

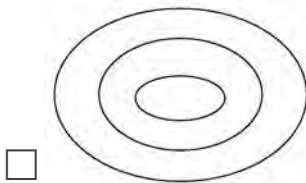
1. How many vegetation zones are evident in this wetland polygon? 1

1b. If only one vegetation zone is evident, which best describes the site?

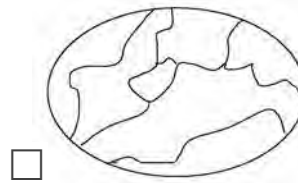
- ☐ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks, heterogeneous textures across the polygon.
- ☒ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

2. If more than one vegetation zone is present in the polygon, which interspersed diagram most closely represents the distribution of these zones?

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation Zone A

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☒ >90%

Is there notable layering/stratification in this vegetation zone? No

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

- | | |
|---|----------|
| a. <u><i>Symphyotrichum lanceolatum</i></u> | d. _____ |
| b. <u><i>Bidens frondosa</i></u> | e. _____ |
| c. <u><i>Persicaria punctata</i></u> | f. _____ |

Dominant Shrub Species listed in order of relative abundance.

- | | |
|----------|----------|
| a. _____ | c. _____ |
| b. _____ | d. _____ |

Dominant Tree Species listed in order of relative abundance.

- | | |
|--|----------|
| a. <u><i>Acer saccharinum</i></u> | c. _____ |
| b. <u><i>Platanus occidentalis</i></u> | d. _____ |

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☒ often touching ☐ more or less close

Mature trees (>12" dbh): ☒ yes ☐ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone B

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closeMature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone C

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closeMature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservatism)

Herbs: non-seed plants

- ☐ horsetail, scouring rush spp. (Equisetum) 2
☐ *ferns: marsh shiled fern spp. (Dryopteris) 7
☐ *cinnamon fern (Osmunda cinnamomea) 9
☐ *royal fern (Osmunda regalis) 8
☐ sensitive fern (Onoclea sensibilis) 4
☐ *other: species (if know _____)
☐ marsh club moss (Selaginella apoda) 4
☐ Sphagnum moss spp. (Sphagnum) 10

Herbs: lvs. floating or submergent

- ☐ *bladderwort spp. (Utricularia) 10
☐ coontail (Ceratophyllum demersum) 1
☐ duckweed spp. (Lemnaceae) 3
☐ *pondweed spp. (Potamogeton) 8
☐ curlyleaf pondweed (Potamogeton crispus) 0
☐ *water lily (Nymphaea tuberosa) 6
☐ water shield (Brasenia schreberi) 4
☐ *yellow spatterdock spp. (Nuphar) 6

Herbs: lvs. floating or submergent

- ☐ *pitcher plant (Sarracenia purpurea) (10)
☐ *sundew spp. (Drosera) 10

Herbs: linear-lvs. or +/- leafless monocots

- ☐ *beak rush spp (Rhynchospora) 10
☐ blueflag iris (Iris virginica) 5
☐ bulrush spp. (Scirpus / Schoenoplectus) 5
☐ *bur reed spp. (Sparganium) 9
☐ cat-tail spp. (Typha) 1
☐ *cotton grass spp. (Eriophorum) 10
 Grasses (family Gramineae) - indicate types and number of species
☐ a. *wild rice (Zizania aquatica) 10
☒ b. most native perennial grass spp. 4:
 cut-grass, manna-grass, Canada bluepoint, foxtail (Alopecurus); other _____
☒ c. introduced grass spp. 0: reed canary grass (Phalaris, reed (Phragmites), annual grasses such as annual foxtail (Setaria) and barnyard grass (Echinochloa)
☐ needle sedge spp. (Eleocharis) 1 sp. = 2
☐ *additional = 8
☐ nutsedge spp. (Cyperus) 2
☐ *orchid spp. 10; species (if know _____)
☐ rush spp. (Juncus) 4
☐ sedge spp. (Carex) 1 sp. = 3 _____ additional = 7
☐ *spiderlily (Hymenocallis occidentalis) 9
☐ sweet flag (Acorus calamus) 0
☐ *3-way sedge (Dulichium arundinaceum) 10
☐ *twig rush (Cladium mariscoides) 10
☐ *umbrella sedge (Fuirena squarrosa) 10
☐ wild hyacinth (Camassia scilloides) 5
☐ *yellow-eyed grass (Xyris torta) 9

Herbs: wide-leafed monocots

- ☐ *arrow arum (Peltandra virginica) 6
☐ arrow-head spp. (Sagittaria) 4
☐ *green dragon (Arisaema dracontium) 6
☐ Jack-in-the-pulpit (Arisaema triphyllum) 4
☐ pickerel weed (Pontederia cordata) 5
☐ *skunk cabbage (Symplocarpus foetidus) 8
☐ *water arum (Calla palustris) 10
☐ water plantain (Alisma plantago-aquatica) 2

Herbs: dicots - lvs. opposite/whorled

- ☐ *bedstraw spp. (Gallium) 6
☐ beggar's tick spp. (Bidens) 3
☐ blue vervain (Verbena hastata) 3
☐ boneset (Eupatorium perfoliatum) 4
☐ bugleweed spp. (Lycopus) 5
☒ clearweed spp. (Pilea) 3
☐ cup plant (Silphium perfoliatum) 4
☒ false nettle (Boehmeria cylindrica) 3
☐ *fen betony (Pedicularis lanceolata) 6
☐ *gentian spp. (Gentiana Gentianopsis) 8
☒ giant ragweed (Ambrosia trifida) 0
☐ Indian hemp (Apocynum cannabinum) 2
☐ Joe-pye weed spp. (Eupatorium) 5
☐ *loosestrife spp. (Lysimachia) 6
☐ meadow beauty (Rhexia virginica) 5
☐ mint spp. e.g. hedge nettle, mtn. mint, skullcap
☒ moneywort (Lysimachia nummularia) 0
☐ monkey flower spp. (Mimulus) 4
☐ nettle (Urtica procera) 1
☐ purple loosestrife (Lythrum salicaria) 0
☐ *richweed (Collinsia canadensis) 8
☐ St. John's wort spp. (Hypericum/Triandrium) 8
☐ sunflower sp. (Helianthus) 4
☐ *swamp loosestrife (Decodon verticillatus) 8
☐ swamp milkweed (Asclepias incarnata) 4
☐ toothcup spp. (Ammania Rotala) 2
☐ *turtlehead spp. (Chelone) 8
☐ virgin's bower (Clematis virginiana) 3
☐ water purslane (Ludwigia palustris) 3
☐ winged loosestrife (Lythrum alatum) 5

Herbs (vines): dicots - lvs. alternate or basal and

- ☐ American bellflower (Campanula americana) 4
☐ *asters: bristly aster (Aster puniceus) 7
☐ flat-topped aster (Aster umbellatus) 8
☒ other aster spp. (e.g. New England, panicled ast
☐ *black-eyed Susan (Rudbeckia fulgida) 8
☐ cardinal flower (Lobelia cardinalis) 4
☐ cress spp. (Cardamine) 4
☐ dock spp.: swamp, water, pale (Rumex) 4
☐ garlic mustard (Alliaria petiolata) 0
☐ golden ragwort (Senecio aureus) 4

Herbs (vines): dicots - lvs. alternate or basal and simple (continued)

- ___ *goldenrod spp. (*Solidago ohioensis*, *S. patula*,
- ___ *grass of Parnassus (*Parnassia glauca*) 10
- ___ *Indian plantain (*Cacalia plantaginea*) 10
- ___ ironweed spp. (*Vernonia*) 4
- ___ jewelweed, touch-me-not spp. (*Impatiens*) 3
- ___ lizard's tail (*Saururus cernuus*) 4
- ___ lobelia spp. (*Lobelia*) 4
- ___ *marsh marigold (*Caltha palustris*) 7
- ___ *moonseed (*Menispermum canadense*) 6
- ___ primrose-willow spp. (*Epilobium* *Ludwigia*) 3
- ___ rose mallow spp. (*Hibiscus*) 4
- ✓ smartweed spp.: jumpseed, pinkweed, tearthumb, water-pepper, waters smartweed (*Polygonum*)
- ___ halbredleaf tearthumb (*Polygonum arifolium*) 10
- ___ sneezeweed (*Helenium autumnale*) 3
- ✓ stinging nettle (*Laportea canadensis*) 2
- ___ *swamp saxifrage (*Saxifraga pennsylvanica*) 10
- ___ *Virginia bluebells (*Mertensia virginica*) 6
- ___ waterhemp (*Amaranthus tuberculatus*) 1
- ___ wingstem (*Actinomeris alternifolia*) 3

Herbs: dicots - lvs. basal or alternate and compound or deeply lobed

- ___ aven spp.: round, white (*Geum*) 2
- ___ *buttercup spp.: cursed b., hooked b., swamp b. (*Ranunculus*) 6
- ___ chervil (*Chaerophyllum procumbens*) 3
- ___ *cowbane (*Oxypolis rigidior*) 7
- ___ *great angelica (*Angelica atropurpurea*) 6
- ___ hog peanut / ground nut (*Amphicarpaea* and *Apios*) 5
- ___ honewort (*Cryptotaenia canadensis*) 3
- ___ meadow rue spp. (*Thalictrum*) 5
- ✓ poison ivy (*Rhus radicans*) 1
- ___ *queen-of-the prairie (*Filipendula rubra*) 9
- ___ senna spp. (*Cassia*) 4
- ___ swamp agrimony (*Agrimonia parviflora*) 4
- ___ *swamp thistle (*Cirsium muticum*) 8
- ___ tall coneflower (*Rudbeckia laciniata*) 3
- ___ *water hemlock spp. (*Cicuta*) 7
- ___ water parsnips (*Sium suave*) 5

Shrubs - leaves opposite or whorled

- ___ bladdernut (*Staphylea trifolia*) 5
- ___ buckthorn spp. (*Rhamnus cathartica*, *R. frangula*) 0
- ___ buttonbush (*Cephalanthus occidentalis*) 5
- ___ dogwood, red-osier (*Cornus stolonifera*) 4
- ___ *dogwood, blue-fruited or silky (*Cornus obliqua*)
- ___ dogwood, gray (*Cornus racemosa*) 2
- ___ elderberry (*Sambucus*) 2

Shrubs - leaves alternate

- ___ *cranberry spp. (*Vaccinium*) 10
- ___ *dwarf birch (*Betula pumila*) 10
- ___ *highbush blueberry (*Vaccinium corymbosum*) 9
- ___ *leatherleaf (*Chamaedaphne calyculata*) 10
- ___ meadowsweet and Hardhack spp. (*Spiraea*) 4
- ___ *ninebark (*Physocarpus opulifolius*) 7
- ___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
- ___ spice bush (*Lindera benzoin*) 5
- ___ *swamp dewberry (*Rubus hispidus*) 6
- ___ *swamp holly and winterberry spp. (*Ilex*) 7
- ___ swamp rose (*Rosa palustris*) 5

Trees - leaves needle shaped

- ___ *tamarack (*Larix laricina*) 10

Trees - leaves compound

- ___ *ash, black (*Fraxinus nigra*) 7
- ___ ash, green (*Fraxinus pensylvanica*) 3
- ___ *ash, pumpkin (*Fraxinus tomentosa*) 8
- ___ boxelder (*Acer negundo*) 1
- ___ hickory, bittersweet (*Carya cordiformis*) 5
- ___ hickory, shellbark (*Carya laciniosa*) 8
- ___ honey locust (*Gleditsia triacanthos*) 1
- ___ *poison sumac (*Rhus vernix*) 10

Trees - leaves simple and opposite

- ___ red maple (*Acer rubrum*) 5
- ___ silver maple (*Acer saccharinum*) 1

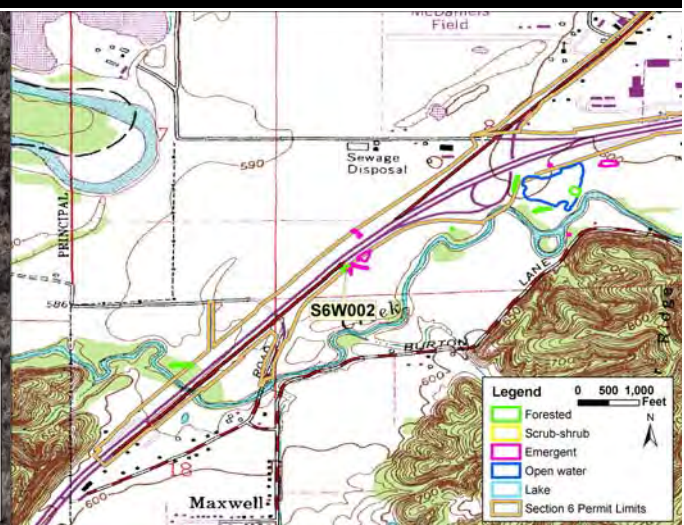
Trees - leaves simple and alternate

- ___ *alder, speckled (*Alnus rugosa*) 9
- ___ river birch (*Betula nigra*) 2
- ___ black, gum (*Nyssa sylvatica*) 5
- ___ cottonwood, eastern (*Populus deltoides*) 1
- ___ cottonwood, swamp (*Populus heterophylla*) 8
- ___ elm, American (*Ulmus americana*) 3
- ___ hackberry (*Celtis occidentalis*) 3
- ___ ironwood (*Carpinus caroliniana*) 5
- ___ oak, pin or white (*Quercus*) 4
- ___ *oak, Shumard's, swamp chestnut, swamp whit
- ___ *pawpaw (*Asimina triloba*) 6
- ___ *sugarberry (*Celtis laevigata*) 7
- ___ sweet gum (*Liquidambar styraciflua*) 4
- ___ sycamore, American (*Platanus occidentalis*) 3
- ___ willow spp. (*Salix*) 1 sp. = 3
- ___ additional sp. = 7

Wetland S6W002



Wetland Location on 2015 Aerial Photograph



Wetland Location on Martinsville USGS Quadrangle

Basin: Indian Creek - Sand Creek
14-digit HUC: 05120201170070
Physiographic Region: Martinsville Hills
Ecoregion: Interior Plateau
Natural Region: Highland Rim
Size of wetland complex (acres): 0.2079
USACE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Quadrangle: Martinsville
County: Morgan
Township: T11N
Range: R1E
Section: 8
Quarter: SW
Latitude: 39.398579
Longitude: -86.452489

| Polygon ID | Community Type | Cowardin Class | Polygon Area (acres) | Animal Habitat Measure | Botanical Measure | Hydrology Measure | Alternative | Area Impacted (acres) | Percent Polygon Impacted |
|------------|--------------------------|----------------|----------------------|------------------------|-------------------|-------------------|-------------|-----------------------|--------------------------|
| S6W002A | Floodplain Forest | PFO | 0.17 | fair | fair | fair | RPA | 0.08 | 46.3% |
| S6W002B | Seasonally Flooded Basin | PEM | 0.04 | poor | poor | fair | RPA | 0.00 | 0.0% |

This site is classified as a PFO wetland, 0.17 acre in size. The Section 6 Design Contract 1 Permit Limits would permanently impact 0.031 acre and temporarily impact 0.047 acre of this wetland. This wetland showed 85% herbaceous cover, 20% sapling/shrub cover, and 95% woody plant cover. Dominant herbaceous species for this wetland include *Carex cristatella*, *Toxicodendron radicans*, *Carex squarrosa*, and, *Elymus virginicus*. Dominant sapling/shrub species included *Cornus racemose*. Dominant woody species included *Acer saccharinum* and *Fraxinus pennsylvanica*. Hydrology is likely due to backwater flooding from Indian Creek and roadside runoff from SR 37. Animal habitat, botanical diversity, and hydrology function are all rated as fair based on InWRAP summaries for the site.

Wetland S6W002



Polygon S6W002A



Polygon S6W002B

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W002A City/County: Morgan Sampling Date: 10/16/2015
 Applicant/Owner: INDOT/Lochmueller State: Indiana Sampling Point: IC02A-1D1
 Investigator(s): Danika Fleck, Matt Brendel Section, Township, Range: Sec 8-T11N-R1E
 Landform (hillslope, terrace, etc.): valley plain Local relief (concave, convex, none): concave
 Slope (%): 0-1 Lat: 39.398679 Long: -86.452281 Datum: GCS NAD83
 Soil Map Unit Name: Genesee silt loam NWI classification: upland

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

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

| | | | |
|---|-----------------|-------------|--|
| Hydrophytic Vegetation Present? | Yes <u> </u> | No <u>X</u> | Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> |
| Hydric Soils Present? | Yes <u> </u> | No <u>X</u> | |
| Wetland Hydrology Present? | Yes <u> </u> | No <u>X</u> | |
| Remarks: None of the wetland criteria are met at this point. This point represents the non-wetland conditions between two wetlands. | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A/B) | | | | | | | | | | | | | | |
|---|--------------------|-------------------|------------------|---|-------------------|--------------|----------------------|----------------|-----------------------|----------------|----------------------|----------------|------------------------|------------------|----------------------|-----------------|---------------------------|--------------------|
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u>0</u> | | | Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr><td>OBL species <u>0</u></td><td>x 1 = <u>0</u></td></tr> <tr><td>FACW species <u>0</u></td><td>x 2 = <u>0</u></td></tr> <tr><td>FAC species <u>0</u></td><td>x 3 = <u>0</u></td></tr> <tr><td>FACU species <u>95</u></td><td>x 4 = <u>380</u></td></tr> <tr><td>UPL species <u>5</u></td><td>x 5 = <u>25</u></td></tr> <tr><td>Column Totals: <u>100</u></td><td>(A) <u>405</u> (B)</td></tr> </tbody> </table> Prevalence Index = B/A = <u>4.05</u> | Total % Cover of: | Multiply by: | OBL species <u>0</u> | x 1 = <u>0</u> | FACW species <u>0</u> | x 2 = <u>0</u> | FAC species <u>0</u> | x 3 = <u>0</u> | FACU species <u>95</u> | x 4 = <u>380</u> | UPL species <u>5</u> | x 5 = <u>25</u> | Column Totals: <u>100</u> | (A) <u>405</u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u>0</u> | x 1 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACW species <u>0</u> | x 2 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FAC species <u>0</u> | x 3 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACU species <u>95</u> | x 4 = <u>380</u> | | | | | | | | | | | | | | | | | |
| UPL species <u>5</u> | x 5 = <u>25</u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u>100</u> | (A) <u>405</u> (B) | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u>0</u> | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <i>Schedonorus arundinaceus</i> | 85 | Yes | FACU | | | | | | | | | | | | | | | |
| 2. <i>Trifolium pratense</i> | 10 | No | FACU | | | | | | | | | | | | | | | |
| 3. <i>Viola sp.</i> | 5 | No | UPL | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | <u>100</u> | | | | | | | | | | | | | | | | | |
| Vine Stratum (Plot Size: <u>30'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | <u>0</u> | | | | | | | | | | | | | | | | | |

Hydrophytic Vegetation Indicators:
 1-Rapid Test for Hydrophytic Vegetation:
 2-Dominance Test is >50%
 3-Prevalence Index is <=3¹
 4-Morphological Adaptations ¹(Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation ¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes No X

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

SOIL

Sampling Point IC02A-1D1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-18 | 10YR5/3 | 100 | | | | | silt loam | |
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¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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 Soil (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)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ 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? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W002A City/County: Morgan Sampling Date: 10/16/2015
 Applicant/Owner: INDOT/Lochmueller State: Indiana Sampling Point: IC02A-1W1
 Investigator(s): Danika Fleck, Matt Brendel Section, Township, Range: Sec 8-T11N-R1E
 Landform (hillslope, terrace, etc.): shallow depression in valley plain Local relief (concave, convex, none): concave
 Slope (%): 0 Lat: 39.398577 Long: -86.452499 Datum: NAD83
 Soil Map Unit Name: Genesee silt loam NWI classification: upland

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

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

| | | | |
|---|--------------|----------------|--|
| Hydrophytic Vegetation Present? | Yes <u>X</u> | No <u> </u> | Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> |
| Hydric Soils Present? | Yes <u>X</u> | No <u> </u> | |
| Wetland Hydrology Present? | Yes <u>X</u> | No <u> </u> | |
| Remarks: Data point represents small wooded depression adjacent to gravel frontage road on south side of SR37. The wetland feature represented by this data point has been designated as PFO1 based on the Cowardin et al. classification system. | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>20'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B) |
|--|------------------|-------------------|------------------|---|
| 1. <u>Acer saccharinum</u> | <u>40</u> | <u>Yes</u> | <u>FACW</u> | |
| 2. <u>Fraxinus pennsylvanica</u> | <u>35</u> | <u>Yes</u> | <u>FACW</u> | |
| 3. <u>Ulmus americana</u> | <u>10</u> | <u>No</u> | <u>FACW</u> | |
| 4. <u>Celtis occidentalis</u> | <u>5</u> | <u>No</u> | <u>FAC</u> | |
| 5. <u>Cornus racemosa</u> | <u>5</u> | <u>No</u> | <u>FAC</u> | |
| | <u>95</u> | = Total Cover | | |
| Sapling/Shrub Stratum (Plot Size: <u>20'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>15</u> x 1 = <u>15</u> FACW species <u>135</u> x 2 = <u>270</u> FAC species <u>50</u> x 3 = <u>150</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>200</u> (A) <u>435</u> (B) Prevalence Index = B/A = <u>2.18</u> |
| 1. <u>Cornus racemosa</u> | <u>20</u> | <u>No</u> | <u>FAC</u> | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| | <u>20</u> | = Total Cover | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Indicators: 1-Rapid Test for Hydrophytic Vegetation: <u>X</u> 2-Dominance Test is >50% <u>X</u> 3-Prevalence Index is <=3 ¹ 4-Morphological Adaptations (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 |
| 1. <u>Carex cristatella</u> | <u>20</u> | <u>Yes</u> | <u>FACW</u> | |
| 2. <u>Toxicodendron radicans</u> | <u>20</u> | <u>Yes</u> | <u>FAC</u> | |
| 3. <u>Carex squarrosa</u> | <u>15</u> | <u>Yes</u> | <u>OBL</u> | |
| 4. <u>Elymus virginicus</u> | <u>15</u> | <u>Yes</u> | <u>FACW</u> | |
| 5. <u>Carex vulpinoidea</u> | <u>10</u> | <u>No</u> | <u>FACW</u> | |
| 6. <u>Carex grayi</u> | <u>5</u> | <u>No</u> | <u>FACW</u> | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| | <u>85</u> | = Total Cover | | |
| Vine Stratum (Plot Size: <u>20'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| | <u>0</u> | = Total Cover | | |

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

SOIL

Sampling Point IC02A-1W1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|----|----------------|----|-------------------|------------------|-----------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-3 | 10YR6/2 | 85 | 10YR5/6 | 15 | C | M | silt loam | |
| 3-20 | 10YR6/2 | 70 | 10YR5/4 | 30 | C | M | silt loam | |
| | | | | | | | | |
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¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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 Soil (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 ☐

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)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ 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 ☒ Depth (inches): _____
 Water Table Present? Yes ☐ No ☒ Depth (inches): _____
 Saturation Present? Yes ☐ No ☒ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W002B City/County: Morgan Sampling Date: 10/16/2015
 Applicant/Owner: INDOT/Lochum Mueller State: Indiana Sampling Point: IC02B-1W1
 Investigator(s): Danika Fleck, Matt Brendel Section, Township, Range: Sec 8-T11N-R1E
 Landform (hillslope, terrace, etc.): shallow depression in valley plain Local relief (concave, convex, none): concave
 Slope (%): 0 Lat: 39.398490 Long: -86.452368 Datum: NAD83
 Soil Map Unit Name: Genesee silt loam NWI classification: upland

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain Remarks.)
 Are Vegetation X , Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No:
 Are Vegetation , Soil or Hydrology naturally problematic? If needed, explain answers in Remarks.)

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

| | | | |
|--|------------------|----------------|--|
| Hydrophytic Vegetation Present? | Yes <u> X </u> | No <u> </u> | Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> |
| Hydric Soils Present? | Yes <u> X </u> | No <u> </u> | |
| Wetland Hydrology Present? | Yes <u> X </u> | No <u> </u> | |
| Remarks: Data point represents extension of wooded wetland to the west that is used for hay production. The wetland feature represented by this data point has been designated as PEM1 based on the Cowardin et al. classification system. | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>10'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> 1 </u> (A) Total Number of Dominant Species Across All Strata: <u> 1 </u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u> 100 </u> (A/B) | | | | | | | | | | | | | | |
|--|----------------------|-------------------|------------------|--|-------------------|--------------|-------------------------|-------------------|--------------------------|-------------------|-------------------------|--------------------|--------------------------|-------------------|-------------------------|-------------------|-----------------------------|----------------------|
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u> 0 </u> = Total Cover | | | | Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr><td>OBL species <u> 15 </u></td><td>x 1 = <u> 15 </u></td></tr> <tr><td>FACW species <u> 10 </u></td><td>x 2 = <u> 20 </u></td></tr> <tr><td>FAC species <u> 75 </u></td><td>x 3 = <u> 225 </u></td></tr> <tr><td>FACU species <u> 0 </u></td><td>x 4 = <u> 0 </u></td></tr> <tr><td>UPL species <u> 0 </u></td><td>x 5 = <u> 0 </u></td></tr> <tr><td>Column Totals: <u> 100 </u></td><td>(A) <u> 260 </u> (B)</td></tr> </tbody> </table> Prevalence Index = B/A = <u> 2.60 </u> | Total % Cover of: | Multiply by: | OBL species <u> 15 </u> | x 1 = <u> 15 </u> | FACW species <u> 10 </u> | x 2 = <u> 20 </u> | FAC species <u> 75 </u> | x 3 = <u> 225 </u> | FACU species <u> 0 </u> | x 4 = <u> 0 </u> | UPL species <u> 0 </u> | x 5 = <u> 0 </u> | Column Totals: <u> 100 </u> | (A) <u> 260 </u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u> 15 </u> | x 1 = <u> 15 </u> | | | | | | | | | | | | | | | | | |
| FACW species <u> 10 </u> | x 2 = <u> 20 </u> | | | | | | | | | | | | | | | | | |
| FAC species <u> 75 </u> | x 3 = <u> 225 </u> | | | | | | | | | | | | | | | | | |
| FACU species <u> 0 </u> | x 4 = <u> 0 </u> | | | | | | | | | | | | | | | | | |
| UPL species <u> 0 </u> | x 5 = <u> 0 </u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u> 100 </u> | (A) <u> 260 </u> (B) | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>10'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u> 0 </u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | | | | Hydrophytic Vegetation Indicators: 1-Rapid Test for Hydrophytic Vegetation: <u> X </u> 2-Dominance Test is >50% <u> X </u> 3-Prevalence Index is <=3 ¹ 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic | | | | | | | | | | | | | | |
| 1. <u>Symphyotrichum lanceolatum</u> | <u>70</u> | <u>Yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | |
| 2. <u>Carex vulpinoidea</u> | <u>10</u> | <u>No</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 3. <u>Juncus effusus</u> | <u>10</u> | <u>No</u> | <u>OBL</u> | | | | | | | | | | | | | | | |
| 4. <u>Rumex crispus</u> | <u>5</u> | <u>No</u> | <u>FAC</u> | | | | | | | | | | | | | | | |
| 5. <u>Scirpus atrovirens</u> | <u>5</u> | <u>No</u> | <u>OBL</u> | | | | | | | | | | | | | | | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u> 100 </u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Vine Stratum (Plot Size: <u>10'</u> radius) | | | | Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u> | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u> 0 </u> = Total Cover | | | | | | | | | | | | | | | | | | |

Remarks: (Include photo numbers here or on a separate sheet.)
 Field mowed for hay.

SOIL

Sampling Point IC02B-1W1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|----|----------------|----|-------------------|------------------|-----------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-5 | 10YR6/2 | 80 | 10YR5/6 | 20 | C | M | silt loam | |
| 5-18 | 10YR6/2 | 60 | 10YR5/4 | 20 | C | M | silt loam | |
| 5-18 | 10YR6/2 | 60 | 10YR5/6 | 20 | C | M | silt loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
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☒ 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 Soil (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 ☐

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)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ 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 ☒ Depth (inches): _____
 Water Table Present? Yes ☐ No ☒ Depth (inches): _____
 Saturation Present? Yes ☐ No ☒ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

I-69 Wetland Quality Assessment Profile

Date Report Generated: 5/22/2018
Data reference # S6W002
Wetland Site **S6W002**
Date of site visit: 05/12/15
Total wetland area: 0.2079 acres

| | | | |
|--|-------------|-------------|---|
| Polygon Information | | | |
| Polygon ID | S6W002A | S6W002B | |
| Polygon Size (acres) | 0.17 | 0.04 | |
| Wetland Community Type | FF | SFB | |
| Red Flag (Special) Indicators | | | |
| Special Hydrologic Conditions | N | N | N |
| Special Community Type | N | N | N |
| Rare-Threatened-Endangered Species | N | N | N |
| Animal Habitat Measures | | | |
| Wetland size and connectivity | 1 | 1 | 1 |
| Surrounding land use | 3 | 3 | 3 |
| Standing water | 1 | 1 | 1 |
| Dead woody material | 2 | 2 | 2 |
| Zonation and Interspersion | 1 | 1 | 1 |
| Stratification | 1 | 1 | 1 |
| Tree canopy | 2 | 1 | 1 |
| Mature trees | 3 | 1 | 1 |
| Animal Habitat Measure Score (min = 8, max = 24) | 14 | 11 | |
| Animal Habitat Measure Rating | fair | poor | |
| Botanical Measures (all except exotics dependent upon community type) | | | |
| Number of dominant plant taxa observed | 3 | 1 | 1 |
| Conservatism rating | 1 | 2 | |
| Total hydrophytic taxa observed | 3 | 1 | 1 |
| Number of indicator taxa | 1 | 1 | 1 |
| Exotic species rating | 3 | 3 | 3 |
| Botanical Measure Score (min = 5, max = 15) | 11 | 8 | |
| Botanical Measure Rating | fair | poor | |
| Hydrology Measures | | | |
| Water quality protection (= no. of yes answers) | 4 | 4 | 4 |
| Flood and storm water storage (= no. of yes answers) | 3 | 3 | 3 |
| Site/Hydrology Score (min = 11, max = 33) | 25 | 25 | |
| Site/Hydrology Rating | fair | fair | |

In-WRAP Summary Sheet

Date Report Generated: Monday, July 30, 2018

Wetland Site Name: N/A

Data Reference #: S6W002

Date of Site Visit: Tuesday, May 12, 2015

Tier 1 Summary:

a. Total Wetland Area (acres): 0.2079

b. Wetland size and connectivity - contribution to animal habitat:

Valuable More Favorable **Favorable** Neutral

c. Surrounding land use - numerical rank (max. = 1): 0.80

d. Value surrounding area adds to animal habitat:

Valuable Favorable Low

Tier 2 SUMMARY:

Polygon ID S6W002A

a. Indiana Wetland community type: Floodplain Forest

b. Standing water - contribution to animal habitat:

Valuable Favorable **Neutral**

c. Disturbances to site: road/railroad

d. Exotic species rating:

Good Medium Poor

e. Special Hydrologic Conditions Observed: None

f. Special Community Type: None

g. Rare-Threatened-Endangered Species:

h. Polygon Quality Descriptor:

Good **Medium** Poor

Tier 3A SUMMARY:

a. Dead woody material as indicator of animal habitat:

Valuable **Favorable** Neutral

b. Water quality protection - numerical rank (6 max.): 4

Good **Medium** Poor

c. Flood and storm water storage - numerical rank (5 max) 3

Good **Medium** Poor

Tier 3B SUMMARY:

a. Zonation and interspersation as indicator of animal habitat:

Valuable Favorable Neutral

b. Stratification as indicator of animal habitat:

Valuable **Neutral**

c. Number of dominant plant taxa observed: 11

Good Medium Poor

d. Average coefficient of conservatism: 2.3

Good Medium **Poor**

e. Tree canopy as indicator of animal habitat:

Valuable Neutral

f. Mature trees as indicator of animal habitat:

Valuable Favorable Neutral

g. Total hydrophytic taxa observed: 23

Good Medium Poor

h. Number of indicator taxa: 0

Good Medium **Poor**

Tier 2 SUMMARY:**Polygon ID** S6W002B

| | | | |
|--|----------|-----------|---------|
| a. Indiana Wetland community type: <u>Seasonally Flooded Basin</u> | | | |
| b. Standing water - contribution to animal habitat: | Valuable | Favorable | Neutral |
| c. Disturbances to site: _____ | | | |
| d. Exotic species rating: | Good | Medium | Poor |
| e. Special Hydrologic Conditions Observed: <u>None</u> | | | |
| f. Special Community Type: <u>None</u> | | | |
| g. Rare-Threatened-Endangered Species: | | | |
| h. Polygon Quality Descriptor: | Good | Medium | Poor |

Tier 3A SUMMARY:

| | | | |
|--|----------|-----------|---------|
| a. Dead woody material as indicator of animal habitat: | Valuable | Favorable | Neutral |
| b. Water quality protection - numerical rank (6 max.): <u>4</u> | Good | Medium | Poor |
| c. Flood and storm water storage - numerical rank (5 max) <u>3</u> | Good | Medium | Poor |

Tier 3B SUMMARY:

| | | | |
|--|----------|-----------|---------|
| a. Zonation and interspersions as indicator of animal habitat: | Valuable | Favorable | Neutral |
| b. Stratification as indicator of animal habitat: | Valuable | | Neutral |
| c. Number of dominant plant taxa observed: <u>1</u> | Good | Medium | Poor |
| d. Average coefficient of conservatism: <u>3</u> | Good | Medium | Poor |
| e. Tree canopy as indicator of animal habitat: | Valuable | | Neutral |
| f. Mature trees as indicator of animal habitat: | Valuable | Favorable | Neutral |
| g. Total hydrophytic taxa observed: <u>5</u> | Good | Medium | Poor |
| h. Number of indicator taxa: <u>0</u> | Good | Medium | Poor |

Tier 1: Assessment Overview**1.1 Site Identification:**Wetland Site Name: N/AOwnership (if known): N/AUSGS Topographic Quadrangle: MartinsvilleUSGS Watershed map 14-Digit HUC: Indian Creek - Sand Creek

Identify each NWI Polygon within the Wetland Site (Polygon specific data)

| NWI Polygon ID Number | Cowardin Classification | Polygon Size (acres) |
|-----------------------|-------------------------|----------------------|
| S6W002A | PFO1 | 0.1683 |
| S6W002B | PEM1 | 0.0396 |

1.2 Site VisitTeam Members: Rusty Yeager & Neal GoffinetAgency: Lochmueller GroupDate assessed: 5/12/2015Time assessed: 2:30:00 PMWeather conditions: Sunny

Note any unusual weather events that may have influenced the current conditions within this wetland system (e.g. recent heavy rains, an unusually dry season, an especially early spring etc.)

1.3 Wetland SizeSize of site under assessment: 0.2079Size of wetland complex: 0.2079**1.4 Site Setting**

Degree of isolation from other wetlands or wetland complexes:

☐ The site is connected upstream and downstream with other wetlands☐ The site is only connected upstream with other wetlands☐ The site is only connected downstream with other wetlands☒ Other wetlands are nearby (within 0.25 mile) but not connected☐ The wetland site is isolated

General assessment of adjacent land use / land cover in the area within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

| | | | |
|------------|---------------------------------------|----------|---|
| <u>0</u> | Native Vegetation - woodland | <u>0</u> | Road / highway / railroad bed / parking lot |
| <u>100</u> | Native Vegetation - old field / scrub | <u>0</u> | Industrial |
| <u>0</u> | Agricultural - tilled | <u>0</u> | Residential - single family |
| <u>0</u> | Agricultural - pasture | <u>0</u> | Commercial or multifamily residential |
| <u>0</u> | Recreation - green space, mowed | | |

(see table on page one)

Tier 2: Individual Polygon: Preliminary Assessment

(to be completed on-site for each NWI polygon present in the wetland)

2.1 Wetland Geomorphic Setting and Surface Water Flow (check one):

☒ Depressional ☐ Slope ☐ Floodplain ☐ Lacustrine
☐ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? No

Is standing water is present, is the water greater than 2 meters in depth? No

Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

☐ Permanently Flooded ☐ Artificially Flooded
☒ Seasonally Flooded
☐ Saturated (surface water seldom present) ☐ Artificially Drained

2.4 Soil Type

☐ Organic (i.e. peat, etc.) ☒ Mineral ☐ Both Mineral and Organic Present

2.5 Wetland Community Type for this NWI polygon (see Key to Wetland Communities of Indiana):

Floodplain Forest

2.6 Disturbances of Hydrology (check all that apply):

☐ Ditching ☐ Culvert
☐ Tiles ☐ Other Human Disturbances to the
☐ Dams Hydrology (explain):
☒ Road or Railroad Embankment

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common):

☐ Garlic Mustard ☐ Glossy Buckthorn
☐ *Phragmites* ☐ Reed Canary Grass
☐ Purple Loosestrife ☐ S Other (list):

2.8 Presence of Special Hydrologic Conditions (i.e. seeps, wet slopes, floating mat):

None

2.9 Presence of Special Community Types:

☐ Bog ☐ Fen ☐ Wet Sand / Muck Flats or Marl Seeps

2.10 Presence of Known Federal or Indiana Rare, Threatened or Endangered Species:☐ None observed or known to be present☐ RTES Present (list):**2.11 Wetland Polygon Quality Descriptor (see: Wetland Quality Descriptions and check one):**

☐ Good ☒ Medium ☐ Poor

Tier 3a: Individual Polygon: Rapid Hydrology Indicators**3a.1 Notable Features that influence water quality and hydrology:**

Estimated herbaceous plant cover (percentage) in the polygon ☒ 100-75 ☐ 75-50 ☐ 50-25 ☐ <25
 Estimated woody plant foliar coverage in the polygon ☒ 100-75 ☐ 75-50 ☐ 50-25 ☐ <25
 Amount of dead woody material on the soil surface ☐ nil ☒ scattered ☐ frequent

3a.2 Water Quality Protection Questions:

1. ☒ Y ☐ N Does the wetland have a significant amount of vegetative (specifically herbaceous and woody plant) density to potentially uptake dissolved nutrients?
2. ☒ Y ☐ N Managed water (e.g. municipal or road stormwater drainage, agricultural drainage outlet, industrial or municipal wastewater) is not discharged into the wetland polygon?
3. If wetland in question is a depressional wetland answer 3a, in not, answer 3b.
☒ Y ☐ N 3a. Does the wetland have a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland?
☒ Y ☐ N 3b. Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface body of water down gradient?
4. ☒ Y ☐ N Does the wetland lack steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within 100 meters of its border?
5. ☒ Y ☐ N Are there recreational lakes, fishable or navigable watercourses, or water supply sources down gradient in the local watershed?
6. ☒ Y ☐ N Is a vegetative buffer area or another wetland polygon (areas where overland flow could be filtered) located upland and adjacent to the wetland polygon? If yes, describe buffer area width and slope.
 width of buffer area (in meters 25 approximate slope (percent 2

3a.3 Flood and Stormwater Storage / Attenuation Questions:

1. If wetland in question is a depressional wetland answer 1a, in not, answer 1b
☒ Y ☐ N 1a. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
☒ Y ☐ N 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. ☒ Y ☐ N Does the wetland lack man-made structure that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. ☒ Y ☐ N Is the flood potential high in the local watershed in which the wetland is located (history of flood damages)?
4. ☒ Y ☐ N Is the wetland located in a watershed where the majority of the upland soils are clay and impermeable, or is bedrock within two feet of the top of the soil profile?
5. ☒ Y ☐ N Is the wetland located in a local watershed which has highly modified runoff conditions due to existing development?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

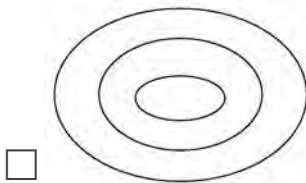
1. How many vegetation zones are evident in this wetland polygon? 1

1b. If only one vegetation zone is evident, which best describes the site?

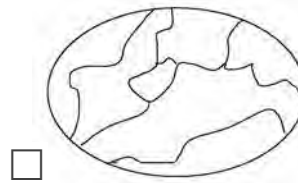
- ☒ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks, heterogeneous textures across the polygon.
- ☐ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

2. If more than one vegetation zone is present in the polygon, which interspersed diagram most closely represents the distribution of these zones?

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation Zone A

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☒ >90%

Is there notable layering/stratification in this vegetation zone? No

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

- | | |
|---------------------------------|---------------------------------------|
| a. <u>Carex sp.</u> | d. <u>Parthenocissus quinquefolia</u> |
| b. <u>Cinna arundinacea</u> | e. <u>Geum canadense</u> |
| c. <u>Lysimachia nummularia</u> | f. _____ |

Dominant Shrub Species listed in order of relative abundance.

- | | |
|-------------------------|----------|
| a. <u>Cornus sp.</u> | c. _____ |
| b. <u>Crataegus sp.</u> | d. _____ |

Dominant Tree Species listed in order of relative abundance.

- | | |
|----------------------------------|-------------------------------|
| a. <u>Acer saccharinum</u> | c. <u>Celtis occidentalis</u> |
| b. <u>Fraxinus pennsylvanica</u> | d. <u>Ulmus americana</u> |

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☒ often touching ☐ more or less close

Mature trees (>12" dbh): ☒ yes ☐ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone B

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closeMature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone C

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closeMature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservatism)

Herbs: non-seed plants

- ___ horsetail, scouring rush spp. (Equisetum) 2
- ___ *ferns: marsh shiled fern spp. (Dryopteris) 7
- ___ *cinnamon fern (Osmunda cinnamomea) 9
- ___ *royal fern (Osmunda regalis) 8
- ___ sensitive fern (Onoclea sensibilis) 4
- ___ *other: species (if know
- ___ marsh club moss (Selaginella apoda) 4
- ___ Sphagnum moss spp. (Sphagnum) 10

Herbs: lvs. floating or submergent

- ___ *bladderwort spp. (Utricularia) 10
- ___ coontail (Ceratophyllum demersum) 1
- ___ duckweed spp. (Lemnaceae) 3
- ___ *pondweed spp. (Potamogeton) 8
- ___ curlyleaf pondweed (Potamogeton crispus) 0
- ___ *water lily (Nymphaea tuberosa) 6
- ___ water shield (Brasenia schreberi) 4
- ___ *yellow spatterdock spp. (Nuphar) 6

Herbs: lvs. floating or submergent

- ___ *pitcher plant (Sarracenia purpurea) (10)
- ___ *sundew spp. (Drosera) 10

Herbs: linear-lvs. or +/- leafless monocots

- ___ *beak rush spp (Rhynchospora) 10
- ___ blueflag iris (Iris virginica) 5
- ___ bulrush spp. (Scirpus / Schoenoplectus) 5
- ___ *bur reed spp. (Sparganium) 9
- ___ cat-tail spp. (Typha) 1
- ___ *cotton grass spp. (Eriophorum) 10
- Grasses (family Gramineae) - indicate types and number of species
- ___ a. *wild rice (Zizania aquatica) 10
- ✓ b. most native perennial grass spp. 4: cut-grass, manna-grass, Canada bluepoint, foxtail (Alopecurus); other
- ✓ c. introduced grass spp. 0: reed canary grass (Phalaris, reed (Phragmites), annual grasses such as annual foxtail (Setaria) and barnyard grass (Echinochloa)
- ___ needle sedge spp. (Eleocharis) 1 sp. = 2
- ___ *additional = 8
- ___ nutsedge spp. (Cyperus) 2
- ___ *orchid spp. 10; species (if know
- ✓ rush spp. (Juncus) 4
- ___ sedge spp. (Carex) 1 sp. = 3 ✓ additional = 7
- ___ *spiderlily (Hymenocallis occidentalis) 9
- ___ sweet flag (Acorus calamus) 0
- ___ *3-way sedge (Dulichium arundinaceum) 10
- ___ *twig rush (Cladium mariscoides) 10
- ___ *umbrella sedge (Fuirena squarrosa) 10
- ___ wild hyacinth (Camassia scilloides) 5
- ___ *yellow-eyed grass (Xyris torta) 9

Herbs: wide-leafed monocots

- ___ *arrow arum (Peltandra virginica) 6
- ___ arrow-head spp. (Sagittaria) 4
- ___ *green dragon (Arisaema dracontium) 6
- ___ Jack-in-the-pulpit (Arisaema triphyllum) 4
- ___ pickerel weed (Pontederia cordata) 5
- ___ *skunk cabbage (Symplocarpus foetidus) 8
- ___ *water arum (Calla palustris) 10
- ___ water plantain (Alisma plantago-aquatica) 2

Herbs: dicots - lvs. opposite/whorled

- ✓ ___ *bedstraw spp. (Gallium) 6
- ✓ ___ beggar's tick spp. (Bidens) 3
- ___ blue vervain (Verbena hastata) 3
- ___ boneset (Eupatorium perfoliatum) 4
- ___ bugleweed spp. (Lycopus) 5
- ___ clearweed spp. (Pilea) 3
- ___ cup plant (Silphium perfoliatum) 4
- ___ false nettle (Boehmeria cylindrica) 3
- ___ *fen betony (Pedicularis lanceolata) 6
- ___ *gentian spp. (Gentiana Gentianopsis) 8
- ___ giant ragweed (Ambrosia trifida) 0
- ___ Indian hemp (Apocynum cannabinum) 2
- ___ Joe-pye weed spp. (Eupatorium) 5
- ___ *loosestrife spp. (Lysimachia) 6
- ___ meadow beauty (Rhexia virginica) 5
- ___ mint spp. e.g. hedge nettle, mtn. mint, skullcap
- ✓ ___ moneywort (Lysimachia nummularia) 0
- ___ monkey flower spp. (Mimulus) 4
- ___ nettle (Urtica procera) 1
- ___ purple loosestrife (Lythrum salicaria) 0
- ___ *richweed (Collinsia canadensis) 8
- ___ St. John's wort spp. (Hypericum/Triandrium) 8
- ___ sunflower sp. (Helianthus) 4
- ___ *swamp loosestrife (Decodon verticillatus) 8
- ___ swamp milkweed (Asclepias incarnata) 4
- ___ toothcup spp. (Ammania Rotala) 2
- ___ *turtlehead spp. (Chelone) 8
- ___ virgin's bower (Clematis virginiana) 3
- ___ water purslane (Ludwigia palustris) 3
- ___ winged loosestrife (Lythrum alatum) 5

Herbs (vines): dicots - lvs. alternate or basal and

- ___ American bellflower (Campanula americana) 4
- ✓ ___ *asters: bristly aster (Aster puniceus) 7
- ___ flat-topped aster (Aster umbellatus) 8
- ___ other aster spp. (e.g. New England, panicled ast
- ___ *black-eyed Susan (Rudbeckia fulgida) 8
- ___ cardinal flower (Lobelia cardinalis) 4
- ___ cress spp. (Cardamine) 4
- ✓ ___ dock spp.: swamp, water, pale (Rumex) 4
- ___ garlic mustard (Alliaria petiolata) 0
- ___ golden ragwort (Senecio aureus) 4

Herbs (vines): dicots - lvs. alternate or basal and simple (continued)

- ✓ *goldenrod spp. (*Solidago ohioensis*, *S. patula*, 10
- *grass of Parnassus (*Parnassia glauca*) 10
- *Indian plantain (*Cacalia plantaginea*) 10
- ironweed spp. (*Vernonia*) 4
- jewelweed, touch-me-not spp. (*Impatiens*) 3
- lizard's tail (*Saururus cernuus*) 4
- lobelia spp. (*Lobelia*) 4
- *marsh marigold (*Caltha palustris*) 7
- *moonseed (*Menispermum canadense*) 6
- primrose-willow spp. (*Epilobium* *Ludwigia*) 3
- rose mallow spp. (*Hibiscus*) 4
- ✓ smartweed spp.: jumpseed, pinkweed, tearthumb, water-pepper, waters smartweed (*Polygonum*)
- halbredleaf tearthumb (*Polygonum arifolium*) 10
- sneezeweed (*Helenium autumnale*) 3
- stinging nettle (*Laportea canadensis*) 2
- *swamp saxifrage (*Saxifraga pennsylvanica*) 10
- *Virginia bluebells (*Mertensia virginica*) 6
- waterhemp (*Amaranthus tuberculatus*) 1
- wingstem (*Actinomeris alternifolia*) 3

Herbs: dicots - lvs. basal or alternate and compound or deeply lobed

- ✓ aven spp.: round, white (*Geum*) 2
- *buttercup spp.: cursed b., hooked b., swamp b. (*Ranunculus*) 6
- chervil (*Chaerophyllum procumbens*) 3
- *cowbane (*Oxypolis rigidior*) 7
- *great angelica (*Angelica atropurpurea*) 6
- hog peanut / ground nut (*Amphicarpaea* and *Apios*) 5
- honewort (*Cryptotaenia canadensis*) 3
- meadow rue spp. (*Thalictrum*) 5
- ✓ poison ivy (*Rhus radicans*) 1
- *queen-of-the prairie (*Filipendula rubra*) 9
- senna spp. (*Cassia*) 4
- swamp agrimony (*Agrimonia parviflora*) 4
- *swamp thistle (*Cirsium muticum*) 8
- tall coneflower (*Rudbeckia laciniata*) 3
- *water hemlock spp. (*Cicuta*) 7
- water parsnips (*Sium suave*) 5

Shrubs - leaves opposite or whorled

- bladdernut (*Staphylea trifolia*) 5
- buckthorn spp. (*Rhamnus cathartica*, *R. frangula*) 0
- buttonbush (*Cephalanthus occidentalis*) 5
- dogwood, red-osier (*Cornus stolonifera*) 4
- *dogwood, blue-fruited or silky (*Cornus obliqua*)
- dogwood, gray (*Cornus racemosa*) 2
- elderberry (*Sambucus*) 2

Shrubs - leaves alternate

- *cranberry spp. (*Vaccinium*) 10
- *dwarf birch (*Betula pumila*) 10
- *highbush blueberry (*Vaccinium corymbosum*) 9
- *leatherleaf (*Chamaedaphne calyculata*) 10
- meadowsweet and Hardhack spp. (*Spiraea*) 4
- *ninebark (*Physocarpus opulifolius*) 7
- *shrubby cinquefoil (*Potentilla fruticosa*) 9
- spice bush (*Lindera benzoin*) 5
- *swamp dewberry (*Rubus hispidus*) 6
- *swamp holly and winterberry spp. (*Ilex*) 7
- swamp rose (*Rosa palustris*) 5

Trees - leaves needle shaped

- *tamarack (*Larix laricina*) 10

Trees - leaves compound

- *ash, black (*Fraxinus nigra*) 7
- ✓ ash, green (*Fraxinus pensylvanica*) 3
- *ash, pumpkin (*Fraxinus tomentosa*) 8
- boxelder (*Acer negundo*) 1
- hickory, bitternut (*Carya cordiformis*) 5
- hickory, shellbark (*Carya laciniosa*) 8
- honey locust (*Gleditsia triacanthos*) 1
- *poison sumac (*Rhus vernix*) 10

Trees - leaves simple and opposite

- red maple (*Acer rubrum*) 5
- ✓ silver maple (*Acer saccharinum*) 1

Trees - leaves simple and alternate

- *alder, speckled (*Alnus rugosa*) 9
- river birch (*Betula nigra*) 2
- black, gum (*Nyssa sylvatica*) 5
- cottonwood, eastern (*Populus deltoides*) 1
- cottonwood, swamp (*Populus heterophylla*) 8
- ✓ elm, American (*Ulmus americana*) 3
- ✓ hackberry (*Celtis occidentalis*) 3
- ironwood (*Carpinus caroliniana*) 5
- oak, pin or white (*Quercus*) 4
- *oak, Shumard's, swamp chestnut, swamp whit
- *pawpaw (*Asimina triloba*) 6
- *sugarberry (*Celtis laevigata*) 7
- sweet gum (*Liquidambar styraciflua*) 4
- sycamore, American (*Platanus occidentalis*) 3
- willow spp. (*Salix*) 1 sp. = 3
- additional sp. = 7

(see table on page one)

Tier 2: Individual Polygon: Preliminary Assessment

(to be completed on-site for each NWI polygon present in the wetland)

2.1 Wetland Geomorphic Setting and Surface Water Flow (check one):

☒ Depressional ☐ Slope ☐ Floodplain ☐ Lacustrine
☐ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? No

Is standing water is present, is the water greater than 2 meters in depth? No

Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

☐ Permanently Flooded ☐ Artificially Flooded
☒ Seasonally Flooded
☐ Saturated (surface water seldom present) ☐ Artificially Drained

2.4 Soil Type

☐ Organic (i.e. peat, etc.) ☒ Mineral ☐ Both Mineral and Organic Present

2.5 Wetland Community Type for this NWI polygon (see Key to Wetland Communities of Indiana):

Seasonally Flooded Basin

2.6 Disturbances of Hydrology (check all that apply):

☐ Ditching ☐ Culvert
☐ Tiles ☐ Other Human Disturbances to the
☐ Dams Hydrology (explain):
☐ Road or Railroad Embankment

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common):

☐ Garlic Mustard ☐ Glossy Buckthorn
☐ *Phragmites* ☐ Reed Canary Grass
☐ Purple Loosestrife ☐ Other (list):

2.8 Presence of Special Hydrologic Conditions (i.e. seeps, wet slopes, floating mat):

None

2.9 Presence of Special Community Types:

☐ Bog ☐ Fen ☐ Wet Sand / Muck Flats or Marl Seeps

2.10 Presence of Known Federal or Indiana Rare, Threatened or Endangered Species:☐ None observed or known to be present☐ RTES Present (list):**2.11 Wetland Polygon Quality Descriptor (see: Wetland Quality Descriptions and check one):**

☐ Good ☐ Medium ☒ Poor

Tier 3a: Individual Polygon: Rapid Hydrology Indicators**3a.1 Notable Features that influence water quality and hydrology:**

Estimated herbaceous plant cover (percentage) in the polygon ☒ 100-75 ☐ 75-50 ☐ 50-25 ☐ <25
 Estimated woody plant foliar coverage in the polygon ☐ 100-75 ☐ 75-50 ☐ 50-25 ☒ <25
 Amount of dead woody material on the soil surface ☒ nil ☐ scattered ☐ frequent

3a.2 Water Quality Protection Questions:

1. Y ☒ N Does the wetland have a significant amount of vegetative (specifically herbaceous and woody plant) density to potentially uptake dissolved nutrients?
2. ☒ N Managed water (e.g. municipal or road stormwater drainage, agricultural drainage outlet, industrial or municipal wastewater) is not discharged into the wetland polygon?
3. If wetland in question is a depressional wetland answer 3a, in not, answer 3b.
☒ N 3a. Does the wetland have a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland?
 Y ☒ N 3b. Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface body of water down gradient?
4. Y ☒ N Does the wetland lack steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within 100 meters of its border?
5. ☒ N Are there recreational lakes, fishable or navigable watercourses, or water supply sources down gradient in the local watershed?
6. ☒ N Is a vegetative buffer area or another wetland polygon (areas where overland flow could be filtered) located upland and adjacent to the wetland polygon? If yes, describe buffer area width and slope.
 width of buffer area (in meters approximate slope (percent

3a.3 Flood and Stormwater Storage / Attenuation Questions:

1. If wetland in question is a depressional wetland answer 1a, in not, answer 1b
☒ N 1a. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
 Y ☒ N 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. ☒ N Does the wetland lack man-made structure that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. Y ☒ N Is the flood potential high in the local watershed in which the wetland is located (history of flood damages)?
4. Y ☒ N Is the wetland located in a watershed where the majority of the upland soils are clay and impermeable, or is bedrock within two feet of the top of the soil profile?
5. ☒ N Is the wetland located in a local watershed which has highly modified runoff conditions due to existing development?

