APPENDIX J
FINAL WETLAND ASSESSMENT REPORT

I-69 TIER 2 STUDY
SECTION 2
FINAL WETLAND ASSESSMENT REPORT

Prepared By:

JACOBS

501 N. Broadway
St. Louis, MO 63102

February 2010

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1. Introduction

This Final Wetland Assessment Report is a support document to the Tier 2 Final Environmental Impact Statement (FEIS), and is intended to present detailed information regarding the identification, characterization and evaluation of project area wetland resources. This document also describes measures that have been utilized throughout project development to avoid, minimize and mitigate impacts to wetlands. Finally, the document describes the unavoidable impacts to wetlands associated with the Refined Preferred Alternative as compared to other build alternatives.

This report is intended to be the primary tool for facilitating coordination of proposed wetland impacts in Section 2 with State and Federal regulatory agencies and documenting compliance with regulatory requirements to avoid, minimize and mitigate wetlands impacts.

Prior to European settlement, the U.S. Fish and Wildlife Service estimated that Indiana had some 5,600,000 acres of wetlands. Over the past 200 years, Indiana has lost approximately 85% of its wetlands (Dahl, 1990). As of the mid-1980s, Indiana was estimated to have approximately 813,032 acres of wetlands (Rolley, 1991). Of this area, approximately 245,817 acres were located in the I-69 Tier 1 Study Area. Because of the importance of these ecosystems, Executive Order 11990 establishes a federal policy of "no net loss of wetlands."

Description of Section 2 Preferred Alternative 3C Corridor

Section 2 of the Preferred Alternative 3C corridor begins at the Section 1 SR 64 interchange and proceeds to US 50 east of Washington, a distance of some 28.6 miles. From SR 64, the corridor turns to the northeast to cross the East Fork of Keg Creek near Gibson County Roads 950E and 125S. The corridor essentially parallels SR 57 approximately one mile to the west. Near the Patoka River, SR 57 turns to the north so that it comes closer to the Alternative 3C corridor at the crossing. The crossing of the Patoka River was placed approximately ½ mile west of SR 57 to minimize impacts on the Patoka National Wildlife Refuge. The crossing location has been viewed, by representatives of the Refuge, as the best location in the SR 57 corridor to minimize impacts in the Refuge. This location was reserved for a future highway corridor by the Final EIS that established the Patoka National Wildlife Refuge. Upon crossing the Patoka River, the corridor leaves Gibson County and proceeds into Pike County.

Leaving the Patoka Bottoms, the corridor ascends into the Boonville Hills Physiographic Region near Pike County Road 50S. The corridor follows through reclaimed coal mine areas and crosses SR 57 near a private coal haul road approximately ¾ mile north of Division Road at Glezen. This location is approximately four miles south of Petersburg. This location is south of Flat Creek, an area identified as environmentally sensitive. East of SR 57, the corridor shifts to the east to remain in the Boonville Hills Physiographic Region through recently mined ground and then runs north, parallel to Meridian Road. Along Meridian Road, it is in the Wabash Lowland Physiographic Region, but is associated with higher ground and reclaimed mine land.

North of Pike County Road 300N, the corridor of preferred Alternative 3C turns northeast, crossing SR 56/61 about one mile south of Petersburg. Traversing eastward to avoid the Prides Creek Lake recreation area, the corridor makes use of reclaimed mine land and then turns to the north to cross SR 356 about 1½ mile east of Petersburg (near Alford). From this point, the corridor proceeds to the northeast to parallel existing SR 57, which is approximately one mile to the west. Continuing in the Wabash Lowland Physiographic Region, the corridor turns north near Pike County Road 425E to begin its approach to the East Fork of the White River at the Daviess County line. This crossing is about 1½ miles east (upstream) of the SR 57 crossing of the East Fork of the White River (Gil Hodges Bridge).

Proceeding just west of Wonder Pond, south of Washington, the corridor shifts to the northwest near Daviess County Road 550S to begin its path around the east side of Washington. North of Daviess County Road 375S, the corridor crosses Veale Creek. It then runs parallel to and northwest of the Veale Creek watershed, eventually crossing SR 257 about one mile south of the US 50 By-pass around Washington. Crossing Hurricane Branch, the corridor turns to the north to cross US 50 approximately ½ mile east of the Washington By-pass (US 50).

The corridor has been located along a narrow strip crossing the Patoka River Bottoms so as to minimize impacts to wetlands and forests. The Patoka River Bottoms, where the highway will be placed on structure, includes potential wetland and forest mitigation sites. Threatened and endangered species have been recorded upstream and downstream. Throughout this stretch of highway, coal resources are available. Some areas of the roadway will cross surface mined areas, while other areas will cross over underground mined areas.

Crossing the East Fork of the White River, there are a number of homes. Archaeological sites may be of significance in the general area and at this crossing of the White River. Similarly, there is an excellent opportunity for wetland and forest mitigation in the floodplains of the East Fork of the White River.

Strip mining has diminished the number of historic properties in the area, and has reduced the cohesiveness of the historic landscape. Segments of the Wabash and Erie Canal are crossed by this section of I-69 in the areas of Hurricane Creek, Patoka River and Flat Creek.

Most wetlands in the project corridor are found along rivers and streams and within their associated floodplains. The major wetland areas that the Refined Preferred Alternative crosses within the Section 2 corridor include resources associated with the Patoka River, Flat Creek, Pride's Creek, and the East Fork of the White River. Several other smaller wetland complexes exist in the project corridor as well along unnamed streams and in isolated depressional areas. Refer to Figures 1-1 through 1-5 and 2-1 through 2-5 to see the Approved Study Corridor and Proposed Alternatives on U.S. Geological Survey Base Mapping. Refer to Figures 3-9 and 4-9 sheets 1-13 to see Proposed Alternatives with Labeled Wetlands and Ponds.

2 Regulatory Definitions

Waters of the U.S.

Waters of the U.S. include wetlands that are defined by the Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (USACE) as:

> *Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that 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*

Waters of the State

"Isolated" wetlands that do not fall under U.S. Army Corps of Engineers Clean Water Act jurisdiction are regulated through the Indiana Department of Environmental Management (IDEM) Isolated Wetlands Regulatory Program. They are considered isolated wetlands because they are not connected or adjacent to "waters of the U.S.," which are regulated by the Corps.

As part of this program, isolated wetlands are grouped into one of three Classes based upon wetland quality. Class III isolated wetlands are generally of higher quality and Class I wetlands of lower quality,

while Class II wetlands fall somewhere in the middle. Different wetland classes have different mitigation requirements.

Wetlands

Wetlands are important ecosystems that include swamps, bogs, marshes, mires, fens, and other wet areas. Wetlands are often transition areas between upland and deepwater habitats. There are a number of definitions for a wetland; however, all definitions have three common criteria.

- **Hydrophytic vegetation** - plants that are adapted to a wet environment;
- **Hydric soils** - soils that are characterized by anaerobic conditions, and;
- **Hydrology** - an area that is inundated or saturated to the surface for at least 5% of the growing season in most years.

The presence of a wetland within the landscape often results in a number of important functions, some of which include:

- Primary Production and Nutrient Transport
- Habitat for Animals
- Sanctuary for Animals
- Hydrological Support for Adjacent Communities
- Shoreline Protection
- Storm/Flood Storage
- Storm/Flood Peak Reduction
- Groundwater Recharge
- Water Purification
- Water Supply
- Effect Climatic Conditions (Temperature, Oxygen, and Carbon Dioxide Cycles)
- Isolated Genetic Population Pools
- Reproduction and Development

In addition, wetlands provide many functions valuable to humans including the following:

- Commercial Fisheries
- Recreation (Hunting, Fishing, Boating, and Swimming)
- Sites for Development
- Forestry Products
- Agricultural Products
- Aesthetics
- Educational Centers
- Peat Mining

The following provides a short description of the types of wetlands and open water systems that occur within the Section 2 Corridor.

Floodplain Forest

Floodplain forest communities within the project area are typically located as narrow polygons along stream channels. In general, these areas consist of canopy tree species such as red maple (*Acer rubrum*), eastern

Figure 3 - Floodplain Forest

cottonwood (*Populus deltoides*), American elm (*Ulmus americana*), and ash (*Fraxinus* spp.*)*. Dominant shrubs and saplings in these resources include box elder (*Acer negundo*), and common elderberry (*Sambucus canadensis*). The herbaceous layer often includes nettles (*Urtica* spp.) poison ivy (*Toxicodendron radicans*), and jewelweed (*Impatiens capensis*). Floodplain forests within the project area are generally ranked high for wildlife habitat using the InWRAP methodology. Many of these, because of their proximity to channelized streams and location within the floodplain also score high for flood and storm water storage. An example of a floodplain forest within the Section 2 project area is shown in Figure 3.

Scrub/Shrub

Scrub/shrub wetland areas are dominated by woody vegetation less than 20 feet (6 meters) tall, including shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions. All water regimes, except subtidal, are possible (Cowardin, 1979). Plants characteristic of project area scrub/shrub wetlands include willows (*Salix* spp.), buttonbush (*Cephalanthus occidentalis)*, and ash saplings (*Fraxinus* spp.). In many locations, these resource areas appear to be prior forests disturbed by activities such as strip mining. Many were found to be colonized with a monostand of one type of young tree, such as red maple (*Acer rubrum*) or willow (*Salix* sp.). In areas where scrub/shrub resources did not show these signs of disturbance, they generally ranked high for wildlife habitat function. Several areas originally mapped as scrub/shrub on NWI maps were found to have matured and are now classified as floodplain forest. Figure 4 shows an example of a scrub/shrub community within Section 2.

Figure 4 – Shrub/Scrub Wetland

Aquatic Bed

Aquatic bed includes wetlands and deepwater habitats dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. Water regimes include subtidal, irregularly exposed, regularly flooded, permanently flooded, intermittently exposed, semipermanently flooded, and seasonally flooded. Aquatic bed wetlands represent a diverse group of plant communities that require surface water for optimum growth and reproduction. They are best developed in relatively permanent water or under conditions of repeated flooding. The plants are either attached to the substrate or float freely in the water above the bottom or on the surface (Cowardin et al., 1979). Project area aquatic bed occurrences include an isolated site with emergent wetland fringes (Sec2-W80) and an oxbow of the Patoka River (Sec2-W17) within Patoka National Wildlife Refuge. This resource type is considered significant to wildlife habitat, particularly amphibian habitat. Aquatic bed resources also provide flood storage and attenuation, and water quality protection. Figure 5 represents an example of an aquatic bed community in the Patoka River

Figure 5 –Aquatic Bed

area.

Emergent Wetlands

Emergent wetlands are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. They are also known as marshes or wet meadows. The vegetation in emergent wetlands is present for most of the growing season in most years. Perennial plants usually dominate emergent wetlands. All water regimes are included except subtidal and irregularly exposed (Cowardin et al., 1979). Within the project area, emergent wetlands were found along the edges of forested or scrub/shrub wetlands and forming fringes around the perimeter of ponds. Plants characteristic of project area emergent wetlands include soft-stem bulrush (*Scirpus validus)*, sedges (*Carex* spp.), spike rushes (*Eleocharis* spp.), and arrowhead (*Sagittaria latifolia*). Several of these locations also showed presence of the invasive non-native reed canary grass (*Phalaris arundinacea*). One occurrence of a natural spring with an associated emergent marsh was also noted within the project area (wetland Sec2-W166A). No bogs or fens, two of the highest quality Emergent Wetlands, were observed within the corridor. InWRAP generally ranked emergent marshes high for habitat in areas where these marshes were bordering another resource area, because of the diversity they provide within the wetland complex. When located in an area with high flooding potential, this resource type also scored high for flood attenuation. An example of an emergent wetland in the Section 2 project area is shown in Figure 6.

Figure 6 – Emergent Wetland

Farmed wetlands

Sections 401 and 404 of the Clean Water Act also regulate those wetlands that have been temporarily converted for active agricultural use. Known as "farmed wetlands", the USDA National Food Security Act Manual, 3rd Edition, September 2000 (NFSAM) defines these as "Wetlands that were drained, dredged, filled, leveled, or otherwise manipulated before December 23, 1985, for the purpose of, or to have the effect of, making the production of an agricultural commodity possible, and continue to meet specific wetland hydrology criteria." The 1996 Swampbuster provisions of the Farm bill allows for the continuation of agricultural activities on certified wetlands and is enforced through local county Natural Resource Conservation Service (NRCS) offices. Any change in the status of the farmed wetlands, including changing drainage or depositing fill, requires a Section 404 Department of the Army Permit from the USACE and a Section 401 Water Quality Certificate from the Indiana Department of Environmental Management (IDEM).

An investigation for farmed wetlands, as defined by the USDA National Food Security Act Manual, 3rd Edition, September 2000 (NFSAM), was conducted for each alternative carried forward for detailed analysis. According to NRCS guidelines, all four of the following criteria must be met in determining a farmed wetland:

1. The area must have been manipulated prior to December 23, 1985.
2. An agricultural commodity was produced once before December 23, 1985.
3. The area meets the required hydrology criteria for farmed wetlands.
4. The site has not been abandoned.

To determine if wetland signatures were present, a minimum of 5 years of Farm Service Agency (FSA) aerial imagery slides were reviewed at the FSA Service Center in each county. The appropriate 5 years of slides that represent normal precipitation to be used for review were determined and provided by NRCS.

In Gibson County, the years of normal rainfall (slides viewed) were 1981, 1982, 1985, 1986, and 1990. In Pike County, the years of normal rainfall were 1980, 1981, 1982, 1984, and 1985. In Daviess County, the years of normal rainfall were 1980, 1981, 1982, 1984, 1985, 1986, 1992, and 1993.

Lakes and Ponds

Lacustrine systems are described as deepwater or wetland habitat including permanently flooded lakes and reservoirs, intermittent lakes, and tidal lakes with salinity below 0.5% (Cowardin et al., 1979). Lacustrine resources are situated in a depression or dammed river channel and have less than 30% aerial coverage by vegetation. Total area of lacustrine systems is greater than 8 ha (20 acres), however, smaller systems are included if an active wave formed or bedrock shoreline features makes up all or part of the boundary or if water depth exceeds 2 m (6.6 feet) in the deepest part of the system during periods of low water (Cowardin et al., 1979).

There are no major lakes within the Section 2 corridor, however, there are three (3) waterbodies classified as lacustrine systems within the project area. Two of these appear to have been created by mining; the third was formed through dam construction and exists in the northern part of the project area. The mining ponds are in Pike County and encompass 19.3 acres and 16.2 acres. The third (unnamed) pond is in Daviess County and is approximately 21 acres in size.

Cowardin et al. (1979) designates ponds as palustrine unconsolidated bottom (PUB) features. This resource type includes aquatic habitats with at least 25% cover of particles smaller than stones and a vegetative cover less than 30%. Water regimes are restricted to subtidal, permanently flooded, intermittently exposed, and semipermanently flooded. Unconsolidated bottoms are characterized by the lack of large stable surfaces for plant and animal attachment (Cowardin et al., 1979).

The project area includes 81 areas classified as unconsolidated bottom. These primarily consist of constructed farm ponds. The majority of these ponds are small (less than 0.5 acres). However, they range in size from only 0.005 acres up to 4.6 acres.

3. Methodology

A literature search was conducted for wetland data as part of the initial ecological data collection during the Tier 1 EIS process. Information was gathered from the United States Geological Survey quadrangles and National Wetland Inventory (NWI) maps (USGS, various dates and US Fish and Wildlife Service, various dates). This information was then used to conduct field visits to verify wetland locations and classifications within the Section 2 corridor approved in Tier 1. This corridor was generally 2,000 feet in width, but narrower where the corridor passes through the area reserved for it at the Patoka River, in the area of the Patoka National Wildlife Refuge.

Field visits were conducted by project wetland scientists in May, June and August of 2005 and in January 2006 to examine and qualify wetlands that were anticipated to be impacted by either project Alternative (A or B) as part of the Tier 2 study. Observations made during these initial field investigations were used to help select a Preferred Alternative. Once the Preferred Alternative was selected, field delineations were conducted in June 2009 to help refine impact calculations for each resource type.

Delineations were conducted in accordance with the USACE 1987 Wetland Delineation Manual and associated technical memoranda.

Wetland areas were also assessed using the Indiana Wetland Rapid Assessment Protocol (InWRAP). The InWRAP methodology was specifically required for the I-69 project to allow for standardized analysis of wetland quality across all sections of the project corridor. This methodology consists of an analysis of NWI polygons (as well as wetlands that were not listed by NWI, but located during field investigations) to rank various wetland functions and values using a worksheet based approach. (Taylor Univ., 2000). For further details of the InWRAP methodology refer to: http://www.taylor.edu/academics/acadDepts/ees/wetlands/iswamp/assess.htm. Functional analysis using InWRAP was conducted only on wetlands (wetland complexes) within the Alternatives Carried Forward for Further Analysis.

4. Results and Discussion

Alternative 3C Corridor Wetlands and Open Water Systems

Wetlands and open water systems are spread throughout the Section 2 corridor. The majority are found along rivers and streams and within their associated floodplains. Wetland types within the study area are predominantly floodplain forest. Emergent and scrub/shrub wetlands occur less frequently within the project area either as complexes associated with forested resources or in low lying areas that are generally too wet to be tilled. Two occurrences of wetlands classified as aquatic bed were also located within the Section 2 project study area. Open water systems within the study area consisted of artificial lacustrine (lake) and unconsolidated bottom (pond) features. Using the classification of Cowardin *et al.* (1979), a total of 105 wetlands and 84 open water systems were identified within the Section 2 Corridor. Tables 1, and 2. below show the distribution of each wetland type and open water system within each county.

Table 1: NWI Wetlands and Open Water Systems within Section 2 Corridor, Summary by Type and County

Wetland Type	Gibson County		Pike County		Davies County		Section 2 Total	
	Number	Area (acres)	Number	Area (acres)	Number	Area (acres)	Number	Area (acres)
Emergent	0	0	11	9.2	13	12.9	**24**	**22.1**
Scrub/Shrub	0	0	14	35.7	5	7.2	**19**	**42.9**
Forested	7	27.3	30	125.5	20	95.6	**57**	**248.4**
Aquatic Bed	2	1.2	3	2.5	0	0	**5**	**3.7**
Unconsolidated Bottom	8	5	29	15.8	44	25.3	**81**	**46.1**
Lacustrine	0	0	2	35.6	1	13.9	**3**	**49.5**
Total	**17**	**33.5**	**89**	**224.3**	**83**	**154.9**	**189**	**412.7**

Table 2: NWI and Field Verified Wetlands and Open Water Systems within Section 2 Corridor, Summary by Type and County

Wetland Type	Gibson County		Pike County		Davies County		Section 2 Total	
	Number	Area (acres)	Number	Area (acres)	Number	Area (acres)	Number	Area (acres)
Emergent	0	0	11	8.9	11	13.6	**22**	**22.5**
Scrub/Shrub	0	0	14	32.3	4	2.0	**18**	**34.3**
Forested	4	18.6	29	67.6	18	48.0	**51**	**134.2**
Aquatic Bed	0	0	3	2.8	0	0	**3**	**2.8**
Unconsolidated Bottom	7	3.5	23	7.9	39	16.2	**69**	**27.6**
Lacustrine	0	0	3	30.2	1	9.0	**4**	**39.2**
Total	**11**	**22.5**	**83**	**149.2**	**73**	**88.8**	**167**	**260.6**

*These wetlands are field verified within the right-of-way and as shown in NWI data within the remaining corridor.

Wetland Resources for Section 2 Alternatives

The following provides a narrative description of each wetland or wetland complex that would be impacted by the proposed construction limits of the Refined Preferred Alternative as well as Alternatives A, B and the DEIS Preferred Alternative. A wetland complex consists of one or more contiguous or adjoining community types represented as individual polygons. Each polygon within a complex was numbered according to wetland type (emergent, forested scrub shrub or aquatic bed) to allow for quantification of impacts to each wetland type. Appendix A, Wetland Site Forms, provides an overall description of each wetland or complex including mapping and photograph documentation. Appendix B includes the Wetland Quality Assessment Profile which generates a ranking for animal habitat, botanical and hydrologic function, based on the InWRAP summary data. Appendix D includes the Wetland Matrix for I-69: Section 2, which summarizes the assessment results. Appendix E includes the InWRAP field data sheets which document the base data collected for each complex, including the major plant communities, soils, hydrology, topography, and component functions and values of the resource. Refer to the Figure 3-9 series and the Figure 4-9 sericesto see the Alternatives with Labeled Wetlands and Ponds.

Since the publication of the Draft Environmental Impact Statement several changes have been made to the wetland report. Total wetland acreages have been refined. Overall wetland areas and impact calculations used for the DEIS were based on NWI wetland boundaries. Additional field work completed since the DEIS was used to further refined the wetland boundaries. This affected the overall size of the wetlands. Additionally, a few wetlands identified in the DEIS were subsequently discovered to not meet the 3 wetland criteria and were thus removed from the wetland impact consideration. Furthermore, wetland impacts in the tables in the DEIS were calculated using right-of-way limits. In the FEIS they are calculated using both right-of-way and construction limits. Finally, additional field work conducted between the DEIS and FEIS identified previously undocumented wetlands within the refined preferred alternative, including those impacted by local access roads not evaluated at the DEIS stage. Within the individual wetland descriptions that follow, the changes that were made to the data that was previously included in the Draft Wetland Assessment Report (Appendix J of the Section 2 Revised DEIS) are documented.

Sec2-W4 (polygon 4)

This site is classified as a swamp forest wetland 10.83 acres in size, with 95 – 100% vegetative cover. Red maple (*Acer rubrum*), ash (*Fraxinus* spp.) and elm (*Ulmus americana*) are found throughout the resource both as mature trees and as saplings. Herbaceous ground cover includes species such as fowl manna grass, jewelweed, and poison ivy. Hydrology is likely due to its depressional nature, local runoff,

and poorly drained soils. Animal habitat and botanical diversity are both ranked fair under InWRAP summaries for the site. Although this site is typical of forested wetlands found throughout the project area, it is likely that it plays an important role in flood storage and attenuation for the area, as it is one of very few wetlands located in this region. Its role in the landscape is therefore considered significant. This resource is regulated under USACE and IDEM jurisdiction due to its immediate adjacency to a tributary of East Fork Keg Creek. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. The Draft Wetland Report documented 0.04 acre of impact for Alternative A and the DEIS Preferred and 5.3 acre of impact for Alternative B. The construction limit impacts are now 0.03 acre for Alternative A and the DEIS Preferred Alternative and 5.05 acres for Alternative B The Refined Preferred Alternative was modified to completely avoid impacts to this resource.

Sec2-W11 (polygon 11)

This 54.27 acre resource is defined as a floodplain forest associated with Hurricane Creek. The tree canopy of red maple and ash is more or less closed and results in a sparse under story below. Herbaceous ground cover consists of scattered sedges and grasses, as well as poison ivy. This resource area rates good for both hydrology, due to its floodplain location, and for wildlife habitat due to open water elements and good protective cover. This wetland falls under the jurisdiction of both the USACE and IDEM due to its hydrologic connectivity with the South Fork Patoka River. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. This wetland complex has been further refined since the publication of the DEIS. These refinements were due to additional field work. The wetland impact is now less than previously anticipated. The Draft Wetland Report documented 0.64 acre of impact for Alternative A and the DEIS Preferred and 1.03 acre of impact for Alternative B. The construction limit impacts are now 0.09 acre for Alternative A and the DEIS Preferred Alternative, 0.46 acre for Alternative B and 0.06 acre for the Refined Preferred Alternative.