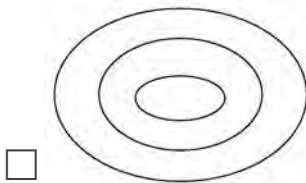
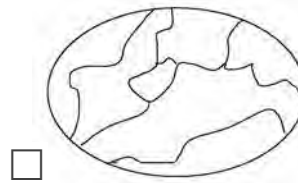
Tier 3b Individual Polygon: Rapid Vegetation Description**3b.1 Zonation and Interspersion:**

1. How many vegetation zones are evident in this wetland polygon? 1

1b. If only one vegetation zone is evident, which best describes the site?

- ☒ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks, heterogeneous textures across the polygon.
- ☐ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

2. If more than one vegetation zone is present in the polygon, which interspersed diagram most closely represents the distribution of these zones?

Type One Interspersion**Type Two Interspersion****3b.2 Dominant Plant Species: Vegetation Zone A**

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☒ >90%

Is there notable layering/stratification in this vegetation zone? No

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

- | | |
|---|----------|
| a. <u><i>Symphyotrichum lanceolatum</i></u> | d. _____ |
| b. _____ | e. _____ |
| c. _____ | f. _____ |

Dominant Shrub Species listed in order of relative abundance.

- | | |
|----------|----------|
| a. _____ | c. _____ |
| b. _____ | d. _____ |

Dominant Tree Species listed in order of relative abundance.

- | | |
|----------|----------|
| a. _____ | c. _____ |
| b. _____ | d. _____ |

Tree and shrub canopy: ☒ nil ☐ separate, seldom touching ☐ often touching ☐ more or less close

Mature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone B

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less close

Mature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone C

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less close

Mature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana SW = southwestern Indiana numbers = C-coefficients * = species with high conservatism)

Herbs: non-seed plants

- ___ horsetail, scouring rush spp. (Equisetum) 2
- ___ *ferns: marsh shiled fern spp. (Dryopteris) 7
- ___ *cinnamon fern (Osmunda cinnamomea) 9
- ___ *royal fern (Osmunda regalis) 8
- ___ sensitive fern (Onoclea sensibilis) 4
- ___ *other: species (if know)
- ___ marsh club moss (Selaginella apoda) 4
- ___ Sphagnum moss spp. (Sphagnum) 10

Herbs: lvs. floating or submergent

- ___ *bladderwort spp. (Utricularia) 10
- ___ coontail (Ceratophyllum demersum) 1
- ___ duckweed spp. (Lemnaceae) 3
- ___ *pondweed spp. (Potamogeton) 8
- ___ curlyleaf pondweed (Potamogeton crispus) 0
- ___ *water lily (Nymphaea tuberosa) 6
- ___ water shield (Brasenia schreberi) 4
- ___ *yellow spatterdock spp. (Nuphar) 6

Herbs: lvs. floating or submergent

- ___ *pitcher plant (Sarracenia purpurea) (10)
- ___ *sundew spp. (Drosera) 10

Herbs: linear-lvs. or +/- leafless monocots

- ___ *beak rush spp (Rhynchospora) 10
- ___ blueflag iris (Iris virginica) 5
- ✓ bulrush spp. (Scirpus / Schoenoplectus) 5
- ___ *bur reed spp. (Sparganium) 9
- ___ cat-tail spp. (Typha) 1
- ___ *cotton grass spp. (Eriophorum) 10

Grasses (family Gramineae) - indicate types and number of species

- ___ a. *wild rice (Zizania aquatica) 10
- ___ b. most native perennial grass spp. 4:
cut-grass, manna-grass, Canada bluepoint,
foxtail (Alopecurus); other
- ___ c. introduced grass spp. 0: reed canary
grass (Phalaris, reed (Phragmites),
annual grasses such as annual foxtail
(Setaria) and barnyard grass (Echinochloa)
- ___ needle sedge spp. (Eleocharis) 1 sp. = 2
___ *additional = 8
- ___ nutsedge spp. (Cyperus) 2
- ___ *orchid spp. 10; species (if know)
- ✓ rush spp. (Juncus) 4
- ✓ sedge spp. (Carex) 1 sp. = 3 ___ additional = 7
- ___ *spiderlily (Hymenocallis occidentalis) 9
- ___ sweet flag (Acorus calamus) 0
- ___ *3-way sedge (Dulichium arundinaceum) 10
- ___ *twig rush (Cladium mariscoides) 10
- ___ *umbrella sedge (Fuirena squarrosa) 10
- ___ wild hyacinth (Camassia scilloides) 5
- ___ *yellow-eyed grass (Xyris torta) 9

Herbs: wide-leafed monocots

- ___ *arrow arum (Peltandra virginica) 6
- ___ arrow-head spp. (Sagittaria) 4
- ___ *green dragon (Arisaema dracontium) 6
- ___ Jack-in-the-pulpit (Arisaema triphyllum) 4
- ___ pickerel weed (Pontederia cordata) 5
- ___ *skunk cabbage (Symplocarpus foetidus) 8
- ___ *water arum (Calla palustris) 10
- ___ water plantain (Alisma plantago-aquatica) 2

Herbs: dicots - lvs. opposite/whorled

- ___ *bedstraw spp. (Gallium) 6
- ___ beggar's tick spp. (Bidens) 3
- ___ blue vervain (Verbena hastata) 3
- ___ boneset (Eupatorium perfoliatum) 4
- ___ bugleweed spp. (Lycopus) 5
- ___ clearweed spp. (Pilea) 3
- ___ cup plant (Silphium perfoliatum) 4
- ___ false nettle (Boehmeria cylindrica) 3
- ___ *fen betony (Pedicularis lanceolata) 6
- ___ *gentian spp. (Gentiana Gentianopsis) 8
- ___ giant ragweed (Ambrosia trifida) 0
- ___ Indian hemp (Apocynum cannabinum) 2
- ___ Joe-pye weed spp. (Eupatorium) 5
- ___ *loosestrife spp. (Lysimachia) 6
- ___ meadow beauty (Rhexia virginica) 5
- ___ mint spp. e.g. hedge nettle, mtn. mint, skullcap
- ___ moneywort (Lysimachia nummularia) 0
- ___ monkey flower spp. (Mimulus) 4
- ___ nettle (Urtica procera) 1
- ___ purple loosestrife (Lythrum salicaria) 0
- ___ *richweed (Collinsia canadensis) 8
- ___ St. John's wort spp. (Hypericum/Triandrium) 8
- ___ sunflower sp. (Helianthus) 4
- ___ *swamp loosestrife (Decodon verticillatus) 8
- ___ swamp milkweed (Asclepias incarnata) 4
- ___ toothcup spp. (Ammania Rotala) 2
- ___ *turtlehead spp. (Chelone) 8
- ___ virgin's bower (Clematis virginiana) 3
- ___ water purslane (Ludwigia palustris) 3
- ___ winged loosestrife (Lythrum alatum) 5

Herbs (vines): dicots - lvs. alternate or basal and

- ___ American bellflower (Campanula americana) 4
- ___ *asters: bristly aster (Aster puniceus) 7
- ___ flat-topped aster (Aster umbellatus) 8
- ✓ other aster spp. (e.g. New England, panicled ast
- ___ *black-eyed Susan (Rudbeckia fulgida) 8
- ___ cardinal flower (Lobelia cardinalis) 4
- ___ cress spp. (Cardamine) 4
- ✓ dock spp.: swamp, water, pale (Rumex) 4
- ___ garlic mustard (Alliaria petiolata) 0
- ___ golden ragwort (Senecio aureus) 4

Herbs (vines): dicots - lvs. alternate or basal and simple (continued)

- ___*goldenrod spp. (*Solidago ohioensis*, *S. patula*,
- ___*grass of Parnassus (*Parnassia glauca*) 10
- ___*Indian plantain (*Cacalia plantaginea*) 10
- ___ironweed spp. (*Vernonia*) 4
- ___jewelweed, touch-me-not spp. (*Impatiens*) 3
- ___lizard's tail (*Saururus cernuus*) 4
- ___lobelia spp. (*Lobelia*) 4
- ___*marsh marigold (*Caltha palustris*) 7
- ___*moonseed (*Menispermum canadense*) 6
- ___primrose-willow spp. (*Epilobium* *Ludwigia*) 3
- ___rose mallow spp. (*Hibiscus*) 4
- ___smartweed spp.: jumpseed, pinkweed,
- tearthumb, water-pepper, waters smartweed
- (*Polygonum*)
- ___halbredleaf tearthumb (*Polygonum arifolium*) 10
- ___sneezeweed (*Helenium autumnale*) 3
- ___stinging nettle (*Laportea canadensis*) 2
- ___*swamp saxifrage (*Saxifraga pennsylvanica*) 10
- ___*Virginia bluebells (*Mertensia virginica*) 6
- ___waterhemp (*Amaranthus tuberculatus*) 1
- ___wingstem (*Actinomeris alternifolia*) 3

Herbs: dicots - lvs. basal or alternate and compound or deeply lobed

- ___aven spp.: round, white (*Geum*) 2
- ___*buttercup spp.: cursed b., hooked b., swamp
- b. (*Ranunculus*) 6
- ___chervil (*Chaerophyllum procumbens*) 3
- ___*cowbane (*Oxypolis rigidior*) 7
- ___*great angelica (*Angelica atropurpurea*) 6
- ___hog peanut / ground nut (*Amphicarpaea* and
- Apios*) 5
- ___honestwort (*Cryptotaenia canadensis*) 3
- ___meadow rue spp. (*Thalictrum*) 5
- ___poison ivy (*Rhus radicans*) 1
- ___*queen-of-the prairie (*Filipendula rubra*) 9
- ___senna spp. (*Cassia*) 4
- ___swamp agrimony (*Agrimonia parviflora*) 4
- ___*swamp thistle (*Cirsium muticum*) 8
- ___tall coneflower (*Rudbeckia laciniata*) 3
- ___*water hemlock spp. (*Cicuta*) 7
- ___water parsnips (*Sium suave*) 5

Shrubs - leaves opposite or whorled

- ___bladdernut (*Staphylea trifolia*) 5
- ___buckthorn spp. (*Rhamnus cathartica*, *R.*
- frangula*) 0
- ___buttonbush (*Cephalanthus occidentalis*) 5
- ___dogwood, red-osier (*Cornus stolonifera*) 4
- ___*dogwood, blue-fruited or silky (*Cornus obliqua*)
- ___dogwood, gray (*Cornus racemosa*) 2
- ___elderberry (*Sambucus*) 2

Shrubs - leaves alternate

- ___*cranberry spp. (*Vaccinium*) 10
- ___*dwarf birch (*Betula pumila*) 10
- ___*highbush blueberry (*Vaccinium corymbosum*) 9
- ___*leatherleaf (*Chamaedaphne calyculata*) 10
- ___meadowsweet and Hardhack spp. (*Spiraea*) 4
- ___*ninebark (*Physocarpus opulifolius*) 7
- ___*shrubby cinquefoil (*Potentilla fruticosa*) 9
- ___spice bush (*Lindera benzoin*) 5
- ___*swamp dewberry (*Rubus hispidus*) 6
- ___*swamp holly and winterberry spp. (*Ilex*) 7
- ___swamp rose (*Rosa palustris*) 5

Trees - leaves needle shaped

- ___*tamarack (*Larix laricina*) 10

Trees - leaves compound

- ___*ash, black (*Fraxinus nigra*) 7
- ___ash, green (*Fraxinus pensylvanica*) 3
- ___*ash, pumpkin (*Fraxinus tomentosa*) 8
- ___boxelder (*Acer negundo*) 1
- ___hickory, bittersweet (*Carya cordiformis*) 5
- ___hickory, shellbark (*Carya laciniosa*) 8
- ___honey locust (*Gleditsia triacanthos*) 1
- ___*poison sumac (*Rhus vernix*) 10

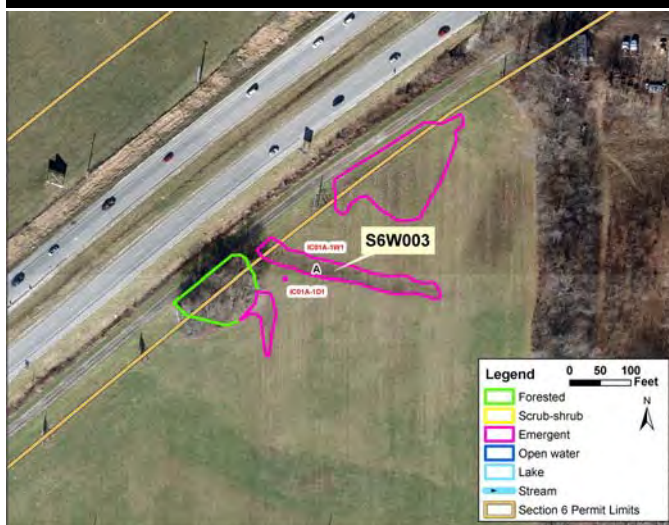
Trees - leaves simple and opposite

- ___red maple (*Acer rubrum*) 5
- ___silver maple (*Acer saccharinum*) 1

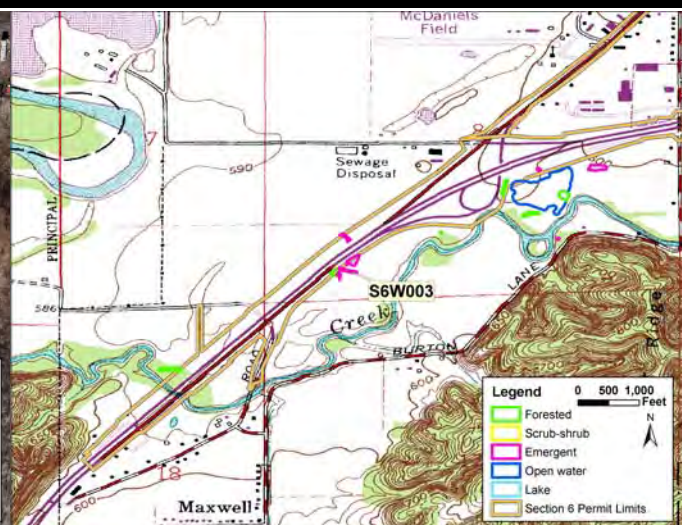
Trees - leaves simple and alternate

- ___*alder, speckled (*Alnus rugosa*) 9
- ___river birch (*Betula nigra*) 2
- ___black, gum (*Nyssa sylvatica*) 5
- ___cottonwood, eastern (*Populus deltoides*) 1
- ___cottonwood, swamp (*Populus heterophylla*) 8
- ___elm, American (*Ulmus americana*) 3
- ___hackberry (*Celtis occidentalis*) 3
- ___ironwood (*Carpinus caroliniana*) 5
- ___oak, pin or white (*Quercus*) 4
- ___*oak, Shumard's, swamp chestnut, swamp whit
- ___*pawpaw (*Asimina triloba*) 6
- ___*sugarberry (*Celtis laevigata*) 7
- ___sweet gum (*Liquidambar styraciflua*) 4
- ___sycamore, American (*Platanus occidentalis*) 3
- ___willow spp. (*Salix*) 1 sp. = 3
- ___additional sp. = 7

Wetland S6W003



Wetland Location on 2015 Aerial Photograph



Wetland Location on Martinsville USGS Quadrangle

Basin: Indian Creek - Sand Creek
14-digit HUC: 05120201170070
Physiographic Region: Martinsville Hills
Ecoregion: Interior Plateau
Natural Region: Highland Rim
Size of wetland complex (acres): 0.1408
USACE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Quadrangle: Martinsville
County: Morgan
Township: T11N
Range: R1E
Section: 8
Quarter: SW
Latitude: 39.398711
Longitude: -86.452018

| Polygon ID | Community Type | Cowardin Class | Polygon Area (acres) | Animal Habitat Measure | Botanical Measure | Hydrology Measure | Alternative | Area Impacted (acres) | Percent Polygon Impacted |
|------------|--------------------------|----------------|----------------------|------------------------|-------------------|-------------------|-------------|-----------------------|--------------------------|
| S6W003A | Seasonally Flooded Basin | PEM | 0.14 | poor | poor | fair | RPA | 0.09 | 63.9% |

This site is classified as a PEM wetland, 0.14 acre in size. The Section 6 Design Contract 1 Permit Limits would permanently impact 0.0 acre and temporarily impact 0.009 acre of this wetland. This wetland showed 100% herbaceous cover. Dominant herbaceous species for this wetland include *Symphytotrichum lanceolatum* and *Carex* spp. Hydrology is likely due to backwater flooding from Indian Creek and roadside runoff from SR 37. Animal habitat, botanical diversity, and hydrology function are rated as poor, poor, and fair respectively based on InWRAP summaries for the site.

Wetland S6W003



Polygon S6W003A



Polygon S6W003A

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W003A City/County: Morgan Sampling Date: 10/16/2015
 Applicant/Owner: INDOT/Lochmueller State: Indiana Sampling Point: IC01A-1D1
 Investigator(s): Danika Fleck, Matt Brendel Section, Township, Range: Sec 8-T11N-R1E
 Landform (hillslope, terrace, etc.): valley plain Local relief (concave, convex, none): concave
 Slope (%): 0-1 Lat: 39.398679 Long: -86.452281 Datum: NAD83
 Soil Map Unit Name: Genesee silt loam NWI classification: upland

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

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

| | | | |
|---|-----------------|-------------|--|
| Hydrophytic Vegetation Present? | Yes <u> </u> | No <u>X</u> | Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> |
| Hydric Soils Present? | Yes <u> </u> | No <u>X</u> | |
| Wetland Hydrology Present? | Yes <u> </u> | No <u>X</u> | |
| Remarks: None of the wetland criteria are met at this point. This point represents the non-wetland conditions between two wetlands. | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A/B) | | | | | | | | | | | | | | |
|---|--------------------|-------------------|------------------|---|-------------------|--------------|----------------------|----------------|-----------------------|----------------|----------------------|----------------|------------------------|------------------|----------------------|-----------------|---------------------------|--------------------|
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u>0</u> | | | Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr><td>OBL species <u>0</u></td><td>x 1 = <u>0</u></td></tr> <tr><td>FACW species <u>0</u></td><td>x 2 = <u>0</u></td></tr> <tr><td>FAC species <u>0</u></td><td>x 3 = <u>0</u></td></tr> <tr><td>FACU species <u>95</u></td><td>x 4 = <u>380</u></td></tr> <tr><td>UPL species <u>5</u></td><td>x 5 = <u>25</u></td></tr> <tr><td>Column Totals: <u>100</u></td><td>(A) <u>405</u> (B)</td></tr> </tbody> </table> Prevalence Index = B/A = <u>4.05</u> | Total % Cover of: | Multiply by: | OBL species <u>0</u> | x 1 = <u>0</u> | FACW species <u>0</u> | x 2 = <u>0</u> | FAC species <u>0</u> | x 3 = <u>0</u> | FACU species <u>95</u> | x 4 = <u>380</u> | UPL species <u>5</u> | x 5 = <u>25</u> | Column Totals: <u>100</u> | (A) <u>405</u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u>0</u> | x 1 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACW species <u>0</u> | x 2 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FAC species <u>0</u> | x 3 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACU species <u>95</u> | x 4 = <u>380</u> | | | | | | | | | | | | | | | | | |
| UPL species <u>5</u> | x 5 = <u>25</u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u>100</u> | (A) <u>405</u> (B) | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u>0</u> | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u>Schedonorus arundinaceus</u> | <u>85</u> | <u>Yes</u> | <u>FACU</u> | | | | | | | | | | | | | | | |
| 2. <u>Trifolium pratense</u> | <u>10</u> | <u>No</u> | <u>FACU</u> | | | | | | | | | | | | | | | |
| 3. <u>Viola sp.</u> | <u>5</u> | <u>No</u> | <u>UPL</u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | <u>100</u> | | | | | | | | | | | | | | | | | |
| Vine Stratum (Plot Size: <u>30'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | <u>0</u> | | | | | | | | | | | | | | | | | |

Hydrophytic Vegetation Indicators:
 1-Rapid Test for Hydrophytic Vegetation:
 2-Dominance Test is >50%
 3-Prevalence Index is <=3¹
 4-Morphological Adaptations ¹(Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation ¹(Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes No X

Remarks: (Include photo numbers here or on a separate sheet.)
 Field mowed for hay.

SOIL

Sampling Point IC01A-1D1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-18 | 10YR5/3 | 100 | | | | | silt loam | |
| | | | | | | | | |
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¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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 Soil (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)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ 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? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W003A City/County: Morgan Sampling Date: 10/16/2015
 Applicant/Owner: INDOT/Lochum Mueller State: Indiana Sampling Point: IC01A-1W1
 Investigator(s): Danika Fleck, Matt Brendel Section, Township, Range: Sec 8-T11N-R1E
 Landform (hillslope, terrace, etc.): shallow depression in valley plain Local relief (concave, convex, none): concave
 Slope (%): 0 Lat: 39.398731 Long: -86.452133 Datum: NAD83
 Soil Map Unit Name: Shoals silt loam NWI classification: upland

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain Remarks.)
 Are Vegetation X, Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No:
 Are Vegetation , Soil or Hydrology naturally problematic? If needed, explain answers in Remarks.)

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

| | | | |
|---|--------------|----------------|--|
| Hydrophytic Vegetation Present? | Yes <u>X</u> | No <u> </u> | Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> |
| Hydric Soils Present? | Yes <u>X</u> | No <u> </u> | |
| Wetland Hydrology Present? | Yes <u>X</u> | No <u> </u> | |
| Remarks: Data point represents linear depression feature in hay field that collects seasonal surface water and meets all three wetland criteria. The wetland feature represented by this data point has been designated as PEM1 based on the Cowardin et al. classificati | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>10'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B) | | | | | | | | | | | | | | |
|---|--------------------|-------------------|------------------|--|-------------------|--------------|-----------------------|-----------------|------------------------|-----------------|-----------------------|------------------|-----------------------|----------------|----------------------|----------------|---------------------------|--------------------|
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr><td>OBL species <u>20</u></td><td>x 1 = <u>20</u></td></tr> <tr><td>FACW species <u>20</u></td><td>x 2 = <u>40</u></td></tr> <tr><td>FAC species <u>60</u></td><td>x 3 = <u>180</u></td></tr> <tr><td>FACU species <u>0</u></td><td>x 4 = <u>0</u></td></tr> <tr><td>UPL species <u>0</u></td><td>x 5 = <u>0</u></td></tr> <tr><td>Column Totals: <u>100</u></td><td>(A) <u>240</u> (B)</td></tr> </tbody> </table> Prevalence Index = B/A = <u>2.40</u> | Total % Cover of: | Multiply by: | OBL species <u>20</u> | x 1 = <u>20</u> | FACW species <u>20</u> | x 2 = <u>40</u> | FAC species <u>60</u> | x 3 = <u>180</u> | FACU species <u>0</u> | x 4 = <u>0</u> | UPL species <u>0</u> | x 5 = <u>0</u> | Column Totals: <u>100</u> | (A) <u>240</u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u>20</u> | x 1 = <u>20</u> | | | | | | | | | | | | | | | | | |
| FACW species <u>20</u> | x 2 = <u>40</u> | | | | | | | | | | | | | | | | | |
| FAC species <u>60</u> | x 3 = <u>180</u> | | | | | | | | | | | | | | | | | |
| FACU species <u>0</u> | x 4 = <u>0</u> | | | | | | | | | | | | | | | | | |
| UPL species <u>0</u> | x 5 = <u>0</u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u>100</u> | (A) <u>240</u> (B) | | | | | | | | | | | | | | | | | |
| 0 = Total Cover | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>10'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 0 = Total Cover | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u>Symphyotrichum lanceolatum</u> | <u>60</u> | <u>Yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | |
| 2. <u>Carex sp.</u> | <u>20</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 3. <u>Juncus effusus</u> | <u>15</u> | <u>No</u> | <u>OBL</u> | | | | | | | | | | | | | | | |
| 4. <u>Echinochloa muricata</u> | <u>5</u> | <u>No</u> | <u>OBL</u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 100 = Total Cover | | | | | | | | | | | | | | | | | | |
| Vine Stratum (Plot Size: <u>10'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 0 = Total Cover | | | | | | | | | | | | | | | | | | |
| Hydrophytic Vegetation Indicators: 1-Rapid Test for Hydrophytic Vegetation: <u>X</u> 2-Dominance Test is >50% <u>X</u> 3-Prevalence Index is <=3 ¹ 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic | | | | | | | | | | | | | | | | | | |
| Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> | | | | | | | | | | | | | | | | | | |

Remarks: (Include photo numbers here or on a separate sheet.)
 Field mowed for hay.

SOIL

Sampling Point IC01A-1W1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|----|----------------|----|-------------------|------------------|-----------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-2 | 10YR6/2 | 70 | 10YR5/6 | 30 | | | silt loam | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |

¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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 Soil (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 ☐

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)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ 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 ☒ Depth (inches): _____
 Water Table Present? Yes ☐ No ☒ Depth (inches): _____
 Saturation Present? Yes ☐ No ☒ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

I-69 Wetland Quality Assessment Profile

Date Report Generated: 5/22/2018
Data reference # S6W003
Wetland Site S6W003
Date of site visit: 05/12/15
Total wetland area: 0.1408 acres

| | |
|--|---------|
| Polygon Information | |
| Polygon ID | S6W003A |
| Polygon Size (acres) | 0.14 |
| Wetland Community Type | SFB |
| Red Flag (Special) Indicators | |
| Special Hydrologic Conditions | N |
| Special Community Type | N |
| Rare-Threatened-Endangered Species | N |
| Animal Habitat Measures | |
| Wetland size and connectivity | 2 |
| Surrounding land use | 3 |
| Standing water | 1 |
| Dead woody material | 1 |
| Zonation and interspersion | 1 |
| Stratification | 1 |
| Tree canopy | 1 |
| Mature trees | 1 |
| Animal Habitat Measure Score (min = 8, max = 24) | 11 |
| Animal Habitat Measure Rating | poor |
| Botanical Measures (all except exotics dependent upon community type) | |
| Number of dominant plant taxa observed | 1 |
| Conservatism rating | 1 |
| Total hydrophytic taxa observed | 1 |
| Number of indicator taxa | 1 |
| Exotic species rating | 3 |
| Botanical Measure Score (min = 5, max = 15) | 7 |
| Botanical Measure Rating | poor |
| Hydrology Measures | |
| Water quality protection (= no. of yes answers) | 4 |
| Flood and storm water storage (= no. of yes answers) | 3 |
| Site/Hydrology Score (min = 11, max = 33) | 25 |
| Site/Hydrology Rating | fair |

In-WRAP Summary Sheet

Date Report Generated: Monday, July 30, 2018

Wetland Site Name: N/A

Data Reference #: S6W003

Date of Site Visit: Tuesday, May 12, 2015

Tier 1 Summary:

a. Total Wetland Area (acres): 0.1408

b. Wetland size and connectivity - contribution to animal habitat:

Valuable More Favorable **Favorable** Neutral

c. Surrounding land use - numerical rank (max. = 1): 0.80

d. Value surrounding area adds to animal habitat:

Valuable Favorable Low

Tier 2 SUMMARY:

Polygon ID S6W003A

a. Indiana Wetland community type: Seasonally Flooded Basin

b. Standing water - contribution to animal habitat:

Valuable Favorable **Neutral**

c. Disturbances to site: road/railroad

d. Exotic species rating:

Good Medium Poor

e. Special Hydrologic Conditions Observed: None

f. Special Community Type: None

g. Rare-Threatened-Endangered Species: None

h. Polygon Quality Descriptor:

Good Medium **Poor**

Tier 3A SUMMARY:

a. Dead woody material as indicator of animal habitat:

Valuable Favorable **Neutral**

b. Water quality protection - numerical rank (6 max.): 4

Good **Medium** Poor

c. Flood and storm water storage - numerical rank (5 max) 3

Good **Medium** Poor

Tier 3B SUMMARY:

a. Zonation and interspersions as indicator of animal habitat:

Valuable Favorable Neutral

b. Stratification as indicator of animal habitat:

Valuable **Neutral**

c. Number of dominant plant taxa observed: 4

Good **Medium** Poor

d. Average coefficient of conservatism: 2.5

Good Medium **Poor**

e. Tree canopy as indicator of animal habitat:

Valuable **Neutral**

f. Mature trees as indicator of animal habitat:

Valuable Favorable **Neutral**

g. Total hydrophytic taxa observed: 6

Good Medium **Poor**

h. Number of indicator taxa: 0

Good Medium **Poor**

Tier 1: Assessment Overview**1.1 Site Identification:**Wetland Site Name: N/AOwnership (if known): N/AUSGS Topographic Quadrangle: MartinsvilleUSGS Watershed map 14-Digit HUC: Indian Creek - Sand Creek

Identify each NWI Polygon within the Wetland Site (Polygon specific data)

| NWI Polygon ID Number | Cowardin Classification | Polygon Size (acres) |
|-----------------------|-------------------------|----------------------|
| S6W003A | PEM1 | 0.1408 |

1.2 Site VisitTeam Members: Rusty Yeager & Neal GoffinetAgency: Lochmueller GroupDate assessed: 5/12/2015Time assessed: 1:45:00 PMWeather conditions: Sunny

Note any unusual weather events that may have influenced the current conditions within this wetland system (e.g. recent heavy rains, an unusually dry season, an especially early spring etc.)

1.3 Wetland SizeSize of site under assessment: 0.1408Size of wetland complex: 0.1408**1.4 Site Setting**

Degree of isolation from other wetlands or wetland complexes:

☐ The site is connected upstream and downstream with other wetlands☐ The site is only connected upstream with other wetlands☐ The site is only connected downstream with other wetlands☒ Other wetlands are nearby (within 0.25 mile) but not connected☐ The wetland site is isolated

General assessment of adjacent land use / land cover in the area within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

| | | | |
|------------|---------------------------------------|----------|---|
| <u>0</u> | Native Vegetation - woodland | <u>0</u> | Road / highway / railroad bed / parking lot |
| <u>100</u> | Native Vegetation - old field / scrub | <u>0</u> | Industrial |
| <u>0</u> | Agricultural - tilled | <u>0</u> | Residential - single family |
| <u>0</u> | Agricultural - pasture | <u>0</u> | Commercial or multifamily residential |
| <u>0</u> | Recreation - green space, mowed | | |

NWI Polygon # S6W003A

Data Reference# S6W003

(see table on page one)

Tier 2: Individual Polygon: Preliminary Assessment

(to be completed on-site for each NWI polygon present in the wetland)

2.1 Wetland Geomorphic Setting and Surface Water Flow (check one):

☒ Depressional ☐ Slope ☐ Floodplain ☐ Lacustrine
☐ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? No

Is standing water is present, is the water greater than 2 meters in depth? No

Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

☐ Permanently Flooded ☐ Artificially Flooded
☒ Seasonally Flooded
☐ Saturated (surface water seldom present) ☐ Artificially Drained

2.4 Soil Type

☐ Organic (i.e. peat, etc.) ☒ Mineral ☐ Both Mineral and Organic Present

2.5 Wetland Community Type for this NWI polygon (see Key to Wetland Communities of Indiana):

Seasonally Flooded Basin

2.6 Disturbances of Hydrology (check all that apply):

☐ Ditching ☐ Culvert
☐ Tiles ☐ Other Human Disturbances to the
☐ Dams Hydrology (explain):
☒ Road or Railroad Embankment

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common):

☐ Garlic Mustard ☐ Glossy Buckthorn
☐ *Phragmites* ☐ S Reed Canary Grass
☐ Purple Loosestrife ☐ Other (list):

2.8 Presence of Special Hydrologic Conditions (i.e. seeps, wet slopes, floating mat):

None

2.9 Presence of Special Community Types:

☐ Bog ☐ Fen ☐ Wet Sand / Muck Flats or Marl Seeps

2.10 Presence of Known Federal or Indiana Rare, Threatened or Endangered Species:

☒ None observed or known to be present
☐ RTES Present (list):

2.11 Wetland Polygon Quality Descriptor (see: Wetland Quality Descriptions and check one):

☐ Good ☐ Medium ☒ Poor

Tier 3a: Individual Polygon: Rapid Hydrology Indicators

3a.1 Notable Features that influence water quality and hydrology:

Estimated herbaceous plant cover (percentage) in the polygon ☒ 100-75 ☐ 75-50 ☐ 50-25 ☐ <25
 Estimated woody plant foliar coverage in the polygon ☐ 100-75 ☐ 75-50 ☐ 50-25 ☒ <25
 Amount of dead woody material on the soil surface ☒ nil ☐ scattered ☐ frequent

3a.2 Water Quality Protection Questions:

1. Y ☒ N Does the wetland have a significant amount of vegetative (specifically herbaceous and woody plant) density to potentially uptake dissolved nutrients?
2. ☒ N Managed water (e.g. municipal or road stormwater drainage, agricultural drainage outlet, industrial or municipal wastewater) is not discharged into the wetland polygon?
3. If wetland in question is a depressional wetland answer 3a, in not, answer 3b.
☒ N 3a. Does the wetland have a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland?
 Y ☒ N 3b. Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface body of water down gradient?
4. Y ☒ N Does the wetland lack steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within 100 meters of its border?
5. ☒ N Are there recreational lakes, fishable or navigable watercourses, or water supply sources down gradient in the local watershed?
6. ☒ N Is a vegetative buffer area or another wetland polygon (areas where overland flow could be filtered) located upland and adjacent to the wetland polygon? If yes, describe buffer area width and slope.
 width of buffer area (in meters 25 approximate slope (percent 2

3a.3 Flood and Stormwater Storage / Attenuation Questions:

1. If wetland in question is a depressional wetland answer 1a, in not, answer 1b
☒ N 1a. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
 Y ☒ N 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. ☒ N Does the wetland lack man-made structure that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. Y ☒ N Is the flood potential high in the local watershed in which the wetland is located (history of flood damages)?
4. Y ☒ N Is the wetland located in a watershed where the majority of the upland soils are clay and impermeable, or is bedrock within two feet of the top of the soil profile?
5. ☒ N Is the wetland located in a local watershed which has highly modified runoff conditions due to existing development?

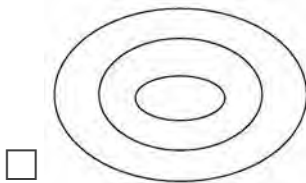
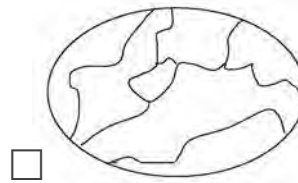
Tier 3b Individual Polygon: Rapid Vegetation Description**3b.1 Zonation and Interspersion:**

1. How many vegetation zones are evident in this wetland polygon? 1

1b. If only one vegetation zone is evident, which best describes the site?

- ☒ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks, heterogeneous textures across the polygon.
- ☐ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

2. If more than one vegetation zone is present in the polygon, which interspersed diagram most closely represents the distribution of these zones?

Type One Interspersion**Type Two Interspersion****3b.2 Dominant Plant Species: Vegetation Zone A**

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☒ >90%

Is there notable layering/stratification in this vegetation zone? No

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

- | | |
|---|---------------------------------|
| a. <u><i>Symphyotrichum lanceolatum</i></u> | d. <u><i>Juncus effusus</i></u> |
| b. <u><i>Carex</i> sp.</u> | e. _____ |
| c. <u><i>Lysimachia nummularia</i></u> | f. _____ |

Dominant Shrub Species listed in order of relative abundance.

- | | |
|----------|----------|
| a. _____ | c. _____ |
| b. _____ | d. _____ |

Dominant Tree Species listed in order of relative abundance.

- | | |
|----------|----------|
| a. _____ | c. _____ |
| b. _____ | d. _____ |

Tree and shrub canopy: ☒ nil ☐ separate, seldom touching ☐ often touching ☐ more or less close

Mature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone B

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closeMature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone C

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closeMature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservatism)

Herbs: non-seed plants

- ___ horsetail, scouring rush spp. (Equisetum) 2
- ___ *ferns: marsh shiled fern spp. (Dryopteris) 7
- ___ *cinnamon fern (Osmunda cinnamomea) 9
- ___ *royal fern (Osmunda regalis) 8
- ___ sensitive fern (Onoclea sensibilis) 4
- ___ *other: species (if know
- ___ marsh club moss (Selaginella apoda) 4
- ___ Sphagnum moss spp. (Sphagnum) 10

Herbs: lvs. floating or submergent

- ___ *bladderwort spp. (Utricularia) 10
- ___ coontail (Ceratophyllum demersum) 1
- ___ duckweed spp. (Lemnaceae) 3
- ___ *pondweed spp. (Potamogeton) 8
- ___ curlyleaf pondweed (Potamogeton crispus) 0
- ___ *water lily (Nymphaea tuberosa) 6
- ___ water shield (Brasenia schreberi) 4
- ___ *yellow spatterdock spp. (Nuphar) 6

Herbs: lvs. floating or submergent

- ___ *pitcher plant (Sarracenia purpurea) (10)
- ___ *sundew spp. (Drosera) 10

Herbs: linear-lvs. or +/- leafless monocots

- ___ *beak rush spp (Rhynchospora) 10
- ___ blueflag iris (Iris virginica) 5
- ___ bulrush spp. (Scirpus / Schoenoplectus) 5
- ___ *bur reed spp. (Sparganium) 9
- ___ cat-tail spp. (Typha) 1
- ___ *cotton grass spp. (Eriophorum) 10

Grasses (family Gramineae) - indicate types and number of species

- ___ a. *wild rice (Zizania aquatica) 10
- ___ b. most native perennial grass spp. 4:
cut-grass, manna-grass, Canada bluepoint,
foxtail (Alopecurus); other
- ✓ c. introduced grass spp. 0: reed canary
grass (Phalaris, reed (Phragmites),
annual grasses such as annual foxtail
(Setaria) and barnyard grass (Echinochloa)
- ___ needle sedge spp. (Eleocharis) 1 sp. = 2
___ *additional = 8
- ___ nutsedge spp. (Cyperus) 2
- ___ *orchid spp. 10; species (if know
- ✓ rush spp. (Juncus) 4
- ___ sedge spp. (Carex) 1 sp. = 3 ✓ additional = 7
- ___ *spiderlily (Hymenocallis occidentalis) 9
- ___ sweet flag (Acorus calamus) 0
- ___ *3-way sedge (Dulichium arundinaceum) 10
- ___ *twig rush (Cladium mariscoides) 10
- ___ *umbrella sedge (Fuirena squarrosa) 10
- ___ wild hyacinth (Camassia scilloides) 5
- ___ *yellow-eyed grass (Xyris torta) 9

Herbs: wide-leafed monocots

- ___ *arrow arum (Peltandra virginica) 6
- ___ arrow-head spp. (Sagittaria) 4
- ___ *green dragon (Arisaema dracontium) 6
- ___ Jack-in-the-pulpit (Arisaema triphyllum) 4
- ___ pickerel weed (Pontederia cordata) 5
- ___ *skunk cabbage (Symplocarpus foetidus) 8
- ___ *water arum (Calla palustris) 10
- ___ water plantain (Alisma plantago-aquatica) 2

Herbs: dicots - lvs. opposite/whorled

- ___ *bedstraw spp. (Gallium) 6
- ___ beggar's tick spp. (Bidens) 3
- ___ blue vervain (Verbena hastata) 3
- ___ boneset (Eupatorium perfoliatum) 4
- ___ bugleweed spp. (Lycopus) 5
- ___ clearweed spp. (Pilea) 3
- ___ cup plant (Silphium perfoliatum) 4
- ___ false nettle (Boehmeria cylindrica) 3
- ___ *fen betony (Pedicularis lanceolata) 6
- ___ *gentian spp. (Gentiana Gentianopsis) 8
- ___ giant ragweed (Ambrosia trifida) 0
- ___ Indian hemp (Apocynum cannabinum) 2
- ___ Joe-pye weed spp. (Eupatorium) 5
- ___ *loosestrife spp. (Lysimachia) 6
- ___ meadow beauty (Rhexia virginica) 5
- ___ mint spp. e.g. hedge nettle, mtn. mint, skullcap
- ✓ moneywort (Lysimachia nummularia) 0
- ___ monkey flower spp. (Mimulus) 4
- ___ nettle (Urtica procera) 1
- ___ purple loosestrife (Lythrum salicaria) 0
- ___ *richweed (Collinsia canadensis) 8
- ___ St. John's wort spp. (Hypericum/Triandrium) 8
- ___ sunflower sp. (Helianthus) 4
- ___ *swamp loosestrife (Decodon verticillatus) 8
- ___ swamp milkweed (Asclepias incarnata) 4
- ___ toothcup spp. (Ammania Rotala) 2
- ___ *turtlehead spp. (Chelone) 8
- ___ virgin's bower (Clematis virginiana) 3
- ___ water purslane (Ludwigia palustris) 3
- ___ winged loosestrife (Lythrum alatum) 5

Herbs (vines): dicots - lvs. alternate or basal and

- ___ American bellflower (Campanula americana) 4
- ___ *asters: bristly aster (Aster puniceus) 7
- ___ flat-topped aster (Aster umbellatus) 8
- ✓ other aster spp. (e.g. New England, panicled ast
- ___ *black-eyed Susan (Rudbeckia fulgida) 8
- ___ cardinal flower (Lobelia cardinalis) 4
- ___ cress spp. (Cardamine) 4
- ✓ dock spp.: swamp, water, pale (Rumex) 4
- ___ garlic mustard (Alliaria petiolata) 0
- ___ golden ragwort (Senecio aureus) 4

Herbs (vines): dicots - lvs. alternate or basal and simple (continued)

- ___*goldenrod spp. (*Solidago ohioensis*, *S. patula*,
- ___*grass of Parnassus (*Parnassia glauca*) 10
- ___*Indian plantain (*Cacalia plantaginea*) 10
- ___ironweed spp. (*Vernonia*) 4
- ___jewelweed, touch-me-not spp. (*Impatiens*) 3
- ___lizard's tail (*Saururus cernuus*) 4
- ___lobelia spp. (*Lobelia*) 4
- ___*marsh marigold (*Caltha palustris*) 7
- ___*moonseed (*Menispermum canadense*) 6
- ___primrose-willow spp. (*Epilobium* *Ludwigia*) 3
- ___rose mallow spp. (*Hibiscus*) 4
- ___smartweed spp.: jumpseed, pinkweed,
- tearthumb, water-pepper, waters smartweed
- (*Polygonum*)
- ___halbredleaf tearthumb (*Polygonum arifolium*) 10
- ___sneezeweed (*Helenium autumnale*) 3
- ___stinging nettle (*Laportea canadensis*) 2
- ___*swamp saxifrage (*Saxifraga pennsylvanica*) 10
- ___*Virginia bluebells (*Mertensia virginica*) 6
- ___waterhemp (*Amaranthus tuberculatus*) 1
- ___wingstem (*Actinomeris alternifolia*) 3

Herbs: dicots - lvs. basal or alternate and compound or deeply lobed

- ___aven spp.: round, white (*Geum*) 2
- ___*buttercup spp.: cursed b., hooked b., swamp
- b. (*Ranunculus*) 6
- ___chervil (*Chaerophyllum procumbens*) 3
- ___*cowbane (*Oxypolis rigidior*) 7
- ___*great angelica (*Angelica atropurpurea*) 6
- ___hog peanut / ground nut (*Amphicarpaea* and
- Apios*) 5
- ___honestwort (*Cryptotaenia canadensis*) 3
- ___meadow rue spp. (*Thalictrum*) 5
- ___poison ivy (*Rhus radicans*) 1
- ___*queen-of-the prairie (*Filipendula rubra*) 9
- ___senna spp. (*Cassia*) 4
- ___swamp agrimony (*Agrimonia parviflora*) 4
- ___*swamp thistle (*Cirsium muticum*) 8
- ___tall coneflower (*Rudbeckia laciniata*) 3
- ___*water hemlock spp. (*Cicuta*) 7
- ___water parsnips (*Sium suave*) 5

Shrubs - leaves opposite or whorled

- ___bladdernut (*Staphylea trifolia*) 5
- ___buckthorn spp. (*Rhamnus cathartica*, *R.*
- frangula*) 0
- ___buttonbush (*Cephalanthus occidentalis*) 5
- ___dogwood, red-osier (*Cornus stolonifera*) 4
- ___*dogwood, blue-fruited or silky (*Cornus obliqua*)
- ___dogwood, gray (*Cornus racemosa*) 2
- ___elderberry (*Sambucus*) 2

Shrubs - leaves alternate

- ___*cranberry spp. (*Vaccinium*) 10
- ___*dwarf birch (*Betula pumila*) 10
- ___*highbush blueberry (*Vaccinium corymbosum*) 9
- ___*leatherleaf (*Chamaedaphne calyculata*) 10
- ___meadowsweet and Hardhack spp. (*Spiraea*) 4
- ___*ninebark (*Physocarpus opulifolius*) 7
- ___*shrubby cinquefoil (*Potentilla fruticosa*) 9
- ___spice bush (*Lindera benzoin*) 5
- ___*swamp dewberry (*Rubus hispidus*) 6
- ___*swamp holly and winterberry spp. (*Ilex*) 7
- ___swamp rose (*Rosa palustris*) 5

Trees - leaves needle shaped

- ___*tamarack (*Larix laricina*) 10

Trees - leaves compound

- ___*ash, black (*Fraxinus nigra*) 7
- ___ash, green (*Fraxinus pensylvanica*) 3
- ___*ash, pumpkin (*Fraxinus tomentosa*) 8
- ___boxelder (*Acer negundo*) 1
- ___hickory, bitternut (*Carya cordiformis*) 5
- ___hickory, shellbark (*Carya laciniosa*) 8
- ___honey locust (*Gleditsia triacanthos*) 1
- ___*poison sumac (*Rhus vernix*) 10

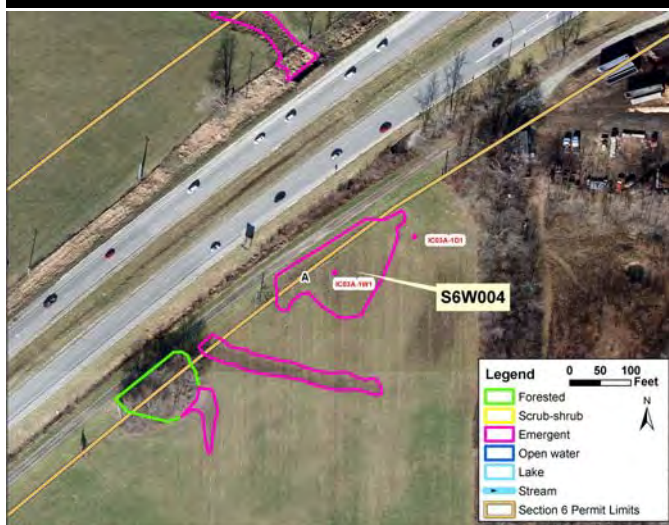
Trees - leaves simple and opposite

- ___red maple (*Acer rubrum*) 5
- ___silver maple (*Acer saccharinum*) 1

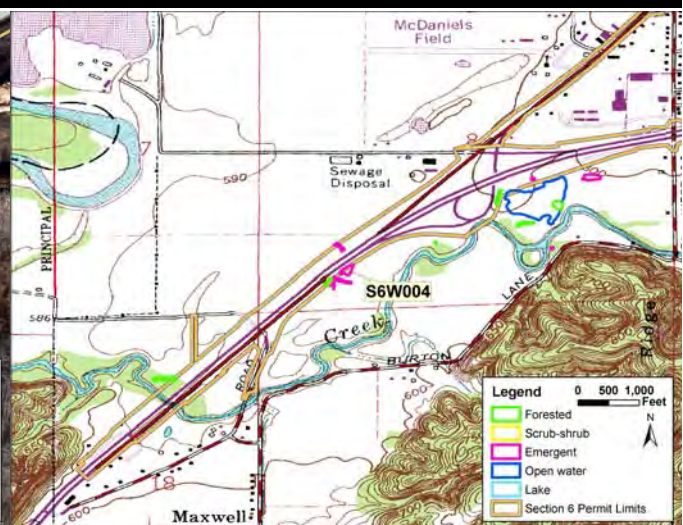
Trees - leaves simple and alternate

- ___*alder, speckled (*Alnus rugosa*) 9
- ___river birch (*Betula nigra*) 2
- ___black, gum (*Nyssa sylvatica*) 5
- ___cottonwood, eastern (*Populus deltoides*) 1
- ___cottonwood, swamp (*Populus heterophylla*) 8
- ___elm, American (*Ulmus americana*) 3
- ___hackberry (*Celtis occidentalis*) 3
- ___ironwood (*Carpinus caroliniana*) 5
- ___oak, pin or white (*Quercus*) 4
- ___*oak, Shumard's, swamp chestnut, swamp whit
- *pawpaw (*Asimina triloba*) 6
- ___*sugarberry (*Celtis laevigata*) 7
- ___sweet gum (*Liquidambar styraciflua*) 4
- ___sycamore, American (*Platanus occidentalis*) 3
- ___willow spp. (*Salix*) 1 sp. = 3
- ___additional sp. = 7

Wetland S6W004



Wetland Location on 2015 Aerial Photograph



Wetland Location on Martinsville USGS Quadangle

Basin: Indian Creek - Sand Creek
14-digit HUC: 05120201170070
Physiographic Region: Martinsville Hills
Ecoregion: Interior Plateau
Natural Region: Highland Rim
Size of wetland complex (acres): 0.3455
USACE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Quadrangle: Martinsville
County: Morgan
Township: T11N
Range: R1E
Section: 8
Quarter: SW
Latitude: 39.399157
Longitude: -86.451757

| Polygon ID | Community Type | Cowardin Class | Polygon Area (acres) | Animal Habitat Measure | Botanical Measure | Hydrology Measure | Alternative | Area Impacted (acres) | Percent Polygon Impacted |
|------------|--------------------------|----------------|----------------------|------------------------|-------------------|-------------------|-------------|-----------------------|--------------------------|
| S6W004A | Seasonally Flooded Basin | PEM | 0.35 | poor | poor | fair | RPA | 0.07 | 19.1% |

This site is classified as a PEM wetland, 0.35 acre in size. The Section 6 Design Contract 1 Permit Limits would permanently impact 0.010 acre and temporarily impact 0.056 acre of this wetland. This wetland showed 100% herbaceous cover. Dominant herbaceous species for this wetland include *Juncus effusus* and *Carex* spp. Hydrology is likely due to backwater flooding from Indian Creek and roadside runoff from SR 37. Animal habitat, botanical diversity, and hydrology function are rated as poor, poor, and fair respectively based on InWRAP summaries for the site.

Wetland S6W004



Polygon S6W004A

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W004A City/County: Morgan Sampling Date: 10/16/2015
 Applicant/Owner: INDOT/Lochum Mueller State: Indiana Sampling Point: IC03A-1D1
 Investigator(s): Danika Fleck, Matt Brendel Section, Township, Range: Sec 8-T11N-R1E
 Landform (hillslope, terrace, etc.): broad valley Local relief (concave, convex, none): flat
 Slope (%): 0-1 Lat: 39.399300 Long: -86.451438 Datum: NAD83
 Soil Map Unit Name: Shoals silt loam NWI classification: upland

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

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

| | | | |
|---------------------------------|-----------------|----------------|--|
| Hydrophytic Vegetation Present? | Yes <u>X</u> | No <u> </u> | Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> |
| Hydric Soils Present? | Yes <u> </u> | No <u>X</u> | |
| Wetland Hydrology Present? | Yes <u> </u> | No <u>X</u> | |
| Remarks: | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B) | | | | | | | | | | | | | | |
|--|--------------------|-------------------|------------------|--|-------------------|--------------|----------------------|----------------|-----------------------|----------------|-----------------------|------------------|------------------------|-----------------|----------------------|----------------|---------------------------|--------------------|
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr><td>OBL species <u>0</u></td><td>x 1 = <u>0</u></td></tr> <tr><td>FACW species <u>0</u></td><td>x 2 = <u>0</u></td></tr> <tr><td>FAC species <u>80</u></td><td>x 3 = <u>240</u></td></tr> <tr><td>FACU species <u>20</u></td><td>x 4 = <u>80</u></td></tr> <tr><td>UPL species <u>0</u></td><td>x 5 = <u>0</u></td></tr> <tr><td>Column Totals: <u>100</u></td><td>(A) <u>320</u> (B)</td></tr> </tbody> </table> Prevalence Index = B/A = <u>3.20</u> | Total % Cover of: | Multiply by: | OBL species <u>0</u> | x 1 = <u>0</u> | FACW species <u>0</u> | x 2 = <u>0</u> | FAC species <u>80</u> | x 3 = <u>240</u> | FACU species <u>20</u> | x 4 = <u>80</u> | UPL species <u>0</u> | x 5 = <u>0</u> | Column Totals: <u>100</u> | (A) <u>320</u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u>0</u> | x 1 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACW species <u>0</u> | x 2 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FAC species <u>80</u> | x 3 = <u>240</u> | | | | | | | | | | | | | | | | | |
| FACU species <u>20</u> | x 4 = <u>80</u> | | | | | | | | | | | | | | | | | |
| UPL species <u>0</u> | x 5 = <u>0</u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u>100</u> | (A) <u>320</u> (B) | | | | | | | | | | | | | | | | | |
| <u>0</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>0</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | | | | Hydrophytic Vegetation Indicators: 1-Rapid Test for Hydrophytic Vegetation: <u>X</u> 2-Dominance Test is >50% 3-Prevalence Index is <=3 ¹ 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic | | | | | | | | | | | | | | |
| 1. <u>Poa pratensis</u> | <u>75</u> | <u>Yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | |
| 2. <u>Trifolium pratense</u> | <u>15</u> | <u>No</u> | <u>FACU</u> | | | | | | | | | | | | | | | |
| 3. <u>Plantago lanceolata</u> | <u>5</u> | <u>No</u> | <u>FACU</u> | | | | | | | | | | | | | | | |
| 4. <u>Viola sororia</u> | <u>5</u> | <u>No</u> | <u>FAC</u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>100</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Vine Stratum (Plot Size: <u>15'</u> radius) | | | | Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>0</u> = Total Cover | | | | | | | | | | | | | | | | | | |

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

SOIL

Sampling Point IC03A-1D1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR4/3 | 100 | | | | | silt loam | |
| | | | | | | | | |
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¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix

| | | |
|--|---|--|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Muck Peat or Peat (S3) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) | Indicators for Problematic Hydric Soils ³ <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other Soil (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 <input checked="" type="checkbox"/> |
|---|---|

Remarks:

HYDROLOGY

| | | |
|--|---|--|
| Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> | | <u>Secondary Indicators (minimum of two required)</u> |
| <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Water Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) |

| | |
|--|---|
| Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/> |
|--|---|

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

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W004A City/County: Morgan Sampling Date: 10/16/2015
 Applicant/Owner: INDOT/Lochmueller State: Indiana Sampling Point: IC03A-1W1
 Investigator(s): Danika Fleck, Matt Brendel Section, Township, Range: Sec 8-T11N-R1E
 Landform (hillslope, terrace, etc.): broad valley Local relief (concave, convex, none): flat
 Slope (%): 0-1 Lat: 39.399140 Long: -86.451797 Datum: NAD83
 Soil Map Unit Name: Shoals silt loam NWI classification: upland

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

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

| | | | |
|---|--------------|----------------|--|
| Hydrophytic Vegetation Present? | Yes <u>X</u> | No <u> </u> | Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> |
| Hydric Soils Present? | Yes <u>X</u> | No <u> </u> | |
| Wetland Hydrology Present? | Yes <u>X</u> | No <u> </u> | |
| Remarks: The wetland feature represented by this data point has been designated as PEM1 based on the Cowardin et al. classification system. | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B) | | | | | | | | | | | | | | |
|--|--------------------|-------------------|------------------|---|-------------------|--------------|-----------------------|-----------------|------------------------|-----------------|-----------------------|-----------------|-----------------------|----------------|----------------------|----------------|---------------------------|--------------------|
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>0</u> = Total Cover | | | | Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr><td>OBL species <u>45</u></td><td>x 1 = <u>45</u></td></tr> <tr><td>FACW species <u>45</u></td><td>x 2 = <u>90</u></td></tr> <tr><td>FAC species <u>10</u></td><td>x 3 = <u>30</u></td></tr> <tr><td>FACU species <u>0</u></td><td>x 4 = <u>0</u></td></tr> <tr><td>UPL species <u>0</u></td><td>x 5 = <u>0</u></td></tr> <tr><td>Column Totals: <u>100</u></td><td>(A) <u>165</u> (B)</td></tr> </tbody> </table> Prevalence Index = B/A = <u>1.65</u> | Total % Cover of: | Multiply by: | OBL species <u>45</u> | x 1 = <u>45</u> | FACW species <u>45</u> | x 2 = <u>90</u> | FAC species <u>10</u> | x 3 = <u>30</u> | FACU species <u>0</u> | x 4 = <u>0</u> | UPL species <u>0</u> | x 5 = <u>0</u> | Column Totals: <u>100</u> | (A) <u>165</u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u>45</u> | x 1 = <u>45</u> | | | | | | | | | | | | | | | | | |
| FACW species <u>45</u> | x 2 = <u>90</u> | | | | | | | | | | | | | | | | | |
| FAC species <u>10</u> | x 3 = <u>30</u> | | | | | | | | | | | | | | | | | |
| FACU species <u>0</u> | x 4 = <u>0</u> | | | | | | | | | | | | | | | | | |
| UPL species <u>0</u> | x 5 = <u>0</u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u>100</u> | (A) <u>165</u> (B) | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>0</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | | | | Hydrophytic Vegetation Indicators: 1-Rapid Test for Hydrophytic Vegetation: <u>X</u> 2-Dominance Test is >50% <u>X</u> 3-Prevalence Index is <=3 ¹ 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic | | | | | | | | | | | | | | |
| 1. <u>Carex sp.</u> | <u>30</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 2. <u>Juncus effusus</u> | <u>30</u> | <u>Yes</u> | <u>OBL</u> | | | | | | | | | | | | | | | |
| 3. <u>Lysimachia nummularia</u> | <u>15</u> | <u>No</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 4. <u>Scirpus atrovirens</u> | <u>15</u> | <u>No</u> | <u>OBL</u> | | | | | | | | | | | | | | | |
| 5. <u>Symphyotrichum lanceolatum</u> | <u>10</u> | <u>No</u> | <u>FAC</u> | | | | | | | | | | | | | | | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>100</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Vine Stratum (Plot Size: <u>15'</u> radius) | | | | Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>0</u> = Total Cover | | | | | | | | | | | | | | | | | | |

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

SOIL

Sampling Point IC03A-1W1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|----|-------------------|---------|-------------------|------------------|-----------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-5 | 10YR6/2 | 80 | 10YR5/6 | 20 | C | M | silt loam | |
| 5-18 | 10YR5/2 | 60 | 10YR5/4 & 10YR5/6 | 20 & 20 | C | M | silt loam | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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 Soils³

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other Soil (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 ☐

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)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ 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 ☒ Depth (inches): _____
 Water Table Present? Yes ☐ No ☒ Depth (inches): _____
 Saturation Present? Yes ☐ No ☒ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

I-69 Wetland Quality Assessment Profile

Date Report Generated: 5/22/2018
Data reference # S6W004
Wetland Site **S6W004**
Date of site visit: 05/12/15
Total wetland area: 0.3455 acres

| | |
|--|---------|
| Polygon Information | |
| Polygon ID | S6W004A |
| Polygon Size (acres) | 0.35 |
| Wetland Community Type | SFB |
| Red Flag (Special) Indicators | |
| Special Hydrologic Conditions | N |
| Special Community Type | N |
| Rare-Threatened-Endangered Species | N |
| Animal Habitat Measures | |
| Wetland size and connectivity | 1 |
| Surrounding land use | 3 |
| Standing water | 1 |
| Dead woody material | 1 |
| Zonation and Interspersion | 1 |
| Stratification | 3 |
| Tree canopy | 1 |
| Mature trees | 1 |
| Animal Habitat Measure Score (min = 8, max = 24) | |
| Animal Habitat Measure Rating | |
| Botanical Measures (all except exotics dependent upon community type) | |
| Number of dominant plant taxa observed | 1 |
| Conservatism rating | 2 |
| Total hydrophytic taxa observed | 1 |
| Number of indicator taxa | 1 |
| Exotic species rating | 3 |
| Botanical Measure Score (min = 5, max = 15) | |
| Botanical Measure Rating | |
| Hydrology Measures | |
| Water quality protection (= no. of yes answers) | 4 |
| Flood and storm water storage (= no. of yes answers) | 3 |
| Site/Hydrology Score (min = 11, max = 33) | |
| Site/Hydrology Rating | |
| | |

In-WRAP Summary Sheet

Date Report Generated: Monday, July 30, 2018

Wetland Site Name: N/A

Data Reference #: S6W004

Date of Site Visit: Tuesday, May 12, 2015

Tier 1 Summary:

a. Total Wetland Area (acres): 0.3455

b. Wetland size and connectivity - contribution to animal habitat:

Valuable More Favorable **Favorable** Neutral

c. Surrounding land use - numerical rank (max. = 1): 0.80

d. Value surrounding area adds to animal habitat:

Valuable Favorable Low

Tier 2 SUMMARY:

Polygon ID S6W004A

a. Indiana Wetland community type: Seasonally Flooded Basin

b. Standing water - contribution to animal habitat:

Valuable Favorable **Neutral**

c. Disturbances to site:

d. Exotic species rating:

Good Medium Poor

e. Special Hydrologic Conditions Observed: None

f. Special Community Type: None

g. Rare-Threatened-Endangered Species:

h. Polygon Quality Descriptor:

Good Medium **Poor**

Tier 3A SUMMARY:

a. Dead woody material as indicator of animal habitat:

Valuable Favorable **Neutral**

b. Water quality protection - numerical rank (6 max.): 4

Good **Medium** Poor

c. Flood and storm water storage - numerical rank (5 max) 3

Good **Medium** Poor

Tier 3B SUMMARY:

a. Zonation and interspersions as indicator of animal habitat:

Valuable Favorable Neutral

b. Stratification as indicator of animal habitat:

Valuable Neutral

c. Number of dominant plant taxa observed: 4

Good **Medium** Poor

d. Average coefficient of conservatism: 3

Good **Medium** Poor

e. Tree canopy as indicator of animal habitat:

Valuable **Neutral**

f. Mature trees as indicator of animal habitat:

Valuable Favorable **Neutral**

g. Total hydrophytic taxa observed: 7

Good Medium **Poor**

h. Number of indicator taxa: 0

Good Medium **Poor**

Tier 1: Assessment Overview**1.1 Site Identification:**Wetland Site Name: N/AOwnership (if known): N/AUSGS Topographic Quadrangle: MartinsvilleUSGS Watershed map 14-Digit HUC: Indian Creek - Sand Creek

Identify each NWI Polygon within the Wetland Site (Polygon specific data)

| NWI Polygon ID Number | Cowardin Classification | Polygon Size (acres) |
|-----------------------|-------------------------|----------------------|
| S6W004A | PEM1 | 0.3455 |

1.2 Site VisitTeam Members: Rusty Yeager & Neal GoffinetAgency: Lochmueller GroupDate assessed: 5/12/2015Time assessed: 3:05:00 PMWeather conditions: Sunny

Note any unusual weather events that may have influenced the current conditions within this wetland system (e.g. recent heavy rains, an unusually dry season, an especially early spring etc.)

1.3 Wetland SizeSize of site under assessment: 0.3455Size of wetland complex: 0.3455**1.4 Site Setting**

Degree of isolation from other wetlands or wetland complexes:

☐ The site is connected upstream and downstream with other wetlands☐ The site is only connected upstream with other wetlands☐ The site is only connected downstream with other wetlands☒ Other wetlands are nearby (within 0.25 mile) but not connected☐ The wetland site is isolated

General assessment of adjacent land use / land cover in the area within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

| | | | |
|------------|---------------------------------------|----------|---|
| <u>0</u> | Native Vegetation - woodland | <u>0</u> | Road / highway / railroad bed / parking lot |
| <u>100</u> | Native Vegetation - old field / scrub | <u>0</u> | Industrial |
| <u>0</u> | Agricultural - tilled | <u>0</u> | Residential - single family |
| <u>0</u> | Agricultural - pasture | <u>0</u> | Commercial or multifamily residential |
| <u>0</u> | Recreation - green space, mowed | | |

(see table on page one)

Tier 2: Individual Polygon: Preliminary Assessment

(to be completed on-site for each NWI polygon present in the wetland)

2.1 Wetland Geomorphic Setting and Surface Water Flow (check one):

☒ Depressional ☐ Slope ☐ Floodplain ☐ Lacustrine
☐ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? No

Is standing water is present, is the water greater than 2 meters in depth? No

Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

☐ Permanently Flooded ☐ Artificially Flooded
☒ Seasonally Flooded
☐ Saturated (surface water seldom present) ☐ Artificially Drained

2.4 Soil Type

☐ Organic (i.e. peat, etc.) ☒ Mineral ☐ Both Mineral and Organic Present

2.5 Wetland Community Type for this NWI polygon (see Key to Wetland Communities of Indiana):

Seasonally Flooded Basin

2.6 Disturbances of Hydrology (check all that apply):

☐ Ditching ☐ Culvert
☐ Tiles ☐ Other Human Disturbances to the
☐ Dams Hydrology (explain):
☐ Road or Railroad Embankment

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common):

☐ Garlic Mustard ☐ Glossy Buckthorn
☐ *Phragmites* ☐ Reed Canary Grass
☐ Purple Loosestrife ☐ Other (list):

2.8 Presence of Special Hydrologic Conditions (i.e. seeps, wet slopes, floating mat):

None

2.9 Presence of Special Community Types:

☐ Bog ☐ Fen ☐ Wet Sand / Muck Flats or Marl Seeps

2.10 Presence of Known Federal or Indiana Rare, Threatened or Endangered Species:

☐ None observed or known to be present
☐ RTES Present (list):

2.11 Wetland Polygon Quality Descriptor (see: Wetland Quality Descriptions and check one):

☐ Good ☐ Medium ☒ Poor

Tier 3a: Individual Polygon: Rapid Hydrology Indicators

3a.1 Notable Features that influence water quality and hydrology:

Estimated herbaceous plant cover (percentage) in the polygon ☒ 100-75 ☐ 75-50 ☐ 50-25 ☐ <25
 Estimated woody plant foliar coverage in the polygon ☐ 100-75 ☐ 75-50 ☐ 50-25 ☒ <25
 Amount of dead woody material on the soil surface ☒ nil ☐ scattered ☐ frequent

3a.2 Water Quality Protection Questions:

1. Y ☒ N Does the wetland have a significant amount of vegetative (specifically herbaceous and woody plant) density to potentially uptake dissolved nutrients?
2. ☒ N Managed water (e.g. municipal or road stormwater drainage, agricultural drainage outlet, industrial or municipal wastewater) is not discharged into the wetland polygon?
3. If wetland in question is a depressional wetland answer 3a, in not, answer 3b.
☒ N 3a. Does the wetland have a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland?
 Y ☒ N 3b. Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface body of water down gradient?
4. Y ☒ N Does the wetland lack steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within 100 meters of its border?
5. ☒ N Are there recreational lakes, fishable or navigable watercourses, or water supply sources down gradient in the local watershed?
6. ☒ N Is a vegetative buffer area or another wetland polygon (areas where overland flow could be filtered) located upland and adjacent to the wetland polygon? If yes, describe buffer area width and slope.
 width of buffer area (in meters approximate slope (percent

3a.3 Flood and Stormwater Storage / Attenuation Questions:

1. If wetland in question is a depressional wetland answer 1a, in not, answer 1b
☒ N 1a. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
 Y ☒ N 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. ☒ N Does the wetland lack man-made structure that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. Y ☒ N Is the flood potential high in the local watershed in which the wetland is located (history of flood damages)?
4. Y ☒ N Is the wetland located in a watershed where the majority of the upland soils are clay and impermeable, or is bedrock within two feet of the top of the soil profile?
5. ☒ N Is the wetland located in a local watershed which has highly modified runoff conditions due to existing development?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

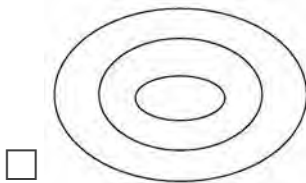
1. How many vegetation zones are evident in this wetland polygon? 1

1b. If only one vegetation zone is evident, which best describes the site?

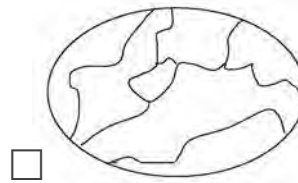
- ☒ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks, heterogeneous textures across the polygon.
- ☐ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

2. If more than one vegetation zone is present in the polygon, which interspersed diagram most closely represents the distribution of these zones?

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation Zone A

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☒ >90%

Is there notable layering/stratification in this vegetation zone? Yes

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

- | | |
|--|---------------------------------|
| a. <u><i>Scirpus atrovirens</i></u> | d. <u><i>Juncus effusus</i></u> |
| b. <u><i>Carex vulpinoidea</i></u> | e. _____ |
| c. <u><i>Lysimachia nummularia</i></u> | f. _____ |

Dominant Shrub Species listed in order of relative abundance.

- | | |
|----------|----------|
| a. _____ | c. _____ |
| b. _____ | d. _____ |

Dominant Tree Species listed in order of relative abundance.

- | | |
|----------|----------|
| a. _____ | c. _____ |
| b. _____ | d. _____ |

Tree and shrub canopy: ☒ nil ☐ separate, seldom touching ☐ often touching ☐ more or less close

Mature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone B

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less close

Mature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone C

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less close

Mature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservatism)

Herbs: non-seed plants

- ___ horsetail, scouring rush spp. (Equisetum) 2
- ___ *ferns: marsh shiled fern spp. (Dryopteris) 7
- ___ *cinnamon fern (Osmunda cinnamomea) 9
- ___ *royal fern (Osmunda regalis) 8
- ___ sensitive fern (Onoclea sensibilis) 4
- ___ *other: species (if know
- ___ marsh club moss (Selaginella apoda) 4
- ___ Sphagnum moss spp. (Sphagnum) 10

Herbs: lvs. floating or submergent

- ___ *bladderwort spp. (Utricularia) 10
- ___ coontail (Ceratophyllum demersum) 1
- ___ duckweed spp. (Lemnaceae) 3
- ___ *pondweed spp. (Potamogeton) 8
- ___ curlyleaf pondweed (Potamogeton crispus) 0
- ___ *water lily (Nymphaea tuberosa) 6
- ___ water shield (Brasenia schreberi) 4
- ___ *yellow spatterdock spp. (Nuphar) 6

Herbs: lvs. floating or submergent

- ___ *pitcher plant (Sarracenia purpurea) (10)
- ___ *sundew spp. (Drosera) 10

Herbs: linear-lvs. or +/- leafless monocots

- ___ *beak rush spp (Rhynchospora) 10
- ___ blueflag iris (Iris virginica) 5
- ✓ bulrush spp. (Scirpus / Schoenoplectus) 5
- ___ *bur reed spp. (Sparganium) 9
- ___ cat-tail spp. (Typha) 1
- ___ *cotton grass spp. (Eriophorum) 10

Grasses (family Gramineae) - indicate types and number of species

- ___ a. *wild rice (Zizania aquatica) 10
- ___ b. most native perennial grass spp. 4:
cut-grass, manna-grass, Canada bluepoint,
foxtail (Alopecurus); other
- ___ c. introduced grass spp. 0: reed canary
grass (Phalaris, reed (Phragmites),
annual grasses such as annual foxtail
(Setaria) and barnyard grass (Echinochloa)
- ___ needle sedge spp. (Eleocharis) 1 sp. = 2
___ *additional = 8
- ___ nutsedge spp. (Cyperus) 2
- ___ *orchid spp. 10; species (if know
- ✓ rush spp. (Juncus) 4
- ___ sedge spp. (Carex) 1 sp. = 3 ✓ additional = 7
- ___ *spiderlily (Hymenocallis occidentalis) 9
- ___ sweet flag (Acorus calamus) 0
- ___ *3-way sedge (Dulichium arundinaceum) 10
- ___ *twig rush (Cladium mariscoides) 10
- ___ *umbrella sedge (Fuirena squarrosa) 10
- ___ wild hyacinth (Camassia scilloides) 5
- ___ *yellow-eyed grass (Xyris torta) 9

Herbs: wide-leaved monocots

- ___ *arrow arum (Peltandra virginica) 6
- ___ arrow-head spp. (Sagittaria) 4
- ___ *green dragon (Arisaema dracontium) 6
- ___ Jack-in-the-pulpit (Arisaema triphyllum) 4
- ___ pickerel weed (Pontederia cordata) 5
- ___ *skunk cabbage (Symplocarpus foetidus) 8
- ___ *water arum (Calla palustris) 10
- ___ water plantain (Alisma plantago-aquatica) 2

Herbs: dicots - lvs. opposite/whorled

- ___ *bedstraw spp. (Gallium) 6
- ___ beggar's tick spp. (Bidens) 3
- ___ blue vervain (Verbena hastata) 3
- ___ boneset (Eupatorium perfoliatum) 4
- ___ bugleweed spp. (Lycopus) 5
- ___ clearweed spp. (Pilea) 3
- ___ cup plant (Silphium perfoliatum) 4
- ___ false nettle (Boehmeria cylindrica) 3
- ___ *fen betony (Pedicularis lanceolata) 6
- ___ *gentian spp. (Gentiana Gentianopsis) 8
- ___ giant ragweed (Ambrosia trifida) 0
- ___ Indian hemp (Apocynum cannabinum) 2
- ___ Joe-pye weed spp. (Eupatorium) 5
- ___ *loosestrife spp. (Lysimachia) 6
- ___ meadow beauty (Rhexia virginica) 5
- ___ mint spp. e.g. hedge nettle, mtn. mint, skullcap
- ✓ moneywort (Lysimachia nummularia) 0
- ___ monkey flower spp. (Mimulus) 4
- ___ nettle (Urtica procera) 1
- ___ purple loosestrife (Lythrum salicaria) 0
- ___ *richweed (Collinsia canadensis) 8
- ___ St. John's wort spp. (Hypericum/Triandem) 8
- ___ sunflower sp. (Helianthus) 4
- ___ *swamp loosestrife (Decodon verticillatus) 8
- ___ swamp milkweed (Asclepias incarnata) 4
- ___ toothcup spp. (Ammania Rotala) 2
- ___ *turtlehead spp. (Chelone) 8
- ___ virgin's bower (Clematis virginiana) 3
- ___ water purslane (Ludwigia palustris) 3
- ___ winged loosestrife (Lythrum alatum) 5

Herbs (vines): dicots - lvs. alternate or basal and

- ___ American bellflower (Campanula americana) 4
- ___ *asters: bristly aster (Aster puniceus) 7
- ___ flat-topped aster (Aster umbellatus) 8
- ___ other aster spp. (e.g. New England, panicled ast
- ___ *black-eyed Susan (Rudbeckia fulgida) 8
- ___ cardinal flower (Lobelia cardinalis) 4
- ___ cress spp. (Cardamine) 4
- ___ dock spp.: swamp, water, pale (Rumex) 4
- ___ garlic mustard (Alliaria petiolata) 0
- ___ golden ragwort (Senecio aureus) 4

Herbs (vines): dicots - lvs. alternate or basal and simple (continued)

- ___*goldenrod spp. (*Solidago ohioensis*, *S. patula*,
- ___*grass of Parnassus (*Parnassia glauca*) 10
- ___*Indian plantain (*Cacalia plantaginea*) 10
- ___ironweed spp. (*Vernonia*) 4
- ___jewelweed, touch-me-not spp. (*Impatiens*) 3
- ___lizard's tail (*Saururus cernuus*) 4
- ___lobelia spp. (*Lobelia*) 4
- ___*marsh marigold (*Caltha palustris*) 7
- ___*moonseed (*Menispermum canadense*) 6
- ___primrose-willow spp. (*Epilobium* *Ludwigia*) 3
- ___rose mallow spp. (*Hibiscus*) 4
- ___smartweed spp.: jumpseed, pinkweed,
- tearthumb, water-pepper, waters smartweed
- (*Polygonum*)
- ___halbredleaf tearthumb (*Polygonum arifolium*) 10
- ___sneezeweed (*Helenium autumnale*) 3
- ___stinging nettle (*Laportea canadensis*) 2
- ___*swamp saxifrage (*Saxifraga pennsylvanica*) 10
- ___*Virginia bluebells (*Mertensia virginica*) 6
- ___waterhemp (*Amaranthus tuberculatus*) 1
- ___wingstem (*Actinomeris alternifolia*) 3

Herbs: dicots - lvs. basal or alternate and compound or deeply lobed

- ___aven spp.: round, white (*Geum*) 2
- ___*buttercup spp.: cursed b., hooked b., swamp
- b. (*Ranunculus*) 6
- ___chervil (*Chaerophyllum procumbens*) 3
- ___*cowbane (*Oxypolis rigidior*) 7
- ___*great angelica (*Angelica atropurpurea*) 6
- ___hog peanut / ground nut (*Amphicarpaea* and
- Apios*) 5
- ___honewort (*Cryptotaenia canadensis*) 3
- ___meadow rue spp. (*Thalictrum*) 5
- ___poison ivy (*Rhus radicans*) 1
- ___*queen-of-the prairie (*Filipendula rubra*) 9
- ___senna spp. (*Cassia*) 4
- ___swamp agrimony (*Agrimonia parviflora*) 4
- ___*swamp thistle (*Cirsium muticum*) 8
- ___tall coneflower (*Rudbeckia laciniata*) 3
- ___*water hemlock spp. (*Cicuta*) 7
- ___water parsnips (*Sium suave*) 5

Shrubs - leaves opposite or whorled

- ___bladdernut (*Staphylea trifolia*) 5
- ___buckthorn spp. (*Rhamnus cathartica*, *R.*
- frangula*) 0
- ___buttonbush (*Cephalanthus occidentalis*) 5
- ___dogwood, red-osier (*Cornus stolonifera*) 4
- ___*dogwood, blue-fruited or silky (*Cornus obliqua*)
- ___dogwood, gray (*Cornus racemosa*) 2
- ___elderberry (*Sambucus*) 2

Shrubs - leaves alternate

- ___*cranberry spp. (*Vaccinium*) 10
- ___*dwarf birch (*Betula pumila*) 10
- ___*highbush blueberry (*Vaccinium corymbosum*) 9
- ___*leatherleaf (*Chamaedaphne calyculata*) 10
- ___meadowsweet and Hardhack spp. (*Spiraea*) 4
- ___*ninebark (*Physocarpus opulifolius*) 7
- ___*shrubby cinquefoil (*Potentilla fruticosa*) 9
- ___spice bush (*Lindera benzoin*) 5
- ___*swamp dewberry (*Rubus hispidus*) 6
- ___*swamp holly and winterberry spp. (*Ilex*) 7
- ___swamp rose (*Rosa palustris*) 5

Trees - leaves needle shaped

- ___*tamarack (*Larix laricina*) 10

Trees - leaves compound

- ___*ash, black (*Fraxinus nigra*) 7
- ___ash, green (*Fraxinus pensylvanica*) 3
- ___*ash, pumpkin (*Fraxinus tomentosa*) 8
- ___boxelder (*Acer negundo*) 1
- ___hickory, bittersweet (*Carya cordiformis*) 5
- ___hickory, shellbark (*Carya laciniosa*) 8
- ___honey locust (*Gleditsia triacanthos*) 1
- ___*poison sumac (*Rhus vernix*) 10

Trees - leaves simple and opposite

- ___red maple (*Acer rubrum*) 5
- ___silver maple (*Acer saccharinum*) 1

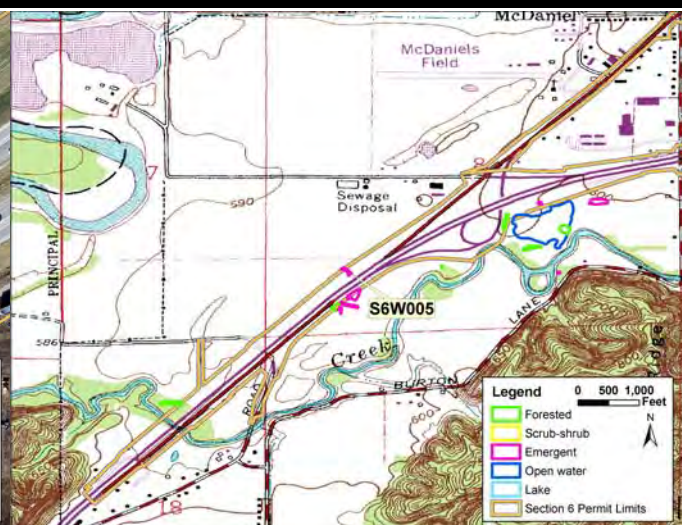
Trees - leaves simple and alternate

- ___*alder, speckled (*Alnus rugosa*) 9
- ___river birch (*Betula nigra*) 2
- ___black, gum (*Nyssa sylvatica*) 5
- ___cottonwood, eastern (*Populus deltoides*) 1
- ___cottonwood, swamp (*Populus heterophylla*) 8
- ___elm, American (*Ulmus americana*) 3
- ___hackberry (*Celtis occidentalis*) 3
- ___ironwood (*Carpinus caroliniana*) 5
- ___oak, pin or white (*Quercus*) 4
- ___*oak, Shumard's, swamp chestnut, swamp whit
- *pawpaw (*Asimina triloba*) 6
- ___*sugarberry (*Celtis laevigata*) 7
- ___sweet gum (*Liquidambar styraciflua*) 4
- ___sycamore, American (*Platanus occidentalis*) 3
- ___willow spp. (*Salix*) 1 sp. = 3
- ___additional sp. = 7

Wetland S6W005



Wetland Location on 2015 Aerial Photograph



Wetland Location on Martinsville USGS Quadangle

Basin: Indian Creek - Sand Creek
14-digit HUC: 05120201170070
Physiographic Region: Martinsville Hills
Ecoregion: Interior Plateau
Natural Region: Highland Rim
Size of wetland complex (acres): 0.1109
USACE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Quadrangle: Martinsville
County: Morgan
Township: T11N
Range: R1E
Section: 8
Quarter: SW
Latitude: 39.400224
Longitude: -86.452072

| Polygon ID | Community Type | Cowardin Class | Polygon Area (acres) | Animal Habitat Measure | Botanical Measure | Hydrology Measure | Alternative | Area Impacted (acres) | Percent Polygon Impacted |
|------------|----------------|----------------|----------------------|------------------------|-------------------|-------------------|-------------|-----------------------|--------------------------|
| S6W005A | Deep Marsh | PEM | 0.11 | poor | poor | poor | RPA | 0.09 | 81.2% |

This site is classified as a PEM wetland, 0.11 acre in size. The Section 6 Design Contract 1 Permit Limits would permanently impact 0.055 acre and temporarily impact 0.035 acre of this wetland. This wetland showed 100% herbaceous cover. Dominant herbaceous species for this wetland include *Phalaris arundinacea*, *lemna minor*, and *Typha latifolia*. Hydrology is likely due to backwater flooding from Indian Creek and roadside runoff from SR 37. Animal habitat, botanical diversity, and hydrology function are all rated as poor based on InWRAP summaries for the site.

Wetland S6W005



Polygon S6W005A

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W005A City/County: Morgan Sampling Date: 10/20/2015
 Applicant/Owner: INDOT/Lochummueller State: Indiana Sampling Point: IC10A-1D1
 Investigator(s): K. Lucier Section, Township, Range: Sec 8-T1N-R11E
 Landform (hillslope, terrace, etc.): broad valley Local relief (concave, convex, none): concave
 Slope (%): 0-1 Lat: 39.400002 Long: -86.452091 Datum: GCS NAD83
 Soil Map Unit Name: Shoals silt loam NWI classification: upland

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

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

| | | | |
|---------------------------------|-----------------|----------------|--|
| Hydrophytic Vegetation Present? | Yes <u>X</u> | No <u> </u> | Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> |
| Hydric Soils Present? | Yes <u> </u> | No <u>X</u> | |
| Wetland Hydrology Present? | Yes <u> </u> | No <u>X</u> | |
| Remarks: | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B) |
|--|------------------|-------------------|------------------|--|
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| <u>0</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>60</u> x 2 = <u>120</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>105</u> (A) <u>275</u> (B) Prevalence Index = B/A = <u>2.62</u> |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| <u>0</u> = Total Cover | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Indicators: 1-Rapid Test for Hydrophytic Vegetation: <u>X</u> 2-Dominance Test is >50% <u>X</u> 3-Prevalence Index is <=3 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 |
| 1. <i>Phalaris arundinacea</i> | <u>60</u> | <u>Yes</u> | <u>FACW</u> | |
| 2. <i>Rubus argutus</i> | <u>25</u> | <u>Yes</u> | <u>FAC</u> | |
| 3. <i>Chamaecrista nictitans</i> | <u>10</u> | <u>No</u> | <u>FACU</u> | |
| 4. <i>Asclepias syriaca</i> | <u>5</u> | <u>No</u> | <u>FACU</u> | |
| 5. <i>Cirsium arvense</i> | <u>5</u> | <u>No</u> | <u>FACU</u> | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| <u>105</u> = Total Cover | | | | |
| Vine Stratum (Plot Size: <u>15'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| <u>0</u> = Total Cover | | | | |

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

SOIL

Sampling Point IC10A-1D1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|----|----------------|---|-------------------|------------------|-----------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-20 | 10YR5/4 | 95 | 10YR4/6 | 5 | C | M | silty clay loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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 Soil (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)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ 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? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W005A City/County: Morgan Sampling Date: 10/20/2015
 Applicant/Owner: INDOT/Lochumuller State: Indiana Sampling Point: IC10A-1W1
 Investigator(s): K. Lucier Section, Township, Range: Sec 8-T1N-R11E
 Landform (hillslope, terrace, etc.): broad valley Local relief (concave, convex, none): concave
 Slope (%): 0-1 Lat: 39.400048 Long: -86.451969 Datum: GCS NAD83
 Soil Map Unit Name: Shoals silt loam NWI classification: upland

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

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

| | | | |
|---|--------------|----------------|--|
| Hydrophytic Vegetation Present? | Yes <u>X</u> | No <u> </u> | Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> |
| Hydric Soils Present? | Yes <u>X</u> | No <u> </u> | |
| Wetland Hydrology Present? | Yes <u>X</u> | No <u> </u> | |
| Remarks: The wetland feature represented by this data point has been designated as PEM1 based on the Cowardin et al. classification system. | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B) | | | | | | | | | | | | | | |
|---|--------------------|-------------------|--------------------------|--|-------------------|--------------|-----------------------|-----------------|------------------------|------------------|----------------------|----------------|-----------------------|----------------|----------------------|----------------|---------------------------|--------------------|
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | | | <u>0</u> = Total Cover | Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>50</u></td> <td>x 1 = <u>50</u></td> </tr> <tr> <td>FACW species <u>75</u></td> <td>x 2 = <u>150</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>125</u></td> <td>(A) <u>200</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>1.60</u> | Total % Cover of: | Multiply by: | OBL species <u>50</u> | x 1 = <u>50</u> | FACW species <u>75</u> | x 2 = <u>150</u> | FAC species <u>0</u> | x 3 = <u>0</u> | FACU species <u>0</u> | x 4 = <u>0</u> | UPL species <u>0</u> | x 5 = <u>0</u> | Column Totals: <u>125</u> | (A) <u>200</u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u>50</u> | x 1 = <u>50</u> | | | | | | | | | | | | | | | | | |
| FACW species <u>75</u> | x 2 = <u>150</u> | | | | | | | | | | | | | | | | | |
| FAC species <u>0</u> | x 3 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACU species <u>0</u> | x 4 = <u>0</u> | | | | | | | | | | | | | | | | | |
| UPL species <u>0</u> | x 5 = <u>0</u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u>125</u> | (A) <u>200</u> (B) | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u>Salix interior</u> | <u>25</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | | | <u>25</u> = Total Cover | | | | | | | | | | | | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u>Phalaris arundinacea</u> | <u>50</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 2. <u>Lemna minor</u> | <u>25</u> | <u>Yes</u> | <u>OBL</u> | | | | | | | | | | | | | | | |
| 3. <u>Typha latifolia</u> | <u>25</u> | <u>Yes</u> | <u>OBL</u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | | | <u>100</u> = Total Cover | | | | | | | | | | | | | | | |
| Vine Stratum (Plot Size: <u>15'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | | | <u>0</u> = Total Cover | | | | | | | | | | | | | | | |
| Hydrophytic Vegetation Indicators: 1-Rapid Test for Hydrophytic Vegetation: <u>X</u> 2-Dominance Test is >50% <u>X</u> 3-Prevalence Index is <=3 ¹ 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic | | | | | | | | | | | | | | | | | | |
| Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> | | | | | | | | | | | | | | | | | | |

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

SOIL

Sampling Point IC10A-1W1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|----|----------------|---|-------------------|------------------|-----------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-20 | 5GY5/3 | 95 | 10YR4/6 | 5 | C | M | silty clay loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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 Soils³

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other Soil (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 ☐

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)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ 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 ☐ Depth (inches): 16
 Water Table Present? Yes ☒ No ☐ Depth (inches): 0
 Saturation Present? Yes ☒ No ☐ Depth (inches): 0
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

I-69 Wetland Quality Assessment Profile

Date Report Generated: 5/22/2018
Data reference # S6W005
Wetland Site **S6W005**
Date of site visit: 05/14/15
Total wetland area: 0.1109 acres

| | |
|--|-------------|
| Polygon Information | |
| Polygon ID | S6W005A |
| Polygon Size (acres) | 0.11 |
| Wetland Community Type | DM |
| Red Flag (Special) Indicators | |
| Special Hydrologic Conditions | N |
| Special Community Type | N |
| Rare-Threatened-Endangered Species | N |
| Animal Habitat Measures | |
| Wetland size and connectivity | 1 |
| Surrounding land use | 2 |
| Standing water | 2 |
| Dead woody material | 1 |
| Zonation and interspersion | 1 |
| Stratification | 1 |
| Tree canopy | 1 |
| Mature trees | 1 |
| Animal Habitat Measure Score (min = 8, max = 24) | 10 |
| Animal Habitat Measure Rating | poor |
| Botanical Measures (all except exotics dependent upon community type) | |
| Number of dominant plant taxa observed | 1 |
| Conservatism rating | 1 |
| Total hydrophytic taxa observed | 3 |
| Number of indicator taxa | 1 |
| Exotic species rating | 2 |
| Botanical Measure Score (min = 5, max = 15) | 8 |
| Botanical Measure Rating | poor |
| Hydrology Measures | |
| Water quality protection (= no. of yes answers) | 2 |
| Flood and storm water storage (= no. of yes answers) | 1 |
| Site/Hydrology Score (min = 11, max = 33) | 17 |
| Site/Hydrology Rating | poor |

In-WRAP Summary Sheet

Date Report Generated: Monday, July 30, 2018

Wetland Site Name: N/A

Data Reference #: S6W005

Date of Site Visit: Thursday, May 14, 2015

Tier 1 Summary:

a. Total Wetland Area (acres): 0.1109

b. Wetland size and connectivity - contribution to animal habitat:

Valuable More Favorable **Favorable** Neutral

c. Surrounding land use - numerical rank (max. = 1): 0.38

d. Value surrounding area adds to animal habitat: Valuable **Favorable** Low

Tier 2 SUMMARY:

Polygon ID S6W005A

a. Indiana Wetland community type: Deep Marsh/Shallow Open Water

b. Standing water - contribution to animal habitat: Valuable **Favorable** Neutral

c. Disturbances to site: road/railroad culvert

d. Exotic species rating: Good **Medium** Poor

e. Special Hydrologic Conditions Observed: None

f. Special Community Type: None

g. Rare-Threatened-Endangered Species: None

h. Polygon Quality Descriptor: Good Medium **Poor**

Tier 3A SUMMARY:

a. Dead woody material as indicator of animal habitat: Valuable Favorable **Neutral**

b. Water quality protection - numerical rank (6 max.): 2 Good Medium **Poor**

c. Flood and storm water storage - numerical rank (5 max) 1 Good Medium **Poor**

Tier 3B SUMMARY:

a. Zonation and interspersions as indicator of animal habitat: **Valuable** Favorable Neutral

b. Stratification as indicator of animal habitat: Valuable **Neutral**

c. Number of dominant plant taxa observed: 2 Good Medium **Poor**

d. Average coefficient of conservatism: 0.5 Good Medium **Poor**

e. Tree canopy as indicator of animal habitat: Valuable **Neutral**

f. Mature trees as indicator of animal habitat: Valuable Favorable **Neutral**

g. Total hydrophytic taxa observed: 1 Good Medium **Poor**

h. Number of indicator taxa: 0 Good Medium **Poor**

Tier 1: Assessment Overview**1.1 Site Identification:**Wetland Site Name: N/A

Ownership (if known): N/A

USGS Topographic Quadrangle: Martinsville

USGS Watershed map 14-Digit HUC: Indian Creek - Sand Creek

Identify each NWI Polygon within the Wetland Site (Polygon specific data)

| NWI Polygon ID Number | Cowardin Classification | Polygon Size (acres) |
|-----------------------|-------------------------|----------------------|
| S6W005A | PEM1 | 0.1109 |

1.2 Site VisitTeam Members: Rusty Yeager

Agency: Lochmueller Group

Date assessed: 5/14/2015Time assessed: 8:10:00 AM

Weather conditions: cloudy, breezy

Note any unusual weather events that may have influenced the current conditions within this wetland system (e.g. recent heavy rains, an unusually dry season, an especially early spring etc.)

1.3 Wetland SizeSize of site under assessment: 0.1109

Size of wetland complex: 0.1109

1.4 Site Setting

Degree of isolation from other wetlands or wetland complexes:

☐ The site is connected upstream and downstream with other wetlands☐ The site is only connected upstream with other wetlands☐ The site is only connected downstream with other wetlands☒ Other wetlands are nearby (within 0.25 mile) but not connected☐ The wetland site is isolated

General assessment of adjacent land use / land cover in the area within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

| | | | |
|-----------|---------------------------------------|----------|---|
| <u>0</u> | Native Vegetation - woodland | <u>5</u> | Road / highway / railroad bed / parking lot |
| <u>0</u> | Native Vegetation - old field / scrub | <u>0</u> | Industrial |
| <u>0</u> | Agricultural - tilled | <u>0</u> | Residential - single family |
| <u>95</u> | Agricultural - pasture | <u>0</u> | Commercial or multifamily residential |
| <u>0</u> | Recreation - green space, mowed | | |

(see table on page one)

Tier 2: Individual Polygon: Preliminary Assessment

(to be completed on-site for each NWI polygon present in the wetland)

2.1 Wetland Geomorphic Setting and Surface Water Flow (check one):

☒ Depressional ☐ Slope ☐ Floodplain ☐ Lacustrine
☐ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes

Is standing water is present, is the water greater than 2 meters in depth? No

Is standing water normally present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

☒ Permanently Flooded ☐ Artificially Flooded
☐ Seasonally Flooded
☐ Saturated (surface water seldom present) ☐ Artificially Drained

2.4 Soil Type

☐ Organic (i.e. peat, etc.) ☒ Mineral ☐ Both Mineral and Organic Present

2.5 Wetland Community Type for this NWI polygon (see Key to Wetland Communities of Indiana):

Deep Marsh/Shallow Open Water

2.6 Disturbances of Hydrology (check all that apply):

☐ Ditching ☒ Culvert
☐ Tiles ☐ Other Human Disturbances to the
☐ Dams Hydrology (explain):
☒ Road or Railroad Embankment

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common):

☐ Garlic Mustard ☐ Glossy Buckthorn
☐ *Phragmites* ☐ C Reed Canary Grass
☐ Purple Loosestrife ☐ Other (list):

2.8 Presence of Special Hydrologic Conditions (i.e. seeps, wet slopes, floating mat):

None

2.9 Presence of Special Community Types:

☐ Bog ☐ Fen ☐ Wet Sand / Muck Flats or Marl Seeps

2.10 Presence of Known Federal or Indiana Rare, Threatened or Endangered Species:

☒ None observed or known to be present
☐ RTES Present (list):

2.11 Wetland Polygon Quality Descriptor (see: Wetland Quality Descriptions and check one):

☐ Good ☐ Medium ☒ Poor

Tier 3a: Individual Polygon: Rapid Hydrology Indicators**3a.1 Notable Features that influence water quality and hydrology:**

Estimated herbaceous plant cover (percentage) in the polygon ___ 100-75 ___ 75-50 ___ 50-25 ☒ <25
 Estimated woody plant foliar coverage in the polygon ___ 100-75 ___ 75-50 ___ 50-25 ☒ <25
 Amount of dead woody material on the soil surface ☒ nil ___ scattered ___ frequent

3a.2 Water Quality Protection Questions:

1. Y ☒ N Does the wetland have a significant amount of vegetative (specifically herbaceous and woody plant) density to potentially uptake dissolved nutrients?
2. Y ☒ N Managed water (e.g. municipal or road stormwater drainage, agricultural drainage outlet, industrial or municipal wastewater) is not discharged into the wetland polygon?
3. If wetland in question is a depressional wetland answer 3a, in not, answer 3b.
 Y ☒ N 3a. Does the wetland have a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland?
 Y ☒ N 3b. Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface body of water down gradient?
4. Y ☒ N Does the wetland lack steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within 100 meters of its border?
5. ☒ Y N Are there recreational lakes, fishable or navigable watercourses, or water supply sources down gradient in the local watershed?
6. ☒ Y N Is a vegetative buffer area or another wetland polygon (areas where overland flow could be filtered) located upland and adjacent to the wetland polygon? If yes, describe buffer area width and slope.
 width of buffer area (in meters ___ 100 ___ approximate slope (percent ___ 1 ___

3a.3 Flood and Stormwater Storage / Attenuation Questions:

1. If wetland in question is a depressional wetland answer 1a, in not, answer 1b
 Y ☒ N 1a. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
 Y ☒ N 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. Y ☒ N Does the wetland lack man-made structure that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. Y ☒ N Is the flood potential high in the local watershed in which the wetland is located (history of flood damages)?
4. Y ☒ N Is the wetland located in a watershed where the majority of the upland soils are clay and impermeable, or is bedrock within two feet of the top of the soil profile?
5. ☒ Y N Is the wetland located in a local watershed which has highly modified runoff conditions due to existing development?

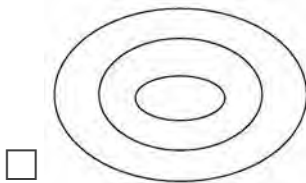
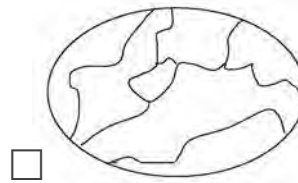
Tier 3b Individual Polygon: Rapid Vegetation Description**3b.1 Zonation and Interspersion:**

1. How many vegetation zones are evident in this wetland polygon? 1

1b. If only one vegetation zone is evident, which best describes the site?

- ☒ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks, heterogeneous textures across the polygon.
- ☐ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

2. If more than one vegetation zone is present in the polygon, which interspersed diagram most closely represents the distribution of these zones?

Type One Interspersion**Type Two Interspersion****3b.2 Dominant Plant Species: Vegetation Zone A**

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☒ >90%

Is there notable layering/stratification in this vegetation zone? No

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

- | | |
|---------------------------------------|----------|
| a. <u><i>Phalaris arundinacea</i></u> | d. _____ |
| b. <u><i>Typha angustifolia</i></u> | e. _____ |
| c. _____ | f. _____ |

Dominant Shrub Species listed in order of relative abundance.

- | | |
|----------|----------|
| a. _____ | c. _____ |
| b. _____ | d. _____ |

Dominant Tree Species listed in order of relative abundance.