Sec2-W15 (polygon 15)

The site consists of a 3.08 acre strip of floodplain forest wetland adjacent to a ditch. Wetland hydrology is affected by ditching and the resource is colonized by monostands of the invasive exotic reed canary grass (*Phalaris arundinacea*). Poison ivy (*Toxicodendron radicans*) is also dominant in this degraded resource and a row of young silver maples (*Acer saccharinum*) is present on the upland border. The wetland exhibits zonation and interspersion typical of fair wildlife habitat and provides only fair botanical measures due to the presence of reed canary grass and low plant diversity within the resource. This wetland falls under the jurisdiction of both the USACE and IDEM due to hydrology connection with an intermittent tributary to the South Fork of the Patoka River. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. This wetland complex has been further refined since the publication of the DEIS. These refinements were due to additional field work. This wetland has increased slightly in size from 3.05 acres to 3.08 acres as a result. The Draft Wetland Report documented 0.71 acre of impact for Alternative A and the DEIS Preferred Alternative and 0.57 acre of impact for Alternative B. The construction limit impacts are now 0.81 acre for Alternative A and the DEIS Preferred Alternative, 0.69 acre for Alternative B, and 0.86 acre for the Refined Preferred Alternative.

Sec2-W17 (polygons 17/25 and 19/24)

This 11.63 acre wetland complex lies within the Patoka National Wildlife Refuge, a large area of bottom land hardwood forest established as a refuge in 1994. Due to the uniqueness and local significance of this area, the project corridor crossing was established early on in the conceptual design and was located in this area due to existing surrounding disturbance and the somewhat degraded nature in the immediate area. The wetland complex is made up of polygons designated as 17/25 and 19/24. Polygon 17/25 represents a floodplain forest wetland community. Polygon 19/24 is an aquatic bed community. The forested resource associated with the old channel of the Patoka River (polygon 17/25) consists of a

bottomland forested resource dominated by silver maple and red maple with a sparse understory dominated by Gray's sedge and poison ivy. Polygon 19/24 is classified as aquatic bed and consists of shallow open water in the old channel of the Patoka River. The presence of the floating emergent duckweed (*Lemna* sp.) was noted during summer field surveys. Buttonbush is scattered along the edges of the open water resource. The wetland complex is determined to be under USACE and IDEM jurisdiction as a result of its direct connection with the Patoka River. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. This wetland complex has been further refined since the publication of the DEIS. These refinements were due to additional field work. The overall forested acreage of this complex has increased from 9.12 acres to 9.62 acres and the aquatic bed portion of this wetland has decreased from 2.43 acres to 2.01 acres as a result. The Draft Wetland Report documented 3.13 acre of forested wetland impact and 0.6 acre of aquatic bed impact for Alternative A and the DEIS Preferred Alternative and 3.07 acre of forested impact and 0.51 acre of aquatic bed impact for Alternative B. The construction limit impacts are now 2.95 acres of forested impact and 0.39 acre of aquatic bed impact for Alternative A and the DEIS Preferred Alternative, 2.90 acres of forested wetland impact and 0.40 acre of aquatic bed impact for Alternative B, and 3.00 acres of forested wetland and 0.40 acre of aquatic bed impact for the Refined Preferred Alternative..

Sec2-W32 (polygons 32 and 32A)

Polygons 32 and 32A form a 52.56 acre wetland complex located along a stream channel and partially within an old field. The swamp forest portion of this complex is dominated by green ash in the overstory and barnyard grass, jewelweed and beggars ticks in the herbaceous layer. The wetland forms a narrow fringe along the channelized stream and shows signs of flooding during periods of high water. The bordering wet meadow wetland portion of this complex consists of a sedge meadow that has formed in a low lying area of an adjacent field. Sedges and rushes identified within this resource include *Juncus tenuis, Juncus acuminatus*, and *Eleocharis obtusa*. Both community types show signs of disturbance such as ditching within the forested system and prior cultivation of the meadow area. Although the wet meadow is small in size and occurs within an old field, it has a hydrologic connection to the forested area and is considered part of the larger complex. The wetland complex is determined to be jurisdictional under both USACE and IDEM regulations due to its direct association with an unnamed tributary to the Patoka River. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. This wetland complex has been significantly refined since the publication of the DEIS. These refinements were due to additional field work. The boundary of the forested component of the complex was redefined within the right-of-way for the Refined Preferred Alternative; however the boundary of the entire wetland was not redefined due to its overall large size. For this reason the forested component is still listed as 48 acres as noted in the Draft Wetland Report. The emergent wetland component of this wetland increased from 2.68 acres to 4.56 acres based on refinement of the boundaries as a result of additional field work. The Draft Wetland Report documented 2.73 acre of forested wetland impact and 1.41 acre of emergent wetland impact for Alternative A and the DEIS Preferred Alternative and 2.71 acre of forested impact and 1.37 acres of emergent wetland impact for Alternative B. The construction limits are now 0.28 acre of forested impact and 2.65 acres of emergent wetland impact for Alternative A and the DEIS Preferred Alternative, 0.26 acre of forested wetland impact and 2.63 acres of emergent wetland impact for Alternative B, and 0.29 acre of forested impact and 2.84 acre of emergent wetland impact for the Refined Preferred Alternative.

Sec2-W37 (polygons 37, 37A and 38)

This 8.87 acre wetland complex consists of a swamp forested section, a scrub-carr section and emergent shallow marsh section. The scrub-carr and swamp forest areas are separated by a narrow steep upland, and a shallow marsh wetland area bordering on one of the forested wetlands. These resources are bounded by roadways and agricultural land. Ditching was observed within the wetland areas, as well as a culvert leading under the roadway. The swamp forest wetland is dominated by red maple and green ash with jewelweed and false nettle in the understory. Reed canary grass was observed scattered throughout the site; however was not frequent enough to be considered dominant. Due to the closed canopy, wood

litter and protected nature of the forested resource it was considered to provide fair wildlife habitat. The scrub-carr section of the wetland appears to be a formerly forested site that was disturbed and is successional. The shallow marsh portion of the wetland complex is dominated by reed grass (*Phragmites australis*). The dense herbaceous layer and position in the landscape led to a good rating for hydrologic function, particularly for storm water attenuation and storage. This complex is determined to be under USACE and IDEM jurisdiction due to its hydrologic association with a Flat Creek tributary. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. This wetland complex has been refined since the publication of the DEIS. These refinements were due to additional field work. The forested acreage changed from 3.70 to 3.71 acres, the scrub-shrub wetland decreased from 5.11 acres to 4.97 acres and the emergent wetland acreage decreased from 0.55 acre to 0.19 acre. The Draft Wetland Report documented 0.03 acre of forested wetland impact for Alternative A and the DEIS Preferred Alternative, and 1.89 acres of forested wetland impact, 2.41 acres of scrub-shrub wetland impact, and 0.34 acres of emergent wetland impact for Alternative B. The construction limit impacts are now 1.79 acres of forested wetland impact, 2.05 acres of scrub-shrub impact, and 0.02 acre of emergent wetland impact for Alternative B. Alternative A, the DEIS Preferred Alternative and the Refined Preferred Alternative would not impact this complex.

Sec2-W43 (polygons 43, 44 and 45)

This 8.23 acre wetland complex is associated with Flat Creek and has been dissected by the railroad, the mine road and SR57. InWRAP assessment for these resources indicated that despite the surrounding land use they provide some areas of good habitat for wildlife due to tree cover and maturity, presence of standing water, as well as areas of scattered woody material and diversity of cover type. The forested wetlands are dominated by red maple in the upper canopy and nettle and jewel weed in the herbaceous layer. Average plant diversity and sparse understory result in fair ratings for this complex for botanical and hydrological functions. This complex is determined to be under USACE and IDEM jurisdiction due to its hydrologic connection to Flat Creek. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. This wetland complex has been refined since the publication of the DEIS. These refinements were due to additional field work. The total forested acreage of this complex decreased from 13.62 acres to 8.23 acres. The Draft Wetland Report documented 1.16 acres of forested wetland impact for Alternative A and the DEIS Preferred Alternative, and 0.53 acre of forested impact for Alternative B. The construction limits impacts are now 0.77 acre of forested wetland impact for Alternative A and the DEIS Preferred Alternative, 0.48 acre of forested wetland impact for Alternative B, and 0.93 acre of impact for the Refined Preferred Alternative.

Sec2-W55A (polygons 55a, 55b, 55c and 56a)

This 22.07 acre wetland complex consists of 4 interconnected wetland polygons. Polygon 55A is a swamp forest with pockets of standing water throughout, making this area considerably wetter than most forested resources found in the project area. Nettle, bent grass and moneywort were common throughout the parcel. A dense upper canopy of red maple, as well as the presence of standing water, makes the herbaceous layer fairly sparse. The eastern edge of the forested wetlands is bordered by a wet meadow wetland (polygon 55B). Polygon 55C is also a swamp forested resource, but is more typical of forested wetlands in the area, in that it does not have standing water present and has an herbaceous layer that is marginally hydrophytic. Across the county road, and connected via a culvert, polygon 56A is a scrub-carr resource with dense sycamore and red maple saplings. It is likely that this location was formerly mined and is now recovering as a successional resource area. Due to the vernal pool like nature of polygon 55A with seasonal pockets of water throughout, this resource receives a fair rating for wildlife habitat and is considered locally significant due to its uniqueness in the surrounding landscape. This complex is determined to be under USACE and IDEM jurisdiction by virtue of its hydrologic connection with a Prides Creek tributary. This wetland complex is now designated Sec 2-W55A since Sec2-W55 is a pond not associated with this complex. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. This wetland complex has been refined since the publication of the DEIS. These refinements were due to additional field work. The acreage of the scrub-

shrub portion of this complex remained the same at 14.15 acres. The total forested portion increased from 7.17 acres to 7.80 acres and the emergent portion decreased from 1.09 acres to 0.12 acre. The Draft Wetland Report documented 3.50 acres of forested wetland impact and 1.09 acres of emergent wetland impact for Alternative A and the DEIS Preferred Alternative, and 4.32 acres of scrub-shrub wetland impact for Alternative B. The construction limits impacts are now 3.88 acres of forested impact and 0.12 acres of emergent wetland impact for Alternative A and the DEIS Preferred Alternative, 4.11 acres of scrub-shrub wetland impact for Alternative B, and 3.92 acres of forested wetland and 0.12 acre of emergent wetland for the Refined Preferred Alternative.

Sec2-W64 (polygons 64, 65, 66 and 66A)
This 1.01 acre complex consists of emergent and scrub/shrub wetland polygons located on a reclaimed mine site that is currently actively cultivated. Presence of invasive exotics and severe disturbance, including ditching give polygons 64 and 65 a poor rating for all InWRAP qualifiers. Polygons 66 and 66A are comprised of an area of shallow open water with a bordering scrub-carr wetland and a shallow marsh fringe. The herbaceous layer includes native grasses as well as the invasive reed canary grass. Hydrology within this resource is depressional. Overall these polygons score poor for most functions, however due to the presence of reed canary grass in the herbaceous layer, and fairly low diversity, the emergent portion of the resource scored poor for botanical measures. Connection to Prides Creek via an intermittent creek makes this complex jurisdictional under USACE and IDEM regulations. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. This wetland complex has been refined since the publication of the DEIS. These refinements were due to additional field work. The acreage of the scrub-shrub portion of this complex has decreased from 2.0 acres to 0.58 acre; the emergent portion of this complex has increased slightly from 0.62 acre to 0.43 acre. The Draft Wetland Report documented 0.11 acres of scrub-shrub impact for Alternative A and the DEIS Preferred Alternative, and 0.18 acre of scrub-shrub impact and 0.01 acre of emergent wetland for Alternative B. The construction limits impacts are 0.06 acre of scrub-shrub impact and 0.15 acre of emergent wetland impact for Alternative A and the DEIS Preferred Alternative, 0.16 acre of scrub-shrub impact for Alternative B, and 0.07 acre of impact to scrub-shrub wetland and 0.15 acre of emergent wetland for the Refined Preferred Alternative.

Sec2-W76 (polygons 76 and 76A)
This 4.47 acre complex consists of fingerlike projections of wetland within a cultivated agricultural field. Vegetative cover is dense, providing a closed canopy throughout most of the resource area (polygon 76). A ditch runs through the forested wetland, becoming heavily dissected to the north. As the channel becomes more pronounced, wetland plants become sparser, and upland communities become more dominant. Willow and ash were common throughout the complex, and herbaceous cover was dominated by jewelweed. Within the small scrub-carr area (polygon 76A) grasses, sedges and rushes such as *Juncus effusus* became more dominant. Both community types scored similarly for InWRAP functions. The forested component was found to have fair animal habitat value due to scattered ground cover and areas of open water. Plant species diversity within the system was relatively low and therefore the wetland scored fair/poor for botanical measures. Finally, hydrological function was considered fair due to presence of sufficient vegetation to uptake nutrients and slow water. This complex is under both USACE and IDEM jurisdiction due to its hydrologic connection with a Lick Creek tributary. Alternatives A, DEIS Preferred and the Refined Preferred would not impact this wetland complex. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. The Draft Wetland Report documented 1.66 acres of forested impacts and 0.46 acres of scrub shrub wetland impacts for Alternative B. The construction limits impacts are now 1.56 acres of forested wetland impacts and 0.44 acre of scrub-shrub wetland impacts for Alternative B. Alternative A, the DEIS Preferred Alternative and the Refined Preferred Alternative would avoid this wetland complex.

Sec2-W80 (polygon 80)
This 0.28 acre isolated deep marsh is located within an actively cultivated agricultural field. The central portion supports *Lemna* sp. while the wetland fringe consists of a ring of cattail on the inner zone and soft rush and Indian hemp on the outer edge. The InWRAP evaluation ranks this resource area as poor for animal habitat, but good for botanical measures and fair for hydrologic measures. During field observation it was noted that this area was densely populated with birds and various frogs. Due to its hydrologic isolation within the landscape, this resource does not fall under the jurisdiction of the USACE, but would be regulated by IDEM. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. This wetland has been refined since the publication of the DEIS. These refinements were due to additional field work. The overall acreage of this aquatic bed increased slightly from 0.27 acre to 0.28 acre. The Draft Wetland Report documented 0.19 acre of impact for Alternative A and the DEIS Preferred Alternative, and 0.04 acre for Alternative B. It was determined that this wetland could potentially lose its hydrology due to any impact. As a result, the construction limits impacts are now 0.28 acre for each of the Alternatives.

Sec2-W80A (polygons 80A, 80B, 80C and 80D)
This complex is 8.91 acres and consists two swamp forest polygons (polygon 80B and 80C) and two shallow marsh polygons (polygon 80Aand 80D) associated with a tributary to Lick Creek. Hydrology for polygons 80A and 80B appears to be supported by a seep from the adjacent hillside. Vegetation within the emergent marshes includes cattails and jewelweed with willow saplings. Red maple and ash dominate the trees in the forested sections, as is typical of wetland forests throughout the project corridor. This wetland resource is not mapped as an NWI wetland. This complex is determined to be under USACE and IDEM jurisdiction due to its hydrologic connection with a Lick Creek tributary. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. This wetland complex has been refined since the publication of the DEIS. These refinements were due to additional field work. This wetland complex was found to be much larger than originally anticipated. The total acreage for the emergent polygons increased from 0.43 acres to 2.11 acres and the forested polygons increased from 0.63 acre to 6.80 acres. The Draft Wetland Report documented 0.43 acre of emergent impact and 0.60 acre of forested impact for Alternative A and the DEIS Preferred, and Alternative B impacted 0.63 acre of forested and 0.43 acre of emergent wetland. The construction limits impacts for the new delineated boundaries are 2.06 acres of emergent wetland impact and 4.61 acres of forested wetland impact for Alternative A and the DEIS Preferred Alternative, 2.06 acres of emergent wetland and 6.05 acres of forested wetland for Alternative B, and 1.99 acres of emergent wetland and 4.16 acres of forested wetland for the Refined Preferred Alternative.

Sec2-W89 (polygon 89)
This 0.78 acre shallow marsh wetland is located on a formerly mined site. It consists of a small area of open water and a shallow marsh fringe that stretches up along a ditch. The dominant plant within the resource is the highly invasive *Phragmites australis*. InWRAP ranks the wildlife habitat and botanical measures as poor, with the hydrology ranked as fair. Due to its location at the bottom of a steep slope and reception of runoff from the mining site, this resource ranks good for hydrologic functionality. The area is highly disturbed and is considered hydrologically isolated; therefore it does not fall under the jurisdiction of the USACE, but would be regulated by IDEM. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. The Draft wetland report documented 0.30 acre of emergent wetland impacts for Alternative B. The construction limits impacts are now 0.27 acres of emergent wetland impact for Alternative B. Alternative A, the DEIS Preferred Alternative and the Refined Preferred Alternative would avoid this wetland.

Sec 2 W94 (polygon 94)
This 26.69 acre forested wetland originally included in the DEIS was re-evaluated in 2009. It was determined that at least the portion of the original polygon boundary that was within the right-of-way of

the alternatives did not meet all of the wetland criteria. It has therefore been removed from the listing of wetlands affected by any of the proposed alternatives.

Sec 2 W95A (polygon 95A)
This is a 1.05 acre narrow swamp forest wetland associated with a small ephemeral stream. The stream flows between a cultivated parcel to the north and a grassy mowed parcel associated with a residence to the south. Wetland plants within this resource include red maple, dogwood, and manna grass. Due to the proximity of disturbance in the surrounding landscape and the narrow nature of the wetland, it does not score high for any assessed quality and only ranks fair for wildlife measures. The sparse understory and position in the landscape result in a poor quality assessment for hydrology measures. This resource is not on the NWI mapping, and was located during field delineation efforts in July 2009, after publication of the DEIS. This complex is determined to be under USACE and IDEM jurisdiction due to its hydrologic connection with a Mud Creek tributary. The construction limits impacts are now 0.70 acres for Alternative A and the DEIS Preferred Alternative, and 0.20 acre for the Refined Preferred Alternative. Alternative B would avoid this wetland.

Sec2-W115 (polygons 115 and 116)
This small 0.69 acre depressional wetland complex is located within an actively cultivated corn field and consists of a 0.61 acre wet meadow component and a 0.08 acre scrub-carr component. During summer field investigations, this wetland was completely obscured by the fields of corn surrounding it. During a winter field investigation, the area was observed to be dominated by smartweed and reed canary grass. Water plantain and *Eleocharis* sp. were also observed growing within the site. A small stand of young willows is located on the southern fringe. Its location in the landscape resulted in a fair hydrology ranking, as this wetland aids in uptake of runoff from the adjacent agricultural use. However, it's isolation from other plant communities and low plant diversity result in poor scores for habitat and botanical measures. Due to its location within the East Fork White River floodplain, this complex falls under the jurisdiction of the USACE and IDEM. This resource area would only be impacted by Alternative B by 0.59 acre. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. The Draft Wetland Report documented 0.08 acre of scrub-shrub impact and 0.53 acre of emergent wetland impact for Alternative B. The construction limits impacts are now 0.08 acre of scrub-shrub wetland and 0.51 acre of emergent wetland for Alternative B. Alternative A, the DEIS Preferred Alternative and the Refined Preferred Alternative would avoid this wetland.

Sec2-W117 (polygon 117)
This 4.66 acre swamp forest wetland shows signs of receiving large amounts of runoff from the surrounding corn field (old corn husks piled in drift lines). This resource is depressional in nature but has a hydrologic outlet. Vegetation within the herbaceous layer is scattered throughout and the upper canopy is more or less closed. Woody debris is frequent throughout and provides for habitat within the resource. Due to its hydrologic connectivity with the East Fork White River this wetland falls under the jurisdiction of USACE and IDEM. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. The total acreage of this wetland has been revised from the 4.7 acres in the Draft Wetland Report to 4.66 acres. The Draft Wetland Report documented a 1.73 acre impact for Alternative B. The construction limits impacts are now 1.63 acres for Alternative B. Alternative A, the DEIS Preferred Alternative and the Refined Preferred Alternative would avoid this wetland.

Sec2-W118 (polygon 118/119)
This site consists of a very large 231 acre forested wetland within the East Fork White River floodplain with channelized flows throughout. In some areas the channel is heavily dissected and in other areas it is no more than a ditch and is shallow enough to step over. Areas at the top of the bank show signs of flooding. Trees dominating the upper canopy include oak, ash and maple. Aster and poison ivy are

common in the understory, as is *Carex intumescens*. Lizard tail and button bush were also observed to be common within the wetland. Dense overstory and woody debris provide for good quality habitat. The entire InWRAP assessment area displays similar functionality. Wildlife habitat is good throughout due to the presence of standing water and the closed tree canopy as protective cover. Botanical measures ae also regarded as good. Hydrology functions were found to be fair for this wetland. This wetland is under the jurisdiction of both USACE and IDEM due to its direct hydrologic connection to Jackson Pond and Aikman Creek within the East Fork White River floodplain. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. This wetland complex has been refined since the publication of the DEIS. These refinements were due to additional field work. The portion of the wetland within the potential area of impact for the alternatives has been redefined. However, the Draft Wetland Report documented 4.02 acres of forested impact for Alternative A and the DEIS Preferred Alternative and 1.25 acres of impact for Alternative B. The construction limits impacts are now 2.37 acres for Alternative A and the DEIS Preferred and 1.18 acres of impact for Alternative B.

Sec2-W120 (polygons 120, 120A and 120B)
This 3.10 acre depressional scrub-shrub and emergent complex wetland is located within an actively cultivated field. Three areas of this complex were identified. Polygon 120 is characterized as a scrub-carr and is dominated by willows. Polygon 120A is classified as an sedge meadow wetland, predominantly vegetated with various sedges and dock. Polygon 120B is a mixture of willow dominated scrub/shrub and wet meadow dominated by goldenrods (*Solidago spp*.). The InWRAP summary suggests that the wetland provides poor wildlife habitat. This is based on its isolated nature, lack of standing water and small size. The resource ranks fair for plant diversity and hydrology, particularly for flood storage as it collects storm water from the surrounding landscape. This site experiences no direct channel connection to the East Fork White River or any of its tributaries; however, due to its location within the East Fork White River floodplain, it is determined to fall under the jurisdiction of the USACE and IDEM. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. The Draft Wetland Report documneted 0.68 acre of scrub-shrub impact and 0.50 acre of emergent wetland impact for Alternative B. The construction limits impacts are now 0.59 acre of scrub-shrub impact and 0.48 acre of impact to emergent wetlands for Alternative B. Alternative A, the DEIS Preferred Alternative and the Refined Preferred Alternative would avoid impacts to this wetland.

Sec2-W166 (polygon 166)
This 0.23 acre sedge meadow wetland is located within an old field and has been previously mowed. Vegetation within the resource is predominantly stunted sedges and rushes. Wetland functionality is low for all categories because of this disturbance. This site is considered isolated and therefore does not fall under the authority of the USACE, but would be regulated by IDEM. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. The Draft Wetland Report documented 0.10 acre of emergent impact for Alternative B. The construction limits impacts are now 0.08 acre for Alternative B. Alternative A, the DEIS Preferred Alternative and the Refined Preferred Alternative would avoid impacts to this wetland.

Sec2-W166A (polygon 166A)
This 0.58 acre shallow marsh wetland is comprised of a natural spring flowing from a forested area and ponding along a narrow dirt roadway. Much of the resource is dominated by reed canary grass. However, the inner portion of the wetland located where the spring pools next to the road is classified as aquatic bed. Duckweed was observed within this resource during the summer field investigations. An outlet pipe was observed in the wetland, which is presumed to connect with a nearby surface water tributary of Veale Creek. Within the project area, this was the only occurrence of a natural spring and therefore is considered a locally significant resource. The wetland is determined to be under USACE and IDEM jurisdiction. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. The Draft Wetland Report documented that the entire 0.58

acre would be impacted by Alternative B. The construction limits impacts are also 0.58 acre for Alternative B. Alternative A, the DEIS Preferred Alternative and the Refined Preferred Alternative would avoid impacts to this wetland.