- | | |
|----------|----------|
| a. _____ | c. _____ |
| b. _____ | d. _____ |

Tree and shrub canopy: ☒ nil ☐ separate, seldom touching ☐ often touching ☐ more or less close

Mature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone B

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closeMature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone C

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closeMature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservatism)

Herbs: non-seed plants

- ___ horsetail, scouring rush spp. (Equisetum) 2
 ___ *ferns: marsh shiled fern spp. (Dryopteris) 7
 ___ *cinnamon fern (Osmunda cinnamomea) 9
 ___ *royal fern (Osmunda regalis) 8
 ___ sensitive fern (Onoclea sensibilis) 4
 ___ *other: species (if know _____)
 ___ marsh club moss (Selaginella apoda) 4
 ___ Sphagnum moss spp. (Sphagnum) 10

Herbs: lvs. floating or submergent

- ___ *bladderwort spp. (Utricularia) 10
 ___ coontail (Ceratophyllum demersum) 1
 ✓ ___ duckweed spp. (Lemnaceae) 3
 ___ *pondweed spp. (Potamogeton) 8
 ___ curlyleaf pondweed (Potamogeton crispus) 0
 ___ *water lily (Nymphaea tuberosa) 6
 ___ water shield (Brasenia schreberi) 4
 ___ *yellow spatterdock spp. (Nuphar) 6

Herbs: lvs. floating or submergent

- ___ *pitcher plant (Sarracenia purpurea) (10)
 ___ *sundew spp. (Drosera) 10

Herbs: linear-lvs. or +/- leafless monocots

- ___ *beak rush spp (Rhynchospora) 10
 ___ blueflag iris (Iris virginica) 5
 ___ bulrush spp. (Scirpus / Schoenoplectus) 5
 ___ *bur reed spp. (Sparganium) 9
 ✓ ___ cat-tail spp. (Typha) 1
 ___ *cotton grass spp. (Eriophorum) 10

Grasses (family Gramineae) - indicate types and number of species

- ___ a. *wild rice (Zizania aquatica) 10
 ___ b. most native perennial grass spp. 4:
 cut-grass, manna-grass, Canada bluepoint,
 foxtail (Alopecurus); other _____
 ✓ ___ c. introduced grass spp. 0: reed canary
 grass (Phalaris, reed (Phragmites),
 annual grasses such as annual foxtail
 (Setaria) and barnyard grass (Echinochloa)
 ___ needle sedge spp. (Eleocharis) 1 sp. = 2
 ___ *additional = 8
 ___ nutsedge spp. (Cyperus) 2
 ___ *orchid spp. 10; species (if know _____)
 ___ rush spp. (Juncus) 4
 ___ sedge spp. (Carex) 1 sp. = 3 ___ additional = 7
 ___ *spiderlily (Hymenocallis occidentalis) 9
 ___ sweet flag (Acorus calamus) 0
 ___ *3-way sedge (Dulichium arundinaceum) 10
 ___ *twig rush (Cladium mariscoides) 10
 ___ *umbrella sedge (Fuirena squarrosa) 10
 ___ wild hyacinth (Camassia scilloides) 5
 ___ *yellow-eyed grass (Xyris torta) 9

Herbs: wide-leafed monocots

- ___ *arrow arum (Peltandra virginica) 6
 ___ arrow-head spp. (Sagittaria) 4
 ___ *green dragon (Arisaema dracontium) 6
 ___ Jack-in-the-pulpit (Arisaema triphyllum) 4
 ___ pickerel weed (Pontederia cordata) 5
 ___ *skunk cabbage (Symplocarpus foetidus) 8
 ___ *water arum (Calla palustris) 10
 ___ water plantain (Alisma plantago-aquatica) 2

Herbs: dicots - lvs. opposite/whorled

- ___ *bedstraw spp. (Gallium) 6
 ___ beggar's tick spp. (Bidens) 3
 ___ blue vervain (Verbena hastata) 3
 ___ boneset (Eupatorium perfoliatum) 4
 ___ bugleweed spp. (Lycopus) 5
 ___ clearweed spp. (Pilea) 3
 ___ cup plant (Silphium perfoliatum) 4
 ___ false nettle (Boehmeria cylindrica) 3
 ___ *fen betony (Pedicularis lanceolata) 6
 ___ *gentian spp. (Gentiana Gentianopsis) 8
 ___ giant ragweed (Ambrosia trifida) 0
 ___ Indian hemp (Apocynum cannabinum) 2
 ___ Joe-pye weed spp. (Eupatorium) 5
 ___ *loosestrife spp. (Lysimachia) 6
 ___ meadow beauty (Rhexia virginica) 5
 ___ mint spp. e.g. hedge nettle, mtn. mint, skullcap
 ___ moneywort (Lysimachia nummularia) 0
 ___ monkey flower spp. (Mimulus) 4
 ___ nettle (Urtica procera) 1
 ___ purple loosestrife (Lythrum salicaria) 0
 ___ *richweed (Collinsia canadensis) 8
 ___ St. John's wort spp. (Hypericum/Triandrium) 8
 ___ sunflower sp. (Helianthus) 4
 ___ *swamp loosestrife (Decodon verticillatus) 8
 ___ swamp milkweed (Asclepias incarnata) 4
 ___ toothcup spp. (Ammania Rotala) 2
 ___ *turtlehead spp. (Chelone) 8
 ___ virgin's bower (Clematis virginiana) 3
 ___ water purslane (Ludwigia palustris) 3
 ___ winged loosestrife (Lythrum alatum) 5

Herbs (vines): dicots - lvs. alternate or basal and

- ___ American bellflower (Campanula americana) 4
 ___ *asters: bristly aster (Aster puniceus) 7
 ___ flat-topped aster (Aster umbellatus) 8
 ___ other aster spp. (e.g. New England, panicled ast
 ___ *black-eyed Susan (Rudbeckia fulgida) 8
 ___ cardinal flower (Lobelia cardinalis) 4
 ___ cress spp. (Cardamine) 4
 ___ dock spp.: swamp, water, pale (Rumex) 4
 ___ garlic mustard (Alliaria petiolata) 0
 ___ golden ragwort (Senecio aureus) 4

Herbs (vines): dicots - lvs. alternate or basal and simple (continued)

- ___*goldenrod spp. (*Solidago ohioensis*, *S. patula*,
- ___*grass of Parnassus (*Parnassia glauca*) 10
- ___*Indian plantain (*Cacalia plantaginea*) 10
- ___ironweed spp. (*Vernonia*) 4
- ___jewelweed, touch-me-not spp. (*Impatiens*) 3
- ___lizard's tail (*Saururus cernuus*) 4
- ___lobelia spp. (*Lobelia*) 4
- ___*marsh marigold (*Caltha palustris*) 7
- ___*moonseed (*Menispermum canadense*) 6
- ___primrose-willow spp. (*Epilobium* *Ludwigia*) 3
- ___rose mallow spp. (*Hibiscus*) 4
- ___smartweed spp.: jumpseed, pinkweed,
- tearthumb, water-pepper, waters smartweed
- (*Polygonum*)
- ___halbredleaf tearthumb (*Polygonum arifolium*) 10
- ___sneezeweed (*Helenium autumnale*) 3
- ___stinging nettle (*Laportea canadensis*) 2
- ___*swamp saxifrage (*Saxifraga pennsylvanica*) 10
- ___*Virginia bluebells (*Mertensia virginica*) 6
- ___waterhemp (*Amaranthus tuberculatus*) 1
- ___wingstem (*Actinomeris alternifolia*) 3

Herbs: dicots - lvs. basal or alternate and compound or deeply lobed

- ___aven spp.: round, white (*Geum*) 2
- ___*buttercup spp.: cursed b., hooked b., swamp
- b. (*Ranunculus*) 6
- ___chervil (*Chaerophyllum procumbens*) 3
- ___*cowbane (*Oxyopolis rigidior*) 7
- ___*great angelica (*Angelica atropurpurea*) 6
- ___hog peanut / ground nut (*Amphicarpaea* and
- Apios*) 5
- ___honewort (*Cryptotaenia canadensis*) 3
- ___meadow rue spp. (*Thalictrum*) 5
- ___poison ivy (*Rhus radicans*) 1
- ___*queen-of-the prairie (*Filipendula rubra*) 9
- ___senna spp. (*Cassia*) 4
- ___swamp agrimony (*Agrimonia parviflora*) 4
- ___*swamp thistle (*Cirsium muticum*) 8
- ___tall coneflower (*Rudbeckia laciniata*) 3
- ___*water hemlock spp. (*Cicuta*) 7
- ___water parsnips (*Sium suave*) 5

Shrubs - leaves opposite or whorled

- ___bladdernut (*Staphylea trifolia*) 5
- ___buckthorn spp. (*Rhamnus cathartica*, *R.*
- frangula*) 0
- ___buttonbush (*Cephalanthus occidentalis*) 5
- ___dogwood, red-osier (*Cornus stolonifera*) 4
- ___*dogwood, blue-fruited or silky (*Cornus obliqua*)
- ___dogwood, gray (*Cornus racemosa*) 2
- ___elderberry (*Sambucus*) 2

Shrubs - leaves alternate

- ___*cranberry spp. (*Vaccinium*) 10
- ___*dwarf birch (*Betula pumila*) 10
- ___*highbush blueberry (*Vaccinium corymbosum*) 9
- ___*leatherleaf (*Chamaedaphne calyculata*) 10
- ___meadowsweet and Hardhack spp. (*Spiraea*) 4
- ___*ninebark (*Physocarpus opulifolius*) 7
- ___*shrubby cinquefoil (*Potentilla fruticosa*) 9
- ___spice bush (*Lindera benzoin*) 5
- ___*swamp dewberry (*Rubus hispidus*) 6
- ___*swamp holly and winterberry spp. (*Ilex*) 7
- ___swamp rose (*Rosa palustris*) 5

Trees - leaves needle shaped

- ___*tamarack (*Larix laricina*) 10

Trees - leaves compound

- ___*ash, black (*Fraxinus nigra*) 7
- ___ash, green (*Fraxinus pensylvanica*) 3
- ___*ash, pumpkin (*Fraxinus tomentosa*) 8
- ___boxelder (*Acer negundo*) 1
- ___hickory, bitternut (*Carya cordiformis*) 5
- ___hickory, shellbark (*Carya laciniosa*) 8
- ___honey locust (*Gleditsia triacanthos*) 1
- ___*poison sumac (*Rhus vernix*) 10

Trees - leaves simple and opposite

- ___red maple (*Acer rubrum*) 5
- ✓ silver maple (*Acer saccharinum*) 1

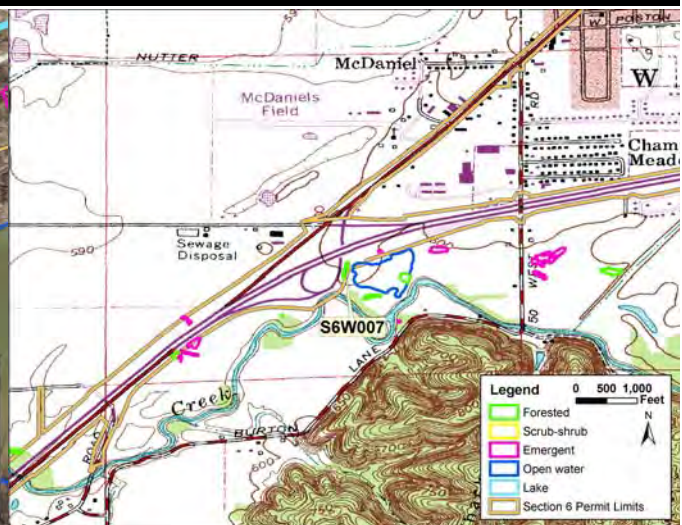
Trees - leaves simple and alternate

- ___*alder, speckled (*Alnus rugosa*) 9
- ___river birch (*Betula nigra*) 2
- ___black, gum (*Nyssa sylvatica*) 5
- ___cottonwood, eastern (*Populus deltoides*) 1
- ___cottonwood, swamp (*Populus heterophylla*) 8
- ___elm, American (*Ulmus americana*) 3
- ___hackberry (*Celtis occidentalis*) 3
- ___ironwood (*Carpinus caroliniana*) 5
- ___oak, pin or white (*Quercus*) 4
- ___*oak, Shumard's, swamp chestnut, swamp whit
- ___*pawpaw (*Asimina triloba*) 6
- ___*sugarberry (*Celtis laevigata*) 7
- ___sweet gum (*Liquidambar styraciflua*) 4
- ___sycamore, American (*Platanus occidentalis*) 3
- ✓ willow spp. (*Salix*) 1 sp. = 3
- ___additional sp. = 7

Wetland S6W007



Wetland Location on 2015 Aerial Photograph



Wetland Location on Martinsville USGS Quadangle

Basin: Indian Creek - Sand Creek
14-digit HUC: 05120201170070
Physiographic Region: Martinsville Hills
Ecoregion: Interior Plateau
Natural Region: Highland Rim
Size of wetland complex (acres): 0.1721
USACE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Quadrangle: Martinsville
County: Morgan
Township: T11N
Range: R1E
Section: 8
Quarter: SE
Latitude: 39.402443
Longitude: -86.444983

| Polygon ID | Community Type | Cowardin Class | Polygon Area (acres) | Animal Habitat Measure | Botanical Measure | Hydrology Measure | Alternative | Area Impacted (acres) | Percent Polygon Impacted |
|------------|-------------------|----------------|----------------------|------------------------|-------------------|-------------------|-------------|-----------------------|--------------------------|
| S6W007A | Floodplain Forest | PFO | 0.17 | fair | fair | fair | RPA | 0.01 | 4.1% |

This site is classified as a PFO wetland, 0.172 acre in size. The Section 6 Design Contract 1 Permit Limits would permanently impact 0.065 acre and temporarily impact 0.107 acre of this wetland. This wetland showed 0% herbaceous cover, 20% sapling/shrub cover, and 50% woody plant cover. Dominant sapling/shrub species included *Morus alba*, *Plantanus occidentalis*, and *Salix nigra*. Dominant woody species included *Plantanus occidentalis* and *Acer saccharinum*. Hydrology is likely due to roadside runoff from SR 37. Animal habitat, botanical diversity, and hydrology function are all rated as fair based on InWRAP summaries for the site.



Polygon S6W007A

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W007A City/County: Morgan Sampling Date: 10/20/2015
 Applicant/Owner: INDOT/Lochum Mueller State: Indiana Sampling Point: IC07A-1D1
 Investigator(s): K. Lucier, M. Brendel Section, Township, Range: Sec 8-T11N-R1E
 Landform (hillslope, terrace, etc.): broad valley Local relief (concave, convex, none): concave
 Slope (%): 2-6 Lat: 39.402384 Long: -83.445141 Datum: GCS NAD83
 Soil Map Unit Name: Whitaker loam NWI classification: upland

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

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

| | | | |
|---------------------------------|-----------------|----------------|--|
| Hydrophytic Vegetation Present? | Yes <u>X</u> | No <u> </u> | Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> |
| Hydric Soils Present? | Yes <u> </u> | No <u>X</u> | |
| Wetland Hydrology Present? | Yes <u> </u> | No <u>X</u> | |
| Remarks: | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>75</u> (A/B) | | | | | | | | | | | | | | |
|--|------------------|-------------------|------------------|---|-------------------|--------------|----------------------|----------------|------------------------|-----------------|-----------------------|------------------|------------------------|------------------|----------------------|----------------|-------------------------------|----------------|
| 1. <u>Ulmus americana</u> | <u>30</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>30</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>30</u></td> <td>x 2 = <u>60</u></td> </tr> <tr> <td>FAC species <u>90</u></td> <td>x 3 = <u>270</u></td> </tr> <tr> <td>FACU species <u>25</u></td> <td>x 4 = <u>100</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>145</u> (A)</td> <td><u>430</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>2.97</u> | Total % Cover of: | Multiply by: | OBL species <u>0</u> | x 1 = <u>0</u> | FACW species <u>30</u> | x 2 = <u>60</u> | FAC species <u>90</u> | x 3 = <u>270</u> | FACU species <u>25</u> | x 4 = <u>100</u> | UPL species <u>0</u> | x 5 = <u>0</u> | Column Totals: <u>145</u> (A) | <u>430</u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u>0</u> | x 1 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACW species <u>30</u> | x 2 = <u>60</u> | | | | | | | | | | | | | | | | | |
| FAC species <u>90</u> | x 3 = <u>270</u> | | | | | | | | | | | | | | | | | |
| FACU species <u>25</u> | x 4 = <u>100</u> | | | | | | | | | | | | | | | | | |
| UPL species <u>0</u> | x 5 = <u>0</u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u>145</u> (A) | <u>430</u> (B) | | | | | | | | | | | | | | | | | |
| 1. <u>Morus alba</u> | <u>10</u> | <u>Yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>10</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Indicators: <u> </u> 1-Rapid Test for Hydrophytic Vegetation: <u>X</u> 2-Dominance Test is >50% <u>X</u> 3-Prevalence Index is <=3 ¹ <u> </u> 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic | | | | | | | | | | | | | | |
| 1. <u>Poa pratensis</u> | <u>80</u> | <u>Yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | |
| 2. <u>Schedonorus pratensis</u> | <u>25</u> | <u>Yes</u> | <u>FACU</u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>105</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Vine Stratum (Plot Size: <u>15'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>0</u> = Total Cover | | | | | | | | | | | | | | | | | | |

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

SOIL

Sampling Point IC07A-1D1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|----------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-5 | 10YR4/3 | 100 | | | | | silt loam | loose material |
| 5-16 | 10YR4/3 | 100 | | | | | silt loam | gravelly |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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 Soil (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (If observed):**

Type: road fill with gravel
 Depth (inches): 16 inches

Hydric Soil present? Yes ☐ No ☒

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)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ 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 ☒ Depth (inches):
 Water Table Present? Yes ☐ No ☒ Depth (inches):
 Saturation Present? Yes ☐ No ☒ Depth (inches):
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W007A City/County: Morgan Sampling Date: 10/20/2015
 Applicant/Owner: INDOT/Lochmueller State: Indiana Sampling Point: IC07A-1W1
 Investigator(s): K. Lucier, M. Brendel Section, Township, Range: Sec 8-T11N-R1E
 Landform (hillslope, terrace, etc.): broad valley Local relief (concave, convex, none): concave
 Slope (%): 0-2 Lat: 39.402367 Long: -86.445031 Datum: GCS NAD83
 Soil Map Unit Name: Whitaker loam NWI classification: upland

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

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

| | | | |
|---|--------------|----------------|--|
| Hydrophytic Vegetation Present? | Yes <u>X</u> | No <u> </u> | Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> |
| Hydric Soils Present? | Yes <u>X</u> | No <u> </u> | |
| Wetland Hydrology Present? | Yes <u>X</u> | No <u> </u> | |
| Remarks: The wetland feature represented by this data point has been designated as PFO1 based on the Cowardin et al. classification system. | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B) |
|--|------------------|-------------------|------------------|--|
| 1. <u>Platanus occidentalis</u> | <u>25</u> | <u>Yes</u> | <u>FACW</u> | |
| 2. <u>Acer saccharinum</u> | <u>10</u> | <u>Yes</u> | <u>FACW</u> | |
| 3. <u>Acer negundo</u> | <u>5</u> | <u>No</u> | <u>FAC</u> | |
| 4. <u>Fraxinus pennsylvanica</u> | <u>5</u> | <u>No</u> | <u>FACW</u> | |
| 5. <u>Ulmus americana</u> | <u>5</u> | <u>No</u> | <u>FACW</u> | |
| <u>50</u> = Total Cover | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>55</u> x 2 = <u>110</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>70</u> (A) <u>155</u> (B) Prevalence Index = B/A = <u>2.21</u> |
| 1. <u>Morus alba</u> | <u>10</u> | <u>Yes</u> | <u>FAC</u> | |
| 2. <u>Platanus occidentalis</u> | <u>5</u> | <u>Yes</u> | <u>FACW</u> | |
| 3. <u>Salix interior</u> | <u>5</u> | <u>Yes</u> | <u>FACW</u> | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| <u>20</u> = Total Cover | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Indicators: 1-Rapid Test for Hydrophytic Vegetation: <u>X</u> 2-Dominance Test is >50% <u>X</u> 3-Prevalence Index is <=3 ¹ 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| <u>0</u> = Total Cover | | | | |
| Vine Stratum (Plot Size: <u>15'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | |
| <u>0</u> = Total Cover | | | | |

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

SOIL

Sampling Point IC07A-1W1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|----|----------------|---|-------------------|------------------|-----------------|----------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR4/1 | 95 | 10YR4/6 | 5 | C | M | silty clay loam | very dry |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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 Soil (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 ☐

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)
☒ Water Marks (B1)
☐ Sediment Deposits (B2)
☒ 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 ☒ Depth (inches): _____
 Water Table Present? Yes ☐ No ☒ Depth (inches): _____
 Saturation Present? Yes ☐ No ☒ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

I-69 Wetland Quality Assessment Profile

Date Report Generated: 5/22/2018
 Data reference # S6W007
 Wetland Site **S6W007**
 Date of site visit: 05/12/15
 Total wetland area: 0.1721 acres

| | |
|--|---------|
| Polygon Information | |
| Polygon ID | S6W007A |
| Polygon Size (acres) | 0.17 |
| Wetland Community Type | FF |
| Red Flag (Special) Indicators | |
| Special Hydrologic Conditions | N |
| Special Community Type | N |
| Rare-Threatened-Endangered Species | N |
| Animal Habitat Measures | |
| Wetland size and connectivity | 2 |
| Surrounding land use | 2 |
| Standing water | 2 |
| Dead woody material | 3 |
| Zonation and interspersion | 1 |
| Stratification | 1 |
| Tree canopy | 3 |
| Mature trees | 3 |
| Animal Habitat Measure Score (min = 8, max = 24) | |
| Animal Habitat Measure Rating | |
| Botanical Measures (all except exotics dependent upon community type) | |
| Number of dominant plant taxa observed | 2 |
| Conservatism rating | 1 |
| Total hydrophytic taxa observed | 2 |
| Number of indicator taxa | 1 |
| Exotic species rating | 3 |
| Botanical Measure Score (min = 5, max = 15) | |
| Botanical Measure Rating | |
| Hydrology Measures | |
| Water quality protection (= no. of yes answers) | 3 |
| Flood and storm water storage (= no. of yes answers) | 4 |
| Site/Hydrology Score (min = 11, max = 33) | |
| Site/Hydrology Rating | |
| 25 | |
| fair | |

In-WRAP Summary Sheet

Date Report Generated: Monday, July 30, 2018

Wetland Site Name: N/A

Data Reference #: S6W007

Date of Site Visit: Tuesday, May 12, 2015

Tier 1 Summary:

a. Total Wetland Area (acres): 0.1721

b. Wetland size and connectivity - contribution to animal habitat:

Valuable More Favorable **Favorable** Neutral

c. Surrounding land use - numerical rank (max. = 1): 0.40

d. Value surrounding area adds to animal habitat: Valuable **Favorable** Low

Tier 2 SUMMARY:

Polygon ID S6W007A

a. Indiana Wetland community type: Floodplain Forest

b. Standing water - contribution to animal habitat: Valuable **Favorable** Neutral

c. Disturbances to site:

d. Exotic species rating: **Good** Medium Poor

e. Special Hydrologic Conditions Observed: None

f. Special Community Type: None

g. Rare-Threatened-Endangered Species:

h. Polygon Quality Descriptor: Good Medium **Poor**

Tier 3A SUMMARY:

a. Dead woody material as indicator of animal habitat: Valuable **Favorable** Neutral

b. Water quality protection - numerical rank (6 max.): 3 Good **Medium** Poor

c. Flood and storm water storage - numerical rank (5 max) 4 **Good** Medium Poor

Tier 3B SUMMARY:

a. Zonation and interspersions as indicator of animal habitat: Valuable **Favorable** **Neutral**

b. Stratification as indicator of animal habitat: Valuable **Neutral**

c. Number of dominant plant taxa observed: 7 Good **Medium** Poor

d. Average coefficient of conservatism: 1.8 Good Medium **Poor**

e. Tree canopy as indicator of animal habitat: **Valuable** **Neutral**

f. Mature trees as indicator of animal habitat: **Valuable** **Favorable** **Neutral**

g. Total hydrophytic taxa observed: 20 Good **Medium** Poor

h. Number of indicator taxa: 0 Good Medium **Poor**

Tier 1: Assessment Overview**1.1 Site Identification:**Wetland Site Name: N/AOwnership (if known): N/AUSGS Topographic Quadrangle: MartinsvilleUSGS Watershed map 14-Digit HUC: Indian Creek - Sand Creek

Identify each NWI Polygon within the Wetland Site (Polygon specific data)

| NWI Polygon ID Number | Cowardin Classification | Polygon Size (acres) |
|-----------------------|-------------------------|----------------------|
| S6W007A | PFO1 | 0.1721 |

1.2 Site VisitTeam Members: Rusty Yeager & Neal GoffinetAgency: Lochmueller GroupDate assessed: 5/12/2015Time assessed: 7:13:00 PMWeather conditions: Sunny

Note any unusual weather events that may have influenced the current conditions within this wetland system (e.g. recent heavy rains, an unusually dry season, an especially early spring etc.)

1.3 Wetland SizeSize of site under assessment: 0.1721Size of wetland complex: 0.1721**1.4 Site Setting**

Degree of isolation from other wetlands or wetland complexes:

☐ The site is connected upstream and downstream with other wetlands☒ The site is only connected upstream with other wetlands☐ The site is only connected downstream with other wetlands☐ Other wetlands are nearby (within 0.25 mile) but not connected☐ The wetland site is isolated

General assessment of adjacent land use / land cover in the area within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

| | | | |
|-----------|---------------------------------------|-----------|---|
| <u>0</u> | Native Vegetation - woodland | <u>50</u> | Road / highway / railroad bed / parking lot |
| <u>50</u> | Native Vegetation - old field / scrub | <u>0</u> | Industrial |
| <u>0</u> | Agricultural - tilled | <u>0</u> | Residential - single family |
| <u>0</u> | Agricultural - pasture | <u>0</u> | Commercial or multifamily residential |
| <u>0</u> | Recreation - green space, mowed | | |

(see table on page one)

Tier 2: Individual Polygon: Preliminary Assessment

(to be completed on-site for each NWI polygon present in the wetland)

2.1 Wetland Geomorphic Setting and Surface Water Flow (check one):

☒ Depressional ☐ Slope ☐ Floodplain ☐ Lacustrine
☐ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes

Is standing water is present, is the water greater than 2 meters n depth? No

Is standing water normally present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

☐ Permanently Flooded ☒ Artificially Flooded
☐ Seasonally Flooded
☐ Saturated (surface water seldom present) ☐ Artificially Drained

2.4 Soil Type

☐ Organic (i.e. peat, etc.) ☒ Mineral ☐ Both Mineral and Organic Present

2.5 Wetland Community Type for this NWI polygon (see Key to Wetland Communities of Indiana):

Floodplain Forest

2.6 Disturbances of Hydrology (check all that apply):

☐ Ditching ☐ Culvert
☐ Tiles ☐ Other Human Distrubances to the
☐ Dams Hydrology (explain):
☐ Road or Railroad Embankment

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common):

☐ Garlic Mustard ☐ Glossy Buckthorn
☐ *Phragmites* ☐ Reed Canary Grass
☐ Purple Loosestrife ☐ Other (list):

2.8 Presence of Special Hydrologic Conditions (i.e. seeps, wet slopes, floating mat):

None

2.9 Presence of Special Community Types:

☐ Bog ☐ Fen ☐ Wet Sand / Muck Flats or Marl Seeps

2.10 Presence of Known Federal or Indiana Rar, Threatened or Endangered Species:☐ None observed or known to be presen☐ RTES Present (list):**2.11 Wetland Polygon Quality Descriptor (see: Wetland Quality Descriptions and check one):**

☐ Good ☐ Medium ☒ Poor

Tier 3a: Individual Polygon: Rapid Hydrology Indicators**3a.1 Notable Features that influence water quality and hydrology:**

Estimated herbaceous plant cover (percentage) in the polygon ___ 100-75 ___ 75-50 ___ 50-25 ☒ <25
 Estimated woody plant foliar coverage in the polygon ☒ 100-75 ___ 75-50 ___ 50-25 ___ <25
 Amount of dead woody material on the soil surface ___ nil ___ scattered ☒ frequent

3a.2 Water Quality Protection Questions:

1. ☒ Y ☐ N Does the wetland have a significant amount of vegetative (specifically herbaceous and woody plant) density to potentially uptake dissolved nutrients?
2. Y ☐ N Managed water (e.g. municipal or road stormwater drainage, agricultural drainage outlet, industrial or municipal wastewater) is not discharged into the wetland polygon?
3. If wetland in question is a depressional wetland answer 3a, in not, answer 3b.
 Y ☐ N 3a. Does the wetland have a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland?
 Y ☐ N 3b. Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface body of water down gradient?
4. Y ☐ N Does the wetland lack steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within 100 meters of its border?
5. ☒ Y ☐ N Are there recreational lakes, fishable or navigable watercourses, or water supply sources down gradient in the local watershed?
6. ☒ Y ☐ N Is a vegetative buffer area or another wetland polygon (areas where overland flow could be filtered) located upland and adjacent to the wetland polygon? If yes, describe buffer area width and slope.
 width of buffer area (in meters) 10 approximate slope (percent) 12

3a.3 Flood and Stormwater Storage / Attenuation Questions:

1. If wetland in question is a depressional wetland answer 1a, in not, answer 1b
☒ Y ☐ N 1a. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
 Y ☐ N 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. ☒ Y ☐ N Does the wetland lack man-made structure that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. ☒ Y ☐ N Is the flood potential high in the local watershed in which the wetland is located (history of flood damages)?
4. Y ☐ N Is the wetland located in a watershed where the majority of the upland soils are clay and impermeable, or is bedrock within two feet of the top of the soil profile?
5. ☒ Y ☐ N Is the wetland located in a local watershed which has highly modified runoff conditions due to existing development?

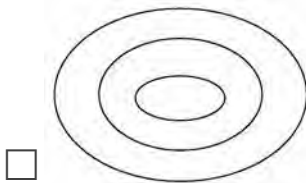
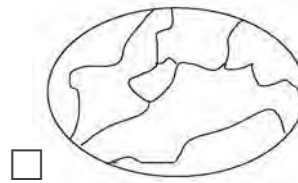
Tier 3b Individual Polygon: Rapid Vegetation Description**3b.1 Zonation and Interspersion:**

1. How many vegetation zones are evident in this wetland polygon? 1

1b. If only one vegetation zone is evident, which best describes the site?

- ☐ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks, heterogeneous textures across the polygon.
- ☒ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

2. If more than one vegetation zone is present in the polygon, which interspersed diagram most closely represents the distribution of these zones?

Type One Interspersion**Type Two Interspersion****3b.2 Dominant Plant Species: Vegetation Zone A**

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☒ >90%

Is there notable layering/stratification in this vegetation zone? No

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

- | | |
|----------|----------|
| a. _____ | d. _____ |
| b. _____ | e. _____ |
| c. _____ | f. _____ |

Dominant Shrub Species listed in order of relative abundance.

- | | |
|------------------------|----------------------|
| a. <u>Acer negundo</u> | c. <u>Morus alba</u> |
| b. <u>Cornus sp.</u> | d. _____ |

Dominant Tree Species listed in order of relative abundance.

- | | |
|----------------------------------|---------------------------------|
| a. <u>Acer saccharinum</u> | c. <u>Platanus occidentalis</u> |
| b. <u>Fraxinus pennsylvanica</u> | d. <u>Celtis occidentalis</u> |

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☒ often touching ☐ more or less close

Mature trees (>12" dbh): ☒ yes ☐ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone B

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less close

Mature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone C

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less close

Mature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservatism)

Herbs: non-seed plants

- ___ horsetail, scouring rush spp. (Equisetum) 2
- ___ *ferns: marsh shiled fern spp. (Dryopteris) 7
- ___ *cinnamon fern (Osmunda cinnamomea) 9
- ___ *royal fern (Osmunda regalis) 8
- ___ sensitive fern (Onoclea sensibilis) 4
- ___ *other: species (if know
- ___ marsh club moss (Selaginella apoda) 4
- ___ Sphagnum moss spp. (Sphagnum) 10

Herbs: lvs. floating or submergent

- ___ *bladderwort spp. (Utricularia) 10
- ___ coontail (Ceratophyllum demersum) 1
- ___ duckweed spp. (Lemnaceae) 3
- ___ *pondweed spp. (Potamogeton) 8
- ___ curlyleaf pondweed (Potamogeton crispus) 0
- ___ *water lily (Nymphaea tuberosa) 6
- ___ water shield (Brasenia schreberi) 4
- ___ *yellow spatterdock spp. (Nuphar) 6

Herbs: lvs. floating or submergent

- ___ *pitcher plant (Sarracenia purpurea) (10)
- ___ *sundew spp. (Drosera) 10

Herbs: linear-lvs. or +/- leafless monocots

- ___ *beak rush spp (Rhynchospora) 10
- ___ blueflag iris (Iris virginica) 5
- ___ bulrush spp. (Scirpus / Schoenoplectus) 5
- ___ *bur reed spp. (Sparganium) 9
- ___ cat-tail spp. (Typha) 1
- ___ *cotton grass spp. (Eriophorum) 10

Grasses (family Gramineae) - indicate types and number of species

- ___ a. *wild rice (Zizania aquatica) 10
- ___ b. most native perennial grass spp. 4:
cut-grass, manna-grass, Canada bluepoint,
foxtail (Alopecurus); other
- ___ c. introduced grass spp. 0: reed canary
grass (Phalaris, reed (Phragmites),
annual grasses such as annual foxtail
(Setaria) and barnyard grass (Echinochloa)
- ___ needle sedge spp. (Eleocharis) 1 sp. = 2
- ___ *additional = 8
- ___ nutsedge spp. (Cyperus) 2
- ___ *orchid spp. 10; species (if know
- ___ rush spp. (Juncus) 4
- ___ sedge spp. (Carex) 1 sp. = 3 ✓ additional = 7
- ___ *spiderlily (Hymenocallis occidentalis) 9
- ___ sweet flag (Acorus calamus) 0
- ___ *3-way sedge (Dulichium arundinaceum) 10
- ___ *twig rush (Cladium mariscoides) 10
- ___ *umbrella sedge (Fuirena squarrosa) 10
- ___ wild hyacinth (Camassia scilloides) 5
- ___ *yellow-eyed grass (Xyris torta) 9

Herbs: wide-leaved monocots

- ___ *arrow arum (Peltandra virginica) 6
- ___ arrow-head spp. (Sagittaria) 4
- ___ *green dragon (Arisaema dracontium) 6
- ___ Jack-in-the-pulpit (Arisaema triphyllum) 4
- ___ pickerel weed (Pontederia cordata) 5
- ___ *skunk cabbage (Symplocarpus foetidus) 8
- ___ *water arum (Calla palustris) 10
- ___ water plantain (Alisma plantago-aquatica) 2

Herbs: dicots - lvs. opposite/whorled

- ___ *bedstraw spp. (Gallium) 6
- ___ beggar's tick spp. (Bidens) 3
- ___ blue vervain (Verbena hastata) 3
- ___ boneset (Eupatorium perfoliatum) 4
- ___ bugleweed spp. (Lycopus) 5
- ___ clearweed spp. (Pilea) 3
- ___ cup plant (Silphium perfoliatum) 4
- ___ false nettle (Boehmeria cylindrica) 3
- ___ *fen betony (Pedicularis lanceolata) 6
- ___ *gentian spp. (Gentiana Gentianopsis) 8
- ___ giant ragweed (Ambrosia trifida) 0
- ___ ✓ Indian hemp (Apocynum cannabinum) 2
- ___ Joe-pye weed spp. (Eupatorium) 5
- ___ *loosestrife spp. (Lysimachia) 6
- ___ meadow beauty (Rhexia virginica) 5
- ___ mint spp. e.g. hedge nettle, mtn. mint, skullcap
- ___ ✓ moneywort (Lysimachia nummularia) 0
- ___ monkey flower spp. (Mimulus) 4
- ___ nettle (Urtica procera) 1
- ___ purple loosestrife (Lythrum salicaria) 0
- ___ *richweed (Collinsia canadensis) 8
- ___ St. John's wort spp. (Hypericum/Triandrium) 8
- ___ sunflower sp. (Helianthus) 4
- ___ *swamp loosestrife (Decodon verticillatus) 8
- ___ swamp milkweed (Asclepias incarnata) 4
- ___ toothcup spp. (Ammania Rotala) 2
- ___ *turtlehead spp. (Chelone) 8
- ___ virgin's bower (Clematis virginiana) 3
- ___ water purslane (Ludwigia palustris) 3
- ___ winged loosestrife (Lythrum alatum) 5

Herbs (vines): dicots - lvs. alternate or basal and

- ___ American bellflower (Campanula americana) 4
- ___ *asters: bristly aster (Aster puniceus) 7
- ___ flat-topped aster (Aster umbellatus) 8
- ___ ✓ other aster spp. (e.g. New England, panicled ast
- ___ *black-eyed Susan (Rudbeckia fulgida) 8
- ___ cardinal flower (Lobelia cardinalis) 4
- ___ cress spp. (Cardamine) 4
- ___ ✓ dock spp.: swamp, water, pale (Rumex) 4
- ___ garlic mustard (Alliaria petiolata) 0
- ___ golden ragwort (Senecio aureus) 4

Herbs (vines): dicots - lvs. alternate or basal and simple (continued)

- ___ *goldenrod spp. (*Solidago ohioensis*, *S. patula*,
- ___ *grass of Parnassus (*Parnassia glauca*) 10
- ___ *Indian plantain (*Cacalia plantaginea*) 10
- ___ ironweed spp. (*Vernonia*) 4
- ___ jewelweed, touch-me-not spp. (*Impatiens*) 3
- ___ lizard's tail (*Saururus cernuus*) 4
- ___ lobelia spp. (*Lobelia*) 4
- ___ *marsh marigold (*Caltha palustris*) 7
- ___ *moonseed (*Menispermum canadense*) 6
- ___ primrose-willow spp. (*Epilobium* *Ludwigia*) 3
- ___ rose mallow spp. (*Hibiscus*) 4
- ___ smartweed spp.: jumpseed, pinkweed,
- tearthumb, water-pepper, waters smartweed
- (*Polygonum*)
- ___ halbredleaf tearthumb (*Polygonum arifolium*) 10
- ___ sneezeweed (*Helenium autumnale*) 3
- ___ stinging nettle (*Laportea canadensis*) 2
- ___ *swamp saxifrage (*Saxifraga pennsylvanica*) 10
- ___ *Virginia bluebells (*Mertensia virginica*) 6
- ___ waterhemp (*Amaranthus tuberculatus*) 1
- ___ wingstem (*Actinomeris alternifolia*) 3

Herbs: dicots - lvs. basal or alternate and compound or deeply lobed

- ___ aven spp.: round, white (*Geum*) 2
- ___ *buttercup spp.: cursed b., hooked b., swamp
- b. (*Ranunculus*) 6
- ___ chervil (*Chaerophyllum procumbens*) 3
- ___ *cowbane (*Oxypolis rigidior*) 7
- ___ *great angelica (*Angelica atropurpurea*) 6
- ___ hog peanut / ground nut (*Amphicarpaea* and
- Apios*) 5
- ___ honewort (*Cryptotaenia canadensis*) 3
- ___ meadow rue spp. (*Thalictrum*) 5
- ✓ poison ivy (*Rhus radicans*) 1
- ___ *queen-of-the prairie (*Filipendula rubra*) 9
- ___ senna spp. (*Cassia*) 4
- ___ swamp agrimony (*Agrimonia parviflora*) 4
- ___ *swamp thistle (*Cirsium muticum*) 8
- ___ tall coneflower (*Rudbeckia laciniata*) 3
- ___ *water hemlock spp. (*Cicuta*) 7
- ___ water parsnips (*Sium suave*) 5

Shrubs - leaves opposite or whorled

- ___ bladderhut (*Staphylea trifolia*) 5
- ___ buckthorn spp. (*Rhamnus cathartica*, *R.*
- frangula*) 0
- ___ buttonbush (*Cephalanthus occidentalis*) 5
- ___ dogwood, red-osier (*Cornus stolonifera*) 4
- ___ *dogwood, blue-fruited or silky (*Cornus obliqua*)
- ___ dogwood, gray (*Cornus racemosa*) 2
- ___ elderberry (*Sambucus*) 2

Shrubs - leaves alternate

- ___ *cranberry spp. (*Vaccinium*) 10
- ___ *dwarf birch (*Betula pumila*) 10
- ___ *highbush blueberry (*Vaccinium corymbosum*) 9
- ___ *leatherleaf (*Chamaedaphne calyculata*) 10
- ___ meadowsweet and Hardhack spp. (*Spiraea*) 4
- ___ *ninebark (*Physocarpus opulifolius*) 7
- ___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
- ___ spice bush (*Lindera benzoin*) 5
- ___ *swamp dewberry (*Rubus hispidus*) 6
- ___ *swamp holly and winterberry spp. (*Ilex*) 7
- ___ swamp rose (*Rosa palustris*) 5

Trees - leaves needle shaped

- ___ *tamarack (*Larix laricina*) 10

Trees - leaves compound

- ___ *ash, black (*Fraxinus nigra*) 7
- ✓ ash, green (*Fraxinus pensylvanica*) 3
- ___ *ash, pumpkin (*Fraxinus tomentosa*) 8
- ✓ boxelder (*Acer negundo*) 1
- ___ hickory, bitternut (*Carya cordiformis*) 5
- ___ hickory, shellbark (*Carya laciniosa*) 8
- ✓ honey locust (*Gleditsia triacanthos*) 1
- ___ *poison sumac (*Rhus vernix*) 10

Trees - leaves simple and opposite

- ___ red maple (*Acer rubrum*) 5
- ✓ silver maple (*Acer saccharinum*) 1

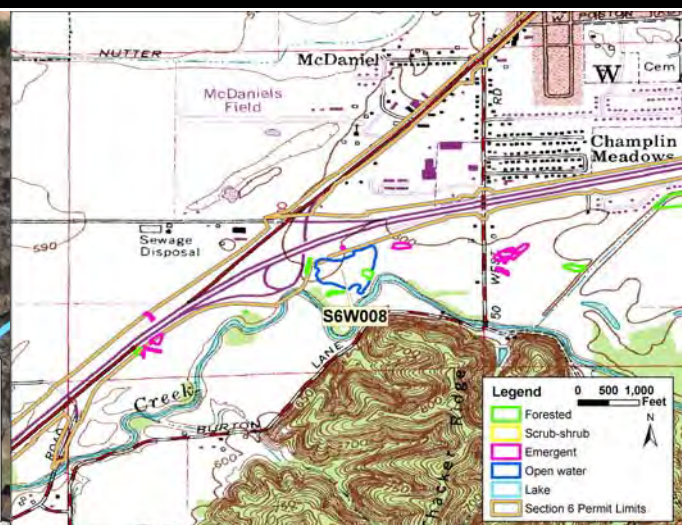
Trees - leaves simple and alternate

- ___ *alder, speckled (*Alnus rugosa*) 9
- ___ river birch (*Betula nigra*) 2
- ___ black, gum (*Nyssa sylvatica*) 5
- ✓ cottonwood, eastern (*Populus deltoides*) 1
- ___ cottonwood, swamp (*Populus heterophylla*) 8
- ✓ elm, American (*Ulmus americana*) 3
- ✓ hackberry (*Celtis occidentalis*) 3
- ___ ironwood (*Carpinus caroliniana*) 5
- ___ oak, pin or white (*Quercus*) 4
- ___ *oak, Shumard's, swamp chestnut, swamp whit
- *pawpaw (*Asimina triloba*) 6
- ___ *sugarberry (*Celtis laevigata*) 7
- ___ sweet gum (*Liquidambar styraciflua*) 4
- ✓ sycamore, American (*Platanus occidentalis*) 3
- ___ willow spp. (*Salix*) 1 sp. = 3
- ___ additional sp. = 7

Wetland S6W008



Wetland Location on 2015 Aerial Photograph



Wetland Location on Martinsville USGS Quadrangle

Basin: Indian Creek - Sand Creek
14-digit HUC: 05120201170070
Physiographic Region: Martinsville Hills
Ecoregion: Interior Plateau
Natural Region: Highland Rim
Size of wetland complex (acres): 8.1381
USACE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Quadrangle: Martinsville
County: Morgan
Township: T11N
Range: R1E
Section: 8
Quarter: SE
Latitude: 39.402288
Longitude: -86.443205

| Polygon ID | Community Type | Cowardin Class | Polygon Area (acres) | Animal Habitat Measure | Botanical Measure | Hydrology Measure | Alternative | Area Impacted (acres) | Percent Polygon Impacted |
|------------|--------------------|----------------|----------------------|------------------------|-------------------|-------------------|-------------|-----------------------|--------------------------|
| S6W008A | Floodplain Forest | PFO | 0.18 | fair | fair | good | RPA | 0.00 | 0.0% |
| S6W008B | Shallow Open Water | PUB | 7.65 | fair | poor | good | RPA | 0.11 | 1.4% |
| S6W008C | Floodplain Forest | PFO | 0.31 | fair | poor | good | RPA | 0.00 | 0.0% |

Wetland S6W008



Polygon S6W008B



Polygon S6W008A

Wetland S6W008



Polygon S6W008C

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W008A City/County: Morgan Sampling Date: 10/16/2015
 Applicant/Owner: INDOT/Lochmueller State: Indiana Sampling Point: IC05A-1D1
 Investigator(s): Rusty Yeager, Lincoln Oliver Section, Township, Range: Sec 8-T11N-R1E
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): undulating
 Slope (%): 0-2 Lat: 39.401163 Long: -86.443755 Datum: NAD83
 Soil Map Unit Name: Water NWI classification: PUBGx

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

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

| | | | |
|--|-----------------|----------------|--|
| Hydrophytic Vegetation Present? | Yes <u>X</u> | No <u> </u> | Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> |
| Hydric Soils Present? | Yes <u> </u> | No <u>X</u> | |
| Wetland Hydrology Present? | Yes <u> </u> | No <u>X</u> | |
| Remarks: Although hydrophytic vegetation is present, sufficient hydrology indicators do not appear evident to meet the hydrology criteria or develop hydric soil indicators. | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B) | | | | | | | | | | | | | | |
|--|------------------|-------------------|------------------|--|-------------------|--------------|-----------------------|-----------------|------------------------|------------------|----------------------|----------------|-----------------------|----------------|----------------------|----------------|-------------------------------|----------------|
| 1. <u>Salix nigra</u> | 40 | Yes | OBL | | | | | | | | | | | | | | | |
| 2. <u>Acer saccharinum</u> | 15 | Yes | FACW | | | | | | | | | | | | | | | |
| 3. <u>Platanus occidentalis</u> | 10 | No | FACW | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>65</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>41</u></td> <td>x 1 = <u>41</u></td> </tr> <tr> <td>FACW species <u>85</u></td> <td>x 2 = <u>170</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>126</u> (A)</td> <td><u>211</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>1.67</u> | Total % Cover of: | Multiply by: | OBL species <u>41</u> | x 1 = <u>41</u> | FACW species <u>85</u> | x 2 = <u>170</u> | FAC species <u>0</u> | x 3 = <u>0</u> | FACU species <u>0</u> | x 4 = <u>0</u> | UPL species <u>0</u> | x 5 = <u>0</u> | Column Totals: <u>126</u> (A) | <u>211</u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u>41</u> | x 1 = <u>41</u> | | | | | | | | | | | | | | | | | |
| FACW species <u>85</u> | x 2 = <u>170</u> | | | | | | | | | | | | | | | | | |
| FAC species <u>0</u> | x 3 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACU species <u>0</u> | x 4 = <u>0</u> | | | | | | | | | | | | | | | | | |
| UPL species <u>0</u> | x 5 = <u>0</u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u>126</u> (A) | <u>211</u> (B) | | | | | | | | | | | | | | | | | |
| 1. <u>Acer saccharinum</u> | 50 | Yes | FACW | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>50</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Indicators: 1-Rapid Test for Hydrophytic Vegetation: <u>X</u> 2-Dominance Test is >50% <u>X</u> 3-Prevalence Index is <=3 ¹ 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic | | | | | | | | | | | | | | |
| 1. <u>Pilea pumila</u> | 10 | Yes | FACW | | | | | | | | | | | | | | | |
| 2. <u>Boehmeria cylindrica</u> | 1 | No | OBL | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>11</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Vine Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>0</u> = Total Cover | | | | | | | | | | | | | | | | | | |

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

SOIL

Sampling Point IC05A-1D1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|----|----------------|---|-------------------|------------------|------------|-----------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-20 | 10YR4/3 | 99 | 5YR5/6 | 1 | C | M | sandy loam | dry non-cohesive sand |
| 0-20 | 10YR4/3 | 99 | 5YR5/6 | 1 | C | M | sandy loam | dry non-cohesive sand |
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¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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 Soils³

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other Soil (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:**

Sandy soils do not appear to remain wet for sufficient period of time to develop redoximorphic features.

HYDROLOGY

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

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ 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? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

Occasional flooding, but with no sustained inundation or surface saturation. No evidence of high water table, but to proximity of large lake and deep channel adjacent stream. No primary hydrology indicators noted during previous site visit in May 2015.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W008A City/County: Morgan Sampling Date: 10/16/2015
 Applicant/Owner: INDOT/Lochum Mueller State: Indiana Sampling Point: IC05A-1W1
 Investigator(s): Rusty Yeager, Lincoln Oliver Section, Township, Range: Sec 8-T11N-R1E
 Landform (hillslope, terrace, etc.): old oxbow channel Local relief (concave, convex, none): floodplain depression
 Slope (%): 0-6 Lat: 39.401279 Long: -86.443774 Datum: NAD83
 Soil Map Unit Name: Water NWI classification: PUBGx

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

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

| | | | | | |
|---|--------------|----------------|--|--------------|----------------|
| Hydrophytic Vegetation Present? | Yes <u>X</u> | No <u> </u> | Is the Sampled Area within a Wetland? | Yes <u>X</u> | No <u> </u> |
| Hydric Soils Present? | Yes <u>X</u> | No <u> </u> | | | |
| Wetland Hydrology Present? | Yes <u>X</u> | No <u> </u> | | | |
| Remarks: Old oxbow feature meets all three wetland criteria. The wetland feature represented by this data point has been designated as PFO1 based on the Cowardin et al. classification system. | | | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B) | | | | | | | | | | | | | | |
|--|-------------------|-------------------|------------------|---|-------------------|--------------|-----------------------|-----------------|------------------------|-----------------|-----------------------|-----------------|-----------------------|----------------|----------------------|----------------|--------------------------|-------------------|
| 1. <u>Acer saccharinum</u> | <u>10</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 2. <u>Platanus occidentalis</u> | <u>10</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 3. <u>Salix nigra</u> | <u>10</u> | <u>Yes</u> | <u>OBL</u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>30</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>11</u></td> <td>x 1 = <u>11</u></td> </tr> <tr> <td>FACW species <u>20</u></td> <td>x 2 = <u>40</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>41</u></td> <td>(A) <u>81</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>1.98</u> | Total % Cover of: | Multiply by: | OBL species <u>11</u> | x 1 = <u>11</u> | FACW species <u>20</u> | x 2 = <u>40</u> | FAC species <u>10</u> | x 3 = <u>30</u> | FACU species <u>0</u> | x 4 = <u>0</u> | UPL species <u>0</u> | x 5 = <u>0</u> | Column Totals: <u>41</u> | (A) <u>81</u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u>11</u> | x 1 = <u>11</u> | | | | | | | | | | | | | | | | | |
| FACW species <u>20</u> | x 2 = <u>40</u> | | | | | | | | | | | | | | | | | |
| FAC species <u>10</u> | x 3 = <u>30</u> | | | | | | | | | | | | | | | | | |
| FACU species <u>0</u> | x 4 = <u>0</u> | | | | | | | | | | | | | | | | | |
| UPL species <u>0</u> | x 5 = <u>0</u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u>41</u> | (A) <u>81</u> (B) | | | | | | | | | | | | | | | | | |
| 1. <u>Acer negundo</u> | <u>5</u> | <u>Yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>5</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Indicators: 1-Rapid Test for Hydrophytic Vegetation: <u>X</u> 2-Dominance Test is >50% <u>X</u> 3-Prevalence Index is <=3 ¹ 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic | | | | | | | | | | | | | | |
| 1. <u>Xanthium strumarium</u> | <u>5</u> | <u>Yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | |
| 2. <u>Bidens tripartita</u> | <u>1</u> | <u>No</u> | <u>OBL</u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>6</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Vine Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>0</u> = Total Cover | | | | | | | | | | | | | | | | | | |

Remarks: (Include photo numbers here or on a separate sheet.)
 Central portion of this old oxbow features is completely devoid of woody and herbaceous vegetation. Vegetation is confirmed for periphery of wetland boundary.

SOIL

Sampling Point IC05A-1W1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|----|----------------|----|-------------------|------------------|-----------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-20 | 10YR4/1 | 90 | 2.5YR4/8 | 10 | C | M | silt loam | |
| 0-20 | 10YR4/1 | 90 | 2.5YR4/8 | 10 | C | M | silt loam | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |

¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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 Soils³

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other Soil (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 ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (minimum of two required)

- ☒ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ 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)

- ☐ 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 ☐ Depth (inches): 1
 Water Table Present? Yes ☐ No ☒ Depth (inches): _____
 Saturation Present? Yes ☐ No ☒ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Multiple aerial images in combination with the lack of vegetation indicate this area remains inundated for extended periods of time. Northern end of oxbow has recently been blocked off from direct surface flow connection with large adjacent lake to the north.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W008C City/County: Morgan Sampling Date: 10/16/2015
 Applicant/Owner: INDOT/Lochmueller State: Indiana Sampling Point: IC05C-1D1
 Investigator(s): Rusty Yeager, Lincoln Oliver Section, Township, Range: Sec 8-T11N-R1E
 Landform (hillslope, terrace, etc.): excavated lake/pond hillslope Local relief (concave, convex, none): concave
 Slope (%): 12+ Lat: 39.401992 Long: -86.442095 Datum: NAD83
 Soil Map Unit Name: Water NWI classification: PUBGx

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain Remarks.)
 Are Vegetation , Soil X or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No:
 Are Vegetation , Soil or Hydrology naturally problematic? If needed, explain answers in Remarks.)