Sec2-W176 (polygon 176)
The Draft Wetland Report documented this site as a 1.81 acre shallow marsh wetland. During the June 2009 field delineation, this site was observed to have been vegetated with predominantly upland plant species. The change in vegetative community indicates that this resource is not supporting hydrology sufficient to maintain a hydrophytic plant community. Therefore, due to the lack of hydrophytic plants, and lack of indicators of hydrology, this resource area is no longer considered to be a wetland under the USACE definition.

Sec2-W176A (polygon 176A)
This 3.94 acre sedge meadow wetland is located immediately adjacent to Hurricane Branch. Vegetation is dense and is comprised of sedges, rushes and scattered elderberry bushes. The site received an InWRAP summary ranking of fair for hydrological function based on flood attenuation and storage qualities. This site is under USACE and IDEM jurisdiction based on its immediate adjacency and hydrologic connection to Hurricane Branch. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. This wetland complex has been refined since the publication of the DEIS. The overall wetland has increased from 3.74 acres to 3.94 acres. These refinements were due to additional field work. The Draft Wetland Report documented 0.61 acre of emergent impact for Alternative A and the DEIS Preferred Alternative, and 1.64 acres of emergent impact for Alternative B. The construction limits impacts are now 1.29 acres for Alternative A and the DEIS Preferred Alternative, and 1.52 acres of impact to Alternative B. The Refined Preferred Alternative would impact 0.64 acre of this wetland.

Sec2-W178 (polygons 178, 178A, 178B, 179 and 179A)
This large 27.83 acre wetland complex is comprised of multiple swamp forest and sedge meadow polygon wetlands typical of floodplain environments throughout the corridor. Polygons 178, 179 and 179A are classified as swamp forest, and polygons 178A and 178B are sedge meadow wetlands. The forested portion of this complex has a sparse understory due to the closed canopy of red maple and green ash above it. Herbaceous vegetation was found to be typical of wetland forested areas and included false nettle and jewel weed as well as sedges and grasses. Due to its location within the floodplain, this wetland complex is consistently ranked good for hydrologic functions. This complex is considered to be under the jurisdiction of the USACE and IDEM by virtue of its direct hydrologic association with Hurricane Branch. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. This wetland complex has been refined since the publication of the DEIS. The overall acreage has changed from 19.30 acres of forest wetland, 4.49 acres of scrub-shrub wetland, and 3.37 acres of emergent wetland to 21.72 acres of forested wetland and 6.11 acres of emergent wetland. The Draft Wetland Report documented 0.12 acres of emergent and 0.44 acre of scrub-shrub impact for Alternative A and the DEIS Preferred Alternative and 2.95 acres of emergent wetland impact, 2.31 acres of scrub-shrub wetland impact, and 3.53 acres of forested wetland impact for Alternative B. The construction limits impacts are now 0.26 acre of emergent wetland impact and 0.67 acre of forested impact for Alternative A and the DEIS Preferred Alternative and 4.34 acres of emergent wetland impact and 3.85 acres of forested wetland impact for Alternative B. The Refined Preferred Alternative would impact 0.64 acre of forested wetland and 0.18 acre of emergent wetland.

Sec2-W186 (polygon 186)
This small 0.80 acre depressional sedge meadow wetland is located within an actively cultivated soy bean field. Vegetation within the resource consists of sedges and grasses interspersed with soy bean plants. All functions examined through the InWRAP protocol were given a rating of poor due to the resource's disturbed nature and location within the landscape. This site is under the jurisdiction of USACE and

IDEM due to its hydrologic connection with Hurricane Branch. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. The Draft Wetland Report documented 0.44 acre of emergent impact for Alternative B. The construction limits impacts are now 0.42 acres for Alternative B. Alternative A, the DEIS Preferred Alternative and the Refined Preferred Alternative would avoid this wetland.

Sec2-W189 (polygon 189)
This 0.92 acre sedge meadow is located within a roadside ditch dense with cattails. Vegetation within the resource also includes invasive plants species *Phalaris arundinacea* and *Phragmites australis*. It receives runoff from the adjacent roadways (including US 50) and flows into a tributary of Hurricane Branch. Due to the channelized nature of the resource and surrounding land use, the site scored low for animal habitat and botanical ratings, but was found to provide fair hydrological function. This wetland is considered to be under USACE and IDEM jurisdiction due to its contiguous connection with natural stream channels (unnamed tributary of Hurricane Branch) to the south. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. This wetland complex has been refined since the publication of the DEIS. The acreage has increased from 0.53 acre to 0.92 acre. The Draft Wetland Report documented 0.06 acre of impact for Alternative A and the DEIS Preferred Alternative, and 0.49 acre of emergent impact for Alternative B. The construction limits impacts are now 0.15 acre for Alternative A and DEIS Preferred Alternative, 0.81 acre for Alternative B, and 0.60 acre for the Refined Preferred Alternative.

Sec2-W190 (polygon 190 and 190PSS)
This 0.56 acre shallow marsh and scrub-carr complex is located southeast of SR57, and would be impacted by the proposed North Pike Interchange, near SR57 and Blackburn Road. It is primarily dominated by graminoids such as reed canary (*Phalaris arundinacea)* and *Eleocharis* sp. Shrub species within the wetland are predominantly small willows (*Salix* sp.) with some occurrences of elm and ash. The wetland is located in an isolated depression at the base of a steep hill. The wetland receives runoff from industrial activities (trucking storage area) located at the top of the hill; however, it is not hydrologically connected to another wetland or waterway. For this reason, this site is not considered to be under USACE jurisdiction, but would be subject to IDEM regulatory authority. The right-of-way impact was presented in the Section 2 Revised DEIS and the construction limit impacts are now presented. This wetland complex has been refined since the publication of the DEIS. This wetland complex originally was just 0.51 acres of emergent wetland, it now includes 0.10 acre of emergent wetland and 0.46 acre of scrub-shrub wetland. The Draft Wetland Report documented 0.17 acre of impact for Alternative A and the DEIS Preferred Alternative, and 0.37 acre for Alternative B. Because the project impacts would result in loss of the majority of this isolated resource area, the remaining portions of the wetland are not anticipated to continue to function as wetlands, therefore the impacts for Alternative A, Alternative B, the DEIS Preferred Alternative and the Refined Preferred Alternative are 0.56 acre.

Sec 2 – W190B (polygon 190B)
This 0.05 acre resource consists of an isolated depressional wetland with open water and a swamp forest wetland fringe. Low plant diversity results in a poor botanical rating for this resource. The sparse understory and position in the landscape result in a fair rating for this wetland for hydrological function. This resource is isolated and therefore determined to be only under IDEM jurisdiction. This wetland has been added since the publication of the DEIS due to additional field work. The proposed reconfiguration of the intersection of Blackburn Road and SR57 would result in construction limit impacts of 0.05 acres for Alternative A, Alternative B, the DEIS Preferred Alternative and the Refined Preferred Alternative.

Sec2-W190C (polygon 190C)
This 0.09 acre scrub-carr wetland complex is comprised of a depressional resource located in a wooded area. The center of the resource appears to flood seasonally as evidenced by the sparse herbaceous layer and saturated, hydrogen sulfide smelling soils. Due to its position in the landscape this resource scores fair for wildlife habitat measure and good for hydrology function. The shrub layer is dominated by green ash and silver maple. The lack of plant diversity and richness results in a poor botanical measure for the wetland. This resource is isolated and therefore determined to be only under IDEM jurisdiction. This wetland has been added since the publication of the DEIS due to additional field work. The construction limits impacts to the wetland would be 0.03 acre for Alternative A, Alternative B and the DEIS Preferred Alternatives. Due to the realignment of the Blackburn Road intersection with SR57, the impacts for the Refined Preferred Alternative would be 0.02 acre.
Sec2-W192 (polygon 192)
This 0.36 acre floodplain forest wetland is located adjacent to CR 275E and is associated with an unnamed ephemeral stream of Mud Creek. The site has fair animal habitat and hydrology measures, but is considered poor botanically due to limited diversity. The canopy consists primarily of red maple and silver maple, and generally lacks a shrub layer. At the time of the site visit, woodreed grass was the prominent ground cover, although ground cover was very sparse. This wetland is considered to be under USACE and IDEM jurisdiction due to its adjacency to an ephemeral stream that is connected to Mud Creek to the north. This wetland has been added since the publication of the DEIS due to additional field work. The connector road from the North Pike Interchange for the Refined Preferred Alternative would impact 0.09 acre of this wetland. Alternative A, Alternative B and the DEIS Preferred Alternative would

Ponds
The following provides a narrative description of each pond that would be impacted by the proposed construction limits of the Refined Preferred Alternative as well as Alternatives A, B and the DEIS Preferred Alternative. Since the publication of the Draft Environmental Impact Statement several changes have been made to the pond assessment. Overall pond areas and impact calculations used for the DEIS were based on NWI boundaries. Additional field work completed since the DEIS was used to further refined the pond boundaries.

Sec2-W28
This pond has been removed due to field work since the publication of the DEIS which revealed that the pond does not exist.

Sec 2-W33
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work. Based on the revised boundary, it is no longer being impacted by Alternative B as documented in the Draft Wetland Report.

Sec2-W35
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work. This pond was not documented as an impact in the Draft Wetland Report. The entire 0.86 acre is now impacted by Alternative A, Alternative B and the DEIS Preferred Alternative. The Refined Preferred Alternative would avoid impacts to this pond.

Sec2-W49
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work. The acreage of the pond is now 0.39 acre. The impact for Alternative B has increased from the 0.24 acre documented in the Draft Wetland Report to include the entire 0.39 acre due to the possibility that the hydrology will be lost. Alternative A, the DEIS Preferred Alternative and the Refined Preferred Alternative would avoid impacts to this pond.

Sec2-W56
The pond location and/or boundary has not changed since the publication of the DEIS. Alternatives A, the DEIS Preferred Alternative and the Refined Preferred Alternative would each impact the entire 0.31 acre. Alternative B would avoid impacts to this pond.

Sec2-W58
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work which indicated that this pond is 0.19 acre and not 1.33 acre as documented in the Draft Wetland Report. Based on the revised boundary it is no longer impacted by Alternative A.

Sec 2-W68
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work which indicated that this pond is 0.39 acre and not 0.55 acre as documented in the Draft Wetland Report. Based on the revised boundary it is no longer impacted by Alternative A.

Sec2-W79
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work. Based on the revised boundary it is no longer impacted by Alternative A.

Sec2-W82
This pond location and/or boundary has not changed since the publication of the DEIS. However; the entire 0.64 acre pond is now being included as an impact for Alternative B compared to the 0.06 acre documented in the Draft Wetland Report.

Sec 2-W83
This pond location and/or boundary has not changed since the publication of the DEIS. However; the entire 0.81 acre pond is now being included as an impact for Alternative B compared to the 0.59 acre documented in the Draft Wetland Report.

Sec2-W86
This pond location and/or boundary has not changed since the publication of the DEIS. However; the entire 0.17 acre pond is now being included as an impact for Alternative B compared to the 0.07 acre of impact documented in the Draft Wetland Report.

Sec2-W90
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work. This pond was found to be 0.19 acre and not 0.38 acre as reported in the Draft Wetland Report. Alternative A, the DEIS Preferred Alternative and the Refined Preferred Alternative would impact the entire 0.19 acre pond.

Sec2-W125
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work. This pond was found to be 0.06 acre and not 0.25 acre as reported in the Draft Wetland Report. Alternative A and the DEIS Preferred Alternative would impact the entire 0.06 acre pond.

Sec2-W130
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work. This pond is no longer impacted by Alternative B as indicated in the Draft Wetland Report.

Sec2-W131
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work. The impact for Alternative B has increased from 0.10 acre documented in the Draft Wetland Report to 1.77 acres to include the entire pond due to the possibility of hydrology loss. Alternative A, the DEIS Preferred Alternative and the Refined Preferred Alternative would avoid impacts to this pond.

Sec2-W132
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work. The impact for Alternative A, Alternative B and the DEIS Preferred Alternative would include the entire 0.58 acre due to the possibility that the hydrology will be lost. The Refined Preferred Alternative would avoid impacts to this pond.

Sec2-W133
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work. This pond was found to be 0.08 acre and not 0.21 acre as reported in the Draft Wetland Report. Alternative A, the DEIS Preferred Alternative and the Refined Preferred Alternative would impact the entire 0.08 acre pond. Alternative B would avoid impacts to this pond.

Sec2-W134
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work. This pond was found to be 0.15 acre and not 0.26 acre as reported in the Draft Wetland Report. Alternative A, the DEIS Preferred Alternative and the Refined Preferred Alternative would impact the entire 0.08 acre pond due to the possibility of hydrology loss. Alternative B would avoid impacts to this pond.

Sec2-W134A
The pond location and/or boundary of this pond has not changed since the publication of the DEIS. Alternatives A, the DEIS Preferred Alternative and the Refined Preferred Alternative would each impact the entire 0.23 acre, Alternative B would avoid impacts to this pond.

Sec2-W135
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work. This pond was found to be 0.43 acre and not 0.45 acre as reported in the Draft Wetland Report. Alternative A, the DEIS Preferred Alternative and the Refined Preferred Alternative would impact the entire 0.43 acre pond due to the possibility of hydrology loss.

Sec2-W137
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work. This pond was found to be 0.22 acre and not 0.25 acre as reported in the Draft Wetland Report. Alternative B would impact the entire 0.22 acre compared to the 0.10 acre documented in the Draft Wetland Report. Alternative A, the DEIS Preferred Alternative and the Refined Preferred Alternative would avoid impacts to this pond.

Sec2-W142
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work. This pond was not included in the Draft Wetland Report because none of the alternatives under investigation were to impact the site. This pond was found to be 0.63 acre. The Refined Preferred Alternative would impact the entire 0.63 acre due to the possibility of hydrology loss. Alternative A, Alternative B and the DEIS Preferred Alternative would avoid impacts to this pond.

Sec2-W147
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work. The pond was found to be 0.44 acre and not 0.42 acre as reported in the Draft Wetland Report. Alternative B would impact the entire 0.44 acre compared to the 0.01 acre documented in the Draft Wetland Report pond due to the possibility of hydrology loss. Alternative A, the DEIS Preferred Alternative and the Refined Preferred Alternative would avoid impacts to this pond.

Sec2-W152
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work. The pond was found to be 0.71 acre and not 0.49 acre as reported in the Draft Wetland Report. Alternative A, the DEIS Preferred Alternative and the Refined Preferred Alternative would impact the entire 0.71 acre compared to the 0.49 acre documented in the Draft Wetland Report. Alternative B would also impact the entire 0.71 acre compared to the 0.40 acre documented in the Draft Wetland Report.

Sec2-W153
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work. The pond was found to be 0.33 acre and not 0.38 acre as reported in the Draft Wetland Report. The Draft Wetland Report indicated that Alternative A would impact 0.01 acre. Based on the revised boundary it is no longer impacted by Alternative A.

Sec2-W157
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work. The pond was found to be 0.38 acre and not 0.30 acre as reported in the Draft Wetland Report. The Draft Wetland Report indicated that Alternative B and the DEIS Preferred Alternative would impact 0.01 acre. Based on the revised boundary, Alternative B, the DEIS Preferred Alternative and the Refined Preferred Alternative would impact the entire 0.38 acre due to the possibility of it losing its hydrology.

Sec2-W159
The Draft Wetland Report inadvertently documented the Alternative A impacts for this pond as 0.17 acre, when in actuality it is 0.17 hectare, or 0.43 acre. The boundary and location of the pond were not revised, so the Alternative A, the DEIS Preferred Alternative and the Refined Preferred Alternative would impact 0.43 acre due to the possibility of it losing its hydrology. Alternative B would avoid impacts to this pond.

Sec2-W160
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work. The pond was found to be 0.36 acre and not 0.42 acre as reported in the Draft Wetland Report. The Draft Wetland Report indicated that Alternative A would impact 0.17 acre and Alternative B would impact 0.34 acre. Based on the revised boundary, Alternative A, Alternative B, the DEIS Preferred Alternative and the Refined Preferred Alternative would impact the entire 0.36 acre due to the potential loss of its hydrology.

Sec2-W167
The pond location and/or boundary has been refined since the publication of the DEIS due to additional field work. The pond was found to be 0.61 acre and not 0.50 acre as reported in the Draft Wetland Report. The Draft Wetland Report indicated that Alternative A would impact 0.50 acre. Based on the revised boundary, Alternative A, the DEIS Preferred Alternative and the Refined Preferred Alternative would impact the entire 0.36 acre due to the potential loss of its hydrology. Alternative B would avoid impacts to this pond.

Sec2-190A
This pond is no longer impacted by Alternative A as documented in the Draft Wetland Report because the construction limits of the alternative do not encroach upon the resource.

Farmed Wetlands

Employing the NRCS criteria for the determination of "farmed wetlands", the FSA slides reviewed for the proposed alternatives did not disclose any locations where the required hydrology signatures were met. It is therefore concluded that no farmed wetlands are present in the I-69 Section 2 corridor within Gibson, Pike, or Daviess counties.

Project Impacts

Construction of the Refined Preferred Alternative would involve direct impacts to Section 404/401 jurisdictional wetlands, as well as isolated features subject to IDEM authority. Collectively, 28 wetland complexes (each comprised on one or more community type polygons) are located within the proposed alignment and interchanges for Alternative A, Alternative B, the DEIS Preferred Alternative and the Refined Preferred Alternative. Twenty-two (22) of these complexes were assessed as Waters of the U.S. subject to USACE jurisdiction. The remaining six (6) were determined to be "isolated" and therefore considered to be Waters of the State under the jurisdiction of IDEM only. The total impact to wetlands (excluding PUB ponds) due to construction of the Refined Preferred Alternative would be 23.98 acres. Of these, 23.07acres are Waters of the US under USACE jurisdiction and the remaining 0.91 acres involve impacts to resources solely under IDEM jurisdiction. Alternative A would result in impacts to 25.21 acres of wetlands (excluding PUB ponds), 24.29 acres of which are Waters of the US under USACE jurisdiction, with the remaining 0.92 acre solely under IDEM jurisdiction. Alternative B would result in impacts to 48.37 acres of wetlands (excluding PUB ponds), 47.10 acres of which are Waters of the US under USACE jurisdiction, with the remaining 1.27 acres solely under IDEM jurisdiction The DEIS Preferred Alternative would result in impacts to 25.21 acres of wetlands (excluding PUB ponds), 24.29 acres of which are Waters of the US under USACE jurisdiction, with the remaining 0.92 acre solely under IDEM jurisdiction.

A total of 24 palustrine unconsolidated bottom (PUB) features (i.e., ponds) were also located within the collective limits of the four alternatives. For determining pond acreage impacts in this assessment, if any portion of the pond was impacted, the entire acreage of the pond was considered an impact due to the possibility of loss of hydrology. The Refined Preferred Alternative, including all interchanges local access roads and cross roads, would impact 15 ponds with a collective total of 4.91 acres. Alternative A would impact 14 ponds with a total area of 5.10 acres. Alternative B would impact 14 ponds with a total of 7.67 acres. The DEIS Preferred Alternative would impact 15 ponds with a total of 5.29 acres. One (1) pond (Sec2-W152) appears to have been formed by impoundment of a Waters of the U.S. and would therefore be considered Section 404/401 jurisdictional. Sec2-W152 would be impacted by each of the four alternatives. The remaining pond sites are considered to be isolated Waters of the State, some or all of which may qualify as "exempt isolated wetlands".

Tables 3-6 document the anticipated impacts for Alternative A, Alternative B, the DEIS Preferred Alternative and the Refined Preferred Alternative by subsection, and resource type. In locations where wetlands of different type are located within a single wetland complex, they are assessed according to wetland type. Refer to the matrix table in Appendix D for a summary of key characteristics, jurisdictional status, functions and values ratings, and area of impact for each wetland affected by the Refined Preferred Alternative.

Table 3: Alternative A Impacts to Wetlands and Ponds , By Subsection

Subsection	Complex/ Wetland ID	Jurisdiction		Cowardin et al. (1979) Classification					Complex Total (acres)	Sub-section Total (acres)
		Waters of the U.S.	Waters of the State	PUB (acres)	PAB (acres)	PEM (acres)	PSS (acres)	PFO (acres)		
1	Sec2-W4	X						0.03	0.03	0.93
	Sec2-W11	X						0.09	0.09	
	Sec2-W15	X						0.81	0.81	
2	Sec2-W17	X			0.39			2.95	3.34	7.90
	Sec2-W32	X				2.65		0.28	2.93	
	Sec2-W35		X	0.86					0.86	
	Sec2-W43	X						0.77	0.77	
3	Sec2-W55A	X				0.12		3.88	4.00	4.52
	Sec2-W56		X	0.31					0.31	
	Sec2-W64	X				0.15	0.06		0.21	
4	Sec2-W80		X		0.28				0.28	8.58
	Sec2-W80A	X				2.06		4.61	6.67	
	Sec2-W90		X	0.19					0.19	
	Sec2-W95A	X						0.70	0.70	
	Sec2-W190		X			0.10	0.46		0.56	
	Sec2-W190B		X	0.10				0.05	0.15	
	Sec2-W190C		X				0.03		0.03	
6	Sec2-W118	X						2.37	2.37	3.90
	Sec2-W125		X	0.06					0.06	
	Sec2-W132		X	0.58					0.58	
	Sec2-W133		X	0.08					0.08	
	Sec2-W134		X	0.15					0.15	
	Sec2-W134A		X	0.23					0.23	
	Sec2-W135		X	0.43					0.43	
7	Sec2-W152	X		0.71					0.71	1.50
	Sec2-W159		X	0.43					0.43	
	Sec2-W160		X	0.36					0.36	
8	Sec2-W167		X	0.61					0.61	0.61
9	Sec2-W176A	X				1.29			1.29	2.37
	Sec2-W178	X				0.26		0.67	0.93	
	Sec2-W189	X				0.15			0.15	
Total				5.10	0.67	6.78	0.55	17.21	30.31	30.31

Table 4: Alternative B Impacts to Wetlands and Ponds , By Subsection

Subsection	Complex/ Wetland ID	Jurisdiction		Cowardin et al. (1979) Classification					Complex Total (acres)	Subsection Total (acres)
		Waters of the U.S.	Waters of the State	PUB (acres)	PAB (acres)	PEM (acres)	PSS (acres)	PFO (acres)		
1	Sec2-W4	X						5.05	5.05	6.20
	Sec2-W11	X						0.46	0.46	
	Sec2-W15	X						0.69	0.69	
2	Sec2-W17	X			0.40			2.90	3.30	11.78
	Sec2-W32	X				2.63		0.26	2.89	
	Sec2-W35		X	0.86					0.86	
	Sec2-W37	X				0.02	2.05	1.79	3.86	
	Sec2-W43	X						0.48	0.48	
	Sec2-W49		X	0.39					0.39	
3	Sec2-W55A	X					4.11		4.11	4.27
	Sec2-W64	X					0.16		0.16	
4	Sec2-W76	X					0.44	1.56	2.00	13.02
	Sec2-W80		X		0.28				0.28	
	Sec2-W80A	X				2.06		6.05	8.11	
	Sec2-W82		X	0.64					0.64	
	Sec2-W83		X	0.81					0.81	
	Sec2-W86		X	0.17					0.17	
	Sec2-W89		X			0.27			0.27	
	Sec2-W190		X			0.10	0.46		0.56	
	Sec2-W190B		X	0.10				0.05	0.15	
	Sec2-W190C		X				0.03		0.03	
6	Sec2-W115	X				0.51	0.08		0.59	7.48
	Sec2-W117	X						1.63	1.63	
	Sec2-W118	X						1.18	1.18	
	Sec2-W120	X				0.48	0.59		1.07	
	Sec2-W131		X	1.77					1.77	
	Sec2-W132		X	0.58					0.58	
	Sec2-W137		X	0.22					0.22	
	Sec2-W147		X	0.44					0.44	
7	Sec2-W152A		X	0.24					0.24	1.69
	Sec2-W152	X		0.71					0.71	
	Sec2-W157		X	0.38					0.38	
	Sec2-W160		X	0.36					0.36	
8	Sec2-W166		X			0.08			0.08	0.66
	Sec2-W166A	X				0.58			0.58	
9	Sec2-W176A	X				1.52			1.52	10.94
	Sec2-W178	X				4.34		3.85	8.19	
	Sec2-W186	X				0.42			0.42	
	Sec2-W189	X				0.81			0.81	
Total				7.67	0.68	13.82	7.92	25.95	56.04	56.04