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

| | | | |
|---|-----------------|----------------|--|
| Hydrophytic Vegetation Present? | Yes <u>X</u> | No <u> </u> | Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> |
| Hydric Soils Present? | Yes <u> </u> | No <u>X</u> | |
| Wetland Hydrology Present? | Yes <u> </u> | No <u>X</u> | |
| Remarks: The hillslope above the toe of slope represented by this data point exhibits hydrophytic vegetation, but does not have sufficient hydrology to result in hydric soil features. | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B) | | | | | | | | | | | | | | |
|--|------------------|-------------------|------------------|---|-------------------|--------------|-----------------------|-----------------|------------------------|-----------------|-----------------------|-----------------|------------------------|-----------------|----------------------|----------------|-------------------------------|----------------|
| 1. <u>Fraxinus pennsylvanica</u> | <u>20</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 2. <u>Salix nigra</u> | <u>15</u> | <u>Yes</u> | <u>OBL</u> | | | | | | | | | | | | | | | |
| 3. <u>Liriodendron tulipifera</u> | <u>10</u> | <u>No</u> | <u>FACU</u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>45</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>30</u></td> <td>x 1 = <u>30</u></td> </tr> <tr> <td>FACW species <u>35</u></td> <td>x 2 = <u>70</u></td> </tr> <tr> <td>FAC species <u>32</u></td> <td>x 3 = <u>96</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>107</u> (A)</td> <td><u>236</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>2.21</u> | Total % Cover of: | Multiply by: | OBL species <u>30</u> | x 1 = <u>30</u> | FACW species <u>35</u> | x 2 = <u>70</u> | FAC species <u>32</u> | x 3 = <u>96</u> | FACU species <u>10</u> | x 4 = <u>40</u> | UPL species <u>0</u> | x 5 = <u>0</u> | Column Totals: <u>107</u> (A) | <u>236</u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u>30</u> | x 1 = <u>30</u> | | | | | | | | | | | | | | | | | |
| FACW species <u>35</u> | x 2 = <u>70</u> | | | | | | | | | | | | | | | | | |
| FAC species <u>32</u> | x 3 = <u>96</u> | | | | | | | | | | | | | | | | | |
| FACU species <u>10</u> | x 4 = <u>40</u> | | | | | | | | | | | | | | | | | |
| UPL species <u>0</u> | x 5 = <u>0</u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u>107</u> (A) | <u>236</u> (B) | | | | | | | | | | | | | | | | | |
| 1. <u>Acer negundo</u> | <u>20</u> | <u>Yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | |
| 2. <u>Cephalanthus occidentalis</u> | <u>15</u> | <u>Yes</u> | <u>OBL</u> | | | | | | | | | | | | | | | |
| 3. <u>Acer saccharinum</u> | <u>10</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 4. <u>Ulmus americana</u> | <u>5</u> | <u>No</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>50</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Indicators: 1-Rapid Test for Hydrophytic Vegetation: <u>X</u> 2-Dominance Test is >50% <u>X</u> 3-Prevalence Index is <=3 ¹ 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic | | | | | | | | | | | | | | |
| 1. <u>Toxicodendron radicans</u> | <u>10</u> | <u>Yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>10</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Vine Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> | | | | | | | | | | | | | | |
| 1. <u>Toxicodendron radicans</u> | <u>2</u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>2</u> = Total Cover | | | | | | | | | | | | | | | | | | |

Remarks: (Include photo numbers here or on a separate sheet.)
 Buttonbush was present on lower portion of hill slope with the plot just above toe of slope to wetland.

SOIL

Sampling Point IC05C-1D1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-3 | 10YR3/2 | 100 | | | | | silt loam | |
| 3-20 | 10YR4/6 | 100 | | | | | sand | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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 Soils³

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other Soil (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:**

The hillslope that defines the wetland/pond boundary was artificially created therefore the surface soils on the hillslope do not represent natural native material. Soil on the hillslope do not stay saturated and therefore do not exhibit redoximorphic features.

HYDROLOGY

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

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ 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? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

Plot is on moderate steep hill slope approx. 3 feet in elevation above adjacent wetland boundary

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W008C City/County: Morgan Sampling Date: 10/16/2015
 Applicant/Owner: INDOT/Lochmueller State: Indiana Sampling Point: IC05C-1W1
 Investigator(s): Rusty Yeager, Lincoln Oliver Section, Township, Range: Sec 8-T11N-R1E
 Landform (hillslope, terrace, etc.): excavated lake/pond Local relief (concave, convex, none): concave
 Slope (%): 0-2 Lat: 39.402036 Long: -86.442310 Datum: NAD83
 Soil Map Unit Name: Water NWI classification: PUBGx

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

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

| | | | |
|--|--------------|----------------|--|
| Hydrophytic Vegetation Present? | Yes <u>X</u> | No <u> </u> | Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> |
| Hydric Soils Present? | Yes <u>X</u> | No <u> </u> | |
| Wetland Hydrology Present? | Yes <u>X</u> | No <u> </u> | |
| Remarks: Vegetation diversity is limited on this seasonally exposed low profile island feature within this constructed lake/pond feature. Even during the dry season, surface/near surface saturation occurs and redoximorphic features are evident. The wetland featu | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B) | | | | | | | | | | | | | | |
|--|-------------------|-------------------|------------------|---|-------------------|--------------|-----------------------|-----------------|------------------------|-----------------|----------------------|----------------|-----------------------|----------------|----------------------|----------------|--------------------------|-------------------|
| 1. <u>Salix nigra</u> | 40 | Yes | OBL | | | | | | | | | | | | | | | |
| 2. <u>Acer saccharinum</u> | 10 | Yes | FACW | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>50</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>55</u></td> <td>x 1 = <u>55</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>65</u></td> <td>(A) <u>75</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>1.15</u> | Total % Cover of: | Multiply by: | OBL species <u>55</u> | x 1 = <u>55</u> | FACW species <u>10</u> | x 2 = <u>20</u> | FAC species <u>0</u> | x 3 = <u>0</u> | FACU species <u>0</u> | x 4 = <u>0</u> | UPL species <u>0</u> | x 5 = <u>0</u> | Column Totals: <u>65</u> | (A) <u>75</u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u>55</u> | x 1 = <u>55</u> | | | | | | | | | | | | | | | | | |
| FACW species <u>10</u> | x 2 = <u>20</u> | | | | | | | | | | | | | | | | | |
| FAC species <u>0</u> | x 3 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACU species <u>0</u> | x 4 = <u>0</u> | | | | | | | | | | | | | | | | | |
| UPL species <u>0</u> | x 5 = <u>0</u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u>65</u> | (A) <u>75</u> (B) | | | | | | | | | | | | | | | | | |
| 1. <u>Salix nigra</u> | 5 | Yes | OBL | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>5</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Indicators: <u>X</u> 1-Rapid Test for Hydrophytic Vegetation: <u>X</u> 2-Dominance Test is >50% <u>X</u> 3-Prevalence Index is <=3 ¹ <u> </u> 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic | | | | | | | | | | | | | | |
| 1. <u>Justicia americana</u> | 10 | Yes | OBL | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>10</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Vine Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>0</u> = Total Cover | | | | | | | | | | | | | | | | | | |

Remarks: (Include photo numbers here or on a separate sheet.)
 Other areas on the small peninsular island have greater cover of water willow than that represented at this data point.

SOIL

Sampling Point IC05C-1W1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|----|----------------|---|-------------------|------------------|-----------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-20 | 10YR4/1 | 95 | 7.5YR4/6 | 5 | C | M | silty clay loam | |
| | | | | | | | | |
| | | | | | | | | |
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| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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 Soil (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 ☐**Remarks:**

Strong indicators of a depleted matrix were evident throughout the entire upper 20 inches of the soil pedon due to extended periods of saturation/inundation.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
☒ High Water Table (A2)
☒ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☒ 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 ☒ Depth (inches): _____
 Water Table Present? Yes ☒ No ☐ Depth (inches): 10
 Saturation Present? Yes ☒ No ☐ Depth (inches): 0
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Surface water present around the periphery of this vegetative island based on current water conditions. Under wet season conditions the island area can be inundated for extended period of time.

I-69 Wetland Quality Assessment Profile

Date Report Generated: 5/22/2018
 Data reference # S6W008
 Wetland Site **S6W008**
 Date of site visit: 05/12/15
 Total wetland area: 7.6507 acres

| | | | |
|--|-------------|-------------|-------------|
| Polygon Information | | | |
| Polygon ID | S6W008A | S6W008B | S6W008C |
| Polygon Size (acres) | 0.18 | 7.65 | 0.31 |
| Wetland Community Type | FF | SOW | FF |
| Red Flag (Special) Indicators | | | |
| Special Hydrologic Conditions | N | N | N |
| Special Community Type | N | N | N |
| Rare-Threatened-Endangered Species | N | N | N |
| Animal Habitat Measures | | | |
| Wetland size and connectivity | 3 | 3 | 3 |
| Surrounding land use | 3 | 3 | 3 |
| Standing water | 2 | 3 | 2 |
| Dead woody material | 2 | 1 | 2 |
| Zonation and Interspersion | 1 | 1 | 1 |
| Stratification | 1 | 1 | 1 |
| Tree canopy | 2 | 1 | 2 |
| Mature trees | 2 | 1 | 1 |
| Animal Habitat Measure Score (min = 8, max = 24) | 16 | 14 | 15 |
| Animal Habitat Measure Rating | fair | fair | fair |
| Botanical Measures (all except exotics dependent upon community type) | | | |
| Number of dominant plant taxa observed | 3 | 1 | 1 |
| Conservatism rating | 1 | 1 | 2 |
| Total hydrophytic taxa observed | 3 | 1 | 1 |
| Number of indicator taxa | 1 | 1 | 1 |
| Exotic species rating | 2 | 3 | 3 |
| Botanical Measure Score (min = 5, max = 15) | 10 | 7 | 8 |
| Botanical Measure Rating | fair | poor | poor |
| Hydrology Measures | | | |
| Water quality protection (= no. of yes answers) | 5 | 5 | 5 |
| Flood and storm water storage (= no. of yes answers) | 4 | 4 | 3 |
| Site/Hydrology Score (min = 11, max = 33) | 29 | 29 | 27 |
| Site/Hydrology Rating | good | good | good |

In-WRAP Summary Sheet

Date Report Generated: Monday, July 30, 2018

Wetland Site Name: N/A

Data Reference #: S6W008

Date of Site Visit: Tuesday, May 12, 2015

Tier 1 Summary:

a. Total Wetland Area (acres): 8.1381

b. Wetland size and connectivity - contribution to animal habitat:

Valuable More Favorable Favorable Neutral

c. Surrounding land use - numerical rank (max. = 1): 1.00

d. Value surrounding area adds to animal habitat:

Valuable Favorable Low

Tier 2 SUMMARY:

Polygon ID S6W008A

a. Indiana Wetland community type: Floodplain Forest

b. Standing water - contribution to animal habitat:

Valuable Favorable Neutral

c. Disturbances to site:

d. Exotic species rating:

Good Medium Poor

e. Special Hydrologic Conditions Observed: None

f. Special Community Type: None

g. Rare-Threatened-Endangered Species:

h. Polygon Quality Descriptor:

Good Medium Poor

Tier 3A SUMMARY:

a. Dead woody material as indicator of animal habitat:

Valuable Favorable Neutral

b. Water quality protection - numerical rank (6 max.): 5

Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max) 4

Good Medium Poor

Tier 3B SUMMARY:

a. Zonation and interspersation as indicator of animal habitat:

Valuable Favorable Neutral

b. Stratification as indicator of animal habitat:

Valuable Neutral

c. Number of dominant plant taxa observed: 14

Good Medium Poor

d. Average coefficient of conservatism: 1.8

Good Medium Poor

e. Tree canopy as indicator of animal habitat:

Valuable Neutral

f. Mature trees as indicator of animal habitat:

Valuable Favorable Neutral

g. Total hydrophytic taxa observed: 33

Good Medium Poor

h. Number of indicator taxa: 0

Good Medium Poor

Tier 2 SUMMARY:**Polygon ID** S6W008B

| | | | |
|---|--------------------------------------|-----------|---------|
| a. Indiana Wetland community type: | <u>Deep Marsh/Shallow Open Water</u> | | |
| b. Standing water - contribution to animal habitat: | Valuable | Favorable | Neutral |
| c. Disturbances to site: | | | |
| d. Exotic species rating: | Good | Medium | Poor |
| e. Special Hydrologic Conditions Observed: | <u>None</u> | | |
| f. Special Community Type: | <u>None</u> | | |
| g. Rare-Threatened-Endangered Species: | <u>None</u> | | |
| h. Polygon Quality Descriptor: | Good | Medium | Poor |

Tier 3A SUMMARY:

| | | | |
|--|----------|-----------|---------|
| a. Dead woody material as indicator of animal habitat: | Valuable | Favorable | Neutral |
| b. Water quality protection - numerical rank (6 max.): <u>5</u> | Good | Medium | Poor |
| c. Flood and storm water storage - numerical rank (5 max) <u>4</u> | Good | Medium | Poor |

Tier 3B SUMMARY:

| | | | |
|--|----------|-----------|---------|
| a. Zonation and interspersions as indicator of animal habitat: | Valuable | Favorable | Neutral |
| b. Stratification as indicator of animal habitat: | Valuable | | Neutral |
| c. Number of dominant plant taxa observed: <u>1</u> | Good | Medium | Poor |
| d. Average coefficient of conservatism: <u>0</u> | Good | Medium | Poor |
| e. Tree canopy as indicator of animal habitat: | Valuable | | Neutral |
| f. Mature trees as indicator of animal habitat: | Valuable | Favorable | Neutral |
| g. Total hydrophytic taxa observed: <u>0</u> | Good | Medium | Poor |
| h. Number of indicator taxa: <u>0</u> | Good | Medium | Poor |

Tier 2 SUMMARY:**Polygon ID** S6W008C

- a. Indiana Wetland community type: Floodplain Forest
- b. Standing water - contribution to animal habitat: Valuable **Favorable** Neutral
- c. Disturbances to site: _____
- d. Exotic species rating: **Good** Medium Poor
- e. Special Hydrologic Conditions Observed: _____
- f. Special Community Type: None
- g. Rare-Threatened-Endangered Species: None
- h. Polygon Quality Descriptor: Good **Medium** Poor

Tier 3A SUMMARY:

- a. Dead woody material as indicator of animal habitat: Valuable **Favorable** Neutral
- b. Water quality protection - numerical rank (6 max.): 5 **Good** Medium Poor
- c. Flood and storm water storage - numerical rank (5 max) 3 Good **Medium** Poor

Tier 3B SUMMARY:

- a. Zonation and interspersions as indicator of animal habitat: Valuable Favorable **Neutral**
- b. Stratification as indicator of animal habitat: Valuable **Neutral**
- c. Number of dominant plant taxa observed: 3 Good Medium **Poor**
- d. Average coefficient of conservatism: 3.3 Good **Medium** Poor
- e. Tree canopy as indicator of animal habitat: **Valuable** Neutral
- f. Mature trees as indicator of animal habitat: Valuable Favorable **Neutral**
- g. Total hydrophytic taxa observed: 3 Good Medium **Poor**
- h. Number of indicator taxa: 0 Good Medium **Poor**

Tier 1: Assessment Overview**1.1 Site Identification:**Wetland Site Name: N/AOwnership (if known): N/AUSGS Topographic Quadrangle: MartinsvilleUSGS Watershed map 14-Digit HUC: Indian Creek - Sand Creek

Identify each NWI Polygon within the Wetland Site (Polygon specific data)

| NWI Polygon ID Number | Cowardin Classification | Polygon Size (acres) |
|-----------------------|-------------------------|----------------------|
| S6W008A | PFO1 | 0.1785 |
| S6W008B | PUBHx | 7.6507 |
| S6W008C | PFO1 | 0.3089 |

1.2 Site VisitTeam Members: Rusty Yeager & Neal GoffinetAgency: Lochmueller GroupDate assessed: 5/12/2015Time assessed: 5:00:00 PMWeather conditions: Sunny

Note any unusual weather events that may have influenced the current conditions within this wetland system (e.g. recent heavy rains, an unusually dry season, an especially early spring etc.)

1.3 Wetland SizeSize of site under assessment: 8.1381Size of wetland complex: 8.1381**1.4 Site Setting**

Degree of isolation from other wetlands or wetland complexes:

☒ The site is connected upstream and downstream with other wetlands☐ The site is only connected upstream with other wetlands☐ The site is only connected downstream with other wetlands☐ Other wetlands are nearby (within 0.25 mile) but not connected☐ The wetland site is isolated

General assessment of adjacent land use / land cover in the area within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

| | | | |
|------------|---------------------------------------|----------|---|
| <u>100</u> | Native Vegetation - woodland | <u>0</u> | Road / highway / railroad bed / parking lot |
| <u>0</u> | Native Vegetation - old field / scrub | <u>0</u> | Industrial |
| <u>0</u> | Agricultural - tilled | <u>0</u> | Residential - single family |
| <u>0</u> | Agricultural - pasture | <u>0</u> | Commercial or multifamily residential |
| <u>0</u> | Recreation - green space, mowed | | |

NWI Polygon # S6W008A

Data Reference# S6W008

(see table on page one)

Tier 2: Individual Polygon: Preliminary Assessment

(to be completed on-site for each NWI polygon present in the wetland)

2.1 Wetland Geomorphic Setting and Surface Water Flow (check one):

☐ Depressional ☒ Slope ☒ Floodplain ☐ Lacustrine
☐ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? No

Is standing water is present, is the water greater than 2 meters n depth? No

Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

☐ Permanently Flooded ☐ Artificially Flooded
☒ Seasonally Flooded
☐ Saturated (surface water seldom present) ☐ Artificailly Drained

2.4 Soil Type

☐ Organic (i.e. peat, etc.) ☒ Mineral ☐ Both Mineral and Organic Present

2.5 Wetland Community Type for this NWI polygon (see Key to Wetland Communities of Indiana):

Floodplain Forest

2.6 Disturbances of Hydrology (check all that apply):

☐ Ditching ☐ Culvert
☐ Tiles ☐ Other Human Distrubances to the
☐ Dams Hydrology (explain):
☐ Road or Railroad Embankment

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common):

☐ Garlic Mustard ☐ Glossy Buckthorn
☐ *Phragmites* ☐ F Reed Canary Grass
☐ Purple Loosestrife ☐ Other (list):

2.8 Presence of Special Hydrologic Conditions (i.e. seeps, wet slopes, floating mat):

None

2.9 Presence of Special Community Types:

☐ Bog ☐ Fen ☐ Wet Sand / Muck Flats or Marl Seeps

2.10 Presence of Known Federal or Indiana Rar, Threatened or Endangered Species:

☐ None observed or known to be presen

☐ RTES Present (list):

2.11 Wetland Polygon Quality Descriptor (see: Wetland Quality Descriptions and check one):

☐ Good ☒ Medium ☐ Poor

Tier 3a: Individual Polygon: Rapid Hydrology Indicators**3a.1 Notable Features that influence water quality and hydrology:**

Estimated herbaceous plant cover (percentage) in the polygon 100-75 75-50 ☒ 50-25 <25
 Estimated woody plant foliar coverage in the polygon ☒ 100-75 75-50 50-25 <25
 Amount of dead woody material on the soil surface nil ☒ scattered frequent

3a.2 Water Quality Protection Questions:

1. ☒ Y ☐ N Does the wetland have a significant amount of vegetative (specifically herbaceous and woody plant) density to potentially uptake dissolved nutrients?
2. ☒ Y ☐ N Managed water (e.g. municipal or road stormwater drainage, agricultural drainage outlet, industrial or municipal wastewater) is not discharged into the wetland polygon?
3. If wetland in question is a depressional wetland answer 3a, in not, answer 3b.
☐ Y ☒ N 3a. Does the wetland have a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland?
- ☒ Y ☐ N 3b. Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface body of water down gradient?
4. ☐ Y ☒ N Does the wetland lack steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within 100 meters of its border?
5. ☒ Y ☐ N Are there recreational lakes, fishable or navigable watercourses, or water supply sources down gradient in the local watershed?
6. ☒ Y ☐ N Is a vegetative buffer area or another wetland polygon (areas where overland flow could be filtered) located upland and adjacent to the wetland polygon? If yes, describe buffer area width and slope.
 width of buffer area (in meters 100 approximate slope (percent 1

3a.3 Flood and Stormwater Storage / Attenuation Questions:

1. If wetland in question is a depressional wetland answer 1a, in not, answer 1b
☐ Y ☒ N 1a. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
- ☒ Y ☐ N 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. ☒ Y ☐ N Does the wetland lack man-made structure that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. ☒ Y ☐ N Is the flood potential high in the local watershed in which the wetland is located (history of flood damages)?
4. ☐ Y ☒ N Is the wetland located in a watershed where the majority of the upland soils are clay and impermeable, or is bedrock within two feet of the top of the soil profile?
5. ☒ Y ☐ N Is the wetland located in a local watershed which has highly modified runoff conditions due to existing development?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

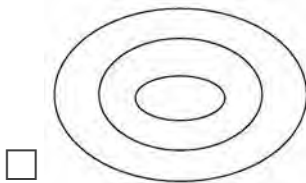
1. How many vegetation zones are evident in this wetland polygon? 1

1b. If only one vegetation zone is evident, which best describes the site?

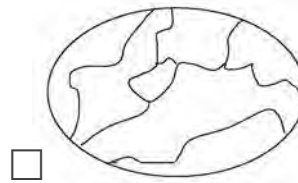
- ☒ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks, heterogeneous textures across the polygon.
- ☐ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

2. If more than one vegetation zone is present in the polygon, which interspersed diagram most closely represents the distribution of these zones?

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation Zone A

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☒ >90%

Is there notable layering/stratification in this vegetation zone? No

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

- | | |
|---------------------------------------|-------------------------------------|
| a. <u><i>Solidago gigantea</i></u> | d. <u><i>Helianthus sp.</i></u> |
| b. <u><i>Laportea canadensis</i></u> | e. <u><i>Impatiens capensis</i></u> |
| c. <u><i>Phalaris arundinacea</i></u> | f. <u><i>Cinna arundinacea</i></u> |

Dominant Shrub Species listed in order of relative abundance.

- | | |
|------------------------------------|---------------------------------|
| a. <u><i>Acer saccharinum</i></u> | c. <u><i>Sambucus nigra</i></u> |
| b. <u><i>Populus deltoides</i></u> | d. <u><i>Acer negundo</i></u> |

Dominant Tree Species listed in order of relative abundance.

- | | |
|------------------------------------|--|
| a. <u><i>Acer saccharinum</i></u> | c. <u><i>Salix nigra</i></u> |
| b. <u><i>Populus deltoides</i></u> | d. <u><i>Platanus occidentalis</i></u> |

Tree and shrub canopy: ☐ nil ☐ separate, seldom touching ☒ often touching ☐ more or less close

Mature trees (>12" dbh): ☒ yes ☐ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone B

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closeMature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone C

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closeMature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservatism)

Herbs: non-seed plants

- ___ horsetail, scouring rush spp. (Equisetum) 2
- ___ *ferns: marsh shiled fern spp. (Dryopteris) 7
- ___ *cinnamon fern (Osmunda cinnamomea) 9
- ___ *royal fern (Osmunda regalis) 8
- ___ sensitive fern (Onoclea sensibilis) 4
- ___ *other: species (if know
- ___ marsh club moss (Selaginella apoda) 4
- ___ Sphagnum moss spp. (Sphagnum) 10

Herbs: lvs. floating or submergent

- ___ *bladderwort spp. (Utricularia) 10
- ___ coontail (Ceratophyllum demersum) 1
- ___ duckweed spp. (Lemnaceae) 3
- ___ *pondweed spp. (Potamogeton) 8
- ___ curlyleaf pondweed (Potamogeton crispus) 0
- ___ *water lily (Nymphaea tuberosa) 6
- ___ water shield (Brasenia schreberi) 4
- ___ *yellow spatterdock spp. (Nuphar) 6

Herbs: lvs. floating or submergent

- ___ *pitcher plant (Sarracenia purpurea) (10)
- ___ *sundew spp. (Drosera) 10

Herbs: linear-lvs. or +/- leafless monocots

- ___ *beak rush spp (Rhynchospora) 10
- ___ blueflag iris (Iris virginica) 5
- ___ bulrush spp. (Scirpus / Schoenoplectus) 5
- ___ *bur reed spp. (Sparganium) 9
- ___ cat-tail spp. (Typha) 1
- ___ *cotton grass spp. (Eriophorum) 10
- Grasses (family Gramineae) - indicate types and number of species
- ___ a. *wild rice (Zizania aquatica) 10
- ✓ b. most native perennial grass spp. 4: cut-grass, manna-grass, Canada bluepoint, foxtail (Alopecurus); other
- ✓ c. introduced grass spp. 0: reed canary grass (Phalaris, reed (Phragmites), annual grasses such as annual foxtail (Setaria) and barnyard grass (Echinochloa)
- ___ needle sedge spp. (Eleocharis) 1 sp. = 2
- ___ *additional = 8
- ___ nutsedge spp. (Cyperus) 2
- ___ *orchid spp. 10; species (if know
- ___ rush spp. (Juncus) 4
- ___ sedge spp. (Carex) 1 sp. = 3 ___ additional = 7
- ___ *spiderlily (Hymenocallis occidentalis) 9
- ___ sweet flag (Acorus calamus) 0
- ___ *3-way sedge (Dulichium arundinaceum) 10
- ___ *twig rush (Cladium mariscoides) 10
- ___ *umbrella sedge (Fuirena squarrosa) 10
- ___ wild hyacinth (Camassia scilloides) 5
- ___ *yellow-eyed grass (Xyris torta) 9

Herbs: wide-leaved monocots

- ___ *arrow arum (Peltandra virginica) 6
- ___ arrow-head spp. (Sagittaria) 4
- ___ *green dragon (Arisaema dracontium) 6
- ___ Jack-in-the-pulpit (Arisaema triphyllum) 4
- ___ pickerel weed (Pontederia cordata) 5
- ___ *skunk cabbage (Symplocarpus foetidus) 8
- ___ *water arum (Calla palustris) 10
- ___ water plantain (Alisma plantago-aquatica) 2

Herbs: dicots - lvs. opposite/whorled

- ✓ ___ *bedstraw spp. (Gallium) 6
- ✓ ___ beggar's tick spp. (Bidens) 3
- ___ blue vervain (Verbena hastata) 3
- ___ boneset (Eupatorium perfoliatum) 4
- ✓ ___ bugleweed spp. (Lycopus) 5
- ✓ ___ clearweed spp. (Pilea) 3
- ___ cup plant (Silphium perfoliatum) 4
- ✓ ___ false nettle (Boehmeria cylindrica) 3
- ___ *fen betony (Pedicularis lanceolata) 6
- ___ *gentian spp. (Gentiana Gentianopsis) 8
- ✓ ___ giant ragweed (Ambrosia trifida) 0
- ___ Indian hemp (Apocynum cannabinum) 2
- ___ Joe-pye weed spp. (Eupatorium) 5
- ___ *loosestrife spp. (Lysimachia) 6
- ___ meadow beauty (Rhexia virginica) 5
- ___ mint spp. e.g. hedge nettle, mtn. mint, skullcap
- ___ moneywort (Lysimachia nummularia) 0
- ___ monkey flower spp. (Mimulus) 4
- ___ nettle (Urtica procera) 1
- ___ purple loosestrife (Lythrum salicaria) 0
- ___ *richweed (Collinsia canadensis) 8
- ___ St. John's wort spp. (Hypericum/Triandrium) 8
- ___ sunflower sp. (Helianthus) 4
- ___ *swamp loosestrife (Decodon verticillatus) 8
- ___ swamp milkweed (Asclepias incarnata) 4
- ___ toothcup spp. (Ammania Rotala) 2
- ___ *turtlehead spp. (Chelone) 8
- ___ virgin's bower (Clematis virginiana) 3
- ___ water purslane (Ludwigia palustris) 3
- ___ winged loosestrife (Lythrum alatum) 5

Herbs (vines): dicots - lvs. alternate or basal and

- ___ American bellflower (Campanula americana) 4
- ___ *asters: bristly aster (Aster puniceus) 7
- ___ flat-topped aster (Aster umbellatus) 8
- ✓ ___ other aster spp. (e.g. New England, panicled ast
- ___ *black-eyed Susan (Rudbeckia fulgida) 8
- ___ cardinal flower (Lobelia cardinalis) 4
- ___ cress spp. (Cardamine) 4
- ___ dock spp.: swamp, water, pale (Rumex) 4
- ✓ ___ garlic mustard (Alliaria petiolata) 0
- ___ golden ragwort (Senecio aureus) 4

Herbs (vines): dicots - lvs. alternate or basal and simple (continued)

- ___ *goldenrod spp. (*Solidago ohioensis*, *S. patula*,
- ___ *grass of Parnassus (*Parnassia glauca*) 10
- ___ *Indian plantain (*Cacalia plantaginea*) 10
- ___ ironweed spp. (*Vernonia*) 4
- ✓ jewelweed, touch-me-not spp. (*Impatiens*) 3
- ___ lizard's tail (*Saururus cernuus*) 4
- ___ lobelia spp. (*Lobelia*) 4
- ___ *marsh marigold (*Caltha palustris*) 7
- ___ *moonseed (*Menispermum canadense*) 6
- ___ primrose-willow spp. (*Epilobium* *Ludwigia*) 3
- ___ rose mallow spp. (*Hibiscus*) 4
- ✓ smartweed spp.: jumpseed, pinkweed, tearthumb, water-pepper, waters smartweed (*Polygonum*)
- ___ halbredleaf tearthumb (*Polygonum arifolium*) 10
- ___ sneezeweed (*Helenium autumnale*) 3
- ✓ stinging nettle (*Laportea canadensis*) 2
- ___ *swamp saxifrage (*Saxifraga pennsylvanica*) 10
- ___ *Virginia bluebells (*Mertensia virginica*) 6
- ___ waterhemp (*Amaranthus tuberculatus*) 1
- ___ wingstem (*Actinomeris alternifolia*) 3

Herbs: dicots - lvs. basal or alternate and compound or deeply lobed

- ___ aven spp.: round, white (*Geum*) 2
- ___ *buttercup spp.: cursed b., hooked b., swamp b. (*Ranunculus*) 6
- ___ chervil (*Chaerophyllum procumbens*) 3
- ___ *cowbane (*Oxypolis rigidior*) 7
- ___ *great angelica (*Angelica atropurpurea*) 6
- ✓ hog peanut / ground nut (*Amphicarpaea* and *Apios*) 5
- ___ honewort (*Cryptotaenia canadensis*) 3
- ___ meadow rue spp. (*Thalictrum*) 5
- ✓ poison ivy (*Rhus radicans*) 1
- ___ *queen-of-the prairie (*Filipendula rubra*) 9
- ___ senna spp. (*Cassia*) 4
- ___ swamp agrimony (*Agrimonia parviflora*) 4
- ___ *swamp thistle (*Cirsium muticum*) 8
- ✓ tall coneflower (*Rudbeckia laciniata*) 3
- ✓ *water hemlock spp. (*Cicuta*) 7
- ___ water parsnips (*Sium suave*) 5

Shrubs - leaves opposite or whorled

- ___ bladderhut (*Staphylea trifolia*) 5
- ___ buckthorn spp. (*Rhamnus cathartica*, *R. frangula*) 0
- ___ buttonbush (*Cephalanthus occidentalis*) 5
- ___ dogwood, red-osier (*Cornus stolonifera*) 4
- ___ *dogwood, blue-fruited or silky (*Cornus obliqua*)
- ___ dogwood, gray (*Cornus racemosa*) 2
- ✓ elderberry (*Sambucus*) 2

Shrubs - leaves alternate

- ___ *cranberry spp. (*Vaccinium*) 10
- ___ *dwarf birch (*Betula pumila*) 10
- ___ *highbush blueberry (*Vaccinium corymbosum*) 9
- ___ *leatherleaf (*Chamaedaphne calyculata*) 10
- ___ meadowsweet and Hardhack spp. (*Spiraea*) 4
- ___ *ninebark (*Physocarpus opulifolius*) 7
- ___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
- ___ spice bush (*Lindera benzoin*) 5
- ___ *swamp dewberry (*Rubus hispidus*) 6
- ___ *swamp holly and winterberry spp. (*Ilex*) 7
- ___ swamp rose (*Rosa palustris*) 5

Trees - leaves needle shaped

- ___ *tamarack (*Larix laricina*) 10

Trees - leaves compound

- ___ *ash, black (*Fraxinus nigra*) 7
- ___ ash, green (*Fraxinus pensylvanica*) 3
- ___ *ash, pumpkin (*Fraxinus tomentosa*) 8
- ✓ boxelder (*Acer negundo*) 1
- ___ hickory, bitternut (*Carya cordiformis*) 5
- ___ hickory, shellbark (*Carya laciniosa*) 8
- ___ honey locust (*Gleditsia triacanthos*) 1
- ___ *poison sumac (*Rhus vernix*) 10

Trees - leaves simple and opposite

- ___ red maple (*Acer rubrum*) 5
- ✓ silver maple (*Acer saccharinum*) 1

Trees - leaves simple and alternate

- ___ *alder, speckled (*Alnus rugosa*) 9
- ___ river birch (*Betula nigra*) 2
- ___ black, gum (*Nyssa sylvatica*) 5
- ✓ cottonwood, eastern (*Populus deltoides*) 1
- ___ cottonwood, swamp (*Populus heterophylla*) 8
- ___ elm, American (*Ulmus americana*) 3
- ___ hackberry (*Celtis occidentalis*) 3
- ___ ironwood (*Carpinus caroliniana*) 5
- ___ oak, pin or white (*Quercus*) 4
- ___ *oak, Shumard's, swamp chestnut, swamp whit
- ___ *pawpaw (*Asimina triloba*) 6
- ___ *sugarberry (*Celtis laevigata*) 7
- ___ sweet gum (*Liquidambar styraciflua*) 4
- ___ sycamore, American (*Platanus occidentalis*) 3
- ✓ willow spp. (*Salix*) 1 sp. = 3
- ___ additional sp. = 7

(see table on page one)

Tier 2: Individual Polygon: Preliminary Assessment

(to be completed on-site for each NWI polygon present in the wetland)

2.1 Wetland Geomorphic Setting and Surface Water Flow (check one):

☐ Depressional ☐ Slope ☐ Floodplain ☒ Lacustrine
☐ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes

Is standing water is present, is the water greater than 2 meters n depth? Yes

Is standing water normally present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

☒ Permanently Flooded ☐ Artificially Flooded
☐ Seasonally Flooded
☐ Saturated (surface water seldom present) ☐ Artificially Drained

2.4 Soil Type

☐ Organic (i.e. peat, etc.) ☒ Mineral ☐ Both Mineral and Organic Present

2.5 Wetland Community Type for this NWI polygon (see Key to Wetland Communities of Indiana):

Deep Marsh/Shallow Open Water

2.6 Disturbances of Hydrology (check all that apply):

☐ Ditching ☐ Culvert
☐ Tiles ☐ Other Human Disturbances to the
☐ Dams Hydrology (explain):
☐ Road or Railroad Embankment

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common):

☐ Garlic Mustard ☐ Glossy Buckthorn
☐ *Phragmites* ☐ Reed Canary Grass
☐ Purple Loosestrife ☐ Other (list):

2.8 Presence of Special Hydrologic Conditions (i.e. seeps, wet slopes, floating mat):

None

2.9 Presence of Special Community Types:

☐ Bog ☐ Fen ☐ Wet Sand / Muck Flats or Marl Seeps

2.10 Presence of Known Federal or Indiana Rar, Threatened or Endangered Species:

☒ None observed or known to be present
☐ RTES Present (list):

2.11 Wetland Polygon Quality Descriptor (see: Wetland Quality Descriptions and check one):

☐ Good ☐ Medium ☒ Poor

Tier 3a: Individual Polygon: Rapid Hydrology Indicators

3a.1 Notable Features that influence water quality and hydrology:

Estimated herbaceous plant cover (percentage) in the polygon ___ 100-75 ___ 75-50 ___ 50-25 ☒ <25
 Estimated woody plant foliar coverage in the polygon ___ 100-75 ___ 75-50 ___ 50-25 ☒ <25
 Amount of dead woody material on the soil surface ☒ nil ___ scattered ___ frequent

3a.2 Water Quality Protection Questions:

1. Y ☒ N Does the wetland have a significant amount of vegetative (specifically herbaceous and woody plant) density to potentially uptake dissolved nutrients?
2. ☒ N Managed water (e.g. municipal or road stormwater drainage, agricultural drainage outlet, industrial or municipal wastewater) is not discharged into the wetland polygon?
3. If wetland in question is a depressional wetland answer 3a, in not, answer 3b.
 Y ☒ N 3a. Does the wetland have a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland?
- ☒ N 3b. Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface body of water down gradient?
4. ☒ N Does the wetland lack steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within 100 meters of its border?
5. ☒ N Are there recreational lakes, fishable or navigable watercourses, or water supply sources down gradient in the local watershed?
6. ☒ N Is a vegetative buffer area or another wetland polygon (areas where overland flow could be filtered) located upland and adjacent to the wetland polygon? If yes, describe buffer area width and slope.
 width of buffer area (in meters ___ 100 ___ approximate slope (percent ___ 0 ___)

3a.3 Flood and Stormwater Storage / Attenuation Questions:

1. If wetland in question is a depressional wetland answer 1a, in not, answer 1b
 Y ☒ N 1a. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
- ☒ N 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. ☒ N Does the wetland lack man-made structure that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. ☒ N Is the flood potential high in the local watershed in which the wetland is located (history of flood damages)?
4. Y ☒ N Is the wetland located in a watershed where the majority of the upland soils are clay and impermeable, or is bedrock within two feet of the top of the soil profile?
5. ☒ N Is the wetland located in a local watershed which has highly modified runoff conditions due to existing development?

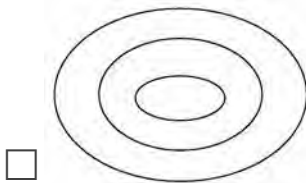
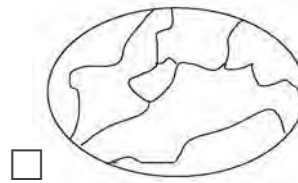
Tier 3b Individual Polygon: Rapid Vegetation Description**3b.1 Zonation and Interspersion:**

1. How many vegetation zones are evident in this wetland polygon? 1

1b. If only one vegetation zone is evident, which best describes the site?

- ☐ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks, heterogeneous textures across the polygon.
- ☒ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

2. If more than one vegetation zone is present in the polygon, which interspersed diagram most closely represents the distribution of these zones?

Type One Interspersion**Type Two Interspersion****3b.2 Dominant Plant Species: Vegetation Zone A**

What % of the polygon does this vegetative zone occupy?

☒ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? No

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

- | | |
|----------|----------|
| a. _____ | d. _____ |
| b. _____ | e. _____ |
| c. _____ | f. _____ |

Dominant Shrub Species listed in order of relative abundance.

- | | |
|----------|----------|
| a. _____ | c. _____ |
| b. _____ | d. _____ |

Dominant Tree Species listed in order of relative abundance.

- | | |
|--------------------------|----------|
| a. <u>Salix interior</u> | c. _____ |
| b. _____ | d. _____ |

Tree and shrub canopy ☐ nil ☒ separate, seldom touching ☐ often touching ☐ more or less close

Mature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone B

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less close

Mature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone C

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less close

Mature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservatism)

Herbs: non-seed plants

- ___ horsetail, scouring rush spp. (Equisetum) 2
- ___ *ferns: marsh shiled fern spp. (Dryopteris) 7
- ___ *cinnamon fern (Osmunda cinnamomea) 9
- ___ *royal fern (Osmunda regalis) 8
- ___ sensitive fern (Onoclea sensibilis) 4
- ___ *other: species (if know
- ___ marsh club moss (Selaginella apoda) 4
- ___ Sphagnum moss spp. (Sphagnum) 10

Herbs: lvs. floating or submergent

- ___ *bladderwort spp. (Utricularia) 10
- ___ coontail (Ceratophyllum demersum) 1
- ___ duckweed spp. (Lemnaceae) 3
- ___ *pondweed spp. (Potamogeton) 8
- ___ curlyleaf pondweed (Potamogeton crispus) 0
- ___ *water lily (Nymphaea tuberosa) 6
- ___ water shield (Brasenia schreberi) 4
- ___ *yellow spatterdock spp. (Nuphar) 6

Herbs: lvs. floating or submergent

- ___ *pitcher plant (Sarracenia purpurea) (10)
- ___ *sundew spp. (Drosera) 10

Herbs: linear-lvs. or +/- leafless monocots

- ___ *beak rush spp (Rhynchospora) 10
- ___ blueflag iris (Iris virginica) 5
- ___ bulrush spp. (Scirpus / Schoenoplectus) 5
- ___ *bur reed spp. (Sparganium) 9
- ___ cat-tail spp. (Typha) 1
- ___ *cotton grass spp. (Eriophorum) 10

Grasses (family Gramineae) - indicate types and number of species

- ___ a. *wild rice (Zizania aquatica) 10
- ___ b. most native perennial grass spp. 4:
cut-grass, manna-grass, Canada bluepoint,
foxtail (Alopecurus); other
- ___ c. introduced grass spp. 0: reed canary
grass (Phalaris, reed (Phragmites),
annual grasses such as annual foxtail
(Setaria) and barnyard grass (Echinochloa)
- ___ needle sedge spp. (Eleocharis) 1 sp. = 2
___ *additional = 8
- ___ nutsedge spp. (Cyperus) 2
- ___ *orchid spp. 10; species (if know
- ___ rush spp. (Juncus) 4
- ___ sedge spp. (Carex) 1 sp. = 3 ___ additional = 7
- ___ *spiderlily (Hymenocallis occidentalis) 9
- ___ sweet flag (Acorus calamus) 0
- ___ *3-way sedge (Dulichium arundinaceum) 10
- ___ *twig rush (Cladium mariscoides) 10
- ___ *umbrella sedge (Fuirena squarrosa) 10
- ___ wild hyacinth (Camassia scilloides) 5
- ___ *yellow-eyed grass (Xyris torta) 9

Herbs: wide-leafed monocots

- ___ *arrow arum (Peltandra virginica) 6
- ___ arrow-head spp. (Sagittaria) 4
- ___ *green dragon (Arisaema dracontium) 6
- ___ Jack-in-the-pulpit (Arisaema triphyllum) 4
- ___ pickerel weed (Pontederia cordata) 5
- ___ *skunk cabbage (Symplocarpus foetidus) 8
- ___ *water arum (Calla palustris) 10
- ___ water plantain (Alisma plantago-aquatica) 2

Herbs: dicots - lvs. opposite/whorled

- ___ *bedstraw spp. (Gallium) 6
- ___ beggar's tick spp. (Bidens) 3
- ___ blue vervain (Verbena hastata) 3
- ___ boneset (Eupatorium perfoliatum) 4
- ___ bugleweed spp. (Lycopus) 5
- ___ clearweed spp. (Pilea) 3
- ___ cup plant (Silphium perfoliatum) 4
- ___ false nettle (Boehmeria cylindrica) 3
- ___ *fen betony (Pedicularis lanceolata) 6
- ___ *gentian spp. (Gentiana Gentianopsis) 8
- ___ giant ragweed (Ambrosia trifida) 0
- ___ Indian hemp (Apocynum cannabinum) 2
- ___ Joe-pye weed spp. (Eupatorium) 5
- ___ *loosestrife spp. (Lysimachia) 6
- ___ meadow beauty (Rhexia virginica) 5
- ___ mint spp. e.g. hedge nettle, mtn. mint, skullcap
- ___ moneywort (Lysimachia nummularia) 0
- ___ monkey flower spp. (Mimulus) 4
- ___ nettle (Urtica procera) 1
- ___ purple loosestrife (Lythrum salicaria) 0
- ___ *richweed (Collinsia canadensis) 8
- ___ St. John's wort spp. (Hypericum/Triandem) 8
- ___ sunflower sp. (Helianthus) 4
- ___ *swamp loosestrife (Decodon verticillatus) 8
- ___ swamp milkweed (Asclepias incarnata) 4
- ___ toothcup spp. (Ammania Rotala) 2
- ___ *turtlehead spp. (Chelone) 8
- ___ virgin's bower (Clematis virginiana) 3
- ___ water purslane (Ludwigia palustris) 3
- ___ winged loosestrife (Lythrum alatum) 5

Herbs (vines): dicots - lvs. alternate or basal and

- ___ American bellflower (Campanula americana) 4
- ___ *asters: bristly aster (Aster puniceus) 7
- ___ flat-topped aster (Aster umbellatus) 8
- ___ other aster spp. (e.g. New England, panicled ast
- ___ *black-eyed Susan (Rudbeckia fulgida) 8
- ___ cardinal flower (Lobelia cardinalis) 4
- ___ cress spp. (Cardamine) 4
- ___ dock spp.: swamp, water, pale (Rumex) 4
- ___ garlic mustard (Alliaria petiolata) 0
- ___ golden ragwort (Senecio aureus) 4

Herbs (vines): dicots - lvs. alternate or basal and simple (continued)

- ___*goldenrod spp. (*Solidago ohioensis*, *S. patula*,
- ___*grass of Parnassus (*Parnassia glauca*) 10
- ___*Indian plantain (*Cacalia plantaginea*) 10
- ___ironweed spp. (*Vernonia*) 4
- ___jewelweed, touch-me-not spp. (*Impatiens*) 3
- ___lizard's tail (*Saururus cernuus*) 4
- ___lobelia spp. (*Lobelia*) 4
- ___*marsh marigold (*Caltha palustris*) 7
- ___*moonseed (*Menispermum canadense*) 6
- ___primrose-willow spp. (*Epilobium* *Ludwigia*) 3
- ___rose mallow spp. (*Hibiscus*) 4
- ___smartweed spp.: jumpseed, pinkweed,
- tearthumb, water-pepper, waters smartweed
- (*Polygonum*)
- ___halbredleaf tearthumb (*Polygonum arifolium*) 10
- ___sneezeweed (*Helenium autumnale*) 3
- ___stinging nettle (*Laportea canadensis*) 2
- ___*swamp saxifrage (*Saxifraga pennsylvanica*) 10
- ___*Virginia bluebells (*Mertensia virginica*) 6
- ___waterhemp (*Amaranthus tuberculatus*) 1
- ___wingstem (*Actinomeris alternifolia*) 3

Herbs: dicots - lvs. basal or alternate and compound or deeply lobed

- ___aven spp.: round, white (*Geum*) 2
- ___*buttercup spp.: cursed b., hooked b., swamp
- b. (*Ranunculus*) 6
- ___chervil (*Chaerophyllum procumbens*) 3
- ___*cowbane (*Oxypolis rigidior*) 7
- ___*great angelica (*Angelica atropurpurea*) 6
- ___hog peanut / ground nut (*Amphicarpaea* and
- Apios*) 5
- ___honewort (*Cryptotaenia canadensis*) 3
- ___meadow rue spp. (*Thalictrum*) 5
- ___poison ivy (*Rhus radicans*) 1
- ___*queen-of-the prairie (*Filipendula rubra*) 9
- ___senna spp. (*Cassia*) 4
- ___swamp agrimony (*Agrimonia parviflora*) 4
- ___*swamp thistle (*Cirsium muticum*) 8
- ___tall coneflower (*Rudbeckia laciniata*) 3
- ___*water hemlock spp. (*Cicuta*) 7
- ___water parsnips (*Sium suave*) 5

Shrubs - leaves opposite or whorled

- ___bladdernut (*Staphylea trifolia*) 5
- ___buckthorn spp. (*Rhamnus cathartica*, *R.*
- frangula*) 0
- ___buttonbush (*Cephalanthus occidentalis*) 5
- ___dogwood, red-osier (*Cornus stolonifera*) 4
- ___*dogwood, blue-fruited or silky (*Cornus obliqua*)
- ___dogwood, gray (*Cornus racemosa*) 2
- ___elderberry (*Sambucus*) 2

Shrubs - leaves alternate

- ___*cranberry spp. (*Vaccinium*) 10
- ___*dwarf birch (*Betula pumila*) 10
- ___*highbush blueberry (*Vaccinium corymbosum*) 9
- ___*leatherleaf (*Chamaedaphne calyculata*) 10
- ___meadowsweet and Hardhack spp. (*Spiraea*) 4
- ___*ninebark (*Physocarpus opulifolius*) 7
- ___*shrubby cinquefoil (*Potentilla fruticosa*) 9
- ___spice bush (*Lindera benzoin*) 5
- ___*swamp dewberry (*Rubus hispidus*) 6
- ___*swamp holly and winterberry spp. (*Ilex*) 7
- ___swamp rose (*Rosa palustris*) 5

Trees - leaves needle shaped

- ___*tamarack (*Larix laricina*) 10

Trees - leaves compound

- ___*ash, black (*Fraxinus nigra*) 7
- ___ash, green (*Fraxinus pensylvanica*) 3
- ___*ash, pumpkin (*Fraxinus tomentosa*) 8
- ___boxelder (*Acer negundo*) 1
- ___hickory, bittersweet (*Carya cordiformis*) 5
- ___hickory, shellbark (*Carya laciniosa*) 8
- ___honey locust (*Gleditsia triacanthos*) 1
- ___*poison sumac (*Rhus vernix*) 10

Trees - leaves simple and opposite

- ___red maple (*Acer rubrum*) 5
- ___silver maple (*Acer saccharinum*) 1

Trees - leaves simple and alternate

- ___*alder, speckled (*Alnus rugosa*) 9
- ___river birch (*Betula nigra*) 2
- ___black, gum (*Nyssa sylvatica*) 5
- ___cottonwood, eastern (*Populus deltoides*) 1
- ___cottonwood, swamp (*Populus heterophylla*) 8
- ___elm, American (*Ulmus americana*) 3
- ___hackberry (*Celtis occidentalis*) 3
- ___ironwood (*Carpinus caroliniana*) 5
- ___oak, pin or white (*Quercus*) 4
- ___*oak, Shumard's, swamp chestnut, swamp whit
- ___*pawpaw (*Asimina triloba*) 6
- ___*sugarberry (*Celtis laevigata*) 7
- ___sweet gum (*Liquidambar styraciflua*) 4
- ___sycamore, American (*Platanus occidentalis*) 3
- ___willow spp. (*Salix*) 1 sp. = 3
- ___additional sp. = 7

NWI Polygon # S6W008C

Data Reference# S6W008

(see table on page one)

Tier 2: Individual Polygon: Preliminary Assessment

(to be completed on-site for each NWI polygon present in the wetland)

2.1 Wetland Geomorphic Setting and Surface Water Flow (check one):

☐ Depressional ☐ Slope ☒ Floodplain ☐ Lacustrine
☐ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? No

Is standing water is present, is the water greater than 2 meters n depth? No

Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

☐ Permanently Flooded ☐ Artificially Flooded
☒ Seasonally Flooded
☐ Saturated (surface water seldom present) ☐ Artificailly Drained

2.4 Soil Type

☐ Organic (i.e. peat, etc.) ☒ Mineral ☐ Both Mineral and Organic Present

2.5 Wetland Community Type for this NWI polygon (see Key to Wetland Communities of Indiana):

Floodplain Forest

2.6 Disturbances of Hydrology (check all that apply):

☐ Ditching ☐ Culvert
☐ Tiles ☐ Other Human Distrubances to the
☐ Dams Hydrology (explain):
☐ Road or Railroad Embankment

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common):

☐ Garlic Mustard ☐ Glossy Buckthorn
☐ *Phragmites* ☐ Reed Canary Grass
☐ Purple Loosestrife ☐ Other (list):

2.8 Presence of Special Hydrologic Conditions (i.e. seeps, wet slopes, floating mat):

2.9 Presence of Special Community Types:

☐ Bog ☐ Fen ☐ Wet Sand / Muck Flats or Marl Seeps

2.10 Presence of Known Federal or Indiana Rar, Threatened or Endangered Species:

☒ None observed or known to be presen
☐ RTES Present (list):

2.11 Wetland Polygon Quality Descriptor (see: Wetland Quality Descriptions and check one):

☐ Good ☒ Medium ☐ Poor

Tier 3a: Individual Polygon: Rapid Hydrology Indicators**3a.1 Notable Features that influence water quality and hydrology:**

Estimated herbaceous plant cover (percentage) in the polygon ____ 100-75 ____ 75-50 ☒ 50-25 ____ <25
 Estimated woody plant foliar coverage in the polygon ____ 100-75 ☒ 75-50 ____ 50-25 ____ <25
 Amount of dead woody material on the soil surface ____ nil ☒ scattered ____ frequent

3a.2 Water Quality Protection Questions:

1. Y ☒ N Does the wetland have a significant amount of vegetative (specifically herbaceous and woody plant) density to potentially uptake dissolved nutrients?
2. ☒ N Managed water (e.g. municipal or road stormwater drainage, agricultural drainage outlet, industrial or municipal wastewater) is not discharged into the wetland polygon?
3. If wetland in question is a depressional wetland answer 3a, in not, answer 3b.
 Y ☒ N 3a. Does the wetland have a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland?
☒ N 3b. Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface body of water down gradient?
4. ☒ N Does the wetland lack steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within 100 meters of its border?
5. ☒ N Are there recreational lakes, fishable or navigable watercourses, or water supply sources down gradient in the local watershed?
6. ☒ N Is a vegetative buffer area or another wetland polygon (areas where overland flow could be filtered) located upland and adjacent to the wetland polygon? If yes, describe buffer area width and slope.
 width of buffer area (in meters) 25 approximate slope (percent) 0

3a.3 Flood and Stormwater Storage / Attenuation Questions:

1. If wetland in question is a depressional wetland answer 1a, in not, answer 1b
 Y ☒ N 1a. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
 Y ☒ N 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. ☒ N Does the wetland lack man-made structure that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. ☒ N Is the flood potential high in the local watershed in which the wetland is located (history of flood damages)?
4. Y ☒ N Is the wetland located in a watershed where the majority of the upland soils are clay and impermeable, or is bedrock within two feet of the top of the soil profile?
5. ☒ N Is the wetland located in a local watershed which has highly modified runoff conditions due to existing development?

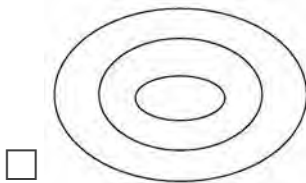
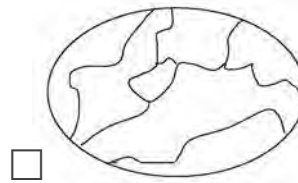
Tier 3b Individual Polygon: Rapid Vegetation Description**3b.1 Zonation and Interspersion:**

1. How many vegetation zones are evident in this wetland polygon? 1

1b. If only one vegetation zone is evident, which best describes the site?

- ☐ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks, heterogeneous textures across the polygon.
- ☒ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

2. If more than one vegetation zone is present in the polygon, which interspersed diagram most closely represents the distribution of these zones?

Type One Interspersion**Type Two Interspersion****3b.2 Dominant Plant Species: Vegetation Zone A**

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☒ >90%

Is there notable layering/stratification in this vegetation zone? No

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

- | | |
|-------------------------------------|----------|
| a. <u><i>Justicia americana</i></u> | d. _____ |
| b. _____ | e. _____ |
| c. _____ | f. _____ |

Dominant Shrub Species listed in order of relative abundance.

- | | |
|----------|----------|
| a. _____ | c. _____ |
| b. _____ | d. _____ |

Dominant Tree Species listed in order of relative abundance.

- | | |
|-----------------------------------|----------|
| a. <u><i>Salix nigra</i></u> | c. _____ |
| b. <u><i>Acer saccharinum</i></u> | d. _____ |

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☒ often touching ☐ more or less close

Mature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone B

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closeMature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone C

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closeMature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

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numbers = C-coefficients

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- ___ *royal fern (Osmunda regalis) 8
- ___ sensitive fern (Onoclea sensibilis) 4
- ___ *other: species (if know
- ___ marsh club moss (Selaginella apoda) 4
- ___ Sphagnum moss spp. (Sphagnum) 10

Herbs: lvs. floating or submergent

- ___ *bladderwort spp. (Utricularia) 10
- ___ coontail (Ceratophyllum demersum) 1
- ___ duckweed spp. (Lemnaceae) 3
- ___ *pondweed spp. (Potamogeton) 8
- ___ curlyleaf pondweed (Potamogeton crispus) 0
- ___ *water lily (Nymphaea tuberosa) 6
- ___ water shield (Brasenia schreberi) 4
- ___ *yellow spatterdock spp. (Nuphar) 6

Herbs: lvs. floating or submergent

- ___ *pitcher plant (Sarracenia purpurea) (10)
- ___ *sundew spp. (Drosera) 10

Herbs: linear-lvs. or +/- leafless monocots

- ___ *beak rush spp (Rhynchospora) 10
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- ___ *bur reed spp. (Sparganium) 9
- ___ cat-tail spp. (Typha) 1
- ___ *cotton grass spp. (Eriophorum) 10

Grasses (family Gramineae) - indicate types and number of species

- ___ a. *wild rice (Zizania aquatica) 10
- ___ b. most native perennial grass spp. 4:
cut-grass, manna-grass, Canada bluepoint,
foxtail (Alopecurus); other
- ___ c. introduced grass spp. 0: reed canary
grass (Phalaris, reed (Phragmites),
annual grasses such as annual foxtail
(Setaria) and barnyard grass (Echinochloa)
- ___ needle sedge spp. (Eleocharis) 1 sp. = 2
___ *additional = 8
- ___ nutsedge spp. (Cyperus) 2
- ___ *orchid spp. 10; species (if know
- ___ rush spp. (Juncus) 4
- ___ sedge spp. (Carex) 1 sp. = 3 ___ additional = 7
- ___ *spiderlily (Hymenocallis occidentalis) 9
- ___ sweet flag (Acorus calamus) 0
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- ___ *twig rush (Cladium mariscoides) 10
- ___ *umbrella sedge (Fuirena squarrosa) 10
- ___ wild hyacinth (Camassia scilloides) 5
- ___ *yellow-eyed grass (Xyris torta) 9

Herbs: wide-leaved monocots

- ___ *arrow arum (Peltandra virginica) 6
- ___ arrow-head spp. (Sagittaria) 4
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- ___ pickerel weed (Pontederia cordata) 5
- ___ *skunk cabbage (Symplocarpus foetidus) 8
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Herbs: dicots - lvs. opposite/whorled

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- ___ beggar's tick spp. (Bidens) 3
- ___ blue vervain (Verbena hastata) 3
- ___ boneset (Eupatorium perfoliatum) 4
- ___ bugleweed spp. (Lycopus) 5
- ___ clearweed spp. (Pilea) 3
- ___ cup plant (Silphium perfoliatum) 4
- ___ false nettle (Boehmeria cylindrica) 3
- ___ *fen betony (Pedicularis lanceolata) 6
- ___ *gentian spp. (Gentiana Gentianopsis) 8
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- ___ Indian hemp (Apocynum cannabinum) 2
- ___ Joe-pye weed spp. (Eupatorium) 5
- ___ *loosestrife spp. (Lysimachia) 6
- ___ meadow beauty (Rhexia virginica) 5
- ___ mint spp. e.g. hedge nettle, mtn. mint, skullcap
- ___ moneywort (Lysimachia nummularia) 0
- ___ monkey flower spp. (Mimulus) 4
- ___ nettle (Urtica procera) 1
- ___ purple loosestrife (Lythrum salicaria) 0
- ___ *richweed (Collinsia canadensis) 8
- ___ St. John's wort spp. (Hypericum/Triandrium) 8
- ___ sunflower sp. (Helianthus) 4
- ___ *swamp loosestrife (Decodon verticillatus) 8
- ___ swamp milkweed (Asclepias incarnata) 4
- ___ toothcup spp. (Ammania Rotala) 2
- ___ *turtlehead spp. (Chelone) 8
- ___ virgin's bower (Clematis virginiana) 3
- ___ water purslane (Ludwigia palustris) 3
- ___ winged loosestrife (Lythrum alatum) 5

Herbs (vines): dicots - lvs. alternate or basal and

- ___ American bellflower (Campanula americana) 4
- ___ *asters: bristly aster (Aster puniceus) 7
- ___ flat-topped aster (Aster umbellatus) 8
- ___ other aster spp. (e.g. New England, panicled ast
- ___ *black-eyed Susan (Rudbeckia fulgida) 8
- ___ cardinal flower (Lobelia cardinalis) 4
- ___ cress spp. (Cardamine) 4
- ___ dock spp.: swamp, water, pale (Rumex) 4
- ___ garlic mustard (Alliaria petiolata) 0
- ___ golden ragwort (Senecio aureus) 4

Herbs (vines): dicots - lvs. alternate or basal and simple (continued)

- ___*goldenrod spp. (*Solidago ohioensis*, *S. patula*,
- ___*grass of Parnassus (*Parnassia glauca*) 10
- ___*Indian plantain (*Cacalia plantaginea*) 10
- ___ironweed spp. (*Vernonia*) 4
- ___jewelweed, touch-me-not spp. (*Impatiens*) 3
- ___lizard's tail (*Saururus cernuus*) 4
- ___lobelia spp. (*Lobelia*) 4
- ___*marsh marigold (*Caltha palustris*) 7
- ___*moonseed (*Menispermum canadense*) 6
- ___primrose-willow spp. (*Epilobium* *Ludwigia*) 3
- ___rose mallow spp. (*Hibiscus*) 4
- ___smartweed spp.: jumpseed, pinkweed,
- tearthumb, water-pepper, waters smartweed
- (*Polygonum*)
- ___halbredleaf tearthumb (*Polygonum arifolium*) 10
- ___sneezeweed (*Helenium autumnale*) 3
- ___stinging nettle (*Laportea canadensis*) 2
- ___*swamp saxifrage (*Saxifraga pennsylvanica*) 10
- ___*Virginia bluebells (*Mertensia virginica*) 6
- ___waterhemp (*Amaranthus tuberculatus*) 1
- ___wingstem (*Actinomeris alternifolia*) 3

Herbs: dicots - lvs. basal or alternate and compound or deeply lobed

- ___aven spp.: round, white (*Geum*) 2
- ___*buttercup spp.: cursed b., hooked b., swamp
- b. (*Ranunculus*) 6
- ___chervil (*Chaerophyllum procumbens*) 3
- ___*cowbane (*Oxypolis rigidior*) 7
- ___*great angelica (*Angelica atropurpurea*) 6
- ___hog peanut / ground nut (*Amphicarpaea* and
- Apios*) 5
- ___honewort (*Cryptotaenia canadensis*) 3
- ___meadow rue spp. (*Thalictrum*) 5
- ___poison ivy (*Rhus radicans*) 1
- ___*queen-of-the prairie (*Filipendula rubra*) 9
- ___senna spp. (*Cassia*) 4
- ___swamp agrimony (*Agrimonia parviflora*) 4
- ___*swamp thistle (*Cirsium muticum*) 8
- ___tall coneflower (*Rudbeckia laciniata*) 3
- ___*water hemlock spp. (*Cicuta*) 7
- ___water parsnips (*Sium suave*) 5

Shrubs - leaves opposite or whorled

- ___bladdernut (*Staphylea trifolia*) 5
- ___buckthorn spp. (*Rhamnus cathartica*, *R.*
- frangula*) 0
- ___buttonbush (*Cephalanthus occidentalis*) 5
- ___dogwood, red-osier (*Cornus stolonifera*) 4
- ___*dogwood, blue-fruited or silky (*Cornus obliqua*)
- ___dogwood, gray (*Cornus racemosa*) 2
- ___elderberry (*Sambucus*) 2

Shrubs - leaves alternate

- ___*cranberry spp. (*Vaccinium*) 10
- ___*dwarf birch (*Betula pumila*) 10
- ___*highbush blueberry (*Vaccinium corymbosum*) 9
- ___*leatherleaf (*Chamaedaphne calyculata*) 10
- ___meadowsweet and Hardhack spp. (*Spiraea*) 4
- ___*ninebark (*Physocarpus opulifolius*) 7
- ___*shrubby cinquefoil (*Potentilla fruticosa*) 9
- ___spice bush (*Lindera benzoin*) 5
- ___*swamp dewberry (*Rubus hispidus*) 6
- ___*swamp holly and winterberry spp. (*Ilex*) 7
- ___swamp rose (*Rosa palustris*) 5

Trees - leaves needle shaped

- ___*tamarack (*Larix laricina*) 10

Trees - leaves compound

- ___*ash, black (*Fraxinus nigra*) 7
- ___ash, green (*Fraxinus pensylvanica*) 3
- ___*ash, pumpkin (*Fraxinus tomentosa*) 8
- ___boxelder (*Acer negundo*) 1
- ___hickory, bitternut (*Carya cordiformis*) 5
- ___hickory, shellbark (*Carya laciniosa*) 8
- ___honey locust (*Gleditsia triacanthos*) 1
- ___*poison sumac (*Rhus vernix*) 10

Trees - leaves simple and opposite

- ___red maple (*Acer rubrum*) 5
- ✓ silver maple (*Acer saccharinum*) 1

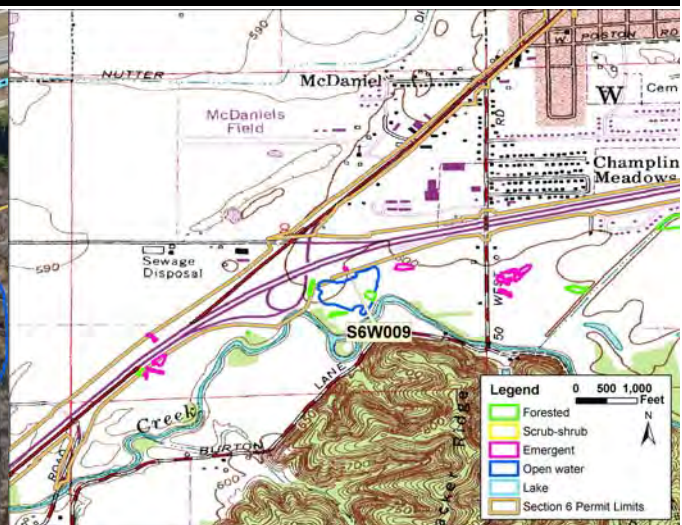
Trees - leaves simple and alternate

- ___*alder, speckled (*Alnus rugosa*) 9
- ___river birch (*Betula nigra*) 2
- ___black, gum (*Nyssa sylvatica*) 5
- ___cottonwood, eastern (*Populus deltoides*) 1
- ___cottonwood, swamp (*Populus heterophylla*) 8
- ___elm, American (*Ulmus americana*) 3
- ___hackberry (*Celtis occidentalis*) 3
- ___ironwood (*Carpinus caroliniana*) 5
- ___oak, pin or white (*Quercus*) 4
- ___*oak, Shumard's, swamp chestnut, swamp whit
- ___*pawpaw (*Asimina triloba*) 6
- ___*sugarberry (*Celtis laevigata*) 7
- ___sweet gum (*Liquidambar styraciflua*) 4
- ___sycamore, American (*Platanus occidentalis*) 3
- ✓ willow spp. (*Salix*) 1 sp. = 3
- ___additional sp. = 7

Wetland S6W009



Wetland Location on 2015 Aerial Photograph



Wetland Location on Martinsville USGS Quadangle

Basin: Indian Creek - Sand Creek
14-digit HUC: 05120201170070
Physiographic Region: Martinsville Hills
Ecoregion: Interior Plateau
Natural Region: Highland Rim
Size of wetland complex (acres): 0.0301
USACE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Quadrangle: Martinsville
County: Morgan
Township: T11N
Range: R1E
Section: 8
Quarter: SE
Latitude: 39.403258
Longitude: -86.443436

| Polygon ID | Community Type | Cowardin Class | Polygon Area (acres) | Animal Habitat Measure | Botanical Measure | Hydrology Measure | Alternative | Area Impacted (acres) | Percent Polygon Impacted |
|------------|--------------------------|----------------|----------------------|------------------------|-------------------|-------------------|-------------|-----------------------|--------------------------|
| S6W009A | Seasonally Flooded Basin | PEM | 0.03 | poor | poor | good | RPA | 0.03 | 99.7% |

This site is classified as a PEM wetland, 0.03 acre in size. The Section 6 Design Contract 1 Permit Limits would permanently impact 0.03 acre of this wetland. This wetland showed 35% herbaceous cover. Dominant herbaceous species for this wetland include *Phalaris arundinacea* and *Juncus torreyi*. Hydrology is likely due to backwater flooding from Indian Creek and roadside runoff from SR 37. Animal habitat, botanical diversity, and hydrology function are rated as poor, poor, and good respectively based on InWRAP summaries for the site.

Wetland S6W009



Polygon S6W009A

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W009A City/County: Morgan Sampling Date: 10/20/2015
 Applicant/Owner: INDOT/Lochum Mueller State: Indiana Sampling Point: IC06A-1D1
 Investigator(s): K. Lucier Section, Township, Range: Sec 8-T11N-R1E
 Landform (hillslope, terrace, etc.): broad valley Local relief (concave, convex, none): flat
 Slope (%): 0-1 Lat: 39.403123 Long: -86.443431 Datum: GCS NAD83
 Soil Map Unit Name: Princeton fine sandy loam NWI classification: PUBGx

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain Remarks.)
 Are Vegetation , Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No: X
 Are Vegetation , Soil or Hydrology naturally problematic? If needed, explain answers in Remarks.)

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

| | | | |
|---|-----------------|----------------|--|
| Hydrophytic Vegetation Present? | Yes <u>X</u> | No <u> </u> | Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> |
| Hydric Soils Present? | Yes <u> </u> | No <u>X</u> | |
| Wetland Hydrology Present? | Yes <u> </u> | No <u>X</u> | |
| Remarks: Recently disturbed habitat lacks hydrology and hydric soil indicators. | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>83</u> (A/B) | | | | | | | | | | | | | | |
|---|------------------|-------------------|-------------------------|---|-------------------|--------------|----------------------|----------------|------------------------|-----------------|-----------------------|------------------|------------------------|------------------|----------------------|----------------|-------------------------------|----------------|
| 1. <u>Populus deltoides</u> | 15 | Yes | FAC | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | | | <u>15</u> = Total Cover | Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>25</u></td> <td>x 2 = <u>50</u></td> </tr> <tr> <td>FAC species <u>50</u></td> <td>x 3 = <u>150</u></td> </tr> <tr> <td>FACU species <u>60</u></td> <td>x 4 = <u>240</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>135</u> (A)</td> <td><u>440</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>3.26</u> | Total % Cover of: | Multiply by: | OBL species <u>0</u> | x 1 = <u>0</u> | FACW species <u>25</u> | x 2 = <u>50</u> | FAC species <u>50</u> | x 3 = <u>150</u> | FACU species <u>60</u> | x 4 = <u>240</u> | UPL species <u>0</u> | x 5 = <u>0</u> | Column Totals: <u>135</u> (A) | <u>440</u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u>0</u> | x 1 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACW species <u>25</u> | x 2 = <u>50</u> | | | | | | | | | | | | | | | | | |
| FAC species <u>50</u> | x 3 = <u>150</u> | | | | | | | | | | | | | | | | | |
| FACU species <u>60</u> | x 4 = <u>240</u> | | | | | | | | | | | | | | | | | |
| UPL species <u>0</u> | x 5 = <u>0</u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u>135</u> (A) | <u>440</u> (B) | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u>Fraxinus pennsylvanica</u> | 15 | Yes | FACW | | | | | | | | | | | | | | | |
| 2. <u>Populus deltoides</u> | 15 | Yes | FAC | | | | | | | | | | | | | | | |
| 3. <u>Salix interior</u> | 10 | Yes | FACW | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | | | <u>40</u> = Total Cover | | | | | | | | | | | | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u>Solidago altissima</u> | 50 | Yes | FACU | | | | | | | | | | | | | | | |
| 2. <u>Symphyotrichum lanceolatum</u> | 20 | Yes | FAC | | | | | | | | | | | | | | | |
| 3. <u>Medicago sativa</u> | 10 | No | FACU | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | | | <u>80</u> = Total Cover | | | | | | | | | | | | | | | |
| Vine Stratum (Plot Size: <u>15'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | | | <u>0</u> = Total Cover | | | | | | | | | | | | | | | |
| Hydrophytic Vegetation Indicators: 1-Rapid Test for Hydrophytic Vegetation: <u> </u> X 2-Dominance Test is >50% 3-Prevalence Index is <=3 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 <u>X</u> No <u> </u> | | | | | | | | | | | | | | | | | | |

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

SOIL

Sampling Point IC06A-1D1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|---------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-12 | 10YR4/4 | 100 | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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 Soil (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)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ 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? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W009A City/County: Morgan Sampling Date: 10/20/2015
 Applicant/Owner: INDOT/Lochmueller State: Indiana Sampling Point: IC06A-1W1
 Investigator(s): K. Lucier Section, Township, Range: Sec 8-T11N-R1E
 Landform (hillslope, terrace, etc.): broad valley Local relief (concave, convex, none): concave
 Slope (%): 0-1 Lat: 39.403227 Long: -86.443461 Datum: GCS NAD83
 Soil Map Unit Name: Princeton fine sandy loam NWI classification: PUBGx

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

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

| | | | |
|---|--------------|----------------|--|
| Hydrophytic Vegetation Present? | Yes <u>X</u> | No <u> </u> | Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> |
| Hydric Soils Present? | Yes <u>X</u> | No <u> </u> | |
| Wetland Hydrology Present? | Yes <u>X</u> | No <u> </u> | |
| Remarks: Data point represents vegetated shelf of linear excavated feature adjacent to fields. The wetland feature represented by this data point has been designated as PEM1 based on the Cowardin et al. classification system. | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B) | | | | | | | | | | | | | | |
|--|--------------------|-------------------|------------------|---|-------------------|--------------|----------------------|----------------|------------------------|------------------|----------------------|----------------|-----------------------|----------------|----------------------|----------------|--------------------------|--------------------|
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | | | | | | | | | | | | | | | | | | |
| <u>0</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>50</u></td> <td>x 2 = <u>100</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>50</u></td> <td>(A) <u>100</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>2.00</u> | Total % Cover of: | Multiply by: | OBL species <u>0</u> | x 1 = <u>0</u> | FACW species <u>50</u> | x 2 = <u>100</u> | FAC species <u>0</u> | x 3 = <u>0</u> | FACU species <u>0</u> | x 4 = <u>0</u> | UPL species <u>0</u> | x 5 = <u>0</u> | Column Totals: <u>50</u> | (A) <u>100</u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u>0</u> | x 1 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACW species <u>50</u> | x 2 = <u>100</u> | | | | | | | | | | | | | | | | | |
| FAC species <u>0</u> | x 3 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACU species <u>0</u> | x 4 = <u>0</u> | | | | | | | | | | | | | | | | | |
| UPL species <u>0</u> | x 5 = <u>0</u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u>50</u> | (A) <u>100</u> (B) | | | | | | | | | | | | | | | | | |
| 1. <u>Salix interior</u> | <u>10</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 2. <u>Fraxinus pennsylvanica</u> | <u>5</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>15</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Indicators: 1-Rapid Test for Hydrophytic Vegetation: <u>X</u> 2-Dominance Test is >50% <u>X</u> 3-Prevalence Index is <=3 ¹ 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic | | | | | | | | | | | | | | |
| 1. <u>Phalaris arundinacea</u> | <u>25</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 2. <u>Juncus torreyi</u> | <u>10</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>35</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Vine Stratum (Plot Size: <u>15'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>0</u> = Total Cover | | | | | | | | | | | | | | | | | | |

Remarks: (Include photo numbers here or on a separate sheet.)
 Also included Carex sp.

SOIL

Sampling Point IC06A-1W1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|----|----------------|---|-------------------|------------------|-----------------|----------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-6 | 10YR4/1 | 95 | 10YR4/6 | 5 | C | M | silty clay loam | very dry |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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 Soil (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 ☐

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)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ 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 ☒ Depth (inches): _____
 Water Table Present? Yes ☐ No ☒ Depth (inches): _____
 Saturation Present? Yes ☐ No ☒ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

I-69 Wetland Quality Assessment Profile

Date Report Generated: 5/22/2018
Data reference # S6W009
Wetland Site **S6W009**
Date of site visit: 05/12/15
Total wetland area: 0.0301 acres

| | |
|--|-------------|
| Polygon Information | |
| Polygon ID | S6W009A |
| Polygon Size (acres) | 0.03 |
| Wetland Community Type | SFB |
| Red Flag (Special) Indicators | |
| Special Hydrologic Conditions | N |
| Special Community Type | N |
| Rare-Threatened-Endangered Species | N |
| Animal Habitat Measures | |
| Wetland size and connectivity | 1 |
| Surrounding land use | 3 |
| Standing water | 1 |
| Dead woody material | 1 |
| Zonation and interspersion | 1 |
| Stratification | 1 |
| Tree canopy | 2 |
| Mature trees | 1 |
| Animal Habitat Measure Score (min = 8, max = 24) | 11 |
| Animal Habitat Measure Rating | poor |
| Botanical Measures (all except exotics dependent upon community type) | |
| Number of dominant plant taxa observed | 2 |
| Conservatism rating | 1 |
| Total hydrophytic taxa observed | 2 |
| Number of indicator taxa | 1 |
| Exotic species rating | 1 |
| Botanical Measure Score (min = 5, max = 15) | 7 |
| Botanical Measure Rating | poor |
| Hydrology Measures | |
| Water quality protection (= no. of yes answers) | 4 |
| Flood and storm water storage (= no. of yes answers) | 4 |
| Site/Hydrology Score (min = 11, max = 33) | 27 |
| Site/Hydrology Rating | good |

In-WRAP Summary Sheet

Date Report Generated: Monday, July 30, 2018

Wetland Site Name: N/A

Data Reference #: S6W009

Date of Site Visit: Tuesday, May 12, 2015

Tier 1 Summary:

a. Total Wetland Area (acres): 0.0301

b. Wetland size and connectivity - contribution to animal habitat:

Valuable More Favorable **Favorable** Neutral

c. Surrounding land use - numerical rank (max. = 1): 0.80

d. Value surrounding area adds to animal habitat:

Valuable Favorable Low

Tier 2 SUMMARY:

Polygon ID S6W009A

a. Indiana Wetland community type: Seasonally Flooded Basin

b. Standing water - contribution to animal habitat:

Valuable Favorable **Neutral**

c. Disturbances to site: other

d. Exotic species rating:

Good Medium Poor

e. Special Hydrologic Conditions Observed: None

f. Special Community Type: None

g. Rare-Threatened-Endangered Species:

h. Polygon Quality Descriptor:

Good Medium **Poor**

Tier 3A SUMMARY:

a. Dead woody material as indicator of animal habitat:

Valuable Favorable **Neutral**

b. Water quality protection - numerical rank (6 max.): 4

Good **Medium** Poor

c. Flood and storm water storage - numerical rank (5 max) 4

Good Medium Poor

Tier 3B SUMMARY:

a. Zonation and interspersions as indicator of animal habitat:

Valuable Favorable Neutral

b. Stratification as indicator of animal habitat:

Valuable **Neutral**

c. Number of dominant plant taxa observed: 5

Good **Medium** Poor

d. Average coefficient of conservatism: 2.4

Good Medium **Poor**

e. Tree canopy as indicator of animal habitat:

Valuable **Neutral**

f. Mature trees as indicator of animal habitat:

Valuable Favorable **Neutral**

g. Total hydrophytic taxa observed: 18

Good **Medium** Poor

h. Number of indicator taxa: 0

Good Medium **Poor**

Tier 1: Assessment Overview**1.1 Site Identification:**Wetland Site Name: N/AOwnership (if known): N/AUSGS Topographic Quadrangle: MartinsvilleUSGS Watershed map 14-Digit HUC: Indian Creek - Sand Creek

Identify each NWI Polygon within the Wetland Site (Polygon specific data)

| NWI Polygon ID Number | Cowardin Classification | Polygon Size (acres) |
|-----------------------|-------------------------|----------------------|
| S6W009A | PEM1 | 0.0301 |

1.2 Site VisitTeam Members: Rusty Yeager & Neal GoffinetAgency: Lochmueller GroupDate assessed: 5/12/2015Time assessed: 6:30:00 PMWeather conditions: Sunny

Note any unusual weather events that may have influenced the current conditions within this wetland system (e.g. recent heavy rains, an unusually dry season, an especially early spring etc.)

1.3 Wetland SizeSize of site under assessment: 0.0301Size of wetland complex: 0.0301**1.4 Site Setting**

Degree of isolation from other wetlands or wetland complexes:

☐ The site is connected upstream and downstream with other wetlands☐ The site is only connected upstream with other wetlands☐ The site is only connected downstream with other wetlands☒ Other wetlands are nearby (within 0.25 mile) but not connected☐ The wetland site is isolated

General assessment of adjacent land use / land cover in the area within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

| | | | |
|------------|---------------------------------------|----------|---|
| <u>0</u> | Native Vegetation - woodland | <u>0</u> | Road / highway / railroad bed / parking lot |
| <u>100</u> | Native Vegetation - old field / scrub | <u>0</u> | Industrial |
| <u>0</u> | Agricultural - tilled | <u>0</u> | Residential - single family |
| <u>0</u> | Agricultural - pasture | <u>0</u> | Commercial or multifamily residential |
| <u>0</u> | Recreation - green space, mowed | | |

(see table on page one)

Tier 2: Individual Polygon: Preliminary Assessment

(to be completed on-site for each NWI polygon present in the wetland)

2.1 Wetland Geomorphic Setting and Surface Water Flow (check one):

☒ Depressional ☐ Slope ☐ Floodplain ☐ Lacustrine
☐ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? No

Is standing water is present, is the water greater than 2 meters in depth? No

Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

☐ Permanently Flooded ☐ Artificially Flooded
☒ Seasonally Flooded
☐ Saturated (surface water seldom present) ☐ Artificially Drained

2.4 Soil Type

☐ Organic (i.e. peat, etc.) ☒ Mineral ☐ Both Mineral and Organic Present

2.5 Wetland Community Type for this NWI polygon (see Key to Wetland Communities of Indiana):

Seasonally Flooded Basin

2.6 Disturbances of Hydrology (check all that apply):

☐ Ditching ☐ Culvert
☐ Tiles ☒ Other Human Disturbances to the
☐ Dams Hydrology (explain):
☐ Road or Railroad Embankment

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common):

☐ Garlic Mustard ☐ Glossy Buckthorn
☐ *Phragmites* ☐ S Reed Canary Grass
☐ Purple Loosestrife ☐ Other (list):

2.8 Presence of Special Hydrologic Conditions (i.e. seeps, wet slopes, floating mat):

None

2.9 Presence of Special Community Types:

☐ Bog ☐ Fen ☐ Wet Sand / Muck Flats or Marl Seeps

2.10 Presence of Known Federal or Indiana Rare, Threatened or Endangered Species:☐ None observed or known to be present☐ RTES Present (list):**2.11 Wetland Polygon Quality Descriptor (see: Wetland Quality Descriptions and check one):**

☐ Good ☐ Medium ☒ Poor

Tier 3a: Individual Polygon: Rapid Hydrology Indicators**3a.1 Notable Features that influence water quality and hydrology:**

Estimated herbaceous plant cover (percentage) in the polygon ☒ 100-75 ☐ 75-50 ☐ 50-25 ☐ <25
 Estimated woody plant foliar coverage in the polygon ☐ 100-75 ☐ 75-50 ☐ 50-25 ☒ <25
 Amount of dead woody material on the soil surface ☒ nil ☐ scattered ☐ frequent

3a.2 Water Quality Protection Questions:

1. ☒ Y ☐ N Does the wetland have a significant amount of vegetative (specifically herbaceous and woody plant) density to potentially uptake dissolved nutrients?
2. ☒ Y ☐ N Managed water (e.g. municipal or road stormwater drainage, agricultural drainage outlet, industrial or municipal wastewater) is not discharged into the wetland polygon?
3. If wetland in question is a depressional wetland answer 3a, in not, answer 3b.
☒ Y ☐ N 3a. Does the wetland have a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland?
☒ Y ☐ N 3b. Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface body of water down gradient?
4. ☒ Y ☐ N Does the wetland lack steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within 100 meters of its border?
5. ☒ Y ☐ N Are there recreational lakes, fishable or navigable watercourses, or water supply sources down gradient in the local watershed?
6. ☒ Y ☐ N Is a vegetative buffer area or another wetland polygon (areas where overland flow could be filtered) located upland and adjacent to the wetland polygon? If yes, describe buffer area width and slope.
 width of buffer area (in meters 10 approximate slope (percent 2

3a.3 Flood and Stormwater Storage / Attenuation Questions:

1. If wetland in question is a depressional wetland answer 1a, in not, answer 1b
☒ Y ☐ N 1a. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
☒ Y ☐ N 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. ☒ Y ☐ N Does the wetland lack man-made structure that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. ☒ Y ☐ N Is the flood potential high in the local watershed in which the wetland is located (history of flood damages)?
4. ☒ Y ☐ N Is the wetland located in a watershed where the majority of the upland soils are clay and impermeable, or is bedrock within two feet of the top of the soil profile?
5. ☒ Y ☐ N Is the wetland located in a local watershed which has highly modified runoff conditions due to existing development?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

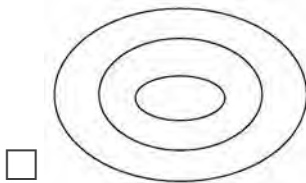
1. How many vegetation zones are evident in this wetland polygon? 1

1b. If only one vegetation zone is evident, which best describes the site?

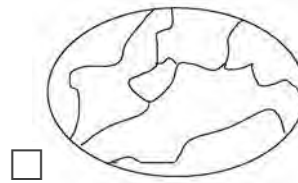
- ☒ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks, heterogeneous textures across the polygon.
- ☐ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

2. If more than one vegetation zone is present in the polygon, which interspersed diagram most closely represents the distribution of these zones?

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation Zone A

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☒ >90%

Is there notable layering/stratification in this vegetation zone? No

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

- | | |
|------------------------------------|---------------------------------|
| a. <u><i>Phyla lanceolata</i></u> | d. <u><i>Juncus dudleyi</i></u> |
| b. <u><i>Scirpus cyperinus</i></u> | e. _____ |
| c. <u><i>Juncus torreyi</i></u> | f. _____ |

Dominant Shrub Species listed in order of relative abundance.

- | | |
|----------|----------|
| a. _____ | c. _____ |
| b. _____ | d. _____ |

Dominant Tree Species listed in order of relative abundance.

- | | |
|---------------------------------|----------|
| a. <u><i>Salix interior</i></u> | c. _____ |
| b. _____ | d. _____ |

Tree and shrub canopy ☐ nil ☒ separate, seldom touching ☐ often touching ☐ more or less close

Mature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone B

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closeMature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone C

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closeMature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservatism)

Herbs: non-seed plants

- ☐ horsetail, scouring rush spp. (Equisetum) 2
☐ *ferns: marsh shiled fern spp. (Dryopteris) 7
☐ *cinnamon fern (Osmunda cinnamomea) 9
☐ *royal fern (Osmunda regalis) 8
☐ sensitive fern (Onoclea sensibilis) 4
☐ *other: species (if know _____)
☐ marsh club moss (Selaginella apoda) 4
☐ Sphagnum moss spp. (Sphagnum) 10

Herbs: lvs. floating or submergent

- ☐ *bladderwort spp. (Utricularia) 10
☐ coontail (Ceratophyllum demersum) 1
☐ duckweed spp. (Lemnaceae) 3
☐ *pondweed spp. (Potamogeton) 8
☐ curlyleaf pondweed (Potamogeton crispus) 0
☐ *water lily (Nymphaea tuberosa) 6
☐ water shield (Brasenia schreberi) 4
☐ *yellow spatterdock spp. (Nuphar) 6

Herbs: lvs. floating or submergent

- ☐ *pitcher plant (Sarracenia purpurea) (10)
☐ *sundew spp. (Drosera) 10

Herbs: linear-lvs. or +/- leafless monocots

- ☐ *beak rush spp (Rhynchospora) 10
☐ blueflag iris (Iris virginica) 5
☒ bulrush spp. (Scirpus / Schoenoplectus) 5
☐ *bur reed spp. (Sparganium) 9
☒ cat-tail spp. (Typha) 1
☐ *cotton grass spp. (Eriophorum) 10

Grasses (family Gramineae) - indicate types and number of species

- ☐ a. *wild rice (Zizania aquatica) 10
☐ b. most native perennial grass spp. 4:
 cut-grass, manna-grass, Canada bluepoint,
 foxtail (Alopecurus); other _____
☒ c. introduced grass spp. 0: reed canary
 grass (Phalaris, reed (Phragmites),
 annual grasses such as annual foxtail
 (Setaria) and barnyard grass (Echinochloa)
☐ needle sedge spp. (Eleocharis) 1 sp. = 2
☐ *additional = 8
☐ nutsedge spp. (Cyperus) 2
☐ *orchid spp. 10; species (if know _____)
☒ rush spp. (Juncus) 4
☐ sedge spp. (Carex) 1 sp. = 3 ☒ additional = 7
☐ *spiderlily (Hymenocallis occidentalis) 9
☐ sweet flag (Acorus calamus) 0
☐ *3-way sedge (Dulichium arundinaceum) 10
☐ *twig rush (Cladium mariscoides) 10
☐ *umbrella sedge (Fuirena squarrosa) 10
☐ wild hyacinth (Camassia scilloides) 5
☐ *yellow-eyed grass (Xyris torta) 9

Herbs: wide-leafed monocots

- ☐ *arrow arum (Peltandra virginica) 6
☐ arrow-head spp. (Sagittaria) 4
☐ *green dragon (Arisaema dracontium) 6
☐ Jack-in-the-pulpit (Arisaema triphyllum) 4
☐ pickerel weed (Pontederia cordata) 5
☐ *skunk cabbage (Symplocarpus foetidus) 8
☐ *water arum (Calla palustris) 10
☒ water plantain (Alisma plantago-aquatica) 2

Herbs: dicots - lvs. opposite/whorled

- ☐ *bedstraw spp. (Gallium) 6
☐ beggar's tick spp. (Bidens) 3
☐ blue vervain (Verbena hastata) 3
☐ boneset (Eupatorium perfoliatum) 4
☐ bugleweed spp. (Lycopus) 5
☐ clearweed spp. (Pilea) 3
☐ cup plant (Silphium perfoliatum) 4
☐ false nettle (Boehmeria cylindrica) 3
☐ *fen betony (Pedicularis lanceolata) 6
☐ *gentian spp. (Gentiana Gentianopsis) 8
☐ giant ragweed (Ambrosia trifida) 0
☐ Indian hemp (Apocynum cannabinum) 2
☐ Joe-pye weed spp. (Eupatorium) 5
☐ *loosestrife spp. (Lysimachia) 6
☐ meadow beauty (Rhexia virginica) 5
☐ mint spp. e.g. hedge nettle, mtn. mint, skullcap
☐ moneywort (Lysimachia nummularia) 0
☐ monkey flower spp. (Mimulus) 4
☐ nettle (Urtica procera) 1
☐ purple loosestrife (Lythrum salicaria) 0
☐ *richweed (Collinsia canadensis) 8
☐ St. John's wort spp. (Hypericum/Triandrium) 8
☐ sunflower sp. (Helianthus) 4
☐ *swamp loosestrife (Decodon verticillatus) 8
☐ swamp milkweed (Asclepias incarnata) 4
☐ toothcup spp. (Ammania Rotala) 2
☐ *turtlehead spp. (Chelone) 8
☐ virgin's bower (Clematis virginiana) 3
☐ water purslane (Ludwigia palustris) 3
☐ winged loosestrife (Lythrum alatum) 5

Herbs (vines): dicots - lvs. alternate or basal and

- ☐ American bellflower (Campanula americana) 4
☐ *asters: bristly aster (Aster puniceus) 7
☐ flat-topped aster (Aster umbellatus) 8
☒ other aster spp. (e.g. New England, panicled ast
☐ *black-eyed Susan (Rudbeckia fulgida) 8
☐ cardinal flower (Lobelia cardinalis) 4
☐ cress spp. (Cardamine) 4
☒ dock spp.: swamp, water, pale (Rumex) 4
☐ garlic mustard (Alliaria petiolata) 0
☐ golden ragwort (Senecio aureus) 4

Herbs (vines): dicots - lvs. alternate or basal and simple (continued)

- ___*goldenrod spp. (*Solidago ohioensis*, *S. patula*,
- ___*grass of Parnassus (*Parnassia glauca*) 10
- ___*Indian plantain (*Cacalia plantaginea*) 10
- ___ironweed spp. (*Vernonia*) 4
- ___jewelweed, touch-me-not spp. (*Impatiens*) 3
- ___lizard's tail (*Saururus cernuus*) 4
- ___lobelia spp. (*Lobelia*) 4
- ___*marsh marigold (*Caltha palustris*) 7
- ___*moonseed (*Menispermum canadense*) 6
- ___primrose-willow spp. (*Epilobium* *Ludwigia*) 3
- ___rose mallow spp. (*Hibiscus*) 4
- ___smartweed spp.: jumpseed, pinkweed,
- tearthumb, water-pepper, waters smartweed
- (*Polygonum*)
- ___halbredleaf tearthumb (*Polygonum arifolium*) 10
- ___sneezeweed (*Helenium autumnale*) 3
- ___stinging nettle (*Laportea canadensis*) 2
- ___*swamp saxifrage (*Saxifraga pennsylvanica*) 10
- ___*Virginia bluebells (*Mertensia virginica*) 6
- ___waterhemp (*Amaranthus tuberculatus*) 1
- ___wingstem (*Actinomeris alternifolia*) 3

Herbs: dicots - lvs. basal or alternate and compound or deeply lobed

- ___aven spp.: round, white (*Geum*) 2
- ___*buttercup spp.: cursed b., hooked b., swamp
- b. (*Ranunculus*) 6
- ___chervil (*Chaerophyllum procumbens*) 3
- ___*cowbane (*Oxypolis rigidior*) 7
- ___*great angelica (*Angelica atropurpurea*) 6
- ___hog peanut / ground nut (*Amphicarpaea* and
- Apios*) 5
- ___honestwort (*Cryptotaenia canadensis*) 3
- ___meadow rue spp. (*Thalictrum*) 5
- ___poison ivy (*Rhus radicans*) 1
- ___*queen-of-the prairie (*Filipendula rubra*) 9
- ___senna spp. (*Cassia*) 4
- ___swamp agrimony (*Agrimonia parviflora*) 4
- ___*swamp thistle (*Cirsium muticum*) 8
- ___tall coneflower (*Rudbeckia laciniata*) 3
- ___*water hemlock spp. (*Cicuta*) 7
- ___water parsnips (*Sium suave*) 5

Shrubs - leaves opposite or whorled

- ___bladdernut (*Staphylea trifolia*) 5
- ___buckthorn spp. (*Rhamnus cathartica*, *R.*
- frangula*) 0
- ___buttonbush (*Cephalanthus occidentalis*) 5
- ___dogwood, red-osier (*Cornus stolonifera*) 4
- ___*dogwood, blue-fruited or silky (*Cornus obliqua*)
- ___dogwood, gray (*Cornus racemosa*) 2
- ___elderberry (*Sambucus*) 2

Shrubs - leaves alternate

- ___*cranberry spp. (*Vaccinium*) 10
- ___*dwarf birch (*Betula pumila*) 10
- ___*highbush blueberry (*Vaccinium corymbosum*) 9
- ___*leatherleaf (*Chamaedaphne calyculata*) 10
- ___meadowsweet and Hardhack spp. (*Spiraea*) 4
- ___*ninebark (*Physocarpus opulifolius*) 7
- ___*shrubby cinquefoil (*Potentilla fruticosa*) 9
- ___spice bush (*Lindera benzoin*) 5
- ___*swamp dewberry (*Rubus hispidus*) 6
- ___*swamp holly and winterberry spp. (*Ilex*) 7
- ___swamp rose (*Rosa palustris*) 5

Trees - leaves needle shaped

- ___*tamarack (*Larix laricina*) 10

Trees - leaves compound

- ___*ash, black (*Fraxinus nigra*) 7
- ✓ ___ash, green (*Fraxinus pensylvanica*) 3
- ___*ash, pumpkin (*Fraxinus tomentosa*) 8
- ___boxelder (*Acer negundo*) 1
- ___hickory, bitternut (*Carya cordiformis*) 5
- ___hickory, shellbark (*Carya laciniosa*) 8
- ___honey locust (*Gleditsia triacanthos*) 1
- ___*poison sumac (*Rhus vernix*) 10

Trees - leaves simple and opposite

- ___red maple (*Acer rubrum*) 5
- ___silver maple (*Acer saccharinum*) 1

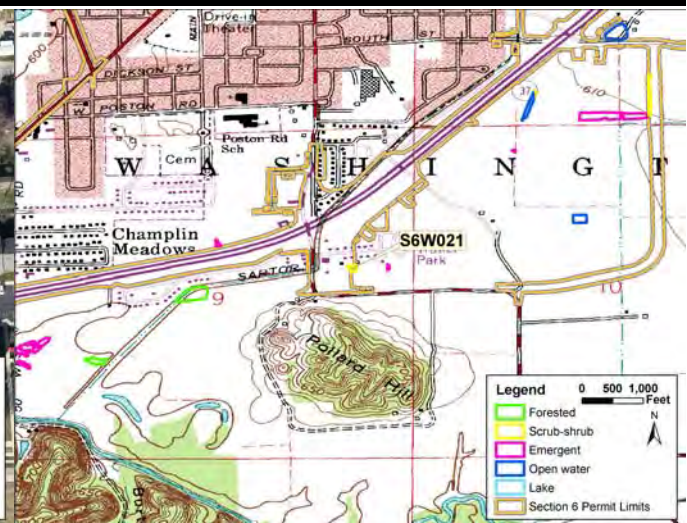
Trees - leaves simple and alternate

- ___*alder, speckled (*Alnus rugosa*) 9
- ___river birch (*Betula nigra*) 2
- ___black, gum (*Nyssa sylvatica*) 5
- ___cottonwood, eastern (*Populus deltoides*) 1
- ___cottonwood, swamp (*Populus heterophylla*) 8
- ___elm, American (*Ulmus americana*) 3
- ___hackberry (*Celtis occidentalis*) 3
- ___ironwood (*Carpinus caroliniana*) 5
- ___oak, pin or white (*Quercus*) 4
- ___*oak, Shumard's, swamp chestnut, swamp whit
- ___*pawpaw (*Asimina triloba*) 6
- ___*sugarberry (*Celtis laevigata*) 7
- ___sweet gum (*Liquidambar styraciflua*) 4
- ___sycamore, American (*Platanus occidentalis*) 3
- ✓ ___willow spp. (*Salix*) 1 sp. = 3
- ___additional sp. = 7

Wetland S6W021



Wetland Location on 2015 Aerial Photograph



Wetland Location on Martinsville USGS Quadangle

Basin: Indian Creek - Sand Creek
14-digit HUC: 05120201170070
Physiographic Region: Martinsville Hills
Ecoregion: Interior Plateau
Natural Region: Highland Rim
Size of wetland complex (acres): 0.2086
USACE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Quadrangle: Martinsville
County: Morgan
Township: T11N
Range: R1E
Section: 9
Quarter: NE
Latitude: 39.406523
Longitude: -86.42155

| Polygon ID | Community Type | Cowardin Class | Polygon Area (acres) | Animal Habitat Measure | Botanical Measure | Hydrology Measure | Alternative | Area Impacted (acres) | Percent Polygon Impacted |
|------------|----------------|----------------|----------------------|------------------------|-------------------|-------------------|-------------|-----------------------|--------------------------|
| S6W021A | Scrub-Carr | PSS | 0.21 | poor | fair | fair | RPA | 0.11 | 50.3% |

This site is classified as a PSS wetland, 0.21 acre in size. The Section 6 Design Contract 1 Permit Limits would permanently impact 0.042 acre and temporarily impact 0.063 acre of this wetland. This wetland showed 65% herbaceous cover and 55% sapling/shrub cover. Dominant herbaceous species for this wetland include *Carex* spp. and *Scirpus cyperinus*. Dominant sapling/shrub species included *Salix interior*. Hydrology is likely due to runoff from local roads and parking lots. Animal habitat, botanical diversity, and hydrology function are rated as poor, fair, and fair respectively based on InWRAP summaries for the site.

Wetland S6W021



Polygon S6W021A

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W021A City/County: Morgan Sampling Date: 04/06/2017
 Applicant/Owner: INDOT/Lochmueller State: Indiana Sampling Point: IC16A-1D1
 Investigator(s): R. Yeager, B. Reust Section, Township, Range: SEC 9, T11N, R1E
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex
 Slope (%): 5% Lat: 39.40639 Long: -86.421373 Datum: GCS NAD83
 Soil Map Unit Name: Martinsville loam, 0 to 2 percent slopes NWI classification: upland

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain Remarks.)
 Are Vegetation X, Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No:
 Are Vegetation , Soil or Hydrology naturally problematic? If needed, explain answers in Remarks.)