Table 5: DEIS Preferred Alternative Impacts to Wetlands and Ponds, By Subsection

Subsection	Complex/ Wetland ID	Jurisdiction		Cowardin et al. (1979) Classification					Complex Total (acres)	Subsection Total (acres)
		Waters of the U.S.	Waters of the State	PUB (acres)	PAB (acres)	PEM (acres)	PSS (acres)	PFO (acres)		
1	Sec2-W4	X						0.03	0.03	0.93
	Sec2-W11	X						0.09	0.09	
	Sec2-W15	X						0.81	0.81	
2	Sec2-W17	X			0.39			2.95	3.34	7.90
	Sec2-W32	X				2.65		0.28	2.93	
	Sec2-W35		X	0.86					0.86	
	Sec2-W43	X						0.77	0.77	
3	Sec2-W55A	X				0.12		3.88	4.00	4.52
	Sec2-W56		X	0.31					0.31	
	Sec2-W64	X				0.15	0.06		0.21	
4	Sec2-W80		X		0.28				0.28	8.58
	Sec2-W80A	X				2.06		4.61	6.67	
	Sec2-W90		X	0.19					0.19	
	Sec2-W95A	X						0.70	0.70	
	Sec2-190		X			0.10	0.46		0.56	
	Sec2-190B		X	0.10				0.05	0.15	
	Sec2-190C		X				0.03		0.03	
6	Sec2-W118	X						2.37	2.37	3.90
	Sec2-W125		X	0.06					0.06	
	Sec2-W132		X	0.58					0.58	
	Sec2-W133		X	0.08					0.08	
	Sec2-W134		X	0.15					0.15	
	Sec2-W134A		X	0.23					0.23	
	Sec2-W135		X	0.43					0.43	
7	Sec2-W152A		X	0.24					0.24	1.69
	Sec2-W152	X		0.71					0.71	
	Sec2-W157		X	0.38					0.38	
	Sec2-W160		X	0.36					0.36	
8	Sec2-W167		X	0.61					0.61	0.61
9	Sec2-W176A	X				1.29			1.29	2.37
	Sec2-W178	X				0.26		0.67	0.93	
	Sec2-W189	X				0.15			0.15	
Total				5.29	0.67	6.78	0.55	17.21	30.50	30.50

Table 6: Refined Preferred Alternative Impacts to Wetlands and Ponds, By Subsection

Subsection	Complex/ Wetland ID	Jurisdiction		Cowardin et al. (1979) Classification					Complex Total (acres)	Subsection Total (acres)
		Waters of the U.S.	Waters of the State	PUB (acres)	PAB (acres)	PEM (acres)	PSS (acres)	PFO (acres)		
1	Sec2-W11	X						0.06	0.06	0.92
	Sec2-W15	X						0.86	0.86	
2	Sec2-W17	X			0.40			3.00	3.40	7.46
	Sec2-W32	X				2.84		0.29	3.13	
	Sec2-W43	X						0.93	0.93	
3	Sec2-W55A	X				0.12		3.92	4.04	4.57
	Sec2-W56		X	0.31					0.31	
	Sec2-W64	X				0.15	0.07		0.22	
4	Sec2-W80		X		0.28				0.28	7.64
	Sec2-W80A	X				1.99		4.16	6.15	
	Sec2-W90		X	0.19					0.19	
	Sec2-W95A	X						0.20	0.20	
	Sec2-W190		X			0.10	0.46		0.56	
	Sec2-W190B		X	0.10				0.05	0.15	
	Sec2-W190C		X				0.02		0.02	
	Sec2-W192	X						0.09	0.09	
6	Sec2-W118	X						1.93	1.93	3.51
	Sec2-W125		X	0.06					0.06	
	Sec2-W133		X	0.08					0.08	
	Sec2-W134		X	0.15					0.15	
	Sec2-W134A		X	0.23					0.23	
	Sec2-W135		X	0.43					0.43	
	Sec2-W142		X	0.63					0.63	
7	Sec2-W152A		X	0.24					0.24	2.12
	Sec2-W152	X		0.71					0.71	
	Sec2-W157		X	0.38					0.38	
	Sec2-W159		X	0.43					0.43	
	Sec2-W160		X	0.36					0.36	
8	Sec2-W167		X	0.61					0.61	0.61
9	Sec2-W176A	X				0.64			0.64	2.06
	Sec2-W178	X				0.18		0.64	0.82	
	Sec2-W189	X				0.60			0.60	
Total				4.91	0.68	6.62	0.55	16.13	28.89	28.89

Impact Avoidance and Minimization

Many impacts to high quality wetlands were avoided during the Tier 1 study of the area and in the selection of the location of the preferred corridor. This initial study committed to bridging the floodplain of Flat Creek and the Patoka River, thereby greatly reducing the impacts to these high quality areas. A shift in the corridor during the Tier 1 analysis also reduced impacts to the wetlands associated with Pride's Creek.

The Tier 2 layout of specific alignments within the corridor has allowed for further avoidance and minimization to wetlands within the corridor. Alternatives A and B were initially laid out within the project corridor with avoidance of wetlands being one of the driving design considerations. Where possible, large wetland complexes were avoided and crossings were made to minimize impacts.

Once the A and B Alternative Alignments were laid out, the DEIS Preferred Alternative was developed by combining sections of each alternative that provided for the best avoidance of sensitive resources within each subsection of the corridor. This allowed for a new alignment that provided the greatest level of avoidance. The Preferred Alternative alignment was selected and then refined further by modifying side slopes, interchange layouts and cul de sacs to further minimize impacts to wetlands and other resources. The Refined Preferred Alternative represents the alignment with the greatest potential for avoidance while still meeting the project purpose and need.

5 Summary

A total of 28 wetland complexes, excluding those complexes that include only ponds, occur within one or more of the Alternatives within the project corridor. Twenty-two (22) are considered to be Waters of the U.S., while the remaining six (6) are regarded as only Waters of the State. A total of 24 ponds occur within one of more of the Alternatives within the project corridor, only one of which is considered to be a Waters of the U.S. One pond is located within a complex (W190B) associated with a forested wetlands.

Alternative A would impact 18 wetland complexes (30 community type polygons) totaling 25.21 acres and fourteen (14) open water ponds totaling 5.10 acres. The palustrine forest type comprised the majority (68%) of the total wetland area (excludes ponds) that would be impacted.

Alternative B would impact 26 wetland complexes (42 community type polygons) totaling 48.37 acres and fourteen (14) open water ponds totaling 7.67 acres. The palustrine forest type comprised the majority (54%) of the total wetland area (excludes ponds) that would be impacted.

The DEIS Preferred Alternative would impact 18 wetland complexes (30 community type polygons) totaling 25.21 acres and fifteen (15) ponds totaling 5.29 acres. The palustrine forest type comprises 68% of the total wetland area impacted (excludes ponds). The Refined Preferred Alternative would impact 18 wetland complexes (30 community type polygons) totaling 23.98 acres and fifteen (15) ponds totaling 4.91 acres. The palustrine forest type comprises 67% of the total wetland area impacted (excludes ponds).

For each alternative, a summary of wetland impacts by resource type and jurisdiction is shown in Table 7. InWRAP wetland quality assessments indicated that forested wetlands most often scored good or fair for animal habitat, botanical and hydrologic measures. Emergent shallow marshes in disturbed, agricultural settings most often scored poor for one or more of the three InWRAP measures.

Table 7: Comparative Summary of Impacts to Wetlands and Ponds for All Build Alternatives

Alternative	PUB (acres)		PAB (acres)		PEM (acres)		PSS (acres)		PFO (acres)		Total (acres)	
	Waters of the U.S.	Waters of the State	Waters of the U.S.	Waters of the State	Waters of the U.S.	Waters of the State	Waters of the U.S.	Waters of the State	Waters of the U.S.	Waters of the State	Waters of the U.S.	Waters of the State
Alternative A	0.71	5.10	0.39	0.67	6.68	6.78	0.06	0.55	17.16	17.21	25.00	30.31
Alternative B	0.71	7.67	0.40	0.68	13.37	13.82	7.43	7.92	25.90	25.95	47.81	56.04
DEIS Preferred Alternative	0.71	5.29	0.39	0.67	6.68	6.78	0.06	0.55	17.16	17.21	25.00	30.50
Refined Preferred Alternative	0.71	4.91	0.40	0.68	6.52	6.62	0.07	0.55	16.08	16.13	23.78	28.89

The Waters of the State column includes both Waters of the U.S. and non-exempt isolated wetlands/ponds under IDEM authority. As such, the difference between the acreage reported for the Waters of the State and the acreage reported for the Waters of the U.S. for each alternative and each wetland class, represents the acreage that is only under IDEM authority.

6 References

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7 Appendices

Appendix A – Wetland Site Forms
Appendix B – I-69 Wetland Quality Assessment Profile Sheets
Appendix C – Wetland Matrix for Build Alternatives
Appendix D – InWRAP Data Sheets
Appendix E – USACE Delineation Data Sheets

I-69 TIER 2 STUDY
SECTION 2
FINAL WETLAND ASSESSMENT REPORT

Appendix A
Wetland Site Forms

Prepared By:

JACOBS

501 N. Broadway
St. Louis, MO 63102

February 2010

Wetland Sec2-W4

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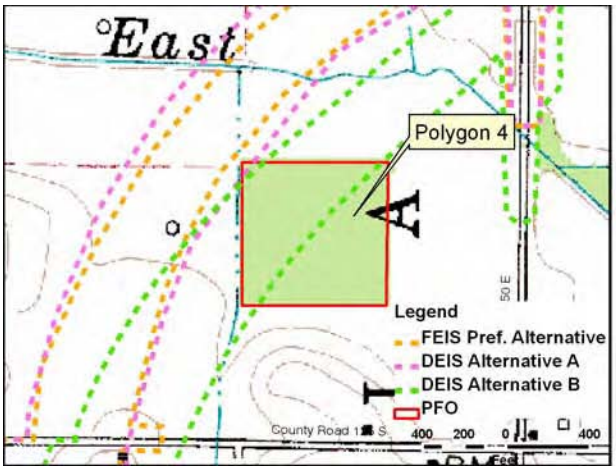
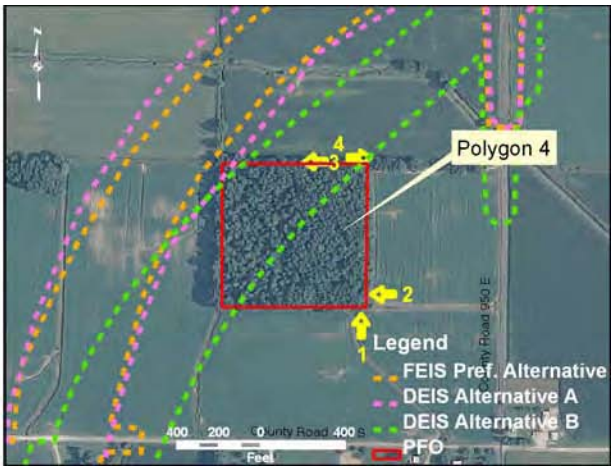


Site Location on FranciscoUSGS Quadrangle



Site Location on 2008 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Francisco
Type:	Forested	**Section:**	15
Quarter:	SW	**Township:**	T2S
Range:	R9W	**USCOE Jurisdiction:**	Yes
Watershed:	East Fork Keg Creek	**IDEM Jurisdiction:**	Yes

Wetland Sec2-W4

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessment		
				Wildlife Habitat Measure	Botanical Measure	Hydrology Measure
4	Swamp Forest	0.03	A	Fair	Fair	Good
		5.05	B			
		0.03	DEIS Preferred			
		0	Refined Preferred			

Description of Potential Impact: The Preferred Alternative was refined to avoid any impact to this wetland. Alternative B would impact approximately 5.05 acres of this 10.83 acre depressional wetland. Alternative A would have a much smaller (0.03 acre) impact on this resource. The area showed 95 – 100% vegetative cover. Red maple, ash and elm are found throughout the polygon both as mature trees and as saplings. Herbaceous ground cover includes species such as fowl manna grass, jewelweed, and poison ivy. Hydrology is likely due to its depressional nature, local runoff, and poorly drained soils. Animal habitat and botanical diversity are both ranked fair under InWRAP summaries for the site. Although this site is typical of forested wetlands found throughout the project area, it is likely that it plays an important role in flood storage and attenuation for the area, as it is one of very few wetlands locally. Its role in the landscape is

therefore considered significant. This resource is regulated under USACE and IDEM jurisdiction due to its immediate adjacency to a tributary of East Fork Keg Creek.

Photograph 1 of polygon 4

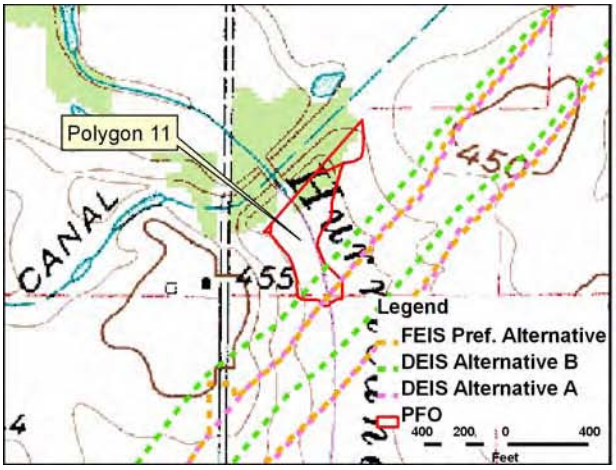
Photograph 2 of polygon 4

Photograph 3 of polygon 4

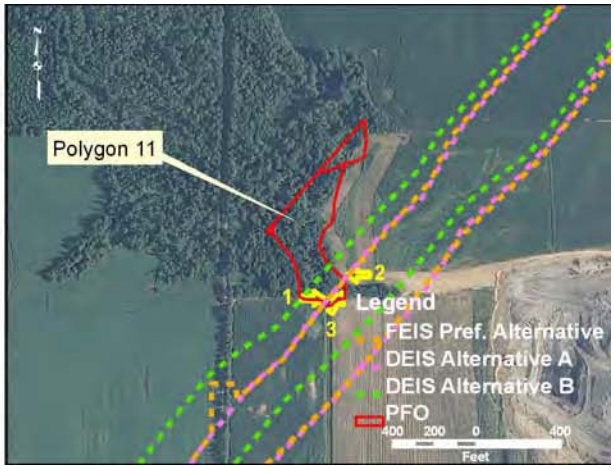
Wetland Sec2-W4

Photograph 4 of polygon 4

Wetland Sec2-W11



Site Location on Oakland City USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Oakland City
Type:	Forested	**Section:**	11
Quarter:	SW	**Township:**	T2S
Range:	R9W	**USCOE Jurisdiction:**	Yes
Watershed:	Patoka River	**IDEM Jurisdiction:**	Yes

Wetland Sec2-W11

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessment		
				Wildlife Habitat Measure	Botanical Measure	Hydrology Measure
11	Floodplain Forest	0.09	A	Good	Fair	Good
		0.46	B			
		0.09	DEIS Preferred			
		0.06	Refined Preferred			

Description of Potential Impact: This 54.27 acre resource would be impacted under all alternatives. Alternative A would impact 0.09 acres of this resource, Alternative B would impact 0.46 acres and the DEIS Preferred would impact 0.09 acres. The Refined Preferred Alternative would result in impacts to 0.06 acres of this resource. The area is made up of a floodplain forest associated with Hurricane Creek. The tree canopy of red maple and ash is more or less closed and results in a sparse understory below. Herbaceous ground cover consists of scattered sedges and grasses, as well as poison ivy. This resource area rates high (good) for both hydrology, due to its floodplain location, and for wildlife habitat due to open water elements and good protective cover. This wetland complex falls under the jurisdiction of both the USACE and IDEM due to its hydrologic connectivity with the South Fork of the Patoka River.

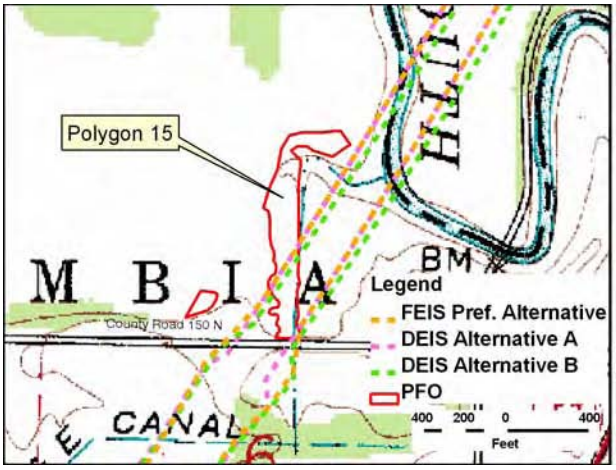
Wetland Sec2-W11

Photograph 1 of polygon 11

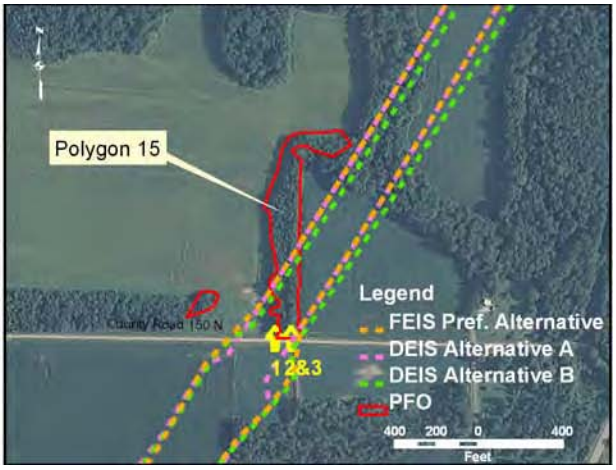
Photograph 2 of polygon 11

Photograph 3 of polygon 11

Wetland Sec2-W15



Site Location on PetersburgUSGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Petersburg
Type:	Forested	**Section:**	11
Quarter:	SW	**Township:**	T2S
Range:	R9W	**USCOE Jurisdiction:**	Yes
Watershed:	Patoka River	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W15

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessment		
				Wildlife Habitat Measure	Botanical Measure	Hydrology Measure
15	Floodplain Forest	0.81	A	Fair	Fair	Fair
		0.69	B			
		0.81	DEIS Preferred			
		0.86	Refined Preferred			

Description of Potential Impact: This site consists of a 3.08 acre strip of forested wetland adjacent to a ditch. Alternative A would impact 0.81 acres, Alternative B would impact 0.69 acres and the DEIS would impact 0.81 acres of this resource. Impacts to this resource area would total 0.86 acres under the Refined Preferred Alternative. All Alternatives would impact less than one acre the resource, with Alternative B impacting slightly less than the other alternatives. This wetland is affected by ditching and is colonized by monostands of the invasive exotic reed canary grass. Poison ivy is also dominant in this degraded resource and a row of young silver maples is present on the upland border. The wetland exhibits fair wildlife habitat and provides only fair botanical measures due to the presence of reed canary grass and low plant diversity within the resource. This wetland falls under the jurisdiction of both the USACE and IDEM due to hydrologic connectivity with the South Fork Patoka River.

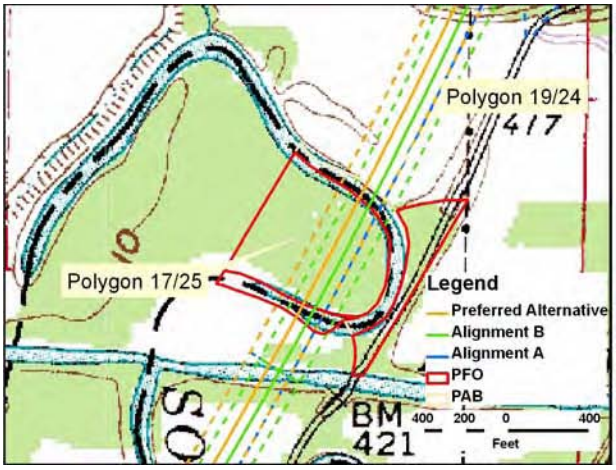
Wetland Sec2-W15

Photograph 1 of polygon 15

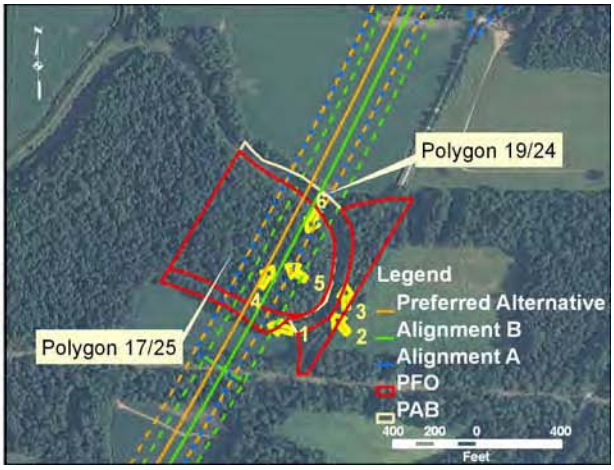
Photograph 2 of polygon 15

Photograph 3 of polygon 15

Wetland Sec2-W17



Site Location on Petersburg USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Petersburg
Type:	Forested and Aquatic Bed	**Section:**	31
Quarter:	SW	**Township:**	T1S
Range:	R8W	**USCOE Jurisdiction:**	Yes
Watershed:	Patoka River	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W17

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessment		
				Wildlife Habitat	Botanical Measure	Hydrology Measure
17/25	Floodplain Forest	2.95	A.	Good	Fair	Good
		2.90	B			
		2.95	DEIS Preferred			
		3.00	Refined Preferred			
19/24	Deep Marsh	0.39	A.	Good	Fair	Good
		0.40	B			
		0.39	DEIS Preferred			
		0.40	Refined Preferred			

Description of Potential Impact: This 11.63 acre wetland complex lies within the Patoka National Wildlife Refuge, a large area of bottom land hardwood forest established as a refuge in 1994. Impacts to this complex include 3.34 acres for Alternative A, 3.3 acres for Alternative B, and 3.34 acres for the DEIS Preferred Alternative. The total impacts to this resource would be 3.4 acres for the Refined Preferred Alternative. Because of the narrow corridor through the Patoka refuge developed

early in the project all of the Alternatives have similar routes through the resource and therefore have similar impacts.

Due to the uniqueness and local significance of this area, the project corridor crossing was established early on in the conceptual design and was located in this area due to existing surrounding disturbance and somewhat degraded nature of the resource area. The wetland complex in this area is made up of polygons 17/25 and 19/24. The floodplain forest resource associated with the old channel of the Patoka (polygon 17/25) consists of a bottomland forested resource dominated by silver maple and red maple with a sparse understory dominated by Gray's sedge and poison ivy.

Adjacent to this forested area is a deep marsh resource located in the old, natural channel of the Patoka River (polygon 19/24). Duckweed dominates the open water portion of this resource and button bush is scattered along the shallow edges. Both types of wetlands scored good for hydrologic function and wildlife habitat. The wetland complex also includes habitat for state listed species. The wetland complex is determined to be jurisdictional under both USCOE and IDEM regulations as a result of its direct connection with the Patoka River.

Photograph 1 of polygon 19/24

Wetland Sec2-W17


Photograph 2 of polygon 17/25

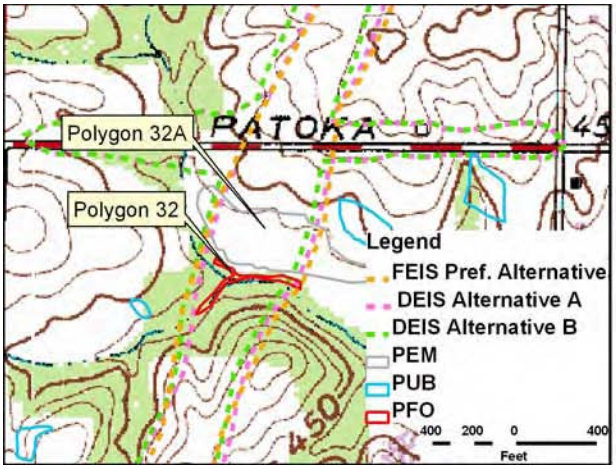

Photograph 3 of polygon 17/25


Photograph 4 of polygon 17/25

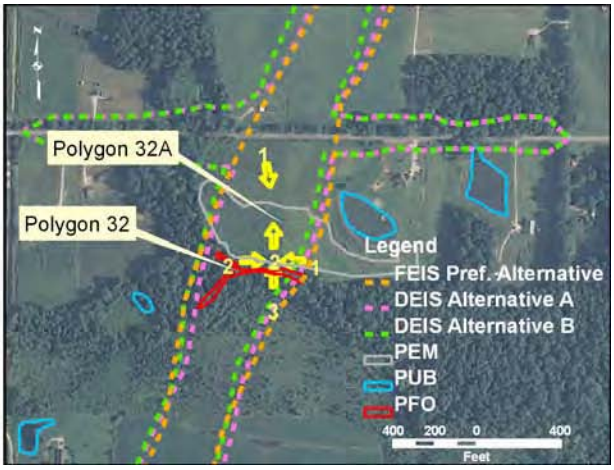
Wetland Sec2-W17


Photograph 5 of polygon 17/25

Wetland Sec2-W32



Site Location on Petersburg USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Petersburg
Type:	Forested and Emergent	**Section:**	31
Quarter:	SW	**Township:**	T1S
Range:	R8W	**USCOE Jurisdiction:**	Yes
Watershed:	Patoka River	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W32

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessment		
				Wildlife Habitat Measure	Botanical Habitat Measure	Hydrology Measure
32	Swamp Forest	0.28	A	Good	Fair	Fair
		0.26	B			
		0.28	DEIS Preferred			
		0.29	Refined Preferred			
32A	Wet Meadow	2.65	A	Poor	Poor	Fair
		2.63	B			
		2.65	DEIS Preferred			
		2.84	Refined Preferred			

Description of Potential Impact: Polygons 32 and 32A form a 52.56 acre wetland complex located along a stream channel and partially within an old field. Alternative A would impact 2.93 acres, Alternative B would impact 2.89 acres, and the DEIS Preferred Alternative would impact 2.93 acres. The Refined Preferred Alternative would result in impacts to 3.13 acres of this resource. The swamp forest portion of this complex is dominated by green ash in the

overstory and barnyard grass, jewel weed and beggars ticks in the herbaceous layer. The field delineated boundary of the resource was found to be much narrower than the NWI mapped resource area. The wetland forms a narrow fringe along the channelized stream and shows signs of flooding during periods of high water. At the proposed intersection, the stream channel is incised and does not have bordering wetland associated with it. The wet meadow wetland portion of this complex consists of a sedge meadow that has formed in a low lying area of an adjacent field. The field delineated wet meadow resource was found to be larger than shown on the NWI mapping. Sedges and rushes identified within this resource include *Juncus tenuis*, *Juncus acuminatus*, and *Eleocharis obtusa*. Both community types show signs of disturbance such as ditching within the forested system and prior cultivation of the meadow area. Although the wet meadow is small in size and occurs within an old field, it has a hydrologic connection to the forested area and is therefore considered part of the larger complex. The wetland complex is determined to be jurisdictional under both USACE and IDEM regulations due to its direct association with an unnamed tributary to the Patoka River.

Photograph 1 of polygon 32

Photograph 2 of polygon 32

Wetland Sec2-W32

Photograph 3 of polygon 32

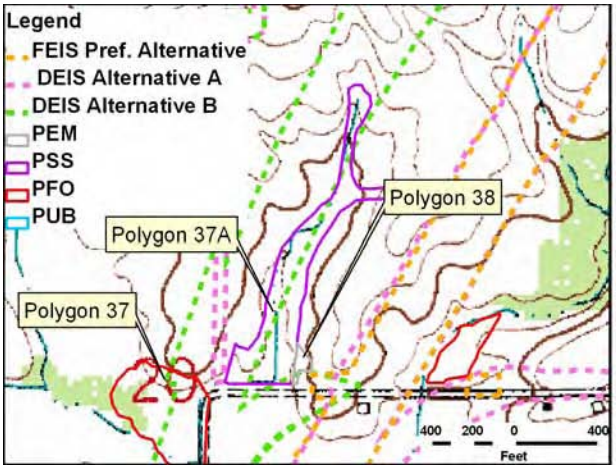
Photograph 1 polygon 32A

Photograph 2 polygon 32A

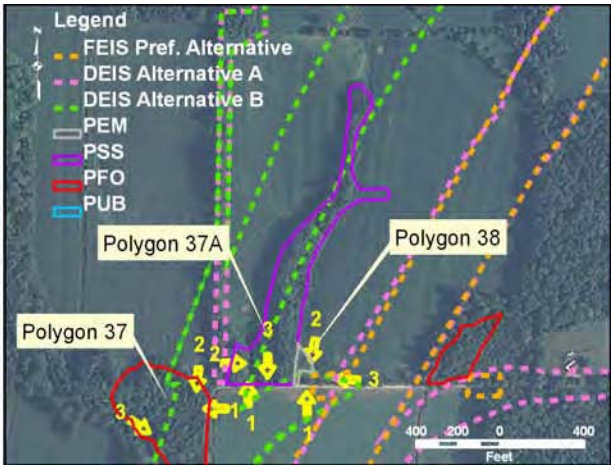
Wetland Sec2-W32

Photograph 3 polygon 32A

Wetland Sec2-W37



Site Location on Petersburg USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Petersburg
Type:	Forested, Scrub/Shrub& Emergent	**Section:**	20
Quarter:	SW	**Township:**	T1S
Range:	R8W	**USCOE Jurisdiction:**	Yes
Watershed:	Patoka River - Flat Creek	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W37

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessment		
				Wildlife Habitat Measure	Botanical Measure	Hydrology Measure
37	Swamp Forest	0	A	Fair	Fair	Fair
		1.79	B			
		0	DEIS Preferred			
		0	Refined Preferred			
37A	Shrub-Carr	0	A	Good	Fair	Fair
		2.05	B			
		0	DEIS Preferred			
		0	Refined Preferred			
38	Shallow Marsh	0	A	Poor	Poor	Good
		0.02	B			
		0	DEIS Preferred			
		0	Refined Preferred			

Wetland Sec2-W37

Description of Potential Impact: This 8.87 acre wetland complex consists of a swamp forest area and a scrub-carr separated by a narrow steep upland, and a shallow marsh wetland area bordering on forested wetlands. Only Alternative B impacts this complex. It is impacted by 3.86 acres. These resources are bounded by roadways and agricultural land. Ditching was observed within the wetland areas, as well as a culvert leading under the roadway. The forested wetland is dominated by red maple and green ash with jewelweed and false nettle in the understory. The scrub/shrub portion of the resource area has similar vegetation, but the trees are sapling size. Reed canary grass was observed scattered throughout the site, however was not frequent enough to be considered dominant. Due to the closed canopy, wood litter and protected nature of the forested resource it was considered to provide fair wildlife habitat. The emergent portion of the wetland complex is dominated by reed grass (*Phragmites australis*). The dense herbaceous layer and position in the landscape led to a good rating for hydrologic function, particularly for storm water attenuation and storage. This complex is determined to be under USACE and IDEM jurisdiction due to its hydrologic association with a Flat Creek tributary.

Wetland Sec2-W37

Photograph 1 of polygon 37

Photograph 2 of polygon 37

Photograph 3 of polygon 37

Wetland Sec2-W37

Photograph 1 of polygon 37A

Photograph 2 of polygon 37A

Photograph 3 of polygon 37A

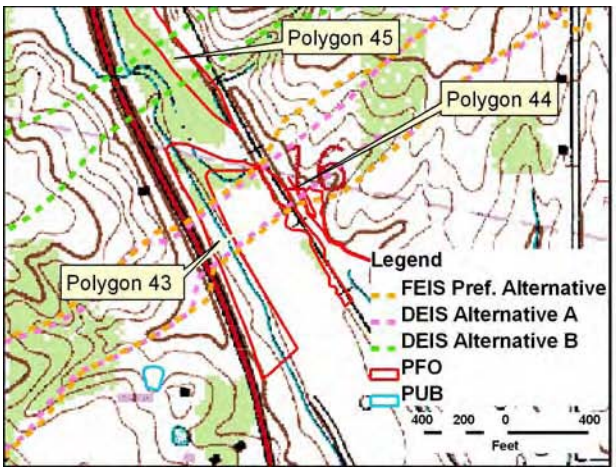
Wetland Sec2-W37

Photograph 1 of polygon 38

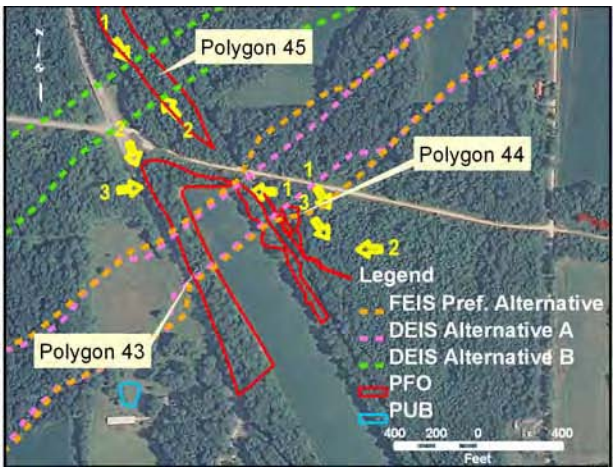
Photograph 2 polygon 38

Photograph 3 polygon 38

Wetland Sec2-W43



Site Location on Petersburg USGS Quadrangle



Site Location on Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Petersburg
Type:	Forested	**Section:**	16
Quarter:	SW	**Township:**	T1S
Range:	R8W	**USCOE Jurisdiction:**	Yes
Watershed:	Patoka River - Flat Creek	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W43

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessment		
				Wildlife Habitat Measure	Botanical Measure	Hydrology Measure
43	Swamp Forest	0.76	A	Good	Fair	Fair
		0	B			
		0.76	DEIS Preferred			
		0.85	Refined Preferred			
44	Swamp Forest	0.01	A	Fair	Fair	Fair
		0	B			
		0.01	DEIS Preferred			
		0.08	Refined Preferred			
45	Swamp Forest	0	A	Good	Fair	Fair
		0.48	B			
		0	DEIS Preferred			
		0	Refined Preferred			

Wetland Sec2-W43

Description of Potential Impact: This 8.23 acre wetland complex is associated with Flat Creek and has been dissected by the railroad, the mine road and SR 57. Impacts to the entire complex would be 0.77 acres for Alternative A, 0.48 acres for Alternative B, 0.77 acres for the DEIS Preferred Alternative, and 0.93 acres for the Refined Preferred Alternative. The swamp forested wetland sections of this complex are dominated by red maple in the upper canopy and nettle and jewelweed in the herbaceous layer. Average plant diversity and sparse understory result in fair ratings for this complex for botanical and hydrological functions. INWRAP assessment for these resources indicates that despite the surrounding land use they provide some areas of good habitat for wildlife due to tree cover and maturity, presence of standing water, as well as areas of scattered woody material. This complex is determined to be under USACE and IDEM jurisdiction due to its hydrologic connection to Flat Creek.

Photograph 1 of polygon 43


Photograph 2 of polygon 43

Wetland Sec2-W43

Photograph 3 of polygon 43

Photograph 1 of polygon 44

Photograph 2 of polygon 44 with 43(A) in rear ground

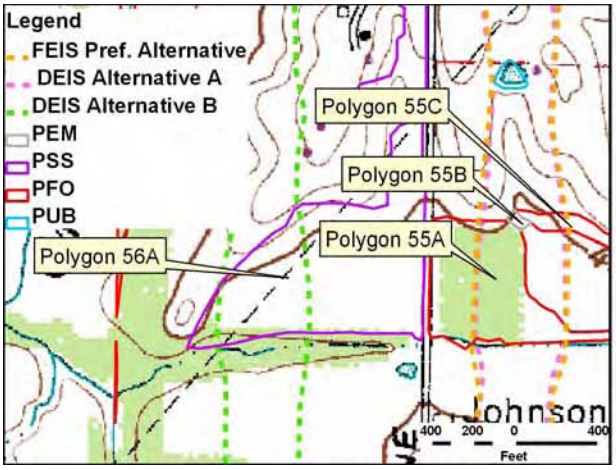
Wetland Sec2-W43

Photograph 3 of polygon 44

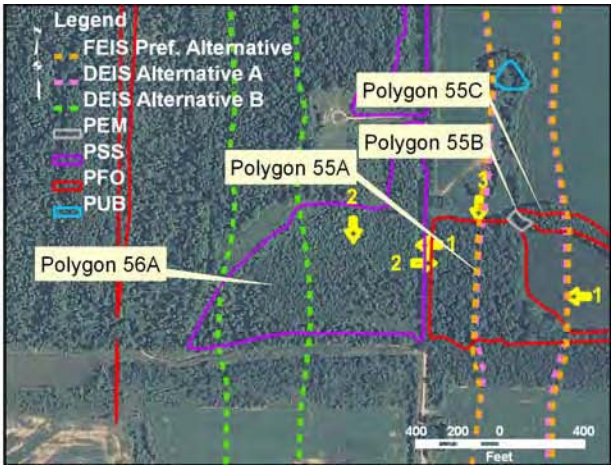
Photograph 1 of polygon 45

Photograph 2 of polygon 45

Wetland Sec2-W55



Site Location on Petersburgh USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Petersburgh
Type:	Forested, Emergent, and Scrub/Shrub	**Section:**	3
Quarter:	SW	**Township:**	T1S
Range:	R8W	**USCOE Jurisdiction:**	Yes
Watershed:	Prides' Creek	**Jurisdiction:**	Yes

Wetland Sec2–W55

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessment		
				Wildlife Habitat Measure	Botanical Measure	Hydrology Measure
55A	Swamp Forest	3.56	A	Fair	Fair	Fair
		0.0	B			
		3.56	DEIS Preferred			
		3.6	Refined Preferred			
55B	Wet Meadow	0.12	A	Poor	Poor	Fair
		0.0	B			
		0.12	DEIS Preferred			
		0.12	Refined Preferred			
55C	Swamp Forest	0.32	A	Fair	Poor	Fair
		0.0	B			
		0.32	DEIS Preferred			
		0.32	Refined Preffered			

Wetland Sec2-W55

56A	Scrub-carr	0	A	Fair	Fair	Good
		4.11	B			
		0	DEIS Preferred			
		0	Refined Preferred			

Description of Potential Impact: This 22.07 acre wetland complex consists of 4 bordering wetland polygons that are interconnected under the roadway. Total impacts to the wetland complex will be 4 acres for Alternative A, 4.11 for Alternative B, 4 acres for the DEIS Preferred and 4.04 acres for the Refined Preferred Alternative. Polygon 55A is a swamp forest with pockets of standing water throughout, making this area considerably wetter than most forested resources found in the project area. Nettle, bent grass and moneywort were common throughout the polygon. A dense upper canopy of red maples as well as ponded water makes the herbaceous layer fairly sparse. The eastern edge of the forested wetland is bordered by a wet meadow wetland (polygon 55C) that is partially under cultivation. Polygon 55B is also forested, but is more typical of forested wetlands in the area in that it does not have standing water present and has an herbaceous layer that is marginally hydrophytic. Across the county road polygon 56A is a scrub-carr resource with dense sycamore and red maple saplings. It is likely that this location was formerly mined and is now recovering as a successional resource area. Due to the vernal pool like nature of polygon 55A with seasonal pockets of water throughout, this resource receives a fair rating for wildlife habitat and is considered locally significant due to its uniqueness in the surrounding landscape. The complex is determined to be both USACE and IDEM jurisdictional due to its direct hydrologic association with an unnamed tributary of Prides Creek.

Photograph 1 polygon 55B

Photograph 2 polygon 55C

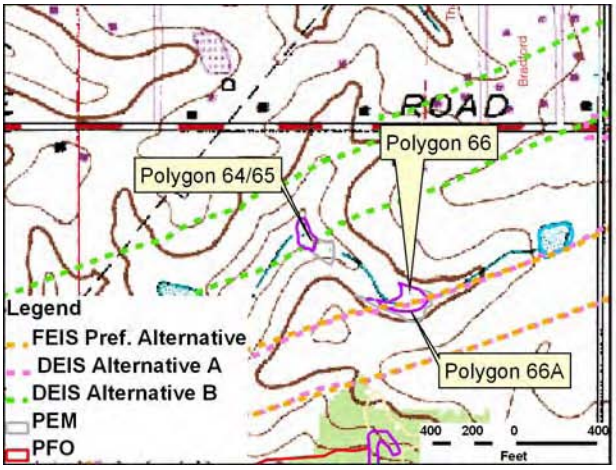
Wetland Sec2-W55

Photograph 3 polygon 55A

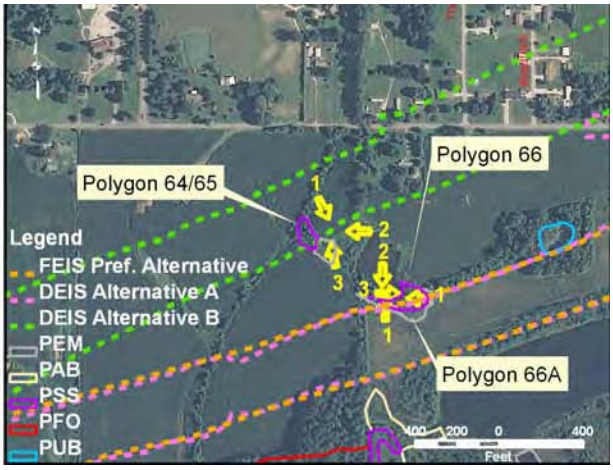
Photograph 1 polygon 56A

Photograph 2 polygon 56A

Wetland Sec2-W64



Site Location on Petersburg USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Petersburg
Type:	Scrub/Shrub and Emergent	**Section:**	36
Quarter:	SW	**Township:**	T1N
Range:	R8W	**USCOE Jurisdiction:**	Yes
Watershed:	Prides Creek	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W64

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessment		
				Wildlife Habitat Measure	Botanical Measure	Hydrology Measure
64	Scrub-carr	0	A	Poor	Poor	Poor
		0.16	B			
		0	DEIS Preferred			
		0	Refined Preferred			
65	Shallow Marsh	0	A	Poor	Fair	Poor
		0	B			
		0	DEIS Preferred			
		0	Refined Preferred			
66	Scrub-Carr	0.06	A	Fair	Poor	Fair
		0	B			
		0.06	DEIS Preferred			
		0.07	Refined Preferred			

Wetland Sec2-W64

66A	Shallow Marsh	0.15	A	Poor	Poor	Fair
		0	B			
		0.15	DEIS Preferred			
		0.15	Refined Preferred			

Description of Potential Impact: This 1.01 acre complex exists on a reclaimed mining site. Impacts to this complex would total 0.21 acres for Alternative A, 0.16 acres for Alternative B, 0.21 acres for the DEIS Preferred Alternative, and 0.22 acres for the Refined Preferred Alternative. Presence of invasive exotics and severe disturbance, including ditching give polygons 64 and 65 a poor rating for all InWRAP qualifiers. Polygons 66 and 66A are comprised of an area of shallow open water with a bordering scrub-carr wetland with a shallow marsh fringe. The herbaceous layer includes native grasses as well as the invasive reed canary grass. Hydrology within this resource is depressional. Overall these polygons score fair for most functions, however due to the presence of reed canary grass in the herbaceous layer, and fairly low diversity, the shallow marsh portion of the resource scored low for botanical measures. Connection to Prides Creek via an intermittent stream channel makes this wetland complex jurisdictional under USACE and IDEM regulations.

Photograph 1 of polygon 64/65

Photograph 2 of polygon 64/65

Wetland Sec2-W64

Photograph 3 of polygon 64/65

Photograph 4 of polygon 66

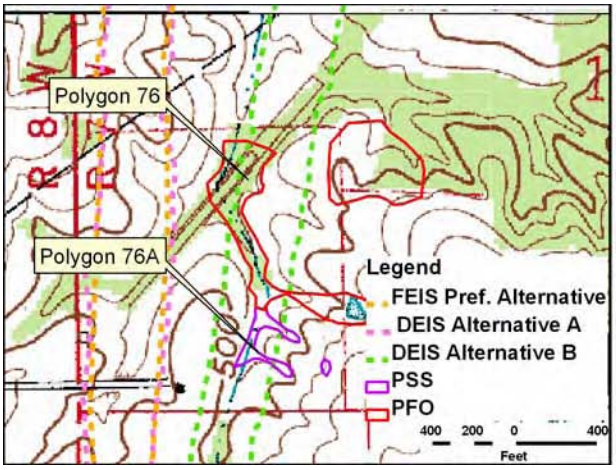
Photograph 5 of polygon 66

Wetland Sec2-W64

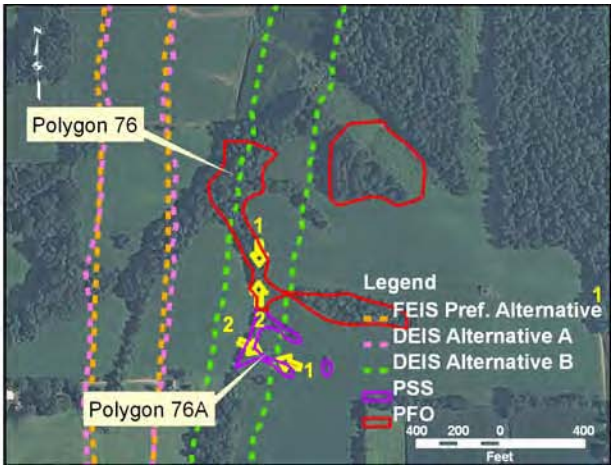
Photograph 6 of polygon 66

Photograph 7 of polygon 66

Wetland Sec2-W76



Site Location on Winslow USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Winslow
Type:	Forested and Scrub/Shrub	**Section:**	19
Quarter:	SW	**Township:**	T1N
Range:	R7W	**USCOE Jurisdiction:**	Yes
Watershed:	Lick Creek (Pike Co.)	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W76

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessment		
				Wildlife Habitat Measure	Botanical Measure	Hydrology Measure
76	Swamp Forest	0	A	Fair	Poor	Fair
		1.56	B			
		0	DEIS Preferred			
		0	Refined Preferred			
76A	Scrub-Carr	0	A	Poor	Fair	Fair
		0.44	B			
		0	DEIS Preferred			
		0	Refined Preferred			

Description of Potential Impact:
This 4.47 acre complex would only be impacted by Alternative B totaling 2.00 acres. It consists of fingerlike projections of wetland within a cultivated agricultural field. Vegetative cover is dense, providing a closed canopy throughout most of the resource area (polygon 76). A ditch runs through the swamp forested wetland, becoming heavily dissected to the north. As the

channel becomes more pronounced, wetland plants become sparser, and upland communities become more dominant. Willow and ash were common throughout the complex, and herbaceous cover was dominated by jewelweed. Within the small scrub-carr polygon (76A) grasses, sedges and rushes such as *Juncus effusus* became more dominant. Both community types scored similarly for InWRAP functions. The forest component was found to have fair animal habitat due to scattered ground cover and areas of open water. Plant species diversity within the system was relatively low and therefore the wetland scored poor/fair for botanical measures. Finally, hydrological function was considered fair due to presence of sufficient vegetation to uptake nutrients and slow water. This system falls under both federal and state jurisdiction due to its connectivity and presence of hydric soils and plants. This complex is under both USACE and IDEM jurisdiction due to its hydrologic connection with a Lick Creek tributary.