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

| | | | |
|--|-----------------|----------------|--|
| Hydrophytic Vegetation Present? | Yes <u> </u> | No <u>X</u> | Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> |
| Hydric Soils Present? | Yes <u>X</u> | No <u> </u> | |
| Wetland Hydrology Present? | Yes <u> </u> | No <u>X</u> | |
| Remarks: This plot is in a mowed urban area. | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A/B) | | | | | | | | | | | | | | |
|--|--------------------|-------------------|------------------|---|-------------------|--------------|----------------------|----------------|-----------------------|----------------|----------------------|----------------|------------------------|------------------|-----------------------|------------------|---------------------------|--------------------|
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr><td>OBL species <u>0</u></td><td>x 1 = <u>0</u></td></tr> <tr><td>FACW species <u>0</u></td><td>x 2 = <u>0</u></td></tr> <tr><td>FAC species <u>0</u></td><td>x 3 = <u>0</u></td></tr> <tr><td>FACU species <u>40</u></td><td>x 4 = <u>160</u></td></tr> <tr><td>UPL species <u>60</u></td><td>x 5 = <u>300</u></td></tr> <tr><td>Column Totals: <u>100</u></td><td>(A) <u>460</u> (B)</td></tr> </tbody> </table> Prevalence Index = B/A = <u>4.60</u> | Total % Cover of: | Multiply by: | OBL species <u>0</u> | x 1 = <u>0</u> | FACW species <u>0</u> | x 2 = <u>0</u> | FAC species <u>0</u> | x 3 = <u>0</u> | FACU species <u>40</u> | x 4 = <u>160</u> | UPL species <u>60</u> | x 5 = <u>300</u> | Column Totals: <u>100</u> | (A) <u>460</u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u>0</u> | x 1 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACW species <u>0</u> | x 2 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FAC species <u>0</u> | x 3 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACU species <u>40</u> | x 4 = <u>160</u> | | | | | | | | | | | | | | | | | |
| UPL species <u>60</u> | x 5 = <u>300</u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u>100</u> | (A) <u>460</u> (B) | | | | | | | | | | | | | | | | | |
| <u>0</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>0</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | | | | | | | | | | | | | | | |
| 1. <i>Festuca sp.</i> | 60 | Yes | UPL | | | | | | | | | | | | | | | |
| 2. <i>Trifolium pratense</i> | 35 | Yes | FACU | | | | | | | | | | | | | | | |
| 3. <i>Taraxacum officinale</i> | 5 | No | FACU | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>100</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Vine Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Hydrophytic Vegetation Indicators: 1-Rapid Test for Hydrophytic Vegetation: 2-Dominance Test is >50% 3-Prevalence Index is <=3 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 | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| <u>0</u> = Total Cover | | | | | | | | | | | | | | | | | | |
| Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u> | | | | | | | | | | | | | | | | | | |

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

SOIL

Sampling Point IC16A-1D1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-5 | 10YR4/3 | 100 | | | | | silt loam | |
| 5-24 | 10YR6/1 | 65 | 10YR5/6 | 35 | C | M | sandy loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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 Soils³

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other Soil (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 ☐

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)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ 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 ☒ Depth (inches): _____
 Water Table Present? Yes ☐ No ☒ Depth (inches): _____
 Saturation Present? Yes ☐ No ☒ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

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

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W021A City/County: Morgan Sampling Date: 10/19/2015
 Applicant/Owner: INDOT/Lochmueller State: Indiana Sampling Point: IC16A-1W1
 Investigator(s): K. Lucier, G. Quigg Section, Township, Range: Sec 9-T11N-R1E
 Landform (hillslope, terrace, etc.): excavated depression Local relief (concave, convex, none): concave
 Slope (%): 0-6 Lat: 39.406513 Long: -86.421492 Datum: GCS NAD83
 Soil Map Unit Name: Martinsville loam, 0 to 2 percent slopes NWI classification: upland

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

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

| | | | |
|---|--------------|----------------|--|
| Hydrophytic Vegetation Present? | Yes <u>X</u> | No <u> </u> | Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> |
| Hydric Soils Present? | Yes <u>X</u> | No <u> </u> | |
| Wetland Hydrology Present? | Yes <u>X</u> | No <u> </u> | |
| Remarks: The wetland feature represented by this data point has been designated as PSS1 based on the Cowardin et al. classification system. | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B) | | | | | | | | | | | | | | |
|---|------------------|-------------------|-------------------------|--|-------------------|--------------|-----------------------|-----------------|------------------------|------------------|----------------------|----------------|------------------------|-----------------|----------------------|----------------|-------------------------------|----------------|
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | | | <u>0</u> = Total Cover | Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>30</u></td> <td>x 1 = <u>30</u></td> </tr> <tr> <td>FACW species <u>80</u></td> <td>x 2 = <u>160</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>120</u> (A)</td> <td><u>230</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>1.92</u> | Total % Cover of: | Multiply by: | OBL species <u>30</u> | x 1 = <u>30</u> | FACW species <u>80</u> | x 2 = <u>160</u> | FAC species <u>0</u> | x 3 = <u>0</u> | FACU species <u>10</u> | x 4 = <u>40</u> | UPL species <u>0</u> | x 5 = <u>0</u> | Column Totals: <u>120</u> (A) | <u>230</u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u>30</u> | x 1 = <u>30</u> | | | | | | | | | | | | | | | | | |
| FACW species <u>80</u> | x 2 = <u>160</u> | | | | | | | | | | | | | | | | | |
| FAC species <u>0</u> | x 3 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACU species <u>10</u> | x 4 = <u>40</u> | | | | | | | | | | | | | | | | | |
| UPL species <u>0</u> | x 5 = <u>0</u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u>120</u> (A) | <u>230</u> (B) | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u>Salix interior</u> | <u>50</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 2. <u>Acer saccharum</u> | <u>5</u> | <u>No</u> | <u>FACU</u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | | | <u>55</u> = Total Cover | | | | | | | | | | | | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u>Carex sp.</u> | <u>25</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 2. <u>Scirpus cyperinus</u> | <u>25</u> | <u>Yes</u> | <u>OBL</u> | | | | | | | | | | | | | | | |
| 3. <u>Acer saccharum</u> | <u>5</u> | <u>No</u> | <u>FACU</u> | | | | | | | | | | | | | | | |
| 4. <u>Packera glabella</u> | <u>5</u> | <u>No</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 5. <u>Typha angustifolia</u> | <u>5</u> | <u>No</u> | <u>OBL</u> | | | | | | | | | | | | | | | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | | | <u>65</u> = Total Cover | | | | | | | | | | | | | | | |
| Vine Stratum (Plot Size: <u>30'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | | | <u>0</u> = Total Cover | | | | | | | | | | | | | | | |
| Hydrophytic Vegetation Indicators: <u> </u> 1-Rapid Test for Hydrophytic Vegetation: <u>X</u> 2-Dominance Test is >50% <u>X</u> 3-Prevalence Index is <=3 ¹ <u> </u> 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic | | | | | | | | | | | | | | | | | | |
| Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> | | | | | | | | | | | | | | | | | | |

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

SOIL

Sampling Point IC16A-1W1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|----|-------------------|------------------|-----------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-6 | 10YR2/1 | 100 | | | | | silty clay loam | |
| 6-10 | 10YR4/1 | 90 | 10YR3/6 | 10 | C | M | silt loam | |
| 10-18 | 10YR4/1 | 50 | 10YR4/6 | 50 | C | M | loamy sand | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix

| | | | |
|---|--|---|--|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Muck Peat or Peat (S3) | | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) | Indicators for Problematic Hydric Soils ³ <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other Soil (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 <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---|---|

Remarks:

HYDROLOGY

| | | | |
|--|--|---|---|
| Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Water Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | <u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
|--|--|---|---|

| | |
|---|---|
| Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
|---|---|

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

Remarks:

I-69 Wetland Quality Assessment Profile

Date Report Generated: 5/22/2018
Data reference # S6W021
Wetland Site **S6W021**
Date of site visit: 05/14/15
Total wetland area: 0.2086 acres

| | |
|--|-----------|
| Polygon Information | |
| Polygon ID | S6W021A |
| Polygon Size (acres) | 0.21 |
| Wetland Community Type | SC |
| Red Flag (Special) Indicators | |
| Special Hydrologic Conditions | N |
| Special Community Type | N |
| Rare-Threatened-Endangered Species | N |
| Animal Habitat Measures | |
| Wetland size and connectivity | 2 |
| Surrounding land use | 1 |
| Standing water | 1 |
| Dead woody material | 1 |
| Zonation and Interspersion | 1 |
| Stratification | 1 |
| Tree canopy | 3 |
| Mature trees | 1 |
| Animal Habitat Measure Score (min = 8, max = 24) | 11 |
| Animal Habitat Measure Rating | |
| Botanical Measures (all except exotics dependent upon community type) | |
| Number of dominant plant taxa observed | 1 |
| Conservationism rating | 1 |
| Total hydrophytic taxa observed | 3 |
| Number of indicator taxa | 1 |
| Exotic species rating | 3 |
| Botanical Measure Score (min = 5, max = 15) | 9 |
| Botanical Measure Rating | |
| Hydrology Measures | |
| Water quality protection (= no. of yes answers) | 5 |
| Flood and storm water storage (= no. of yes answers) | 1 |
| Site/Hydrology Score (min = 11, max = 33) | 23 |
| Site/Hydrology Rating | |
| fair | |

In-WRAP Summary Sheet

Date Report Generated: Monday, July 30, 2018

Wetland Site Name: N/A

Data Reference #: S6W021

Date of Site Visit: Thursday, May 14, 2015

Tier 1 Summary:

a. Total Wetland Area (acres): 0.2086

b. Wetland size and connectivity - contribution to animal habitat:

Valuable More Favorable **Favorable** Neutral

c. Surrounding land use - numerical rank (max. = 1): 0.30

d. Value surrounding area adds to animal habitat: Valuable Favorable Low

Tier 2 SUMMARY:

Polygon ID S6W021A

a. Indiana Wetland community type: Shrub-Carr

b. Standing water - contribution to animal habitat: Valuable Favorable **Neutral**

c. Disturbances to site: culvert

d. Exotic species rating: **Good** Medium Poor

e. Special Hydrologic Conditions Observed: None

f. Special Community Type: None

g. Rare-Threatened-Endangered Species: None

h. Polygon Quality Descriptor: Good **Medium** Poor

Tier 3A SUMMARY:

a. Dead woody material as indicator of animal habitat: Valuable Favorable **Neutral**

b. Water quality protection - numerical rank (6 max.): 5 **Good** Medium Poor

c. Flood and storm water storage - numerical rank (5 max) 1 Good Medium **Poor**

Tier 3B SUMMARY:

a. Zonation and interspersions as indicator of animal habitat: Valuable Favorable **Neutral**

b. Stratification as indicator of animal habitat: Valuable **Neutral**

c. Number of dominant plant taxa observed: 4 Good Medium **Poor**

d. Average coefficient of conservatism: 2.3 Good Medium **Poor**

e. Tree canopy as indicator of animal habitat: **Valuable** Neutral

f. Mature trees as indicator of animal habitat: Valuable Favorable **Neutral**

g. Total hydrophytic taxa observed: 26 **Good** Medium Poor

h. Number of indicator taxa: 0 Good Medium **Poor**

Tier 1: Assessment Overview**1.1 Site Identification:**Wetland Site Name: N/AOwnership (if known): N/AUSGS Topographic Quadrangle: MartinsvilleUSGS Watershed map 14-Digit HUC: Indian Creek - Sand Creek

Identify each NWI Polygon within the Wetland Site (Polygon specific data)

| NWI Polygon ID Number | Cowardin Classification | Polygon Size (acres) |
|-----------------------|-------------------------|----------------------|
| S6W021A | PSS1 | 0.2086 |

1.2 Site VisitTeam Members: Rusty Yeager & Neal GoffinetAgency: Lochmueller GroupDate assessed: 5/14/2015Time assessed: 3:45:00 PMWeather conditions: Cloudy

Note any unusual weather events that may have influenced the current conditions within this wetland system (e.g. recent heavy rains, an unusually dry season, an especially early spring etc.)

1.3 Wetland SizeSize of site under assessment: 0.2086Size of wetland complex: 0.2086**1.4 Site Setting**

Degree of isolation from other wetlands or wetland complexes:

☐ The site is connected upstream and downstream with other wetlands☐ The site is only connected upstream with other wetlands☐ The site is only connected downstream with other wetlands☒ Other wetlands are nearby (within 0.25 mile) but not connected☐ The wetland site is isolated

General assessment of adjacent land use / land cover in the area within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

| | | | |
|----------|---------------------------------------|------------|---|
| <u>0</u> | Native Vegetation - woodland | <u>0</u> | Road / highway / railroad bed / parking lot |
| <u>0</u> | Native Vegetation - old field / scrub | <u>0</u> | Industrial |
| <u>0</u> | Agricultural - tilled | <u>0</u> | Residential - single family |
| <u>0</u> | Agricultural - pasture | <u>100</u> | Commercial or multifamily residential |
| <u>0</u> | Recreation - green space, mowed | | |

(see table on page one)

Tier 2: Individual Polygon: Preliminary Assessment

(to be completed on-site for each NWI polygon present in the wetland)

2.1 Wetland Geomorphic Setting and Surface Water Flow (check one):

☒ Depressional ☐ Slope ☐ Floodplain ☐ Lacustrine
☐ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? No

Is standing water is present, is the water greater than 2 meters in depth? No

Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

☐ Permanently Flooded ☒ Artificially Flooded
☐ Seasonally Flooded
☐ Saturated (surface water seldom present) ☐ Artificially Drained

2.4 Soil Type

☐ Organic (i.e. peat, etc.) ☒ Mineral ☐ Both Mineral and Organic Present

2.5 Wetland Community Type for this NWI polygon (see Key to Wetland Communities of Indiana):

Shrub-Carr

2.6 Disturbances of Hydrology (check all that apply):

☐ Ditching ☒ Culvert
☐ Tiles ☐ Other Human Disturbances to the
☐ Dams Hydrology (explain):
☐ Road or Railroad Embankment

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common):

☐ Garlic Mustard ☐ Glossy Buckthorn
☐ *Phragmites* ☐ Reed Canary Grass
☐ Purple Loosestrife ☐ Other (list):

2.8 Presence of Special Hydrologic Conditions (i.e. seeps, wet slopes, floating mat):

None

2.9 Presence of Special Community Types:

☐ Bog ☐ Fen ☐ Wet Sand / Muck Flats or Marl Seeps

2.10 Presence of Known Federal or Indiana Rare, Threatened or Endangered Species:

☒ None observed or known to be present
☐ RTES Present (list):

2.11 Wetland Polygon Quality Descriptor (see: Wetland Quality Descriptions and check one):

☐ Good ☒ Medium ☐ Poor

Tier 3a: Individual Polygon: Rapid Hydrology Indicators

3a.1 Notable Features that influence water quality and hydrology:

Estimated herbaceous plant cover (percentage) in the polygon ☒ 100-75 ☐ 75-50 ☐ 50-25 ☐ <25
 Estimated woody plant foliar coverage in the polygon ☒ 100-75 ☐ 75-50 ☐ 50-25 ☐ <25
 Amount of dead woody material on the soil surface ☒ nil ☐ scattered ☐ frequent

3a.2 Water Quality Protection Questions:

1. ☒ Y ☐ N Does the wetland have a significant amount of vegetative (specifically herbaceous and woody plant) density to potentially uptake dissolved nutrients?
2. ☒ Y ☐ N Managed water (e.g. municipal or road stormwater drainage, agricultural drainage outlet, industrial or municipal wastewater) is not discharged into the wetland polygon?
3. If wetland in question is a depressional wetland answer 3a, in not, answer 3b.
☒ Y ☐ N 3a. Does the wetland have a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland?
☒ Y ☐ N 3b. Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface body of water down gradient?
4. ☒ Y ☐ N Does the wetland lack steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within 100 meters of its border?
5. ☒ Y ☐ N Are there recreational lakes, fishable or navigable watercourses, or water supply sources down gradient in the local watershed?
6. ☒ Y ☐ N Is a vegetative buffer area or another wetland polygon (areas where overland flow could be filtered) located upland and adjacent to the wetland polygon? If yes, describe buffer area width and slope.
 width of buffer area (in meters 15 approximate slope (percent 10

3a.3 Flood and Stormwater Storage / Attenuation Questions:

1. If wetland in question is a depressional wetland answer 1a, in not, answer 1b
☒ Y ☐ N 1a. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
☒ Y ☐ N 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. ☒ Y ☐ N Does the wetland lack man-made structure that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. ☒ Y ☐ N Is the flood potential high in the local watershed in which the wetland is located (history of flood damages)?
4. ☒ Y ☐ N Is the wetland located in a watershed where the majority of the upland soils are clay and impermeable, or is bedrock within two feet of the top of the soil profile?
5. ☒ Y ☐ N Is the wetland located in a local watershed which has highly modified runoff conditions due to existing development?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

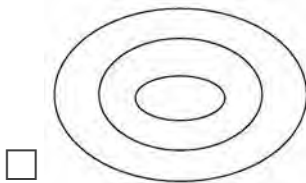
1. How many vegetation zones are evident in this wetland polygon? 1

1b. If only one vegetation zone is evident, which best describes the site?

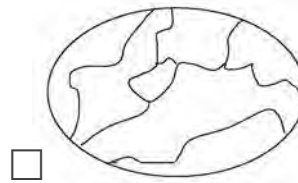
- ☐ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks, heterogeneous textures across the polygon.
- ☒ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

2. If more than one vegetation zone is present in the polygon, which interspersed diagram most closely represents the distribution of these zones?

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation Zone A

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☒ >90%

Is there notable layering/stratification in this vegetation zone? No

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

- | | |
|---|----------|
| a. <u><i>Typha latifolia</i></u> | d. _____ |
| b. <u><i>Symphyotrichum lanceolatum</i></u> | e. _____ |
| c. <u><i>Solidago gigantea</i></u> | f. _____ |

Dominant Shrub Species listed in order of relative abundance.

- | | |
|---------------------------------|----------|
| a. <u><i>Salix interior</i></u> | c. _____ |
| b. _____ | d. _____ |

Dominant Tree Species listed in order of relative abundance.

- | | |
|----------|----------|
| a. _____ | c. _____ |
| b. _____ | d. _____ |

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☒ more or less close

Mature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone B

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closeMature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone C

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closeMature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservatism)

Herbs: non-seed plants

- ☐ horsetail, scouring rush spp. (Equisetum) 2
☐ *ferns: marsh shiled fern spp. (Dryopteris) 7
☐ *cinnamon fern (Osmunda cinnamomea) 9
☐ *royal fern (Osmunda regalis) 8
☐ sensitive fern (Onoclea sensibilis) 4
☐ *other: species (if know _____)
☐ marsh club moss (Selaginella apoda) 4
☐ Sphagnum moss spp. (Sphagnum) 10

Herbs: lvs. floating or submergent

- ☐ *bladderwort spp. (Utricularia) 10
☐ coontail (Ceratophyllum demersum) 1
☐ duckweed spp. (Lemnaceae) 3
☐ *pondweed spp. (Potamogeton) 8
☐ curlyleaf pondweed (Potamogeton crispus) 0
☐ *water lily (Nymphaea tuberosa) 6
☐ water shield (Brasenia schreberi) 4
☐ *yellow spatterdock spp. (Nuphar) 6

Herbs: lvs. floating or submergent

- ☐ *pitcher plant (Sarracenia purpurea) (10)
☐ *sundew spp. (Drosera) 10

Herbs: linear-lvs. or +/- leafless monocots

- ☐ *beak rush spp (Rhynchospora) 10
☐ blueflag iris (Iris virginica) 5
☒ bulrush spp. (Scirpus / Schoenoplectus) 5
☐ *bur reed spp. (Sparganium) 9
☒ cat-tail spp. (Typha) 1
☐ *cotton grass spp. (Eriophorum) 10
 Grasses (family Gramineae) - indicate types and number of species
☐ a. *wild rice (Zizania aquatica) 10
☒ b. most native perennial grass spp. 4:
 cut-grass, manna-grass, Canada bluepoint, foxtail (Alopecurus); other _____
☐ c. introduced grass spp. 0: reed canary grass (Phalaris, reed (Phragmites), annual grasses such as annual foxtail (Setaria) and barnyard grass (Echinochloa)
☐ needle sedge spp. (Eleocharis) 1 sp. = 2
☐ *additional = 8
☐ nutsedge spp. (Cyperus) 2
☐ *orchid spp. 10; species (if know _____)
☐ rush spp. (Juncus) 4
☐ sedge spp. (Carex) 1 sp. = 3 ☒ additional = 7
☐ *spiderlily (Hymenocallis occidentalis) 9
☐ sweet flag (Acorus calamus) 0
☐ *3-way sedge (Dulichium arundinaceum) 10
☐ *twig rush (Cladium mariscoides) 10
☐ *umbrella sedge (Fuirena squarrosa) 10
☐ wild hyacinth (Camassia scilloides) 5
☐ *yellow-eyed grass (Xyris torta) 9

Herbs: wide-leafed monocots

- ☐ *arrow arum (Peltandra virginica) 6
☐ arrow-head spp. (Sagittaria) 4
☐ *green dragon (Arisaema dracontium) 6
☐ Jack-in-the-pulpit (Arisaema triphyllum) 4
☐ pickerel weed (Pontederia cordata) 5
☐ *skunk cabbage (Symplocarpus foetidus) 8
☐ *water arum (Calla palustris) 10
☒ water plantain (Alisma plantago-aquatica) 2

Herbs: dicots - lvs. opposite/whorled

- ☐ *bedstraw spp. (Gallium) 6
☐ beggar's tick spp. (Bidens) 3
☐ blue vervain (Verbena hastata) 3
☐ boneset (Eupatorium perfoliatum) 4
☒ bugleweed spp. (Lycopus) 5
☐ clearweed spp. (Pilea) 3
☐ cup plant (Silphium perfoliatum) 4
☐ false nettle (Boehmeria cylindrica) 3
☐ *fen betony (Pedicularis lanceolata) 6
☐ *gentian spp. (Gentiana Gentianopsis) 8
☐ giant ragweed (Ambrosia trifida) 0
☐ Indian hemp (Apocynum cannabinum) 2
☐ Joe-pye weed spp. (Eupatorium) 5
☐ *loosestrife spp. (Lysimachia) 6
☐ meadow beauty (Rhexia virginica) 5
☐ mint spp. e.g. hedge nettle, mtn. mint, skullcap
☐ moneywort (Lysimachia nummularia) 0
☐ monkey flower spp. (Mimulus) 4
☐ nettle (Urtica procera) 1
☐ purple loosestrife (Lythrum salicaria) 0
☐ *richweed (Collinsia canadensis) 8
☐ St. John's wort spp. (Hypericum/Triandrium) 8
☐ sunflower sp. (Helianthus) 4
☐ *swamp loosestrife (Decodon verticillatus) 8
☐ swamp milkweed (Asclepias incarnata) 4
☐ toothcup spp. (Ammania Rotala) 2
☐ *turtlehead spp. (Chelone) 8
☐ virgin's bower (Clematis virginiana) 3
☐ water purslane (Ludwigia palustris) 3
☐ winged loosestrife (Lythrum alatum) 5

Herbs (vines): dicots - lvs. alternate or basal and

- ☐ American bellflower (Campanula americana) 4
☐ *asters: bristly aster (Aster puniceus) 7
☐ flat-topped aster (Aster umbellatus) 8
☒ other aster spp. (e.g. New England, panicled ast
☐ *black-eyed Susan (Rudbeckia fulgida) 8
☐ cardinal flower (Lobelia cardinalis) 4
☐ cress spp. (Cardamine) 4
☒ dock spp.: swamp, water, pale (Rumex) 4
☐ garlic mustard (Alliaria petiolata) 0
☐ golden ragwort (Senecio aureus) 4

Herbs (vines): dicots - lvs. alternate or basal and simple (continued)

- ✓ *goldenrod spp. (*Solidago ohioensis*, *S. patula*, 10
- *grass of Parnassus (*Parnassia glauca*) 10
- *Indian plantain (*Cacalia plantaginea*) 10
- ironweed spp. (*Vernonia*) 4
- jewelweed, touch-me-not spp. (*Impatiens*) 3
- lizard's tail (*Saururus cernuus*) 4
- lobelia spp. (*Lobelia*) 4
- *marsh marigold (*Caltha palustris*) 7
- *moonseed (*Menispermum canadense*) 6
- primrose-willow spp. (*Epilobium* *Ludwigia*) 3
- rose mallow spp. (*Hibiscus*) 4
- ✓ smartweed spp.: jumpseed, pinkweed, 10
- tearthumb, water-pepper, waters smartweed 10
- (*Polygonum*)
- halbredleaf tearthumb (*Polygonum arifolium*) 10
- sneezeweed (*Helenium autumnale*) 3
- stinging nettle (*Laportea canadensis*) 2
- *swamp saxifrage (*Saxifraga pennsylvanica*) 10
- *Virginia bluebells (*Mertensia virginica*) 6
- waterhemp (*Amaranthus tuberculatus*) 1
- wingstem (*Actinomeris alternifolia*) 3

Herbs: dicots - lvs. basal or alternate and compound or deeply lobed

- aven spp.: round, white (*Geum*) 2
- *buttercup spp.: cursed b., hooked b., swamp 6
- b. (*Ranunculus*)
- chervil (*Chaerophyllum procumbens*) 3
- *cowbane (*Oxypolis rigidior*) 7
- *great angelica (*Angelica atropurpurea*) 6
- hog peanut / ground nut (*Amphicarpaea* and 5
- Apios*)
- honewort (*Cryptotaenia canadensis*) 3
- meadow rue spp. (*Thalictrum*) 5
- ✓ poison ivy (*Rhus radicans*) 1
- *queen-of-the prairie (*Filipendula rubra*) 9
- senna spp. (*Cassia*) 4
- swamp agrimony (*Agrimonia parviflora*) 4
- *swamp thistle (*Cirsium muticum*) 8
- tall coneflower (*Rudbeckia laciniata*) 3
- *water hemlock spp. (*Cicuta*) 7
- water parsnips (*Sium suave*) 5

Shrubs - leaves opposite or whorled

- bladdernut (*Staphylea trifolia*) 5
- buckthorn spp. (*Rhamnus cathartica*, *R.* 0
- frangula*)
- buttonbush (*Cephalanthus occidentalis*) 5
- dogwood, red-osier (*Cornus stolonifera*) 4
- *dogwood, blue-fruited or silky (*Cornus obliqua*)
- dogwood, gray (*Cornus racemosa*) 2
- elderberry (*Sambucus*) 2

Shrubs - leaves alternate

- *cranberry spp. (*Vaccinium*) 10
- *dwarf birch (*Betula pumila*) 10
- *highbush blueberry (*Vaccinium corymbosum*) 9
- *leatherleaf (*Chamaedaphne calyculata*) 10
- meadowsweet and Hardhack spp. (*Spiraea*) 4
- *ninebark (*Physocarpus opulifolius*) 7
- *shrubby cinquefoil (*Potentilla fruticosa*) 9
- spice bush (*Lindera benzoin*) 5
- *swamp dewberry (*Rubus hispidus*) 6
- *swamp holly and winterberry spp. (*Ilex*) 7
- swamp rose (*Rosa palustris*) 5

Trees - leaves needle shaped

- *tamarack (*Larix laricina*) 10

Trees - leaves compound

- *ash, black (*Fraxinus nigra*) 7
- ash, green (*Fraxinus pensylvanica*) 3
- *ash, pumpkin (*Fraxinus tomentosa*) 8
- boxelder (*Acer negundo*) 1
- hickory, bitternut (*Carya cordiformis*) 5
- hickory, shellbark (*Carya laciniosa*) 8
- honey locust (*Gleditsia triacanthos*) 1
- *poison sumac (*Rhus vernix*) 10

Trees - leaves simple and opposite

- ✓ red maple (*Acer rubrum*) 5
- ✓ silver maple (*Acer saccharinum*) 1

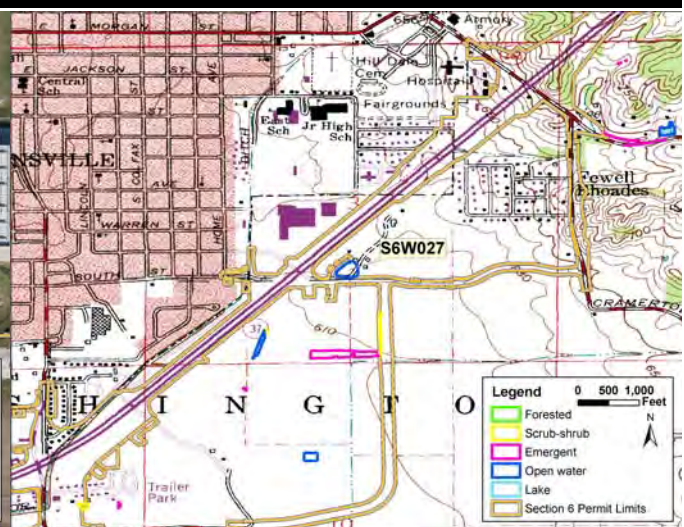
Trees - leaves simple and alternate

- *alder, speckled (*Alnus rugosa*) 9
- river birch (*Betula nigra*) 2
- black, gum (*Nyssa sylvatica*) 5
- cottonwood, eastern (*Populus deltoides*) 1
- cottonwood, swamp (*Populus heterophylla*) 8
- ✓ elm, American (*Ulmus americana*) 3
- hackberry (*Celtis occidentalis*) 3
- ironwood (*Carpinus caroliniana*) 5
- oak, pin or white (*Quercus*) 4
- *oak, Shumard's, swamp chestnut, swamp whit
- *pawpaw (*Asimina triloba*) 6
- *sugarberry (*Celtis laevigata*) 7
- sweet gum (*Liquidambar styraciflua*) 4
- sycamore, American (*Platanus occidentalis*) 3
- ✓ willow spp. (*Salix*) 1 sp. = 3
- additional sp. = 7

Wetland S6W027



Wetland Location on 2015 Aerial Photograph



Wetland Location on Martinsville USGS Quadangle

Basin: Indian Creek - Sand Creek

14-digit HUC: 05120201170070

Physiographic Region: Martinsville Hills

Ecoregion: Interior Plateau

Natural Region: Highland Rim

Size of wetland complex (acres): 1.2057

USACE Jurisdiction: Yes

IDEM Jurisdiction: Yes

Quadrangle: Martinsville

County: Morgan

Township: T11N

Range: R1E

Section: 3

Quarter: SW

Latitude: 39.417087

Longitude: -86.409698

| Polygon ID | Community Type | Cowardin Class | Polygon Area (acres) | Animal Habitat Measure | Botanical Measure | Hydrology Measure | Alternative | Area Impacted (acres) | Percent Polygon Impacted |
|------------|----------------|----------------|----------------------|------------------------|-------------------|-------------------|-------------|-----------------------|--------------------------|
| S6W027A | Pond | PUB | 1.21 | no rating | no rating | no rating | RPA | 0.00 | 0.0% |

Wetland S6W027

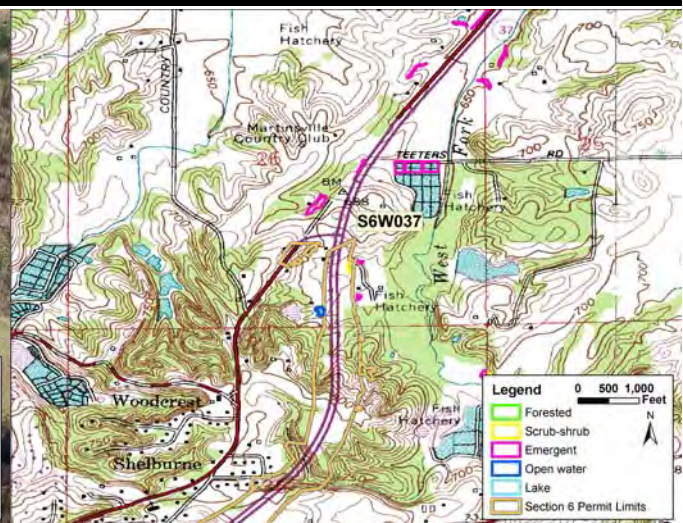


Polygon S6W027A

Wetland S6W037



Wetland Location on 2015 Aerial Photograph



Wetland Location on Martinsville USGS Quadrangle

Basin: Clear Creek - East/West/Grassy
14-digit HUC: 05120201140140
Physiographic Region: Martinsville Hills
Ecoregion: Interior Plateau
Natural Region: Highland Rim
Size of wetland complex (acres): 0.0603
USACE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Quadrangle: Martinsville
County: Morgan
Township: T12N
Range: R1E
Section: 26
Quarter: SE
Latitude: 39.444538
Longitude: -86.386915

| Polygon ID | Community Type | Cowardin Class | Polygon Area (acres) | Animal Habitat Measure | Botanical Measure | Hydrology Measure | Alternative | Area Impacted (acres) | Percent Polygon Impacted |
|------------|----------------|----------------|----------------------|------------------------|-------------------|-------------------|-------------|-----------------------|--------------------------|
| S6W037A | Wet Meadow | PEM | 0.06 | poor | poor | fair | RPA | 0.06 | 99.5% |

This site is classified as a PSS wetland, 0.06 acre in size. The Section 6 Design Contract 1 Permit Limits would permanently impact 0.06 acre of this wetland. This wetland showed 100% herbaceous cover and 30% sapling/shrub cover. Dominant herbaceous species for this wetland include Equisetum hyemale. Dominant sapling/shrub species included Salix interior. Hydrology is likely due to runoff from local roads and SR 37. Animal habitat, botanical diversity, and hydrology function are rated as poor, poor, and fair respectively based on InWRAP summaries for the site.

Wetland S6W037



Polygon S6W037A



Polygon S6W037A

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W037A City/County: Morgan Sampling Date: 04/07/2017
 Applicant/Owner: INDOT/Lochummueller State: Indiana Sampling Point: CL03A-1D1
 Investigator(s): R. Yeager, B. Reust Section, Township, Range: SEC 26, T12N, R1E
 Landform (hillslope, terrace, etc.): roadside Local relief (concave, convex, none): flat
 Slope (%): 1% Lat: 39.444677 Long: -86.386898 Datum: GCS NAD83
 Soil Map Unit Name: Elkinsville silt loam, 6 to 12 percent slopes NWI classification: upland

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain Remarks.)
 Are Vegetation X, Soil X or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No:
 Are Vegetation , Soil or Hydrology naturally problematic? If needed, explain answers in Remarks.)

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

| | | | |
|---------------------------------|-----------------|-------------|--|
| Hydrophytic Vegetation Present? | Yes <u> </u> | No <u>X</u> | Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> |
| Hydric Soils Present? | Yes <u> </u> | No <u>X</u> | |
| Wetland Hydrology Present? | Yes <u> </u> | No <u>X</u> | |
| Remarks: | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A/B) | | | | | | | | | | | | | | | | |
|---|--------------------|-------------------|------------------|---|-------------------|--------------|----------------------|----------------|-----------------------|----------------|----------------------|----------------|-----------------------|----------------|------------------------|------------------|---------------------------|--------------------|--------------------------------------|--|
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u>0</u> | <u> </u> | <u> </u> | Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>100</u></td> <td>x 5 = <u>500</u></td> </tr> <tr> <td>Column Totals: <u>100</u></td> <td>(A) <u>500</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>5.00</u></td> </tr> </table> | Total % Cover of: | Multiply by: | OBL species <u>0</u> | x 1 = <u>0</u> | FACW species <u>0</u> | x 2 = <u>0</u> | FAC species <u>0</u> | x 3 = <u>0</u> | FACU species <u>0</u> | x 4 = <u>0</u> | UPL species <u>100</u> | x 5 = <u>500</u> | Column Totals: <u>100</u> | (A) <u>500</u> (B) | Prevalence Index = B/A = <u>5.00</u> | |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | | | |
| OBL species <u>0</u> | x 1 = <u>0</u> | | | | | | | | | | | | | | | | | | | |
| FACW species <u>0</u> | x 2 = <u>0</u> | | | | | | | | | | | | | | | | | | | |
| FAC species <u>0</u> | x 3 = <u>0</u> | | | | | | | | | | | | | | | | | | | |
| FACU species <u>0</u> | x 4 = <u>0</u> | | | | | | | | | | | | | | | | | | | |
| UPL species <u>100</u> | x 5 = <u>500</u> | | | | | | | | | | | | | | | | | | | |
| Column Totals: <u>100</u> | (A) <u>500</u> (B) | | | | | | | | | | | | | | | | | | | |
| Prevalence Index = B/A = <u>5.00</u> | | | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | | | | Hydrophytic Vegetation Indicators: <u> </u> 1-Rapid Test for Hydrophytic Vegetation: <u> </u> 2-Dominance Test is >50% <u> </u> 3-Prevalence Index is <=3 ¹ <u> </u> 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic | | | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u>0</u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | | | | Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u> | | | | | | | | | | | | | | | | |
| 1. <u>Festuca sp.</u> | <u>100</u> | <u>Yes</u> | <u>UPL</u> | | | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u>100</u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| Vine Stratum (Plot Size: <u>30'</u> radius) | | | | | | | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| | <u>0</u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |

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

SOIL

Sampling Point CL03A-1D1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|----|----------------|----|-------------------|------------------|-----------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-4 | 10YR3/2 | | | | | | silt loam | |
| 4-20 | 10YR5/6 | 60 | 10YR5/2 | 40 | | | silt loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix

| | | | |
|--|--|--|---|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Muck Peat or Peat (S3) | | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) | Indicators for Problematic Hydric Soils ³ <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other Soil (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 <u>X</u> | |

Remarks:

Access road gravel encountered at 4 inches.

HYDROLOGY

| | | | |
|--|--|---|---|
| Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Water Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | <u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) |
| Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe) | | Wetland Hydrology Present? Yes _____ No <u>X</u> | |

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

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W037A City/County: Morgan Sampling Date: 04/06/2017
 Applicant/Owner: INDOT/Lochmueller State: Indiana Sampling Point: CL03A-1W1
 Investigator(s): R. Yeager, B. Reust Section, Township, Range: SEC 26, T12N, R1E
 Landform (hillslope, terrace, etc.): roadside Local relief (concave, convex, none): flat
 Slope (%): 1% Lat: 39.444666 Long: -86.386939 Datum: GCS NAD83
 Soil Map Unit Name: Elkinsville silt loam, 6 to 12 percent slopes, eroded NWI classification: upland

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

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

| | | | |
|---|--------------|----------------|--|
| Hydrophytic Vegetation Present? | Yes <u>X</u> | No <u> </u> | Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> |
| Hydric Soils Present? | Yes <u>X</u> | No <u> </u> | |
| Wetland Hydrology Present? | Yes <u>X</u> | No <u> </u> | |
| Remarks: The wetland feature represented by this data point has been designated as PSS1 based on the Cowardin et al. classification system. | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>100</u> (A/B) | | | | | | | | | | | | | | |
|--|------------------|-------------------|--------------------------|---|-------------------|--------------|----------------------|----------------|-------------------------|------------------|----------------------|----------------|-----------------------|----------------|----------------------|----------------|-------------------------------|----------------|
| 1. <u>Fraxinus pennsylvanica</u> | <u>20</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | | | <u>20</u> = Total Cover | Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>150</u></td> <td>x 2 = <u>300</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>150</u> (A)</td> <td><u>300</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>2.00</u> | Total % Cover of: | Multiply by: | OBL species <u>0</u> | x 1 = <u>0</u> | FACW species <u>150</u> | x 2 = <u>300</u> | FAC species <u>0</u> | x 3 = <u>0</u> | FACU species <u>0</u> | x 4 = <u>0</u> | UPL species <u>0</u> | x 5 = <u>0</u> | Column Totals: <u>150</u> (A) | <u>300</u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u>0</u> | x 1 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACW species <u>150</u> | x 2 = <u>300</u> | | | | | | | | | | | | | | | | | |
| FAC species <u>0</u> | x 3 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACU species <u>0</u> | x 4 = <u>0</u> | | | | | | | | | | | | | | | | | |
| UPL species <u>0</u> | x 5 = <u>0</u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u>150</u> (A) | <u>300</u> (B) | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u>Salix interior</u> | <u>30</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | | | <u>30</u> = Total Cover | | | | | | | | | | | | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u>Equisetum hyemale</u> | <u>100</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | | | <u>100</u> = Total Cover | | | | | | | | | | | | | | | |
| Vine Stratum (Plot Size: <u>30'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | | | <u>0</u> = Total Cover | | | | | | | | | | | | | | | |
| Hydrophytic Vegetation Indicators: <u>X</u> 1-Rapid Test for Hydrophytic Vegetation: <u>X</u> 2-Dominance Test is >50% <u>X</u> 3-Prevalence Index is <=3 ¹ <u> </u> 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic | | | | | | | | | | | | | | | | | | |
| Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> | | | | | | | | | | | | | | | | | | |

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

SOIL

Sampling Point CL03A-1W1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|-----------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-3 | 10YR3/2 | 100 | | | | | silt loam | |
| 3-20 | 10YR4/2 | 95 | 10YR4/6 | 5 | C | M | silty clay loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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 Soils³

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other Soil (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 ☐

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)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ 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 ☒ Depth (inches): _____
 Water Table Present? Yes ☒ No ☐ Depth (inches): 9
 Saturation Present? Yes ☒ No ☐ Depth (inches): 1
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Ground water movement from SR37 to access road ditch. Ditch included in wetland.

I-69 Wetland Quality Assessment Profile

Date Report Generated: 5/22/2018
Data reference # S6W037
Wetland Site **S6W037**
Date of site visit: 10/01/15
Total wetland area: 0.0603 acres

| | |
|--|-------------|
| Polygon Information | |
| Polygon ID | S6W037A |
| Polygon Size (acres) | 0.06 |
| Wetland Community Type | SC |
| Red Flag (Special) Indicators | |
| Special Hydrologic Conditions | N |
| Special Community Type | N |
| Rare-Threatened-Endangered Species | N |
| Animal Habitat Measures | |
| Wetland size and connectivity | 3 |
| Surrounding land use | 1 |
| Standing water | 1 |
| Dead woody material | 1 |
| Zonation and interspersion | 1 |
| Stratification | 1 |
| Tree canopy | 1 |
| Mature trees | 1 |
| Animal Habitat Measure Score (min = 8, max = 24) | 10 |
| Animal Habitat Measure Rating | poor |
| Botanical Measures (all except exotics dependent upon community type) | |
| Number of dominant plant taxa observed | 1 |
| Conservatism rating | 1 |
| Total hydrophytic taxa observed | 1 |
| Number of indicator taxa | 1 |
| Exotic species rating | 3 |
| Botanical Measure Score (min = 5, max = 15) | 7 |
| Botanical Measure Rating | poor |
| Hydrology Measures | |
| Water quality protection (= no. of yes answers) | 2 |
| Flood and storm water storage (= no. of yes answers) | 2 |
| Site/Hydrology Score (min = 11, max = 33) | 19 |
| Site/Hydrology Rating | fair |

In-WRAP Summary Sheet

Date Report Generated: Monday, July 30, 2018

Wetland Site Name: N/A

Data Reference #: S6W037

Date of Site Visit: Thursday, October 1, 2015

Tier 1 Summary:

a. Total Wetland Area (acres): 0.0603

b. Wetland size and connectivity - contribution to animal habitat:

Valuable More Favorable Favorable Neutral

c. Surrounding land use - numerical rank (max. = 1): 0.23

d. Value surrounding area adds to animal habitat: Valuable Favorable Low

Tier 2 SUMMARY:

Polygon ID S6W037A

a. Indiana Wetland community type: Shrub-Carr

b. Standing water - contribution to animal habitat: Valuable Favorable Neutral

c. Disturbances to site: ditches road/railroad

d. Exotic species rating: Good Medium Poor

e. Special Hydrologic Conditions Observed: None

f. Special Community Type: None

g. Rare-Threatened-Endangered Species: None

h. Polygon Quality Descriptor: Good Medium Poor

Tier 3A SUMMARY:

a. Dead woody material as indicator of animal habitat: Valuable Favorable Neutral

b. Water quality protection - numerical rank (6 max.): 2 Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max) 2 Good Medium Poor

Tier 3B SUMMARY:

a. Zonation and interspersions as indicator of animal habitat: Valuable Favorable Neutral

b. Stratification as indicator of animal habitat: Valuable Neutral

c. Number of dominant plant taxa observed: 4 Good Medium Poor

d. Average coefficient of conservatism: 1 Good Medium Poor

e. Tree canopy as indicator of animal habitat: Valuable Neutral

f. Mature trees as indicator of animal habitat: Valuable Favorable Neutral

g. Total hydrophytic taxa observed: 5 Good Medium Poor

h. Number of indicator taxa: 0 Good Medium Poor

Tier 1: Assessment Overview**1.1 Site Identification:**Wetland Site Name: N/AOwnership (if known): N/AUSGS Topographic Quadrangle: MartinsvilleUSGS Watershed map 14-Digit HUC: Clear Creek - East/West/Grassy Forks

Identify each NWI Polygon within the Wetland Site (Polygon specific data)

| NWI Polygon ID Number | Cowardin Classification | Polygon Size (acres) |
|-----------------------|-------------------------|----------------------|
| S6W037A | PEM1 | 0.0603 |

1.2 Site VisitTeam Members: R. Hook, R. ConnollyAgency: HNTBDate assessed: 10/1/2015

Time assessed: _____

Weather conditions: _____

Note any unusual weather events that may have influenced the current conditions within this wetland system (e.g. recent heavy rains, an unusually dry season, an especially early spring etc.)

1.3 Wetland SizeSize of site under assessment: 0.0603Size of wetland complex: 0.0603**1.4 Site Setting**

Degree of isolation from other wetlands or wetland complexes:

☒ The site is connected upstream and downstream with other wetlands☐ The site is only connected upstream with other wetlands☐ The site is only connected downstream with other wetlands☐ Other wetlands are nearby (within 0.25 mile) but not connected☐ The wetland site is isolated

General assessment of adjacent land use / land cover in the area within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

| | | | |
|-----------|---------------------------------------|-----------|---|
| <u>0</u> | Native Vegetation - woodland | <u>70</u> | Road / highway / railroad bed / parking lot |
| <u>15</u> | Native Vegetation - old field / scrub | <u>0</u> | Industrial |
| <u>0</u> | Agricultural - tilled | <u>0</u> | Residential - single family |
| <u>0</u> | Agricultural - pasture | <u>0</u> | Commercial or multifamily residential |
| <u>15</u> | Recreation - green space, mowed | | |

(see table on page one)

Tier 2: Individual Polygon: Preliminary Assessment

(to be completed on-site for each NWI polygon present in the wetland)

2.1 Wetland Geomorphic Setting and Surface Water Flow (check one):

☒ Depressional ☐ Slope ☐ Floodplain ☐ Lacustrine
☐ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? No

Is standing water is present, is the water greater than 2 meters n depth? No

Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

☐ Permanently Flooded ☐ Artificially Flooded
☐ Seasonally Flooded
☒ Saturated (surface water seldom present) ☐ Artificailly Drained

2.4 Soil Type

☐ Organic (i.e. peat, etc.) ☒ Mineral ☐ Both Mineral and Organic Present

2.5 Wetland Community Type for this NWI polygon (see Key to Wetland Communities of Indiana):

Shrub-Carr

2.6 Disturbances of Hydrology (check all that apply):

☒ Ditching ☐ Culvert
☐ Tiles ☐ Other Human Distrubances to the
☐ Dams Hydrology (explain):
☒ Road or Railroad Embankment

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common):

☐ Garlic Mustard ☐ Glossy Buckthorn
☐ *Phragmites* ☐ Reed Canary Grass
☐ Purple Loosestrife ☐ Other (list):

2.8 Presence of Special Hydrologic Conditions (i.e. seeps, wet slopes, floating mat):

None

2.9 Presence of Special Community Types:

☐ Bog ☐ Fen ☐ Wet Sand / Muck Flats or Marl Seeps

2.10 Presence of Known Federal or Indiana Rar, Threatened or Endangered Species:

☒ None observed or known to be presen
☐ RTES Present (list):

2.11 Wetland Polygon Quality Descriptor (see: Wetland Quality Descriptions and check one):

☐ Good ☐ Medium ☒ Poor

Tier 3a: Individual Polygon: Rapid Hydrology Indicators

3a.1 Notable Features that influence water quality and hydrology:

Estimated herbaceous plant cover (percentage) in the polygon 100-75 ☒ 75-50 50-25 <25
 Estimated woody plant foliar coverage in the polygon 100-75 75-50 50-25 ☒ <25
 Amount of dead woody material on the soil surface ☒ nil scattered frequent

3a.2 Water Quality Protection Questions:

1. ☒ Y ☐ N Does the wetland have a significant amount of vegetative (specifically herbaceous and woody plant) density to potentially uptake dissolved nutrients?
2. Y ☐ N Managed water (e.g. municipal or road stormwater drainage, agricultural drainage outlet, industrial or municipal wastewater) is not discharged into the wetland polygon?
3. If wetland in question is a depressional wetland answer 3a, in not, answer 3b.
☒ Y ☐ N 3a. Does the wetland have a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland?
- Y ☐ N 3b. Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface body of water down gradient?
4. Y ☐ N Does the wetland lack steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within 100 meters of its border?
5. Y ☐ N Are there recreational lakes, fishable or navigable watercourses, or water supply sources down gradient in the local watershed?
6. Y ☐ N Is a vegetative buffer area or another wetland polygon (areas where overland flow could be filtered) located upland and adjacent to the wetland polygon? If yes, describe buffer area width and slope.
 width of buffer area (in meters 0 approximate slope (percent 0

3a.3 Flood and Stormwater Storage / Attenuation Questions:

1. If wetland in question is a depressional wetland answer 1a, in not, answer 1b
☒ Y ☐ N 1a. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
 Y ☐ N 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. Y ☐ N Does the wetland lack man-made structure that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. Y ☐ N Is the flood potential high in the local watershed in which the wetland is located (history of flood damages)?
4. Y ☐ N Is the wetland located in a watershed where the majority of the upland soils are clay and impermeable, or is bedrock within two feet of the top of the soil profile?
5. ☒ Y ☐ N Is the wetland located in a local watershed which has highly modified runoff conditions due to existing development?

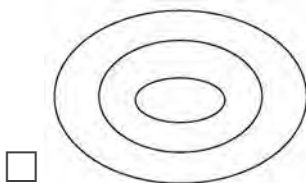
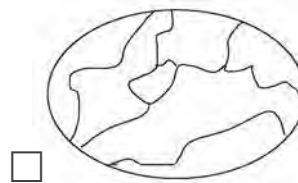
Tier 3b Individual Polygon: Rapid Vegetation Description**3b.1 Zonation and Interspersion:**

1. How many vegetation zones are evident in this wetland polygon? 1

1b. If only one vegetation zone is evident, which best describes the site?

- ☒ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks, heterogeneous textures across the polygon.
- ☐ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

2. If more than one vegetation zone is present in the polygon, which interspersed diagram most closely represents the distribution of these zones?

Type One Interspersion**Type Two Interspersion****3b.2 Dominant Plant Species: Vegetation Zone A**

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☒ >90%

Is there notable layering/stratification in this vegetation zone? No

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

- | | |
|------------------------------------|----------|
| a. <u><i>Pericaria sp.</i></u> | d. _____ |
| b. <u><i>Typha latifolia</i></u> | e. _____ |
| c. <u><i>Equisetum hyemale</i></u> | f. _____ |

Dominant Shrub Species listed in order of relative abundance.

- | | |
|----------|----------|
| a. _____ | c. _____ |
| b. _____ | d. _____ |

Dominant Tree Species listed in order of relative abundance.