Photograph 1 of polygon 76

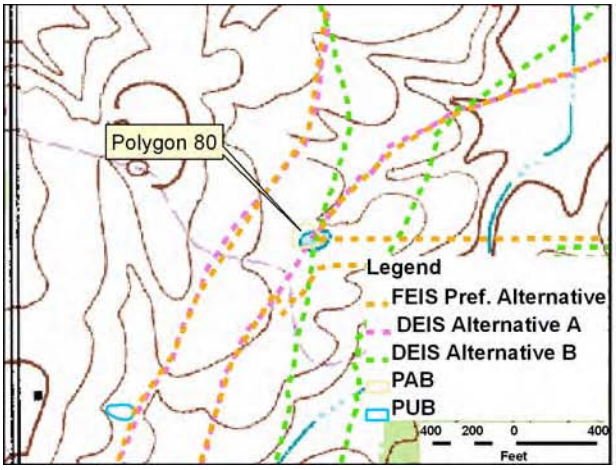
Photograph 2 of polygon 76

Wetland Sec2-W76

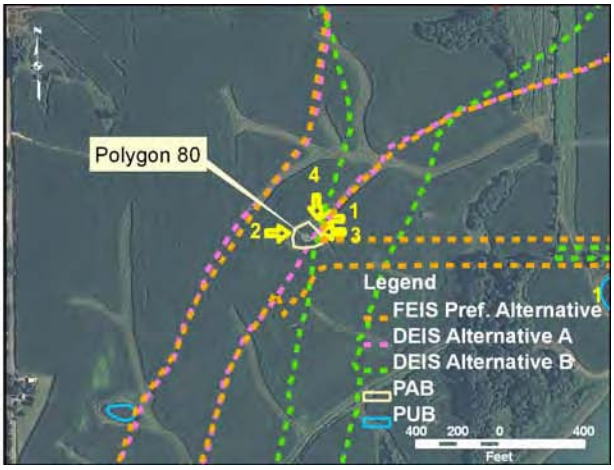
Photograph 1 of polygon 76A

Photograph 2 of polygon 76A

Wetland Sec2-W80



Site Location on Sandy Hook USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Sandy Hook
Type:	Aquatic Bed	**Section:**	19
Quarter:	SW	**Township:**	T1N
Range:	R7W	**USCOE Jurisdiction:**	No
Watershed:	Lick Creek	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W80

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessment		
				Wildlife Habitat Measure	Botanical Measure	Hydrology Measure
80	Deep Marsh	0.28	A	Poor	Good	Fair
		0.28	B			
		0.28	DEIS Preferred			
		0.28	Refined Preferred			

Description of Potential Impact: This 0.28 acre isolated deep marsh is located within an actively cultivated agricultural field. Although the entire polygon is not actually impacted, loss of the majority of the polygon would result in a very small and non functional wetland. Therefore the overall impact to this resource is considered the total acreage of the polygon 0.28 acres for all alternatives. The central portion of this site has floating aquatics such as *Lemna* sp. present, while the fringe consists of a ring of cattail on the inner zone and soft rush and Indian hemp on the outer edge. InWRAP evaluation ranks this resource area as poor for animal habitat, but good for botanical measures and faire for hydrologic measures. Although the InWRAP summary indicates a poor ranking for animal habitat, during field observation it was

noted that this area was densely populated with red winged blackbirds and various frogs. It is the only resource of its kind in the vicinity and is likely to be locally significant. Due to its hydrologic isolation from other Waters of the U.S. in the landscape, this resource does not fall under the jurisdiction of the USACE, but would be subject to IDEM regulations.

Photograph 1 of polygon 80

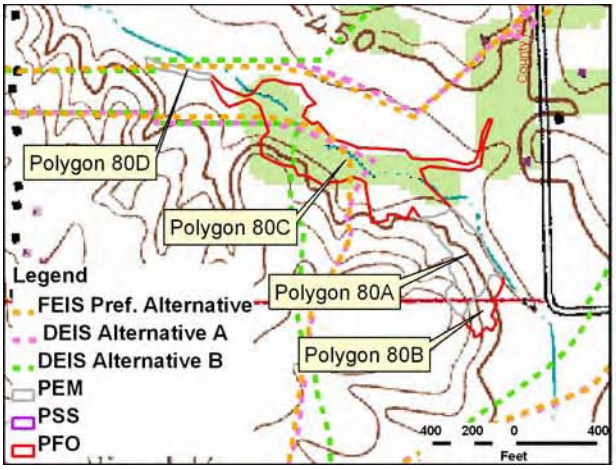
Photograph 2 of polygon 80

Wetland Sec2-W80

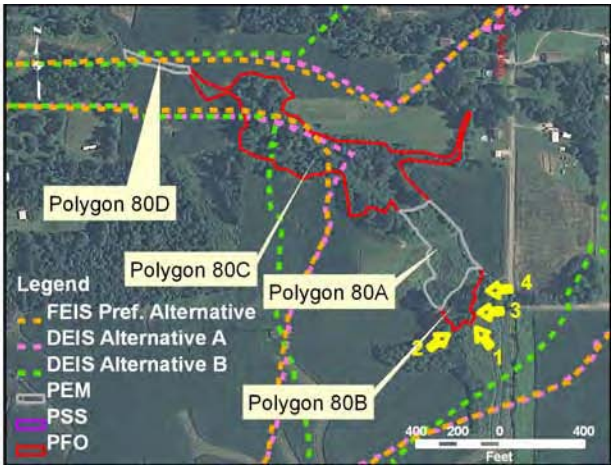
Photograph 3 of polygon 80

Photograph 4 of polygon 80

Wetland Sec2-W80A



Site Location on Sandy Hook USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Sandy Hook
Type:	Emergent Marsh/Forested	**Section:**	18
Quarter:	SW	**Township:**	T1N
Range:	R7W	**USCOE Jurisdiction:**	Yes
Watershed:	Lick Creek (Pike)	**IDEM Jurisdiction:**	Yes

Wetland Sec2–80A

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessment		
80A	Shallow Marsh	1.88	A	Poor	Fair	Fair
		1.88	B			
		1.88	DEIS Preferred			
		1.88	Refined Preferred			
80B	Swamp Forest	0.66	A	Fair	Fair	Fair
		0.66	B			
		0.66	DEIS Preferred			
		0.66	Refined Preferred			
80C	Swamp Forest	3.95	A	Fair	Fair	Fair
		5.39	B			
		3.95	DEIS Preferred			
		3.50	Refined Preferred			
80D	Shallow Marsh	0.18	A	Poor	Poor	Fair
		0.18	B			
		0.18	DEIS Preferred			
		0.11	Refined Preferred			

Description of Potential Impact: This complex totals 8.91 acres and consists of a shallow marsh (polygon 80A) bordering on a swamp forest (polygon 80B) and a swamp forest (polygon 80C) and a shallow marsh (polygon 80D) associated with a tributary to Lick Creek. This wetland complex would be impacted by the all four Alternatives due to the proposed North Pike

Wetland Sec2-W80A

Interchange. Impacts would total 6.67 acres for Alternative A, 8.11 acres for Alternative B, 6.67 acres for the DEIS Preferred Alternative, and 6.15 acres for the Refined Preferred Alternative. Hydrology of polygons 80A and 80B appears to be supported by a seep from the adjacent hillside. Vegetation within the shallow marshes includes cat tails and jewel weed with willow saplings. Red maple and ash dominate the trees in the forested sections, as is typical of wetland forests throughout the project corridor. The wetland was field delineated in June of 2009 and found to be considerably larger than previously anticipated. This complex is under both USACE and IDEM jurisdiction due to its hydrologic connection with a Lick Creek tributary.

Photograph 1 of polygon 80A

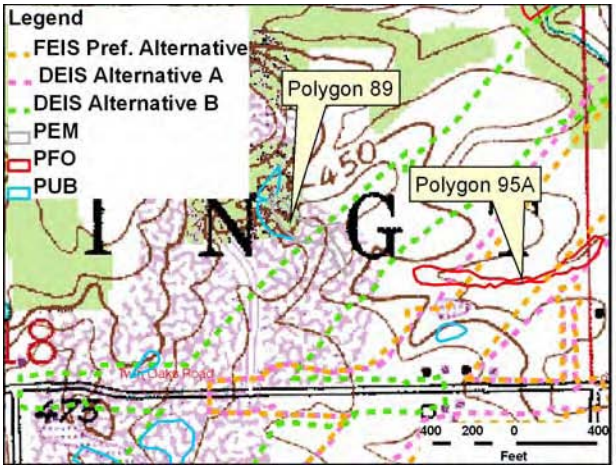
Photograph 2 of polygon 80A

Wetland Sec2-W80A

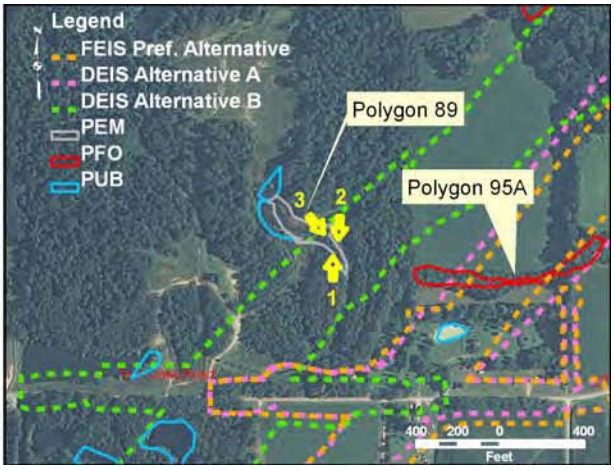
Photograph 3 of polygon 80A

Photograph 4 of polygon 80A

Wetland Sec2-W89



Site Location on Sandy Hook USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Sandy Hook
Type:	Emergent	**Section:**	18
Quarter:	SW	**Township:**	T1N
Range:	R7W	**USCOE Jurisdiction:**	No
Watershed:	E Fork White River–Mud Creek	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W89

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessment		
				Wildlife Habitat Measure	Botanical Measure	Hydrology Measure
89	Shallow Marsh	0	A	Poor	Poor	Fair
		0.27	B			
		0	DEIS Preferred			
		0	Refined Preferred			

Description of Potential Impact:
This 0.78 acre shallow marsh wetland is located on a formerly mined site. Alternative B will impacted this resource 0.27 acre. It consists of a small area of open water and an emergent fringe that stretches up along a ditch. The dominant plant within the resource is the highly invasive *Phragmites australis*. InWRAP ranks the wildlife habitat and botanical measures as poor, with the hydrology ranked as fair. Due to it's location at the bottom of a steep slope and reception of runoff from the mining site, this resource ranks good for flood storage. The area is highly disturbed and is considered isolated in nature; therefore, it does not fall under the jurisdiction of the USACE.

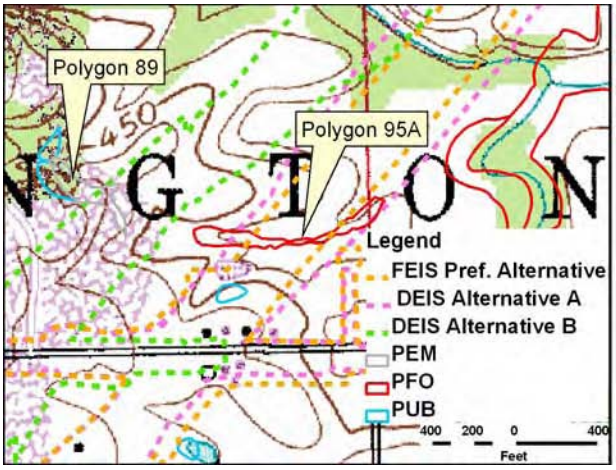
Wetland Sec2-W89

Photograph 1 of polygon 89

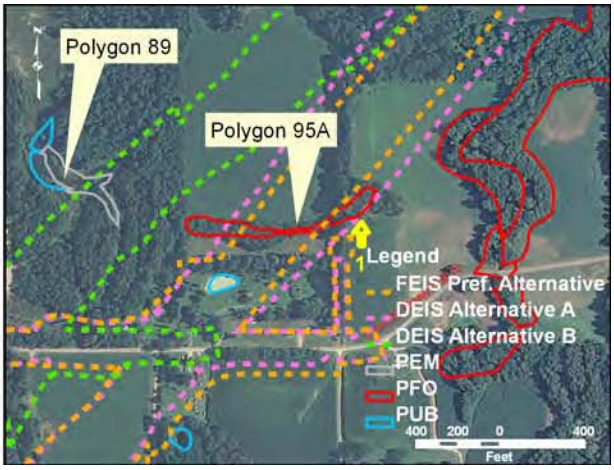
Photograph 2 of polygon 89

Photograph 3 of polygon 89

Wetland Sec2-W95A



Site Location on Sandy Hook Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Sandy Hook
Type:	Forested	**Section:**	S18
Quarter:	NE	**Township:**	T1N
Range:	R7W	**USCOE Jurisdiction:**	Yes
Watershed:	E Fork White River	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W95A

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessment		
				Wildlife Habitat Measure	Botanical Measure	Hydrology Measure
95A	Floodplain Forest	0.7	A	Fair	Poor	Poor
		0	B			
		0.7	DEIS Preferred			
		0.2	Refined Preferred			

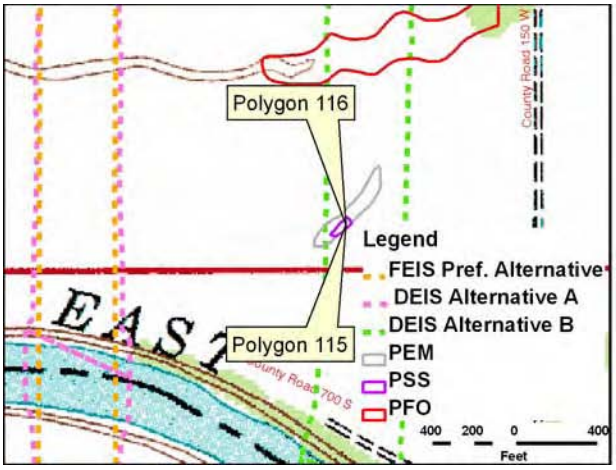
Description of Potential Impact: Wetland 95A is a 1.05 acre narrow floodplain forest wetland associated with a small ephemeral stream. Alternative A would impact 0.7 acres of this resource. Alternative B would not impact this resource. The DEIS Preferred Alternative would impact 0.7 acres. The Refined Preferred Alternative would impact 0.2 acres of this resource. This resource is not on the NWI mapping, and was located during the FEIS field delineation efforts in July 2009. The stream channel runs between a cultivated parcel to the north and a grassy mowed parcel associated with a residence to the south. Wetland plants within this resource include red maple, dogwood, and manna grass. Due to the proximity of disturbance in the surrounding landscape and the narrow nature of the wetland, it does not score high for any quality and only ranks fair for wildlife measures. The sparse understory and position in the landscape result in a

poor quality assessment for hydrology measures. This complex is determined to be under USACE and IDEM jurisdiction due to its hydrologic connection with a Mud Creek tributary.

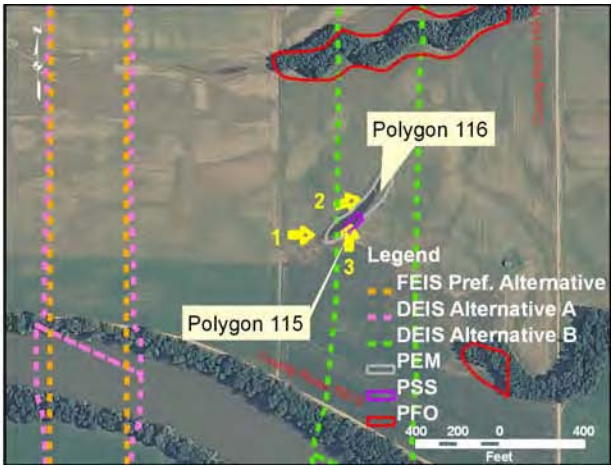
Wetland Sec2-W95A

Photo 1 Wetland 95A

Wetland Sec2-W115



Site Location on Sandy Hook USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Sandy Hook
Type:	Scrub/Shrub and Emergent	**Section:**	33
Quarter:	SW	**Township:**	T2N
Range:	R7W	**USCOE Jurisdiction:**	Yes
Watershed:	Wh. River Kessinger Frick	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W115

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessment		
				Wildlife Habitat Measure	Botanical Measure	Hydrology Measure
115	Scrub-carr	0	A	Poor	Poor	Fair
		0.08	B			
		0	DEIS Preferred			
		0	Refined Preferred			
116	Wet Meadow	0	A	Poor	Poor	Fair
		0.51	B			
		0	DEIS Preferred			
		0	Refined Preferred			

Description of Potential Impact: This complex is a small (0.69 acre) depressional wetland located within an actively cultivated corn field. This resource area would only be impacted by Alternative B by 0.59 acre. During summer field investigations, this wetland was completely obscured by the fields of corn surrounding it. During a winter field investigation, the area was observed to be dominated by smartweed and reed canary grass. Water plantain and *Eleocharis* sp. were also observed growing within the site. A small stand of young willows is located on the

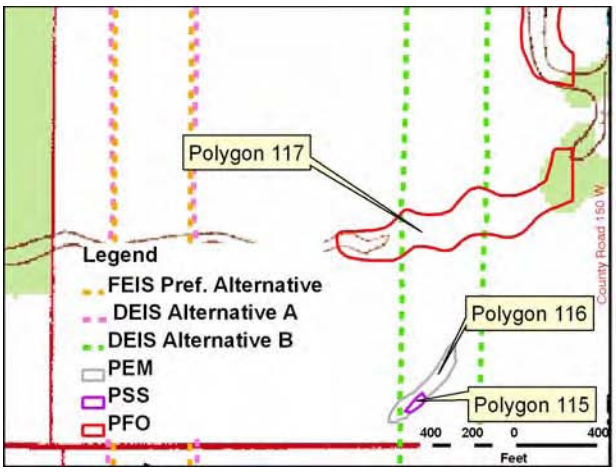
southern fringe. The location of the wetland in the landscape resulted in a fair hydrology rating, as this wetland aids in uptake of runoff from the adjacent agricultural use. However, its isolation from other natural communities and low plant diversity result in poor scores for animal habitat and botanical measures. Due to its location within the East Fork White River floodplain, this resource falls under the jurisdiction of the USACE and IDEM.

Photograph 1 of polygon 115 & 116

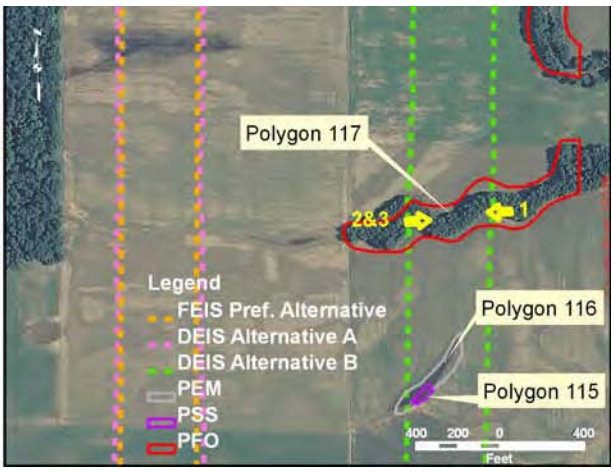
Photograph 2 of polygon 115 & 116

Photograph 3 of polygon 115 & 116

Wetland Sec2-W117



Site Location on Sandy Hook USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Sandy Hook
Type:	Forested	**Section:**	33
Quarter:	SW	**Township:**	T2N
Range:	R7W	**USCOE Jurisdiction:**	Yes
Watershed:	White River-Kessinger-Frick Dt	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W117

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessment		
				Wildlife Habitat Measure	Botanical Measure	Hydrology Measure
117	Swamp Forest	0	A	Fair	Fair	Fair
		1.63	B			
		0	DEIS Preferred			
		0	Refined Preferred			

Description of Potential Impact: This wetland totals 4.66 acres and shows signs of receiving large amounts of run off from the surrounding corn field (old corn husks were observed piled in drift lines). Alternative B would result in a 1.63 acre impact to this wetland. This resource is depressional in nature but has a hydrologic outlet. Vegetation within the herbaceous layer is scattered throughout and the upper canopy is more or less closed. Woody debris is frequent throughout and provides for habitat within the resource. Due to its connectivity and presence of hydrophytic vegetation this wetland falls under the jurisdiction of the USACE and IDEM.

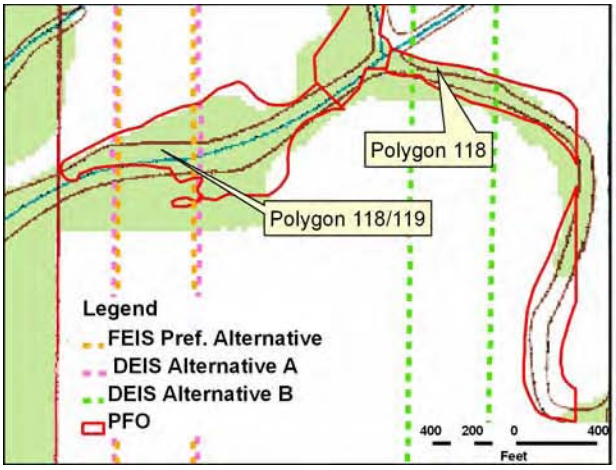
Wetland Sec2-W117

Photograph 1 of polygon 117

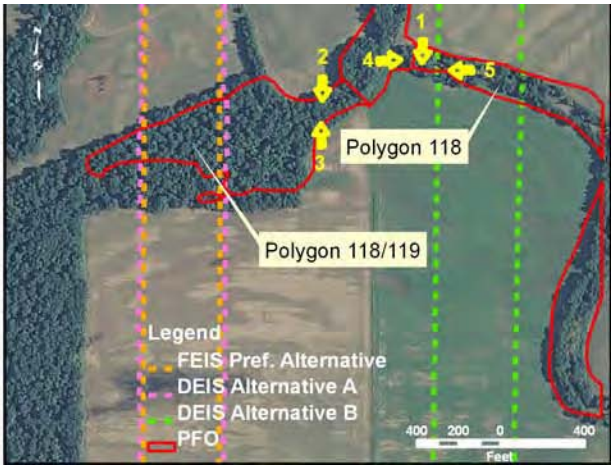
Photograph 2 of polygon 117

Photograph 3 of polygon 117

Wetland Sec2-W118



Site Location on Sandy Hook USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Sandy Hook
Type:	Forested	**Section:**	33
Quarter:	SW	**Township:**	T2N
Range:	R7W	**USCOE Jurisdiction:**	Yes
Watershed:	White River-Kessinger-Frick Dt	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W118

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessment		
				Wildlife Habitat Measure	Botanical Measure	Hydrology Measure
118/119	Floodplain Forest	2.37	A	Good	Good	Fair
		1.18	B			
		2.37	DEIS Preferred			
		1.93	Refined Preferred			

Description of Potential Impact: This resource area consists of a very large (231 acre) floodplain forested wetland with channelized flows throughout. In some areas the channel is heavily dissected and in other areas it is no more than a ditch and is shallow enough to step over. This resource would be impacted by 2.37 acres for Alternative A, 1.18 acres for Alternative B, 2.37 acres for the DEIS Preferred Alternative and 1.93 acres for the Refined Preferred Alternative. Areas at the top of the bank show signs of flooding. Trees dominating the upper canopy include oak, ash and maple. Aster and poison ivy are common in the understory, as is *Carex intumescens*. Lizards tail and button bush were also observed to be common within the wetland. Dense overstory and woody debris provide for good quality habitat. The area assessed for wetland quality using InWRAP suggests similar functionality throughout the forested floodplain. Wildlife habitat is good throughout due to the presence of standing water and the closed tree canopy as protective cover. Botanical measures are also regarded as good.

Wetland Sec2-W118

Hydrology was found to be fair for this wetland. This wetland is under the jurisdiction of both USACE and IDEM due to its direct hydrologic connection to Jackson Pond and Aikman Creek within the East Fork White River floodplain.

Photograph 1 of polygon 118/119

Photograph 2 of polygon 118/119

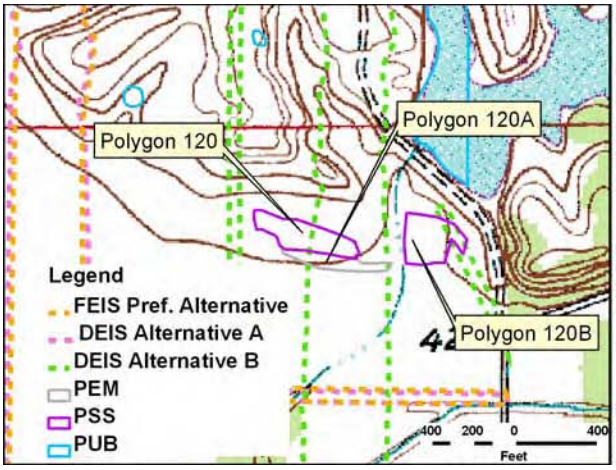
Photograph 3 of polygon 118/119

Wetland Sec2-W118

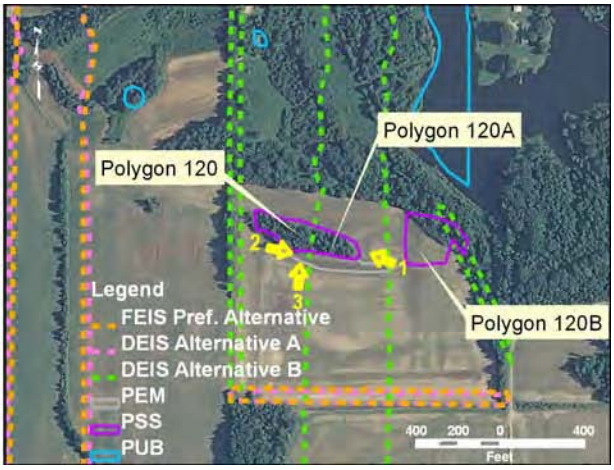
Photograph 4 of polygon 118/119

Photograph 5 of polygon 118/119

Wetland Sec2-W120



Site Location on Sandy Hook USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Sandy Hook
Type:	Scrub/Shrub and Emergent	**Section:**	33
Quarter:	SW	**Township:**	T2N
Range:	R7W	**USCOE Jurisdiction:**	Yes
Watershed:	White River-Kessinger-Frick Dt	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W120

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessments		
				Wildlife Measure	Botanical Measure	Hydrological Measure
120	Scrub-carr	0	A	Poor	Poor	Fair
		0.49	B			
		0	DEIS Preferred			
		0	Refined Preferred			
120A	Sedge Meadow	0	A	Poor	Fair	Fair
		0.48	B			
		0	DEIS Preferred			
		0	Refined Preferred			
120B	Scrub-carr	0	A	Poor	Fair	Fair
		0.1	B			
		0	DEIS Preferred			
		0	Refined Preferred			

Description of Potential Impact: This 3.10 acre isolated depressional wetland is located within an actively cultivated field. This resource would be impacted only by Alternative B at

Wetland Sec2-W120

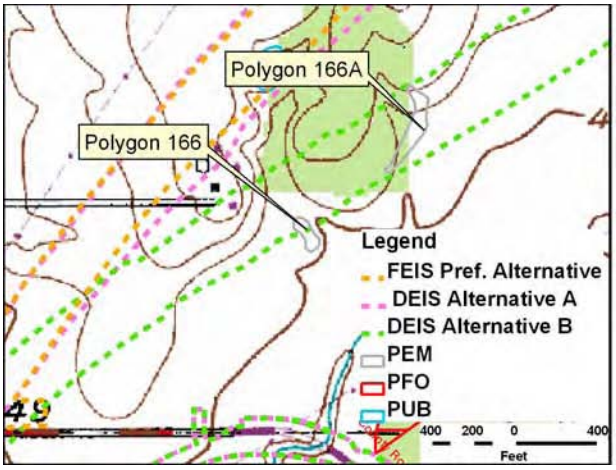
1.07 acres. Polygon 120 is characterized as a scrub-carr and is dominated by willows. Polygon 120 A is classified as a sedge meadow wetland, predominantly vegetated with various sedges and dock. Polygon 120B is a mixture of willow dominated scrub/shrub and wet meadow dominated by goldenrods (*Solidago spp*.). The InWRAP summary indicates that the wetland provides poor wildlife habitat based on its isolated nature, lack of standing water and small size. The resource ranks fair for plant diversity and hydrology, particularly for flood storage as it collects storm water from the surrounding landscape. Due to its location within the East Fork White River floodplain this wetland falls under the jurisdiction of the USACE and IDEM.

Photo 1 of polygon 120A

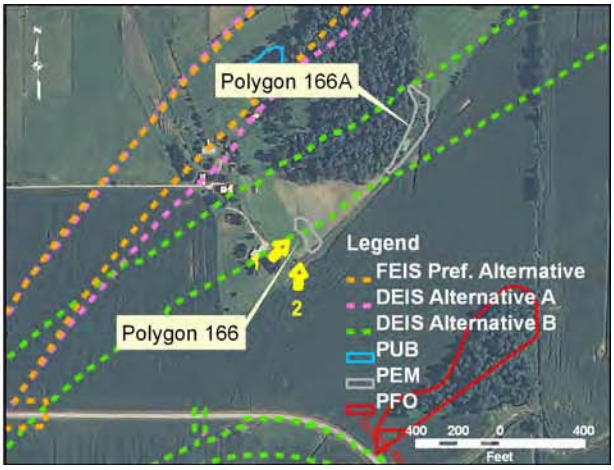
Photo 2 of polygon 120A

Photo 3 of polygon 120 and 120A

Wetland Sec2-W166



Site Location on Sandy Hook USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Sandy Hook
Type:	Emergent	**Section:**	11
Quarter:	SW	**Township:**	T2N
Range:	R7W	**USCOE Jurisdiction:**	No
Watershed:	Veale Creek-Lower	**IDEM Jurisdiction:**	Yes

Wetland Sec2 – W166

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessments		
				Wildlife Habitat Measure	Botanical Measure	Hydrological Measure
166	Sedge Meadow	0	A	Poor	Poor	Fair
		0.08	B			
		0	DEIS Preferred			
		0	Refined Preferred			

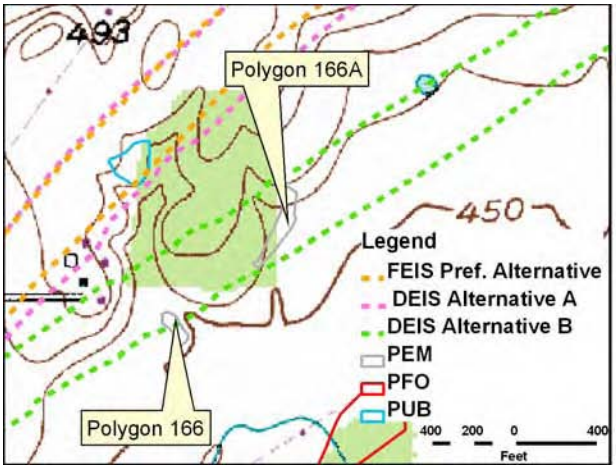
Description of Potential Impact: This 0.23 acre sedge meadow wetland is located within an old field and has been previously mowed. Wetland functionality is low because of this disturbance. This resource would only be impacted by Alternative B at 0.08 acre. Vegetation within the resource is predominantly sedges and rushes. Due to its lack of a hydrologic connection with other Waters of the U.S. within the Veale Creek watershed, this site is determined to be isolated and therefore only falls under the jurisdiction of IDEM and not USACE.

Wetland Sec2-W166

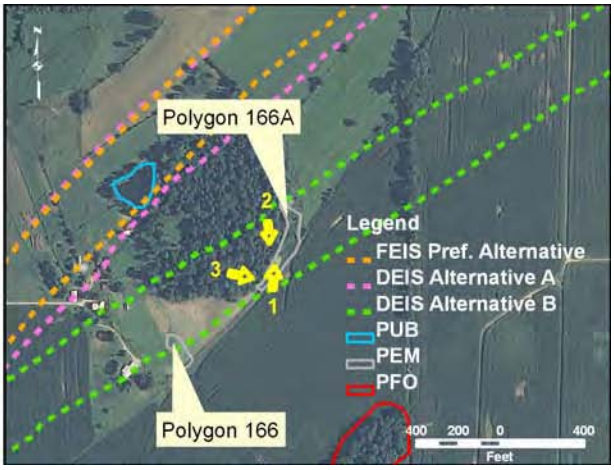
Photograph 1 of polygon166

Photograph 2 of polygon 166

Wetland Sec2-W166A



Site Location on Sandy Hook USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Sandy Hook
Type:	Emergent	**Section:**	11
Quarter:	SW	**Township:**	T2N
Range:	R7W	**USCOE Jurisdiction:**	Yes
Watershed:	Veale Creek-Lower	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W166A

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessments		
				Wildlife Habitat Measure	Botanical Measure	Hydrological Measure
166A	Sedge Meadow	0	A	Fair	Fair	Good
		0.58	B			
		0	DEIS Preferred			
		0	Refined Preferred			

Description of Potential Impact: This wetland totals 0.58 acre and is comprised of a natural spring flowing from a forested area and ponding along a narrow dirt roadway. This wetland is only impacted by Alternative B and is impacted in its entirety by 0.58 acre. Much of the resource is classified as a sedge meadow with reed canary grass dominating. However the inner portion of the wetland located where the spring pools next to the road is classified as aquatic bed. Duckweed was observed within this resource during the summer field investigations. Within the project area, this was the only occurrence of a natural spring and therefore wetland 166A is considered a locally significant resource. An outlet pipe was observed within the wetland, which is presumed to connect to a nearby surface water; therefore, this wetland is determined to be USACE and IDEM jurisdictional due to its connectivity to Veale Creek.

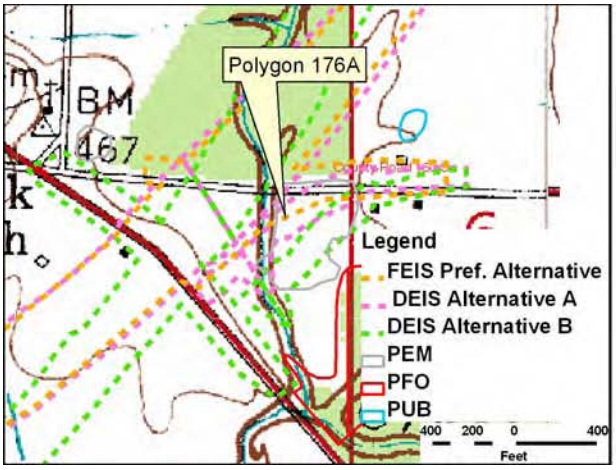
Wetland Sec2-W166A

Photograph 1 of polygon 166A

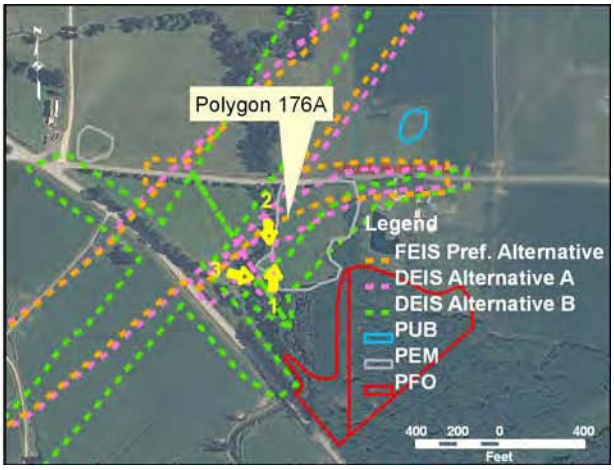
Photograph 2 of polygon166A

Photograph 3 of polygon 166A

Wetland Sec 2 W176A



Site Location on Sandy Hook USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Washington
Type:	Emergent	**Section:**	1
Quarter:	SW	**Township:**	T2N
Range:	R7W	**USCOE Jurisdiction:**	Yes
Watershed:	Veale Creek - Lower	**IDEM Jurisdiction:**	Yes

Wetland Sec2 – W176A						
Polygon ID	**Wetland Type**	**Area Impacted (acres)**	**Alternative**	**Wetland Quality Assessment**		
				Wildlife Measure	**Botanical Measure**	**Hydrology Measure**
W-176A	Sedge Meadow	1.29	A	Poor	Fair	Fair
		1.52	B			
		1.29	DEIS Preferred			
		0.64	Refined Preferred			

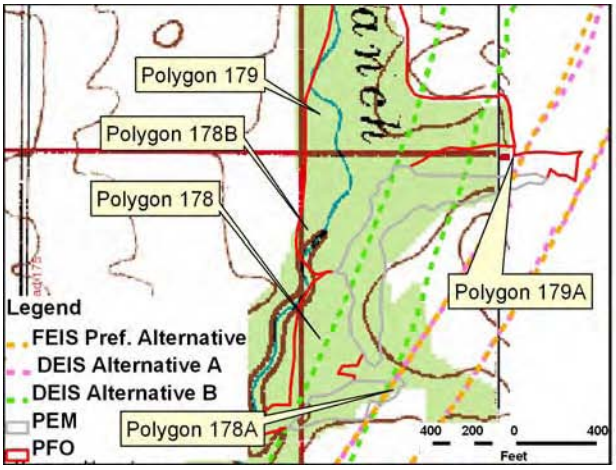
Description of Potential Impact: This 3.94 acre sedge meadow wetland has formed in a depression of an old field east of Hurricane Branch. This resource would be impacted by 1.29 acres by Alternative A, 1.52 acres by Alternative B, 1.29 acres by the DEIS Preferred Alternative and 0.64 acres by the Refined Preferred Alternative. Vegetation is dense and is comprised on sedges, rushes and scattered elderberry bushes. The site received an InWRAP summary ranking of fair for hydrological function based on flood attenuation and storage qualities. Although there are no surface channels emanating from the wetland, it is located at the periphery of the Hurricane Branch floodplain and therefore is determined to be under the authority of the USACE and IDEM.

Wetland Sec 2 W176A

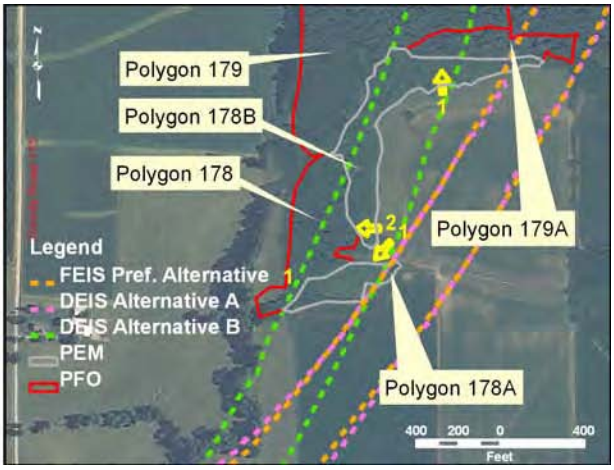
Photograph 1 of polygon 176A

Photograph 2 of polygon 176A

Wetland Sec2-W178



Site Location on Sandy Hook USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Washington
Type:	Forest and Emergent	**Section:**	1
Quarter:	NW	**Township:**	T2N
Range:	R7W	**USCOE Jurisdiction:**	Yes
Watershed:	Veale Creek Slough	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W178

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessments		
				Wildlife Habitat Measure	Botanical Measure	Hydrology Measure
178	Swamp Forest	0	A	Good	Fair	Good
		1.33	B			
		0	DEIS Preferred			
		0	Refined Preferred			
178A	Sedge Meadow	0.09	A	Fair	Poor	Good
		1.26	B			
		0.09	DEIS Preferred			
		0.03	Refined Preferred			
178B	Sedge Meadow	0.17	A	Fair	Poor	Good
		3.08	B			
		0.17	DEIS Preferred			
		0.15	Refined Preferred			

Wetland Sec2-W178

179	Swamp Forest	0	A	Good	Fair	Good
		1.9	B			
		0	DEIS Preferred			
		0	Refined Preferred			
179A	Swamp Forest	0.67	A	Poor	Fair	Good
		0.62	B			
		0.67	DEIS Preferred			
		0.64	Refined Preferred			

Description of Potential Impact: This large 27.83 acre wetland complex is made up of several types of wetlands typical of floodplains throughout the corridor. This resource would be impacted 0.93 acres by Alternative A, 8.19 acres by Alternative B, 0.93 acres by the DEIS Preferred Alternative and 0.82 acres by the Refined Preferred Alternative. Polygons 178, 179 and 179A are classified as swamp forests; polygons 178A and 178B are sedge meadow wetlands. The forested portion of this complex has a sparse understory due to the closed canopy of red maple and green ash above it. Herbaceous vegetation was found to be typical of wetland forested areas and included false nettle and jewelweed as well as sedges and grasses. Due to its location within the floodplain, this wetland complex is consistently ranked good for hydrologic functions. This complex is determined to be under USACE and IDEM jurisdiction due to its direct association with Hurricane Branch.

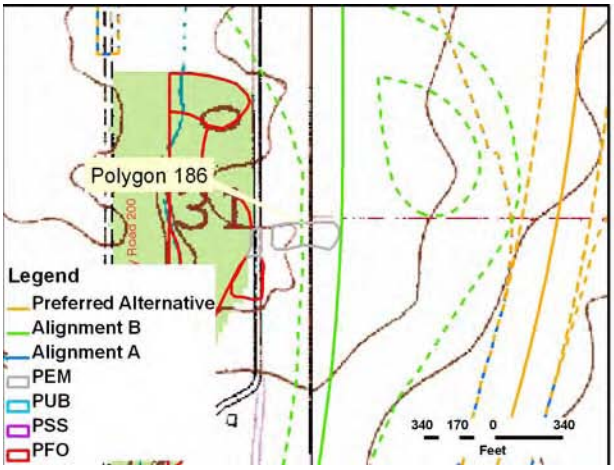
Photograph 1 of polygon 178

Photograph 2 of polygon 178

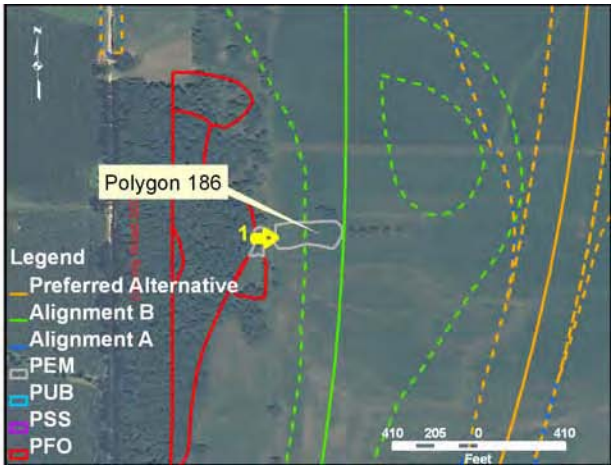
Wetland Sec2-W178

Photograph 1 of polygon 179A

Wetland Sec2-W186



Site Location on Montgomery USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Montgomery & Washington
Type:	Emergent	**Section:**	6
Quarter:	SW	**Township:**	T2N
Range:	R6W	**USCOE Jurisdiction:**	Yes
Watershed:	Veale Creek Slough	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W186

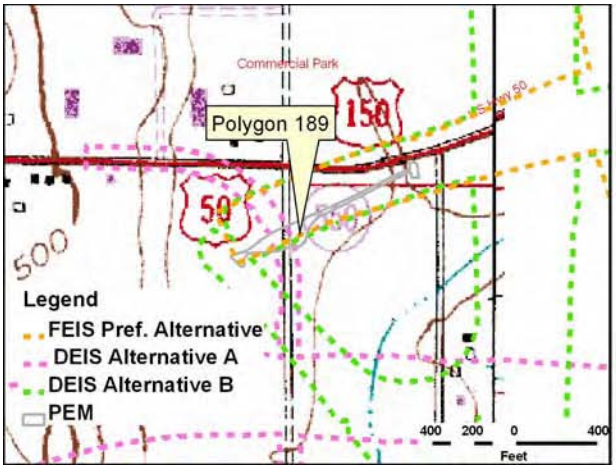
Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Hydrology Measure	Botanical Measure	Wildlife Measure
186	Sedge Meadow	0	A	Poor	Poor	Poor
		0.42	B			
		0	DEIS Preferred			
		0	Refined Preferred			

Description of Potential Impact: This site consists of a 0.80 acre depressional wetland located within an actively cultivated soy bean field. Alternative B is the only alternative that impacts this resource (0.42 acres). Vegetation within the resource consists of sedges and grasses interspersed with soy bean plants. All functions examined through the InWRAP protocol were given a rating of poor due to the resource's disturbed nature and location within the landscape. This resource is determined to be within the jurisdiction of the USACE and IDEM.

Wetland Sec2-W186

Photograph 1 of polygon 186

Wetland Sec2-W189



Site Location on Washington USGS Quadrangle

Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Washington
Type:	Emergent	**Section:**	6
Quarter:	SW	**Township:**	T2N
Range:	R6W	**USCOE Jurisdiction:**	Yes
Watershed:	Veale Creek	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W189

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessments		
				Wildlife Habitat Measure	Botanical Measure	Hydrology Measure
189	Sedge Meadow	0.15	A	Poor	Poor	Fair
		0.81	B			
		0.15	DEIS Preferred			
		0.60	Refined Preferred			

Description of Potential Impact: This complex includes a roadside ditch 0.92 acres in size dense with cattails, but also includes the invasive plant species *Phalaris arundinacea* and *Phragmites australis*. It receives runoff from the adjacent roadways (including US 50) and flows into a stream. Due to the channelized nature of the resource and surrounding land use, the site scored low for animal habitat and botanical ratings, but was found to provide fair hydrological function. This site is determined to be under the USACE and IDEM jurisdiction due to its contiguous connection with an unnamed tributary to Hurricane Branch to the south.