- | | |
|---------------------------------|----------|
| a. <u><i>Salix interior</i></u> | c. _____ |
| b. _____ | d. _____ |

Tree and shrub canopy: ☒ nil ☐ separate, seldom touching ☐ often touching ☐ more or less close

Mature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone B

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closeMature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone C

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closeMature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservatism)

Herbs: non-seed plants

- ✓ horsetail, scouring rush spp. (Equisetum) 2
- *ferns: marsh shiled fern spp. (Dryopteris) 7
- *cinnamon fern (Osmunda cinnamomea) 9
- *royal fern (Osmunda regalis) 8
- sensitive fern (Onoclea sensibilis) 4
- *other: species (if know
- marsh club moss (Selaginella apoda) 4
- Sphagnum moss spp. (Sphagnum) 10

Herbs: lvs. floating or submergent

- *bladderwort spp. (Utricularia) 10
- coontail (Ceratophyllum demersum) 1
- duckweed spp. (Lemnaceae) 3
- *pondweed spp. (Potamogeton) 8
- curlyleaf pondweed (Potamogeton crispus) 0
- *water lily (Nymphaea tuberosa) 6
- water shield (Brasenia schreberi) 4
- *yellow spatterdock spp. (Nuphar) 6

Herbs: lvs. floating or submergent

- *pitcher plant (Sarracenia purpurea) (10)
- *sundew spp. (Drosera) 10

Herbs: linear-lvs. or +/- leafless monocots

- *beak rush spp (Rhynchospora) 10
- blueflag iris (Iris virginica) 5
- bulrush spp. (Scirpus / Schoenoplectus) 5
- *bur reed spp. (Sparganium) 9
- ✓ cat-tail spp. (Typha) 1
- *cotton grass spp. (Eriophorum) 10

Grasses (family Gramineae) - indicate types and number of species

- a. *wild rice (Zizania aquatica) 10
- b. most native perennial grass spp. 4:
cut-grass, manna-grass, Canada bluepoint,
foxtail (Alopecurus); other
- c. introduced grass spp. 0: reed canary
grass (Phalaris, reed (Phragmites),
annual grasses such as annual foxtail
(Setaria) and barnyard grass (Echinochloa)
- needle sedge spp. (Eleocharis) 1 sp. = 2
*additional = 8
- nutsedge spp. (Cyperus) 2
- *orchid spp. 10; species (if know
- rush spp. (Juncus) 4
- sedge spp. (Carex) 1 sp. = 3 additional = 7
- *spiderlily (Hymenocallis occidentalis) 9
- sweet flag (Acorus calamus) 0
- *3-way sedge (Dulichium arundinaceum) 10
- *twig rush (Cladium mariscoides) 10
- *umbrella sedge (Fuirena squarrosa) 10
- wild hyacinth (Camassia scilloides) 5
- *yellow-eyed grass (Xyris torta) 9

Herbs: wide-leafed monocots

- *arrow arum (Peltandra virginica) 6
- arrow-head spp. (Sagittaria) 4
- *green dragon (Arisaema dracontium) 6
- Jack-in-the-pulpit (Arisaema triphyllum) 4
- pickerel weed (Pontederia cordata) 5
- *skunk cabbage (Symplocarpus foetidus) 8
- *water arum (Calla palustris) 10
- water plantain (Alisma plantago-aquatica) 2

Herbs: dicots - lvs. opposite/whorled

- *bedstraw spp. (Gallium) 6
- beggar's tick spp. (Bidens) 3
- blue vervain (Verbena hastata) 3
- boneset (Eupatorium perfoliatum) 4
- bugleweed spp. (Lycopus) 5
- clearweed spp. (Pilea) 3
- cup plant (Silphium perfoliatum) 4
- false nettle (Boehmeria cylindrica) 3
- *fen betony (Pedicularis lanceolata) 6
- *gentian spp. (Gentiana Gentianopsis) 8
- giant ragweed (Ambrosia trifida) 0
- Indian hemp (Apocynum cannabinum) 2
- Joe-pye weed spp. (Eupatorium) 5
- *loosestrife spp. (Lysimachia) 6
- meadow beauty (Rhexia virginica) 5
- mint spp. e.g. hedge nettle, mtn. mint, skullcap
- moneywort (Lysimachia nummularia) 0
- monkey flower spp. (Mimulus) 4
- nettle (Urtica procera) 1
- purple loosestrife (Lythrum salicaria) 0
- *richweed (Collinsia canadensis) 8
- St. John's wort spp. (Hypericum/Triandem) 8
- sunflower sp. (Helianthus) 4
- *swamp loosestrife (Decodon verticillatus) 8
- swamp milkweed (Asclepias incarnata) 4
- toothcup spp. (Ammania Rotala) 2
- *turtlehead spp. (Chelone) 8
- virgin's bower (Clematis virginiana) 3
- water purslane (Ludwigia palustris) 3
- winged loosestrife (Lythrum alatum) 5

Herbs (vines): dicots - lvs. alternate or basal and

- American bellflower (Campanula americana) 4
- *asters: bristly aster (Aster puniceus) 7
- flat-topped aster (Aster umbellatus) 8
- other aster spp. (e.g. New England, panicled ast
- *black-eyed Susan (Rudbeckia fulgida) 8
- cardinal flower (Lobelia cardinalis) 4
- cress spp. (Cardamine) 4
- dock spp.: swamp, water, pale (Rumex) 4
- garlic mustard (Alliaria petiolata) 0
- golden ragwort (Senecio aureus) 4

Herbs (vines): dicots - lvs. alternate or basal and simple (continued)

- ✓ *goldenrod spp. (*Solidago ohioensis*, *S. patula*, 10
- *grass of Parnassus (*Parnassia glauca*) 10
- *Indian plantain (*Cacalia plantaginea*) 10
- ironweed spp. (*Vernonia*) 4
- jewelweed, touch-me-not spp. (*Impatiens*) 3
- lizard's tail (*Saururus cernuus*) 4
- lobelia spp. (*Lobelia*) 4
- *marsh marigold (*Caltha palustris*) 7
- *moonseed (*Menispermum canadense*) 6
- primrose-willow spp. (*Epilobium* *Ludwigia*) 3
- rose mallow spp. (*Hibiscus*) 4
- ✓ smartweed spp.: jumpseed, pinkweed, 10
- tearthumb, water-pepper, waters smartweed 10
- (*Polygonum*)
- halbredleaf tearthumb (*Polygonum arifolium*) 10
- sneezeweed (*Helenium autumnale*) 3
- stinging nettle (*Laportea canadensis*) 2
- *swamp saxifrage (*Saxifraga pennsylvanica*) 10
- *Virginia bluebells (*Mertensia virginica*) 6
- waterhemp (*Amaranthus tuberculatus*) 1
- wingstem (*Actinomeris alternifolia*) 3

Herbs: dicots - lvs. basal or alternate and compound or deeply lobed

- aven spp.: round, white (*Geum*) 2
- *buttercup spp.: cursed b., hooked b., swamp 6
- b. (*Ranunculus*)
- chervil (*Chaerophyllum procumbens*) 3
- *cowbane (*Oxypolis rigidior*) 7
- *great angelica (*Angelica atropurpurea*) 6
- hog peanut / ground nut (*Amphicarpaea* and 5
- Apios*)
- honewort (*Cryptotaenia canadensis*) 3
- meadow rue spp. (*Thalictrum*) 5
- poison ivy (*Rhus radicans*) 1
- *queen-of-the prairie (*Filipendula rubra*) 9
- senna spp. (*Cassia*) 4
- swamp agrimony (*Agrimonia parviflora*) 4
- *swamp thistle (*Cirsium muticum*) 8
- tall coneflower (*Rudbeckia laciniata*) 3
- *water hemlock spp. (*Cicuta*) 7
- water parsnips (*Sium suave*) 5

Shrubs - leaves opposite or whorled

- bladdernut (*Staphylea trifolia*) 5
- buckthorn spp. (*Rhamnus cathartica*, *R.* 0
- frangula*)
- buttonbush (*Cephalanthus occidentalis*) 5
- dogwood, red-osier (*Cornus stolonifera*) 4
- *dogwood, blue-fruited or silky (*Cornus obliqua*)
- dogwood, gray (*Cornus racemosa*) 2
- elderberry (*Sambucus*) 2

Shrubs - leaves alternate

- *cranberry spp. (*Vaccinium*) 10
- *dwarf birch (*Betula pumila*) 10
- *highbush blueberry (*Vaccinium corymbosum*) 9
- *leatherleaf (*Chamaedaphne calyculata*) 10
- meadowsweet and Hardhack spp. (*Spiraea*) 4
- *ninebark (*Physocarpus opulifolius*) 7
- *shrubby cinquefoil (*Potentilla fruticosa*) 9
- spice bush (*Lindera benzoin*) 5
- *swamp dewberry (*Rubus hispidus*) 6
- *swamp holly and winterberry spp. (*Ilex*) 7
- swamp rose (*Rosa palustris*) 5

Trees - leaves needle shaped

- *tamarack (*Larix laricina*) 10

Trees - leaves compound

- *ash, black (*Fraxinus nigra*) 7
- ash, green (*Fraxinus pensylvanica*) 3
- *ash, pumpkin (*Fraxinus tomentosa*) 8
- boxelder (*Acer negundo*) 1
- hickory, bitternut (*Carya cordiformis*) 5
- hickory, shellbark (*Carya laciniosa*) 8
- honey locust (*Gleditsia triacanthos*) 1
- *poison sumac (*Rhus vernix*) 10

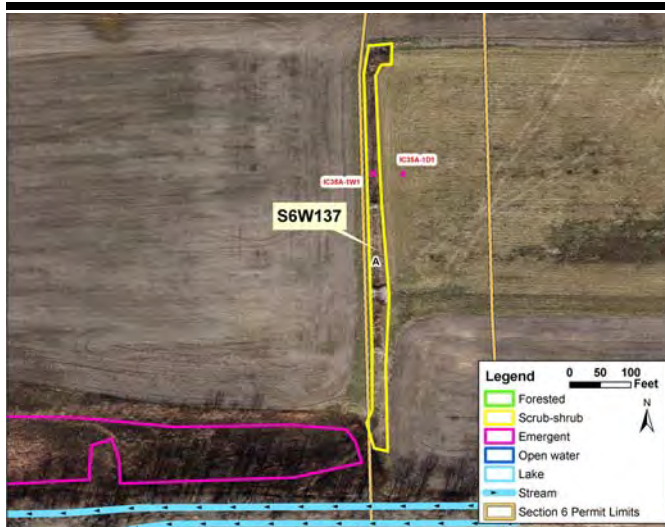
Trees - leaves simple and opposite

- red maple (*Acer rubrum*) 5
- silver maple (*Acer saccharinum*) 1

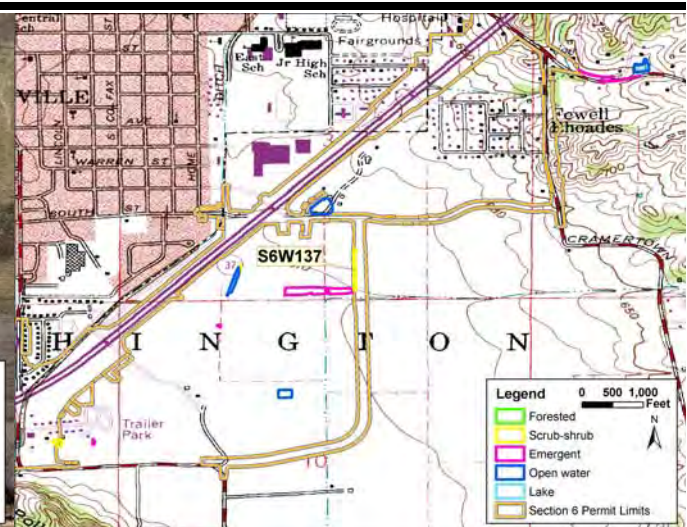
Trees - leaves simple and alternate

- *alder, speckled (*Alnus rugosa*) 9
- river birch (*Betula nigra*) 2
- black, gum (*Nyssa sylvatica*) 5
- cottonwood, eastern (*Populus deltoides*) 1
- cottonwood, swamp (*Populus heterophylla*) 8
- elm, American (*Ulmus americana*) 3
- hackberry (*Celtis occidentalis*) 3
- ironwood (*Carpinus caroliniana*) 5
- oak, pin or white (*Quercus*) 4
- *oak, Shumard's, swamp chestnut, swamp whit
- *pawpaw (*Asimina triloba*) 6
- *sugarberry (*Celtis laevigata*) 7
- sweet gum (*Liquidambar styraciflua*) 4
- sycamore, American (*Platanus occidentalis*) 3
- ✓ willow spp. (*Salix*) 1 sp. = 3
- additional sp. = 7

Wetland S6W137



Wetland Location on 2015 Aerial Photograph



Wetland Location on Martinsville USGS Quadrangle

Basin: Indian Creek - Sand Creek
14-digit HUC: 05120201170070
Physiographic Region: Martinsville Hills
Ecoregion: Interior Plateau
Natural Region: Highland Rim
Size of wetland complex (acres): 0.2938
USACE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Quadrangle: Martinsville
County: Morgan
Township: T11N
Range: R1E
Section: 3
Quarter: SE
Latitude: 39.414255
Longitude: -86.408257

| Polygon ID | Community Type | Cowardin Class | Polygon Area (acres) | Animal Habitat Measure | Botanical Measure | Hydrology Measure | Alternative | Area Impacted (acres) | Percent Polygon Impacted |
|------------|--------------------------|----------------|----------------------|------------------------|-------------------|-------------------|-------------|-----------------------|--------------------------|
| S6W137A | Seasonally Flooded Basin | PEM | 0.29 | poor | poor | poor | RPA | 0.29 | 98.7% |

This site is classified as a PSS wetland, 0.29 acre in size. The Section 6 Design Contract 1 Permit Limits would permanently impact 0.29 acre of this wetland. This wetland showed 22% herbaceous cover and 5% sapling/shrub cover. Dominant herbaceous species for this wetland include *Symphytotrichum lanceolatum*, *Carex* spp., and unknown spp. Dominant sapling/shrub species included *Salix interior*. Hydrology is likely due to runoff from local roads and SR 37. Animal habitat, botanical diversity, and hydrology function are all rated as poor based on InWRAP summaries for the site.

Wetland S6W137



Polygon S6W137A

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W137A City/County: Martinsville/Morgan Sampling Date: 2/9/2018
 Applicant/Owner: INDOT/Lochmueller State: Indiana Sampling Point: IC35A-1D1
 Investigator(s): Ruth Hook Section, Township, Range: Sec 3-T11N-R1E
 Landform (hillslope, terrace, etc.): excavated drainageway Local relief (concave, convex, none): concave
 Slope (%): 0-1 Lat: 39.414598 Long: -86.408139 Datum: GCS NAD83
 Soil Map Unit Name: Rensselaer cly loam NWI classification: upland

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

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

| | | | |
|--|-----------------|----------------|--|
| Hydrophytic Vegetation Present? | Yes <u> </u> | No <u>X</u> | Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> |
| Hydric Soils Present? | Yes <u>X</u> | No <u> </u> | |
| Wetland Hydrology Present? | Yes <u> </u> | No <u>X</u> | |
| Remarks: Data point represents flat field landscape adjacent to excavated drainageway where wetland vegetation and hydrology criteria are not met. | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A/B) | | | | | | | | | | | | | | | | |
|---|--------------------|-------------------|------------------|---|-------------------|--------------|----------------------|----------------|-----------------------|----------------|----------------------|----------------|-------------------------|------------------|----------------------|----------------|---------------------------|--------------------|--------------------------------------|--|
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u>0</u> | | | Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr><td>OBL species <u>0</u></td><td>x 1 = <u>0</u></td></tr> <tr><td>FACW species <u>0</u></td><td>x 2 = <u>0</u></td></tr> <tr><td>FAC species <u>0</u></td><td>x 3 = <u>0</u></td></tr> <tr><td>FACU species <u>100</u></td><td>x 4 = <u>400</u></td></tr> <tr><td>UPL species <u>0</u></td><td>x 5 = <u>0</u></td></tr> <tr><td>Column Totals: <u>100</u></td><td>(A) <u>400</u> (B)</td></tr> <tr><td colspan="2">Prevalence Index = B/A = <u>4.00</u></td></tr> </tbody> </table> | Total % Cover of: | Multiply by: | OBL species <u>0</u> | x 1 = <u>0</u> | FACW species <u>0</u> | x 2 = <u>0</u> | FAC species <u>0</u> | x 3 = <u>0</u> | FACU species <u>100</u> | x 4 = <u>400</u> | UPL species <u>0</u> | x 5 = <u>0</u> | Column Totals: <u>100</u> | (A) <u>400</u> (B) | Prevalence Index = B/A = <u>4.00</u> | |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | | | |
| OBL species <u>0</u> | x 1 = <u>0</u> | | | | | | | | | | | | | | | | | | | |
| FACW species <u>0</u> | x 2 = <u>0</u> | | | | | | | | | | | | | | | | | | | |
| FAC species <u>0</u> | x 3 = <u>0</u> | | | | | | | | | | | | | | | | | | | |
| FACU species <u>100</u> | x 4 = <u>400</u> | | | | | | | | | | | | | | | | | | | |
| UPL species <u>0</u> | x 5 = <u>0</u> | | | | | | | | | | | | | | | | | | | |
| Column Totals: <u>100</u> | (A) <u>400</u> (B) | | | | | | | | | | | | | | | | | | | |
| Prevalence Index = B/A = <u>4.00</u> | | | | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | | | | Hydrophytic Vegetation Indicators: 1-Rapid Test for Hydrophytic Vegetation: 2-Dominance Test is >50% 3-Prevalence Index is <=3 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 | | | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u>0</u> | | | Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u> | | | | | | | | | | | | | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | | | | | | | | | | | | | | | | | | | | |
| 1. <u>Schedonorus arundinaceus</u> | <u>100</u> | <u>Yes</u> | <u>FACU</u> | | | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| | <u>100</u> | | | | | | | | | | | | | | | | | | | |
| Vine Stratum (Plot Size: <u>30'</u> radius) | | | | | | | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | | | |
| | <u>0</u> | | | | | | | | | | | | | | | | | | | |

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

SOIL

Sampling Point IC35A-1D1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|----|----------------|---|-------------------|------------------|-----------------|--------------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-7 | 10YR2/1 | | | | | | silty clay loam | |
| 7-14 | 10YR2/1 | 95 | 10YR6/8 | 5 | C | PL/M | silty clay loam | prominent redox features |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix

| | | | |
|--|--|---|--|
| Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Muck Peat or Peat (S3) | | <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) | Indicators for Problematic Hydric Soils ³ <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other Soil (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 <input checked="" type="checkbox"/> No <input type="checkbox"/> | |

Remarks:

HYDROLOGY

| | | | |
|--|--|---|---|
| Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | <input type="checkbox"/> Water Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) | <u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5) |
| Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe) | | Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | |

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

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-69 Section 6 Wetland S6W137A City/County: Martinsville/Morgan Sampling Date: 2/9/2018
 Applicant/Owner: INDOT/Lochmueller State: Indiana Sampling Point: IC35A-1W1
 Investigator(s): Ruth Hook Section, Township, Range: Sec 3-T11N-R1E
 Landform (hillslope, terrace, etc.): drainage ditch Local relief (concave, convex, none): concave
 Slope (%): 0-1 Lat: 39.474599 Long: -86.408271 Datum: GCS NAD83
 Soil Map Unit Name: Rensselaer cly loam NWI classification: upland

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

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

| | | | |
|---|--------------|----------------|--|
| Hydrophytic Vegetation Present? | Yes <u>X</u> | No <u> </u> | Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> |
| Hydric Soils Present? | Yes <u>X</u> | No <u> </u> | |
| Wetland Hydrology Present? | Yes <u>X</u> | No <u> </u> | |
| Remarks: The wetland feature represented by this data point has been designated as PEM1 based on the Cowardin et al. classification system. | | | |

VEGETATION - Use scientific names of plants

| Tree Stratum (Plot Size: <u>30'</u> radius) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That are OBL, FACW, or FAC: <u>80</u> (A/B) | | | | | | | | | | | | | | |
|---|-------------------|-------------------|-------------------------|---|-------------------|--------------|----------------------|----------------|------------------------|-----------------|-----------------------|-----------------|-----------------------|----------------|----------------------|----------------|--------------------------|-------------------|
| 1. <u>Salix interior</u> | <u>5</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | | | <u>5</u> = Total Cover | Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>17</u></td> <td>x 2 = <u>34</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>27</u></td> <td>(A) <u>64</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>2.37</u> | Total % Cover of: | Multiply by: | OBL species <u>0</u> | x 1 = <u>0</u> | FACW species <u>17</u> | x 2 = <u>34</u> | FAC species <u>10</u> | x 3 = <u>30</u> | FACU species <u>0</u> | x 4 = <u>0</u> | UPL species <u>0</u> | x 5 = <u>0</u> | Column Totals: <u>27</u> | (A) <u>64</u> (B) |
| Total % Cover of: | Multiply by: | | | | | | | | | | | | | | | | | |
| OBL species <u>0</u> | x 1 = <u>0</u> | | | | | | | | | | | | | | | | | |
| FACW species <u>17</u> | x 2 = <u>34</u> | | | | | | | | | | | | | | | | | |
| FAC species <u>10</u> | x 3 = <u>30</u> | | | | | | | | | | | | | | | | | |
| FACU species <u>0</u> | x 4 = <u>0</u> | | | | | | | | | | | | | | | | | |
| UPL species <u>0</u> | x 5 = <u>0</u> | | | | | | | | | | | | | | | | | |
| Column Totals: <u>27</u> | (A) <u>64</u> (B) | | | | | | | | | | | | | | | | | |
| Sapling/Shrub Stratum (Plot Size: <u>15'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u>Salix interior</u> | <u>5</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 3. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 4. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | | | <u>5</u> = Total Cover | | | | | | | | | | | | | | | |
| Herb Stratum (Plot Size: <u>5'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u>Symphyotrichum lanceolatum</u> | <u>10</u> | <u>Yes</u> | <u>FAC</u> | | | | | | | | | | | | | | | |
| 2. <u>Carex sp.</u> | <u>5</u> | <u>Yes</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 3. <u>unknown</u> | <u>5</u> | <u>Yes</u> | <u>NL</u> | | | | | | | | | | | | | | | |
| 4. <u>Juncus bufonius</u> | <u>2</u> | <u>No</u> | <u>FACW</u> | | | | | | | | | | | | | | | |
| 5. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 6. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 7. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 8. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 9. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 10. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | | | <u>22</u> = Total Cover | | | | | | | | | | | | | | | |
| Vine Stratum (Plot Size: <u>15'</u> radius) | | | | | | | | | | | | | | | | | | |
| 1. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| 2. <u> </u> | <u> </u> | <u> </u> | <u> </u> | | | | | | | | | | | | | | | |
| | | | <u>0</u> = Total Cover | | | | | | | | | | | | | | | |
| Hydrophytic Vegetation Indicators: 1-Rapid Test for Hydrophytic Vegetation: <u>X</u> 2-Dominance Test is >50% <u>X</u> 3-Prevalence Index is <=3 ¹ 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic | | | | | | | | | | | | | | | | | | |
| Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> | | | | | | | | | | | | | | | | | | |

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

SOIL

Sampling Point IC35A-1W1

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

| Depth (Inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|----|-------------------|---------|-------------------|------------------|------------|--------------------------------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-4 | 10YR2/1 | 95 | 10YR5/8 | 5 | C | PL/M | sandy loam | prominent redox concentrations |
| 4-18 | 10YR2/1 | 70 | 10YR5/8 & 10YR6/2 | 15 & 15 | C | PL/M | sandy loam | prominent redox concentrations |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

¹ Type: C=Concentration, D= Depletion, RM=Reduced Matrix, CS=Covered or Coated 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 Muck 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 Soil (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 ☐

Remarks:

No soils were examined as part of this data point review.

HYDROLOGY

Wetland Hydrology Indicators:

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

☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ 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 ☒ Depth (inches): _____
 Water Table Present? Yes ☐ No ☒ Depth (inches): _____
 Saturation Present? Yes ☐ No ☒ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

I-69 Wetland Quality Assessment Profile

Date Report Generated: 5/22/2018
Data reference # S6W137
Wetland Site **S6W137**
Date of site visit: 12/13/17
Total wetland area: 0.2938 acres

| | |
|--|-------------|
| Polygon Information | |
| Polygon ID | S6W137A |
| Polygon Size (acres) | 0.29 |
| Wetland Community Type | SC |
| Red Flag (Special) Indicators | |
| Special Hydrologic Conditions | N |
| Special Community Type | N |
| Rare-Threatened-Endangered Species | N |
| Animal Habitat Measures | |
| Wetland size and connectivity | 2 |
| Surrounding land use | 1 |
| Standing water | 2 |
| Dead woody material | 1 |
| Zonation and interspersion | 1 |
| Stratification | 1 |
| Tree canopy | 1 |
| Mature trees | 1 |
| Animal Habitat Measure Score (min = 8, max = 24) | 10 |
| Animal Habitat Measure Rating | poor |
| Botanical Measures (all except exotics dependent upon community type) | |
| Number of dominant plant taxa observed | 1 |
| Conservatism rating | 1 |
| Total hydrophytic taxa observed | 1 |
| Number of indicator taxa | 1 |
| Exotic species rating | 3 |
| Botanical Measure Score (min = 5, max = 15) | 7 |
| Botanical Measure Rating | poor |
| Hydrology Measures | |
| Water quality protection (= no. of yes answers) | |
| Flood and storm water storage (= no. of yes answers) | 2 |
| Site/Hydrology Score (min = 11, max = 33) | 15 |
| Site/Hydrology Rating | poor |

In-WRAP Summary Sheet

Date Report Generated: Monday, July 30, 2018

Wetland Site Name: N/A

Data Reference #: S6W137

Date of Site Visit: Wednesday, December 13, 2017

Tier 1 Summary:

a. Total Wetland Area (acres): 0.2938

b. Wetland size and connectivity - contribution to animal habitat:

Valuable More Favorable **Favorable** Neutral

c. Surrounding land use - numerical rank (max. = 1): 0.20

d. Value surrounding area adds to animal habitat: Valuable Favorable Low

Tier 2 SUMMARY:

Polygon ID S6W137A

a. Indiana Wetland community type: Shrub-Carr

b. Standing water - contribution to animal habitat: Valuable **Favorable** Neutral

c. Disturbances to site: ditches

d. Exotic species rating: **Good** Medium Poor

e. Special Hydrologic Conditions Observed: none

f. Special Community Type: None

g. Rare-Threatened-Endangered Species: None

h. Polygon Quality Descriptor: Good Medium **Poor**

Tier 3A SUMMARY:

a. Dead woody material as indicator of animal habitat: Valuable Favorable **Neutral**

b. Water quality protection - numerical rank (6 max.): 0 Good Medium **Poor**

c. Flood and storm water storage - numerical rank (5 max) 2 Good **Medium** Poor

Tier 3B SUMMARY:

a. Zonation and interspersions as indicator of animal habitat: Valuable Favorable **Neutral**

b. Stratification as indicator of animal habitat: **Valuable** Neutral

c. Number of dominant plant taxa observed: 4 Good Medium **Poor**

d. Average coefficient of conservatism: 2.3 Good Medium **Poor**

e. Tree canopy as indicator of animal habitat: Valuable **Neutral**

f. Mature trees as indicator of animal habitat: Valuable Favorable **Neutral**

g. Total hydrophytic taxa observed: 4 Good Medium **Poor**

h. Number of indicator taxa: 0 Good Medium **Poor**

Tier 1: Assessment Overview**1.1 Site Identification:**Wetland Site Name: N/AOwnership (if known): N/AUSGS Topographic Quadrangle: MartinsvilleUSGS Watershed map 14-Digit HUC: Indian Creek - Sand Creek

Identify each NWI Polygon within the Wetland Site (Polygon specific data)

| NWI Polygon ID Number | Cowardin Classification | Polygon Size (acres) |
|-----------------------|-------------------------|----------------------|
| S6W137A | PEM1 | 0.2938 |

1.2 Site VisitTeam Members: Ruth HookAgency: Lochmueller GroupDate assessed: 12/13/2017

Time assessed: _____

Weather conditions: _____

Note any unusual weather events that may have influenced the current conditions within this wetland system (e.g. recent heavy rains, an unusually dry season, an especially early spring etc.)

1.3 Wetland SizeSize of site under assessment: 0.2938Size of wetland complex: 0.2938**1.4 Site Setting**

Degree of isolation from other wetlands or wetland complexes:

☐ The site is connected upstream and downstream with other wetlands☐ The site is only connected upstream with other wetlands☒ The site is only connected downstream with other wetlands☐ Other wetlands are nearby (within 0.25 mile) but not connected☐ The wetland site is isolated

General assessment of adjacent land use / land cover in the area within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

| | | | |
|------------|---------------------------------------|----------|---|
| <u>0</u> | Native Vegetation - woodland | <u>0</u> | Road / highway / railroad bed / parking lot |
| <u>0</u> | Native Vegetation - old field / scrub | <u>0</u> | Industrial |
| <u>100</u> | Agricultural - tilled | <u>0</u> | Residential - single family |
| <u>0</u> | Agricultural - pasture | <u>0</u> | Commercial or multifamily residential |
| <u>0</u> | Recreation - green space, mowed | | |

(see table on page one)

Tier 2: Individual Polygon: Preliminary Assessment

(to be completed on-site for each NWI polygon present in the wetland)

2.1 Wetland Geomorphic Setting and Surface Water Flow (check one):

☒ Depressional ☐ Slope ☐ Floodplain ☐ Lacustrine
☐ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes

Is standing water is present, is the water greater than 2 meters in depth? No

Is standing water normally present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

☐ Permanently Flooded ☐ Artificially Flooded
☒ Seasonally Flooded
☐ Saturated (surface water seldom present) ☐ Artificially Drained

2.4 Soil Type

☐ Organic (i.e. peat, etc.) ☒ Mineral ☐ Both Mineral and Organic Present

2.5 Wetland Community Type for this NWI polygon (see Key to Wetland Communities of Indiana):

Shrub-Carr

2.6 Disturbances of Hydrology (check all that apply):

☒ Ditching ☐ Culvert
☐ Tiles ☐ Other Human Disturbances to the
☐ Dams Hydrology (explain):
☐ Road or Railroad Embankment

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common):

☐ Garlic Mustard ☐ Glossy Buckthorn
☐ *Phragmites* ☐ Reed Canary Grass
☐ Purple Loosestrife ☐ Other (list):

2.8 Presence of Special Hydrologic Conditions (i.e. seeps, wet slopes, floating mat):

none

2.9 Presence of Special Community Types:

☐ Bog ☐ Fen ☐ Wet Sand / Muck Flats or Marl Seeps

2.10 Presence of Known Federal or Indiana Rare, Threatened or Endangered Species:

☒ None observed or known to be present
☐ RTES Present (list):

2.11 Wetland Polygon Quality Descriptor (see: Wetland Quality Descriptions and check one):

☐ Good ☐ Medium ☒ Poor

Tier 3a: Individual Polygon: Rapid Hydrology Indicators**3a.1 Notable Features that influence water quality and hydrology:**

Estimated herbaceous plant cover (percentage) in the polygon ____ 100-75 ____ 75-50 ☒ 50-25 ____ <25
 Estimated woody plant foliar coverage in the polygon ____ 100-75 ____ 75-50 ____ 50-25 ☒ <25
 Amount of dead woody material on the soil surface ☒ nil ____ scattered ____ frequent

3a.2 Water Quality Protection Questions:

1. Y ☒ N Does the wetland have a significant amount of vegetative (specifically herbaceous and woody plant) density to potentially uptake dissolved nutrients?
2. Y ☒ N Managed water (e.g. municipal or road stormwater drainage, agricultural drainage outlet, industrial or municipal wastewater) is not discharged into the wetland polygon?
3. If wetland in question is a depressional wetland answer 3a, in not, answer 3b.
 Y ☒ N 3a. Does the wetland have a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland?
- Y ☒ N 3b. Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface body of water down gradient?
4. Y ☒ N Does the wetland lack steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within 100 meters of its border?
5. Y ☒ N Are there recreational lakes, fishable or navigable watercourses, or water supply sources down gradient in the local watershed?
6. Y ☒ N Is a vegetative buffer area or another wetland polygon (areas where overland flow could be filtered) located upland and adjacent to the wetland polygon? If yes, describe buffer area width and slope.
 width of buffer area (in meters) ____ 0 ____ approximate slope (percent) ____ 0 ____

3a.3 Flood and Stormwater Storage / Attenuation Questions:

1. If wetland in question is a depressional wetland answer 1a, in not, answer 1b
 Y ☒ N 1a. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
 Y ☒ N 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. ☒ Y N Does the wetland lack man-made structure that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. Y ☒ N Is the flood potential high in the local watershed in which the wetland is located (history of flood damages)?
4. Y ☒ N Is the wetland located in a watershed where the majority of the upland soils are clay and impermeable, or is bedrock within two feet of the top of the soil profile?
5. ☒ Y N Is the wetland located in a local watershed which has highly modified runoff conditions due to existing development?

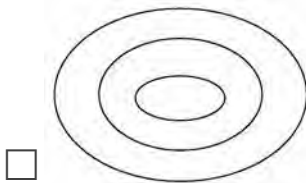
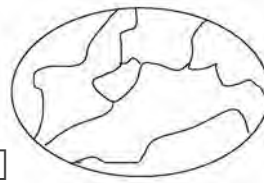
Tier 3b Individual Polygon: Rapid Vegetation Description**3b.1 Zonation and Interspersion:**

1. How many vegetation zones are evident in this wetland polygon? 1

1b. If only one vegetation zone is evident, which best describes the site?

- ☐ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks, heterogeneous textures across the polygon.
- ☒ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

2. If more than one vegetation zone is present in the polygon, which interspersed diagram most closely represents the distribution of these zones?

Type One Interspersion**Type Two Interspersion****3b.2 Dominant Plant Species: Vegetation Zone A**

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☒ >90%

Is there notable layering/stratification in this vegetation zone? Yes

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

- | | |
|---|----------|
| a. <u><i>Equisetum hyemale</i></u> | d. _____ |
| b. <u><i>Symphyotrichum lanceolatum</i></u> | e. _____ |
| c. _____ | f. _____ |

Dominant Shrub Species listed in order of relative abundance.

- | | |
|----------|----------|
| a. _____ | c. _____ |
| b. _____ | d. _____ |

Dominant Tree Species listed in order of relative abundance.

- | | |
|------------------------------------|----------|
| a. <u><i>Salix interior</i></u> | c. _____ |
| b. <u><i>Populus deltoides</i></u> | d. _____ |

Tree and shrub canopy ☐ nil ☒ separate, seldom touching ☐ often touching ☐ more or less close

Mature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone B

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closeMature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.2 Dominant Plant Species: Vegetation Zone C

What % of the polygon does this vegetative zone occupy?

☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☐ >90%

Is there notable layering/stratification in this vegetation zone? _____

Dominant Herbaceous Species (i.e., covering more than 10% of the area) listed in order of relative abundance. (Mark with an * any species that forms extensive monocultural patches).

a. _____ d. _____

b. _____ e. _____

c. _____ f. _____

Dominant Shrub Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Dominant Tree Species listed in order of relative abundance.

a. _____ c. _____

b. _____ d. _____

Tree and shrub canopy ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closeMature trees (>12" dbh): ☐ yes ☒ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservatism)

Herbs: non-seed plants

- ☒ horsetail, scouring rush spp. (Equisetum) 2
- ☐ *ferns: marsh shiled fern spp. (Dryopteris) 7
- ☐ *cinnamon fern (Osmunda cinnamomea) 9
- ☐ *royal fern (Osmunda regalis) 8
- ☐ sensitive fern (Onoclea sensibilis) 4
- ☐ *other: species (if know
- ☐ marsh club moss (Selaginella apoda) 4
- ☐ Sphagnum moss spp. (Sphagnum) 10

Herbs: lvs. floating or submergent

- ☐ *bladderwort spp. (Utricularia) 10
- ☐ coontail (Ceratophyllum demersum) 1
- ☐ duckweed spp. (Lemnaceae) 3
- ☐ *pondweed spp. (Potamogeton) 8
- ☐ curlyleaf pondweed (Potamogeton crispus) 0
- ☐ *water lily (Nymphaea tuberosa) 6
- ☐ water shield (Brasenia schreberi) 4
- ☐ *yellow spatterdock spp. (Nuphar) 6

Herbs: lvs. floating or submergent

- ☐ *pitcher plant (Sarracenia purpurea) (10)
- ☐ *sundew spp. (Drosera) 10

Herbs: linear-lvs. or +/- leafless monocots

- ☐ *beak rush spp (Rhynchospora) 10
- ☐ blueflag iris (Iris virginica) 5
- ☐ bulrush spp. (Scirpus / Schoenoplectus) 5
- ☐ *bur reed spp. (Sparganium) 9
- ☐ cat-tail spp. (Typha) 1
- ☐ *cotton grass spp. (Eriophorum) 10

Grasses (family Gramineae) - indicate types and number of species

- ☐ a. *wild rice (Zizania aquatica) 10
- ☐ b. most native perennial grass spp. 4:
cut-grass, manna-grass, Canada bluepoint,
foxtail (Alopecurus); other
- ☐ c. introduced grass spp. 0: reed canary
grass (Phalaris, reed (Phragmites),
annual grasses such as annual foxtail
(Setaria) and barnyard grass (Echinochloa)
- ☐ needle sedge spp. (Eleocharis) 1 sp. = 2
- ☐ *additional = 8
- ☐ nutsedge spp. (Cyperus) 2
- ☐ *orchid spp. 10; species (if know
- ☐ rush spp. (Juncus) 4
- ☐ sedge spp. (Carex) 1 sp. = 3 additional = 7
- ☐ *spiderlily (Hymenocallis occidentalis) 9
- ☐ sweet flag (Acorus calamus) 0
- ☐ *3-way sedge (Dulichium arundinaceum) 10
- ☐ *twig rush (Cladium mariscoides) 10
- ☐ *umbrella sedge (Fuirena squarrosa) 10
- ☐ wild hyacinth (Camassia scilloides) 5
- ☐ *yellow-eyed grass (Xyris torta) 9

Herbs: wide-leaved monocots

- ☐ *arrow arum (Peltandra virginica) 6
- ☐ arrow-head spp. (Sagittaria) 4
- ☐ *green dragon (Arisaema dracontium) 6
- ☐ Jack-in-the-pulpit (Arisaema triphyllum) 4
- ☐ pickerel weed (Pontederia cordata) 5
- ☐ *skunk cabbage (Symplocarpus foetidus) 8
- ☐ *water arum (Calla palustris) 10
- ☐ water plantain (Alisma plantago-aquatica) 2

Herbs: dicots - lvs. opposite/whorled

- ☐ *bedstraw spp. (Gallium) 6
- ☐ beggar's tick spp. (Bidens) 3
- ☐ blue vervain (Verbena hastata) 3
- ☐ boneset (Eupatorium perfoliatum) 4
- ☐ bugleweed spp. (Lycopus) 5
- ☐ clearweed spp. (Pilea) 3
- ☐ cup plant (Silphium perfoliatum) 4
- ☐ false nettle (Boehmeria cylindrica) 3
- ☐ *fen betony (Pedicularis lanceolata) 6
- ☐ *gentian spp. (Gentiana Gentianopsis) 8
- ☐ giant ragweed (Ambrosia trifida) 0
- ☐ Indian hemp (Apocynum cannabinum) 2
- ☐ Joe-pye weed spp. (Eupatorium) 5
- ☐ *loosestrife spp. (Lysimachia) 6
- ☐ meadow beauty (Rhexia virginica) 5
- ☐ mint spp. e.g. hedge nettle, mtn. mint, skullcap
- ☐ moneywort (Lysimachia nummularia) 0
- ☐ monkey flower spp. (Mimulus) 4
- ☐ nettle (Urtica procera) 1
- ☐ purple loosestrife (Lythrum salicaria) 0
- ☐ *richweed (Collinsia canadensis) 8
- ☐ St. John's wort spp. (Hypericum/Triandrium) 8
- ☐ sunflower sp. (Helianthus) 4
- ☐ *swamp loosestrife (Decodon verticillatus) 8
- ☐ swamp milkweed (Asclepias incarnata) 4
- ☐ toothcup spp. (Ammania Rotala) 2
- ☐ *turtlehead spp. (Chelone) 8
- ☐ virgin's bower (Clematis virginiana) 3
- ☐ water purslane (Ludwigia palustris) 3
- ☐ winged loosestrife (Lythrum alatum) 5

Herbs (vines): dicots - lvs. alternate or basal and

- ☐ American bellflower (Campanula americana) 4
- ☐ *asters: bristly aster (Aster puniceus) 7
- ☐ flat-topped aster (Aster umbellatus) 8
- ☒ other aster spp. (e.g. New England, panicled ast
- ☐ *black-eyed Susan (Rudbeckia fulgida) 8
- ☐ cardinal flower (Lobelia cardinalis) 4
- ☐ cress spp. (Cardamine) 4
- ☐ dock spp.: swamp, water, pale (Rumex) 4
- ☐ garlic mustard (Alliaria petiolata) 0
- ☐ golden ragwort (Senecio aureus) 4

3b.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservatism)

Herbs: non-seed plants

- ☒ horsetail, scouring rush spp. (Equisetum) 2
- ☐ *ferns: marsh shiled fern spp. (Dryopteris) 7
- ☐ *cinnamon fern (Osmunda cinnamomea) 9
- ☐ *royal fern (Osmunda regalis) 8
- ☐ sensitive fern (Onoclea sensibilis) 4
- ☐ *other: species (if know
- ☐ marsh club moss (Selaginella apoda) 4
- ☐ Sphagnum moss spp. (Sphagnum) 10

Herbs: lvs. floating or submergent

- ☐ *bladderwort spp. (Utricularia) 10
- ☐ coontail (Ceratophyllum demersum) 1
- ☐ duckweed spp. (Lemnaceae) 3
- ☐ *pondweed spp. (Potamogeton) 8
- ☐ curlyleaf pondweed (Potamogeton crispus) 0
- ☐ *water lily (Nymphaea tuberosa) 6
- ☐ water shield (Brasenia schreberi) 4
- ☐ *yellow spatterdock spp. (Nuphar) 6

Herbs: lvs. floating or submergent

- ☐ *pitcher plant (Sarracenia purpurea) (10)
- ☐ *sundew spp. (Drosera) 10

Herbs: linear-lvs. or +/- leafless monocots

- ☐ *beak rush spp (Rhynchospora) 10
- ☐ blueflag iris (Iris virginica) 5
- ☐ bulrush spp. (Scirpus / Schoenoplectus) 5
- ☐ *bur reed spp. (Sparganium) 9
- ☐ cat-tail spp. (Typha) 1
- ☐ *cotton grass spp. (Eriophorum) 10

Grasses (family Gramineae) - indicate types and number of species

- ☐ a. *wild rice (Zizania aquatica) 10
- ☐ b. most native perennial grass spp. 4: cut-grass, manna-grass, Canada bluepoint, foxtail (Alopecurus); other
- ☐ c. introduced grass spp. 0: reed canary grass (Phalaris, reed (Phragmites), annual grasses such as annual foxtail (Setaria) and barnyard grass (Echinochloa)
- ☐ needle sedge spp. (Eleocharis) 1 sp. = 2
- ☐ *additional = 8
- ☐ nutsedge spp. (Cyperus) 2
- ☐ *orchid spp. 10; species (if know
- ☐ rush spp. (Juncus) 4
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- ☐ sweet flag (Acorus calamus) 0
- ☐ *3-way sedge (Dulichium arundinaceum) 10
- ☐ *twig rush (Cladium mariscoides) 10
- ☐ *umbrella sedge (Fuirena squarrosa) 10
- ☐ wild hyacinth (Camassia scilloides) 5
- ☐ *yellow-eyed grass (Xyris torta) 9

Herbs: wide-leafed monocots

- ☐ *arrow arum (Peltandra virginica) 6
- ☐ arrow-head spp. (Sagittaria) 4
- ☐ *green dragon (Arisaema dracontium) 6
- ☐ Jack-in-the-pulpit (Arisaema triphyllum) 4
- ☐ pickerel weed (Pontederia cordata) 5
- ☐ *skunk cabbage (Symplocarpus foetidus) 8
- ☐ *water arum (Calla palustris) 10
- ☐ water plantain (Alisma plantago-aquatica) 2

Herbs: dicots - lvs. opposite/whorled

- ☐ *bedstraw spp. (Gallium) 6
- ☐ beggar's tick spp. (Bidens) 3
- ☐ blue vervain (Verbena hastata) 3
- ☐ boneset (Eupatorium perfoliatum) 4
- ☐ bugleweed spp. (Lycopus) 5
- ☐ clearweed spp. (Pilea) 3
- ☐ cup plant (Silphium perfoliatum) 4
- ☐ false nettle (Boehmeria cylindrica) 3
- ☐ *fen betony (Pedicularis lanceolata) 6
- ☐ *gentian spp. (Gentiana Gentianopsis) 8
- ☐ giant ragweed (Ambrosia trifida) 0
- ☐ Indian hemp (Apocynum cannabinum) 2
- ☐ Joe-pye weed spp. (Eupatorium) 5
- ☐ *loosestrife spp. (Lysimachia) 6
- ☐ meadow beauty (Rhexia virginica) 5
- ☐ mint spp. e.g. hedge nettle, mtn. mint, skullcap
- ☐ moneywort (Lysimachia nummularia) 0
- ☐ monkey flower spp. (Mimulus) 4
- ☐ nettle (Urtica procera) 1
- ☐ purple loosestrife (Lythrum salicaria) 0
- ☐ *richweed (Collinsia canadensis) 8
- ☐ St. John's wort spp. (Hypericum/Triandrium) 8
- ☐ sunflower sp. (Helianthus) 4
- ☐ *swamp loosestrife (Decodon verticillatus) 8
- ☐ swamp milkweed (Asclepias incarnata) 4
- ☐ toothcup spp. (Ammania Rotala) 2
- ☐ *turtlehead spp. (Chelone) 8
- ☐ virgin's bower (Clematis virginiana) 3
- ☐ water purslane (Ludwigia palustris) 3
- ☐ winged loosestrife (Lythrum alatum) 5

Herbs (vines): dicots - lvs. alternate or basal and

- ☐ American bellflower (Campanula americana) 4
- ☐ *asters: bristly aster (Aster puniceus) 7
- ☐ flat-topped aster (Aster umbellatus) 8
- ☒ other aster spp. (e.g. New England, panicled ast
- ☐ *black-eyed Susan (Rudbeckia fulgida) 8
- ☐ cardinal flower (Lobelia cardinalis) 4
- ☐ cress spp. (Cardamine) 4
- ☐ dock spp.: swamp, water, pale (Rumex) 4
- ☐ garlic mustard (Alliaria petiolata) 0
- ☐ golden ragwort (Senecio aureus) 4

Herbs (vines): dicots - lvs. alternate or basal and simple (continued)

- ___*goldenrod spp. (*Solidago ohioensis*, *S. patula*,
- ___*grass of Parnassus (*Parnassia glauca*) 10
- ___*Indian plantain (*Cacalia plantaginea*) 10
- ___ironweed spp. (*Vernonia*) 4
- ___jewelweed, touch-me-not spp. (*Impatiens*) 3
- ___lizard's tail (*Saururus cernuus*) 4
- ___lobelia spp. (*Lobelia*) 4
- ___*marsh marigold (*Caltha palustris*) 7
- ___*moonseed (*Menispermum canadense*) 6
- ___primrose-willow spp. (*Epilobium* *Ludwigia*) 3
- ___rose mallow spp. (*Hibiscus*) 4
- ___smartweed spp.: jumpseed, pinkweed,
- tearthumb, water-pepper, waters smartweed
- (*Polygonum*)
- ___halbredleaf tearthumb (*Polygonum arifolium*) 10
- ___sneezeweed (*Helenium autumnale*) 3
- ___stinging nettle (*Laportea canadensis*) 2
- ___*swamp saxifrage (*Saxifraga pennsylvanica*) 10
- ___*Virginia bluebells (*Mertensia virginica*) 6
- ___waterhemp (*Amaranthus tuberculatus*) 1
- ___wingstem (*Actinomeris alternifolia*) 3

Herbs: dicots - lvs. basal or alternate and compound or deeply lobed

- ___aven spp.: round, white (*Geum*) 2
- ___*buttercup spp.: cursed b., hooked b., swamp
- b. (*Ranunculus*) 6
- ___chervil (*Chaerophyllum procumbens*) 3
- ___*cowbane (*Oxyopolis rigidior*) 7
- ___*great angelica (*Angelica atropurpurea*) 6
- ___hog peanut / ground nut (*Amphicarpaea* and
- Apios*) 5
- ___honewort (*Cryptotaenia canadensis*) 3
- ___meadow rue spp. (*Thalictrum*) 5
- ___poison ivy (*Rhus radicans*) 1
- ___*queen-of-the prairie (*Filipendula rubra*) 9
- ___senna spp. (*Cassia*) 4
- ___swamp agrimony (*Agrimonia parviflora*) 4
- ___*swamp thistle (*Cirsium muticum*) 8
- ___tall coneflower (*Rudbeckia laciniata*) 3
- ___*water hemlock spp. (*Cicuta*) 7
- ___water parsnips (*Sium suave*) 5

Shrubs - leaves opposite or whorled

- ___bladdernut (*Staphylea trifolia*) 5
- ___buckthorn spp. (*Rhamnus cathartica*, *R.*
- frangula*) 0
- ___buttonbush (*Cephalanthus occidentalis*) 5
- ___dogwood, red-osier (*Cornus stolonifera*) 4
- ___*dogwood, blue-fruited or silky (*Cornus obliqua*)
- ___dogwood, gray (*Cornus racemosa*) 2
- ___elderberry (*Sambucus*) 2

Shrubs - leaves alternate

- ___*cranberry spp. (*Vaccinium*) 10
- ___*dwarf birch (*Betula pumila*) 10
- ___*highbush blueberry (*Vaccinium corymbosum*) 9
- ___*leatherleaf (*Chamaedaphne calyculata*) 10
- ___meadowsweet and Hardhack spp. (*Spiraea*) 4
- ___*ninebark (*Physocarpus opulifolius*) 7
- ___*shrubby cinquefoil (*Potentilla fruticosa*) 9
- ___spice bush (*Lindera benzoin*) 5
- ___*swamp dewberry (*Rubus hispidus*) 6
- ___*swamp holly and winterberry spp. (*Ilex*) 7
- ___swamp rose (*Rosa palustris*) 5

Trees - leaves needle shaped

- ___*tamarack (*Larix laricina*) 10

Trees - leaves compound

- ___*ash, black (*Fraxinus nigra*) 7
- ___ash, green (*Fraxinus pensylvanica*) 3
- ___*ash, pumpkin (*Fraxinus tomentosa*) 8
- ___boxelder (*Acer negundo*) 1
- ___hickory, bitternut (*Carya cordiformis*) 5
- ___hickory, shellbark (*Carya laciniosa*) 8
- ___honey locust (*Gleditsia triacanthos*) 1
- ___*poison sumac (*Rhus vernix*) 10

Trees - leaves simple and opposite

- ___red maple (*Acer rubrum*) 5
- ___silver maple (*Acer saccharinum*) 1

Trees - leaves simple and alternate

- ___*alder, speckled (*Alnus rugosa*) 9
- ___river birch (*Betula nigra*) 2
- ___black, gum (*Nyssa sylvatica*) 5
- ___cottonwood, eastern (*Populus deltoides*) 1
- ___cottonwood, swamp (*Populus heterophylla*) 8
- ___elm, American (*Ulmus americana*) 3
- ___hackberry (*Celtis occidentalis*) 3
- ___ironwood (*Carpinus caroliniana*) 5
- ___oak, pin or white (*Quercus*) 4
- ___*oak, Shumard's, swamp chestnut, swamp whit
- *pawpaw (*Asimina triloba*) 6
- ___*sugarberry (*Celtis laevigata*) 7
- ___sweet gum (*Liquidambar styraciflua*) 4
- ___sycamore, American (*Platanus occidentalis*) 3
- ___willow spp. (*Salix*) 1 sp. = 3
- ___additional sp. = 7

Herbs (vines): dicots - lvs. alternate or basal and simple (continued)

- ___*goldenrod spp. (*Solidago ohioensis*, *S. patula*,
- ___*grass of Parnassus (*Parnassia glauca*) 10
- ___*Indian plantain (*Cacalia plantaginea*) 10
- ___ironweed spp. (*Vernonia*) 4
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- ___lizard's tail (*Saururus cernuus*) 4
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- ___tall coneflower (*Rudbeckia laciniata*) 3
- ___*water hemlock spp. (*Cicuta*) 7
- ___water parsnips (*Sium suave*) 5

Shrubs - leaves opposite or whorled

- ___bladdernut (*Staphylea trifolia*) 5
- ___buckthorn spp. (*Rhamnus cathartica*, *R.*
- frangula*) 0
- ___buttonbush (*Cephalanthus occidentalis*) 5
- ___dogwood, red-osier (*Cornus stolonifera*) 4
- ___*dogwood, blue-fruited or silky (*Cornus obliqua*)
- ___dogwood, gray (*Cornus racemosa*) 2
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Shrubs - leaves alternate

- ___*cranberry spp. (*Vaccinium*) 10
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- ___*leatherleaf (*Chamaedaphne calyculata*) 10
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- ___*swamp dewberry (*Rubus hispidus*) 6
- ___*swamp holly and winterberry spp. (*Ilex*) 7
- ___swamp rose (*Rosa palustris*) 5

Trees - leaves needle shaped

- ___*tamarack (*Larix laricina*) 10

Trees - leaves compound

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- ___*ash, pumpkin (*Fraxinus tomentosa*) 8
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- ___hickory, shellbark (*Carya laciniosa*) 8
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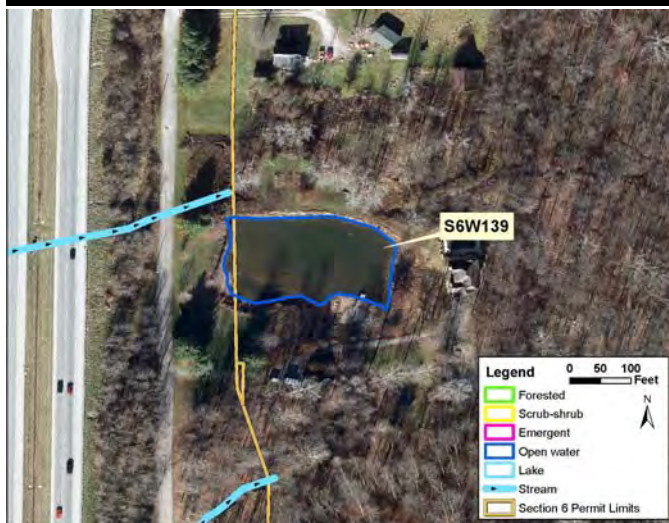
Trees - leaves simple and opposite

- ___red maple (*Acer rubrum*) 5
- ___silver maple (*Acer saccharinum*) 1

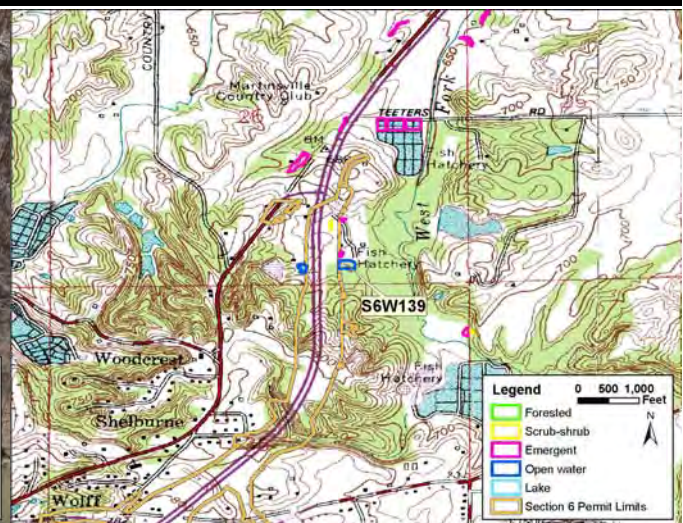
Trees - leaves simple and alternate

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- ___river birch (*Betula nigra*) 2
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- ___*oak, Shumard's, swamp chestnut, swamp whit
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- ___sycamore, American (*Platanus occidentalis*) 3
- ✓ willow spp. (*Salix*) 1 sp. = 3
- ___additional sp. = 7

Wetland S6W139



Wetland Location on 2015 Aerial Photograph



Wetland Location on Martinsville USGS Quadrangle

Basin: Clear Creek - East/West/Grassy

14-digit HUC: 05120201140140

Physiographic Region: Martinsville Hills

Ecoregion: Interior Plateau

Natural Region: Highland Rim

Size of wetland complex (acres): 0.6098

USACE Jurisdiction: Yes

IDEM Jurisdiction: Yes

Quadrangle: Martinsville

County: Morgan

Township: T12N

Range: R1E

Section: 26

Quarter: SE

Latitude: 39.442839

Longitude: -86.386262

| Polygon ID | Community Type | Cowardin Class | Polygon Area (acres) | Animal Habitat Measure | Botanical Measure | Hydrology Measure | Alternative | Area Impacted (acres) | Percent Polygon Impacted |
|------------|----------------|----------------|----------------------|------------------------|-------------------|-------------------|-------------|-----------------------|--------------------------|
| S6W139A | Pond | PUB | 0.61 | no rating | no rating | no rating | RPA | 0.00 | 0.0% |