Wetland Sec2-W189

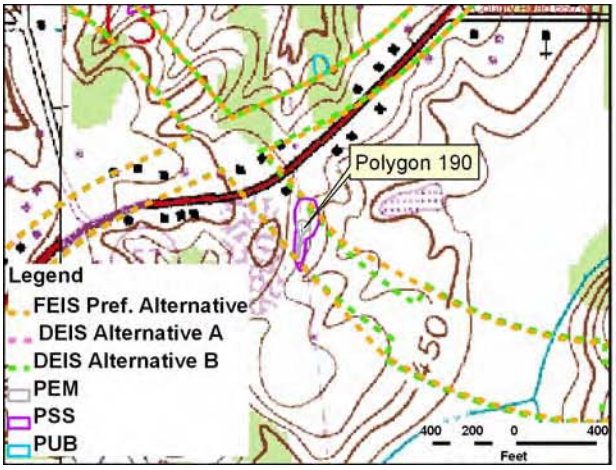
Photograph 1 of polygon 189

Photograph 2 of polygon 189

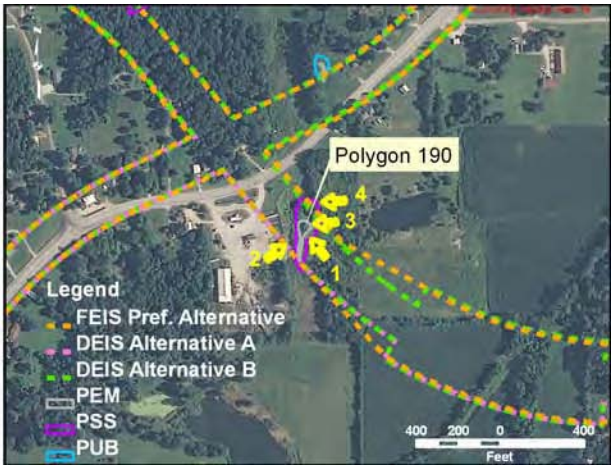
Photograph 3 of polygon 189

Photograph 4 of polygon 189

Wetland Sec2-W190



Site Location on Washington USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Washington
Type:	Emergent and Scrub/Shrub	**Section:**	13
Quarter:	SE	**Township:**	T1N
Range:	R8W	**USCOE Jurisdiction:**	No
Watershed:	Lick Creek	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W190

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessments		
				Wildlife Habitat Measure	Botanical Measure	Hydrology Measure
190	Shallow Marsh	0.10	A	Poor	Poor	Fair
		0.10	B			
		0.10	DEIS Preferred			
		0.10	Refined Preferred			
190PSS	Scrub-Carr	0.46	A	Fair	Poor	Fair
		0.46	B			
		0.46	DEIS Preferred			
		0.46	Refined Preferred			

Description of Potential Impact: This 0.56 acre shallow marsh and scrub-carr site is located southeast of SR 57, and would potentially be impacted by the proposed North Pike Interchange, near SR 57 and Blackburn Road. All four Alternatives would impact this resource. Because the

Wetland Sec2-W190

project impacts would result in loss of the majority of this isolated resource area, the remaining portions of the wetland are not anticipated to continue to function as wetlands, therefore the impacts for each of the four alternatives is considered to be 0.56 acres. It is primarily dominated by graminoids such as reed canary (*Phalaris arundinacea)* and *Eleocharis* sp. Shrub species within the wetland are predominantly small willows (*Salix sp*) with some occurrences of elm and ash. The wetland is located in an isolated depression at the base of a steep hill. The wetland receives runoff from industrial activities (trucking storage area) located at the top of the hill; however, it is not hydrologically connected to another wetland or waterway. For this reason, this site is not considered to be under USACE jurisdiction, but would be subject to IDEM regulatory authority.

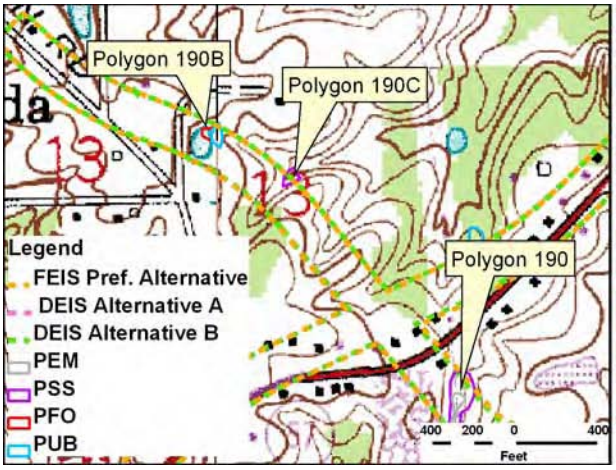
Photograph 1 of polygon 190

Photograph 2 of polygon 190

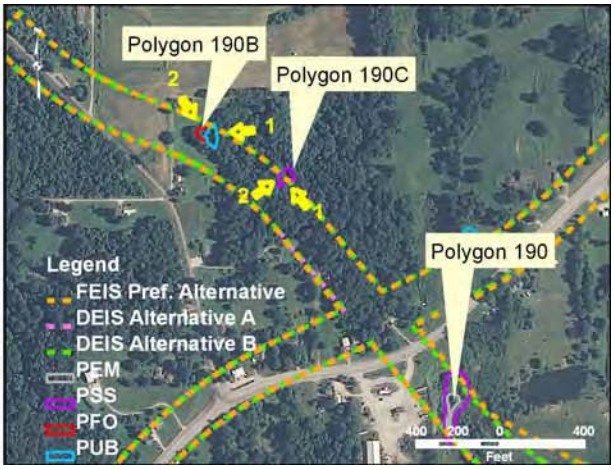
Wetland Sec2-W190

Photograph 3 of polygon 190

Wetland Sec2-W190B



Site Location on Petersburg USGS Quadrangle



Site Location on Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Sandy Hook
Type:	Forested	**Section:**	S13
Quarter:	NW	**Township:**	T1N
Range:	R8N	**USCOE Jurisdiction:**	No
Watershed:	Patoka	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W190B

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessment		
				Wildlife Habitat Measure	Botanical Measure	Hydrology Measure
190B	Swamp Forest	0.05	A	Good	Poor	Fair
		0.05	B			
		0.05	DEIS Preferred			
		0.05	Refined Preferred			

Description of Potential Impact: This 0.05 acre wetland complex is a depressional resource located off Arda Road. The proposed reconfiguration of the intersection of Blackburn Road and Route 57 under all four alternatives would result in 0.05 acres of wetland impact for the all alternatives. The center of the wetland contains shallow open water vegetated with pondweed. Hydrology is likely due to runoff from upland areas. A forested fringe around the open water section is dominated by green ash, silver maple, poison ivy and asters. Low plant diversity results in a poor botanical rating for this resource. The sparse understory and position in the landscape result in a fair rating for this wetland for hydrological function. This resource is isolated and therefore determined to be only under IDEM jurisdiction. This resource area was identified after the publication of the DEIS.

Wetland Sec2-W190B

Photo 1 Wetland 190B

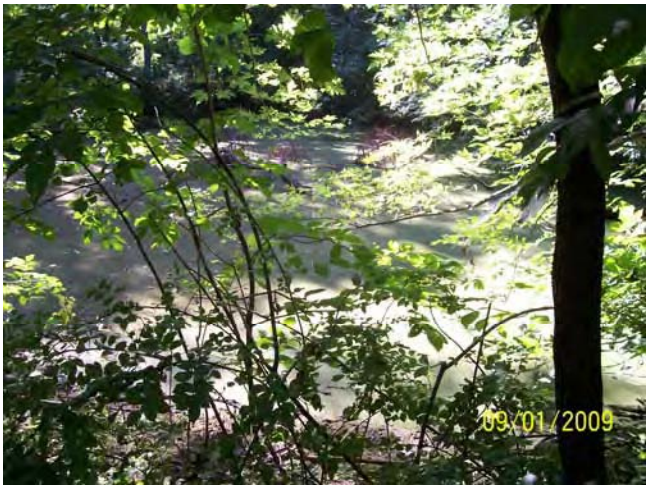
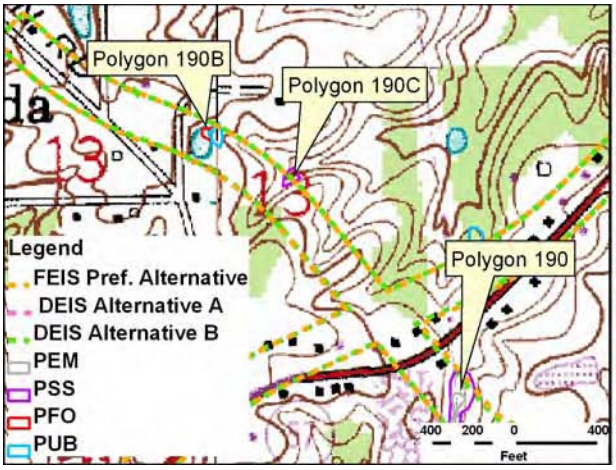
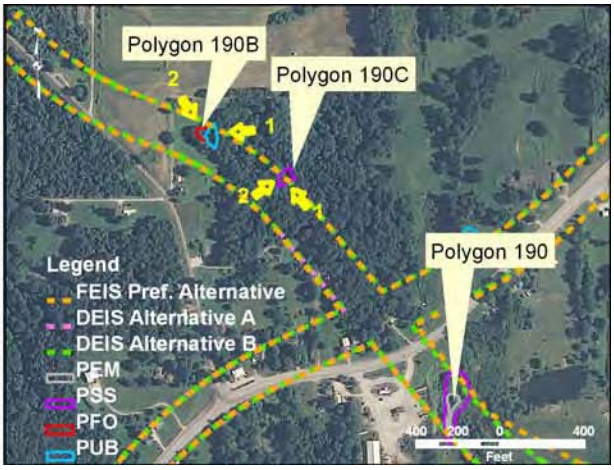


Photo 2 wetland 190B

Wetland Sec2-W190C



Site Location on Petersburg USGS Quadrangle



Site Location on Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Sandy Hook
Type:	Scrub/Shrub	**Section:**	S13
Quarter:	SE	**Township:**	T1N
Range:	R8N	**USCOE Jurisdiction:**	No
Watershed:	Patoka	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W190C

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessment		
				Wildlife Habitat Measure	Botanical Measure	Hydrology Measure
190C	Scrub-carr	0.03	A	Fair	Poor	Good
		0.03	B			
		0.03	DEIS Preferred			
		0.02	Refined Preferred			

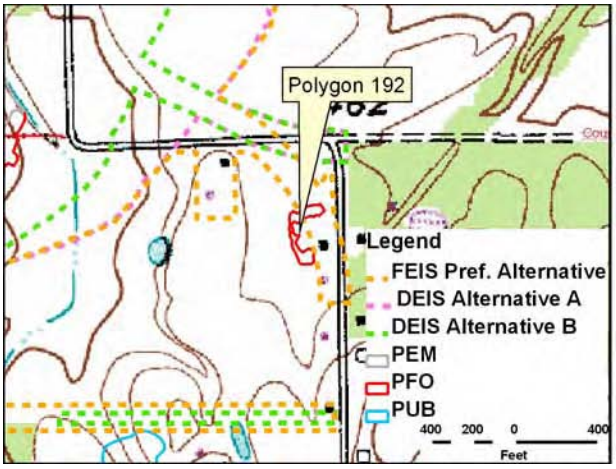
Description of Potential Impact: This 0.09 acre wetland complex is comprised of a depressional resource located in a wooded area. Impacts to the wetland would be 0.03 acres for the A and B and DEIS Preferred Alternatives, and 0.02 for the Refined Preferred Alternative, due to the realignment of the Blackburn Road intersection with SR 57. The center of the resource appears to flood seasonally as evidenced by the sparse herbaceous layer and saturated, hydrogen sulfide smelling soils. Due to its position in the landscape this resource scores fair for the wildlife habitat measure and good for the hydrology measure. The shrub layer is dominated by green ash and silver maple. The lack of plant diversity and richness results in a poor botanical

measure for the wetland. This resource is isolated and therefore determined to be only under IDEM jurisdiction.

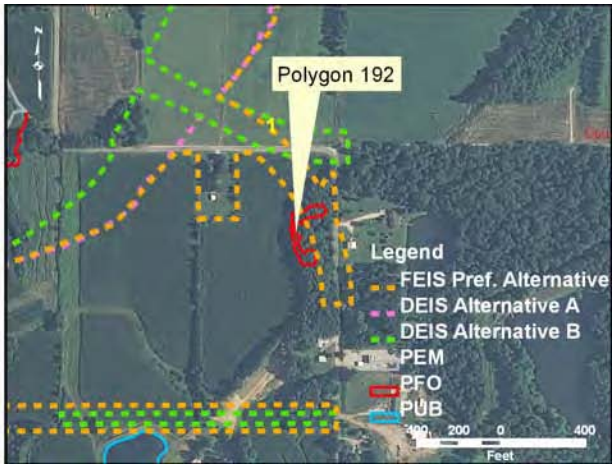
Photo 1 Wetland 190 C

Photo 2 Wetland 190C

Wetland Sec2-W192



Site Location on Sandy Hook USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource:	Wetland	**USGS Quadrangle:**	Sandy Hook
Type:	Forested	**Section:**	19
Quarter:	SW	**Township:**	T1N
Range:	R7W	**USCOE Jurisdiction:**	Yes
Watershed:	Lick Creek	**IDEM Jurisdiction:**	Yes

Wetland Sec2–W192

Polygon ID	Wetland Type	Area Impacted (acres)	Alternative	Wetland Quality Assessment		
				Wildlife Habitat Measure	Botanical Measure	Hydrology Measure
192	Floodplain Forest	0	A	Fair	Poor	Fair
		0	B			
		0	DEIS Preferred			
		0.09	Refined Preferred			

Description of Potential Impact: This 0.36 acre floodplain forest wetland is located adjacent to CR 275E and is associated with an unnamed ephemeral stream of Mud Creek. This site would only be impacted by a connector road from the North Pike Interchange at 0.09 acre for the Refined Preferred Alternative. The site has fair animal habitat and hydrology measures, but is considered poor botanically due to limited diversity. The canopy consists primarily of red maple and silver maple, and generally lacks a shrub layer. At the time of the site visit, woodreed grass was the prominent ground cover, although ground cover was very sparse. This wetland is considered to be under USACE and IDEM jurisdiction due to its adjacency to an ephemeral stream that is connected to Mud Creek to the north.

Wetland Sec2-W192


Photograph 1 of Polygon 192


Photograph 2 of Polygon 192


Photograph 3 of Polygon 192


Photograph 4 of Polygon 192

I-69 TIER 2 STUDY
SECTION 2
FINAL WETLAND ASSESSMENT REPORT

Appendix B
I-69 Wetland Quality Assessment Profile Sheets

Prepared By:

JACOBS

501 N. Broadway
St. Louis, MO 63102

February 2010

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W04
Data reference # **W04**
Date of site visit: 06/01/05
Total wetland area: 10.83 acres

Polygon Information	
Polygon ID	4
Polygon Size (acres)	10.83
Wetland Community Type	SW
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	1
Dead woody material	2
Zonation and interspersion	1
Stratification	3
Tree canopy	3
Mature trees	3
Animal Habitat Measure Score (min = 8, max = 24)	**16**
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	3
Botanical Measure Score (min = 5, max = 15)	**11**
Botanical Measure Rating	**fair**
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**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W11
Data reference # **W11**
Date of site visit: 06/01/05
Total wetland area: 54.27 acres

Polygon Information	
Polygon ID	11
Polygon Size (acres)	54.27
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	2
Standing water	2
Dead woody material	3
Zonation and interspersion	3
Stratification	3
Tree canopy	3
Mature trees	1
Animal Habitat Measure Score (min = 8, max = 24)	**20**
Animal Habitat Measure Rating	**good**
Botanical Measures **(all except exotics dependent upon community type)**	
Number of dominant plant taxa observed	3
Conservatism rating	2
Total hydrophytic taxa observed	2
Number of indicator taxa	1
Exotic species rating	3
Botanical Measure Score (min = 5, max = 15)	**11**
Botanical Measure Rating	**fair**
Hydrology Measures	
Water quality protection (= no. of yes answers)	4
Flood and storm water storage (= no. of yes answers)	5
Site/Hydrology Score (min = 11, max = 33)	**29**
Site/Hydrology Rating	**good**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W15
Data reference # **W15**
Date of site visit: 06/01/05
Total wetland area: 3.08 acres

Polygon Information	
Polygon ID	15
Polygon Size (acres)	3.08
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	1
Standing water	2
Dead woody material	1
Zonation and interspersion	2
Stratification	3
Tree canopy	3
Mature trees	3
Animal Habitat Measure Score (min = 8, max = 24)	**18**
Animal Habitat Measure Rating	**fair**
Botanical Measures **(all except exotics dependent upon community type)**	
Number of dominant plant taxa observed	2
Conservatism rating	1
Total hydrophytic taxa observed	3
Number of indicator taxa	1
Exotic species rating	2
Botanical Measure Score (min = 5, max = 15)	**9**
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**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W17
Data reference # **W17**
Date of site visit: 06/01/05
Total wetland area: 11.63 acres

Polygon Information		
Polygon ID	17/25	19/24
Polygon Size (acres)	9.62	2.01
Wetland Community Type	FF	DM
Red Flag (Special) Indicators		
Special Hydrologic Conditions	N	N
Special Community Type	N	N
Rare-Threatened-Endangered Species	Y	Y
Animal Habitat Measures		
Wetland size and connectivity	3	3
Surrounding land use	2	2
Standing water	2	3
Dead woody material	3	2
Zonation and interspersion	1	2
Stratification	3	3
Tree canopy	3	3
Mature trees	3	3
Animal Habitat Measure Score (min = 8, max = 24)	**20**	**21**
Animal Habitat Measure Rating	**good**	**good**
Botanical Measures **(all except exotics dependent upon community type)**		
Number of dominant plant taxa observed	2	3
Conservatism rating	1	2
Total hydrophytic taxa observed	2	3
Number of indicator taxa	1	1
Exotic species rating	3	2
Botanical Measure Score (min = 5, max = 15)	**9**	**11**
Botanical Measure Rating	**fair**	**fair**
Hydrology Measures		
Water quality protection (= no. of yes answers)	5	6
Flood and storm water storage (= no. of yes answers)	3	5
Site/Hydrology Score (min = 11, max = 33)	**27**	**33**
Site/Hydrology Rating	**good**	**good**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W32
Data reference # **W32**
Date of site visit: 06/01/05
Total wetland area: 48 acres

Polygon Information		
Polygon ID	32	32A
Polygon Size (acres)	48.00	4.56
Wetland Community Type	SW	WM
Red Flag (Special) Indicators		
Special Hydrologic Conditions	N	N
Special Community Type	N	N
Rare-Threatened-Endangered Species	N	N
Animal Habitat Measures		
Wetland size and connectivity	3	3
Surrounding land use	2	2
Standing water	2	1
Dead woody material	2	1
Zonation and interspersion	1	1
Stratification	3	1
Tree canopy	3	1
Mature trees	3	1
Animal Habitat Measure Score (min = 8, max = 24)	**19**	**11**
Animal Habitat Measure Rating	**good**	**poor**
Botanical Measures **(all except exotics dependent upon community type)**		
Number of dominant plant taxa observed	1	1
Conservatism rating	1	2
Total hydrophytic taxa observed	3	1
Number of indicator taxa	1	1
Exotic species rating	3	3
Botanical Measure Score (min = 5, max = 15)	**9**	**8**
Botanical Measure Rating	**fair**	**poor**
Hydrology Measures		
Water quality protection (= no. of yes answers)	3	2
Flood and storm water storage (= no. of yes answers)	4	3
Site/Hydrology Score (min = 11, max = 33)	**25**	**21**
Site/Hydrology Rating	**fair**	**fair**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W37
Data reference # **W37**
Date of site visit: 06/01/05
Total wetland area: 8.87 acres

Polygon Information			
Polygon ID	37	37A	38
Polygon Size (acres)	3.71	4.97	0.19
Wetland Community Type	SW	SC	SHM
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	2	2	2
Surrounding land use	1	1	1
Standing water	1	1	1
Dead woody material	3	3	1
Zonation and interspersion	1	3	1
Stratification	3	3	1
Tree canopy	3	3	1
Mature trees	3	3	1
Animal Habitat Measure Score (min = 8, max = 24)	**17**	**19**	**9**
Animal Habitat Measure Rating	**fair**	**good**	**poor**
Botanical Measures **(all except exotics dependent upon community type)**			
Number of dominant plant taxa observed	2	1	1
Conservatism rating	2	2	1
Total hydrophytic taxa observed	3	2	1
Number of indicator taxa	1	1	1
Exotic species rating	3	3	2
Botanical Measure Score (min = 5, max = 15)	**11**	**9**	**6**
Botanical Measure Rating	**fair**	**fair**	**poor**
Hydrology Measures			
Water quality protection (= no. of yes answers)	3	4	4
Flood and storm water storage (= no. of yes answers)	3	3	4
Site/Hydrology Score (min = 11, max = 33)	**23**	**25**	**27**
Site/Hydrology Rating	**fair**	**fair**	**good**

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Date Report Generated: 2/10/2010
Wetland site: W43
Data reference # **W43**
Date of site visit: 06/01/05
Total wetland area: 8.23 acres

Polygon Information			
Polygon ID	43	44	45
Polygon Size (acres)	4.72	0.30	3.21
Wetland Community Type	SW	SW	SW
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	1	1	1
Standing water	2	1	3
Dead woody material	2	1	2
Zonation and interspersion	3	1	3
Stratification	3	3	3
Tree canopy	3	3	3
Mature trees	3	3	3
Animal Habitat Measure Score (min = 8, max = 24)	**20**	**16**	**21**
Animal Habitat Measure Rating	**good**	**fair**	**good**
Botanical Measures **(all except exotics dependent upon community type)**			
Number of dominant plant taxa observed	2	1	2
Conservatism rating	2	2	2
Total hydrophytic taxa observed	3	2	3
Number of indicator taxa	1	1	1
Exotic species rating	3	3	3
Botanical Measure Score (min = 5, max = 15)	**11**	**9**	**11**
Botanical Measure Rating	**fair**	**fair**	**fair**
Hydrology Measures			
Water quality protection (= no. of yes answers)	2	2	2
Flood and storm water storage (= no. of yes answers)	3	2	3
Site/Hydrology Score (min = 11, max = 33)	**21**	**19**	**21**
Site/Hydrology Rating	**fair**	**fair**	**fair**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W55A
Data reference # **W55A**
Date of site visit: 06/01/05
Total wetland area: 22.07 acres

Polygon Information				
Polygon ID	55A	56A	55 B	55C
Polygon Size (acres)	6.98	14.15	0.12	0.82
Wetland Community Type	SW	SC	WM	SW
Red Flag (Special) Indicators				
Special Hydrologic Conditions	N	N	N	N
Special Community Type	N	N	N	N
Rare-Threatened-Endangered Species	N	N	N	N
Animal Habitat Measures				
Wetland size and connectivity	2	2	2	2
Surrounding land use	2	2	2	2
Standing water	2	2	2	2
Dead woody material	2	1	1	2
Zonation and interspersion	1	1	1	1
Stratification	3	3	1	3
Tree canopy	3	3	1	3
Mature trees	3	1	1	3
Animal Habitat Measure Score (min = 8, max = 24)	**18**	**15**	**11**	**18**
Animal Habitat Measure Rating	**fair**	**fair**	**poor**	**fair**
Botanical Measures **(all except exotics dependent upon community type)**				
Number of dominant plant taxa observed	2	1	1	1
Conservatism rating	1	2	2	2
Total hydrophytic taxa observed	3	3	1	1
Number of indicator taxa	1	2	1	1
Exotic species rating	3	3	3	3
Botanical Measure Score (min = 5, max = 15)	**10**	**11**	**8**	**8**
Botanical Measure Rating	**fair**	**fair**	**poor**	**poor**
Hydrology Measures				
Water quality protection (= no. of yes answers)	3	5	3	3
Flood and storm water storage (= no. of yes answers)	4	4	4	2
Site/Hydrology Score (min = 11, max = 33)	**25**	**29**	**25**	**21**
Site/Hydrology Rating	**fair**	**good**	**fair**	**fair**

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Date Report Generated: 2/10/2010
Wetland site: W64
Data reference # **W64**
Date of site visit: 06/01/05
Total wetland area: 1.01 acres

Polygon Information				
Polygon ID	64	65	66	66A
Polygon Size (acres)	0.20	0.19	0.38	0.24
Wetland Community Type	SC	SHM	SC	SHM
Red Flag (Special) Indicators				
Special Hydrologic Conditions	N	N	N	none
Special Community Type	N	N	N	none
Rare-Threatened-Endangered Species	N	N	N	none
Animal Habitat Measures				
Wetland size and connectivity	3	3	3	3
Surrounding land use	1	1	1	1
Standing water	1	1	2	2
Dead woody material	1	1	2	1
Zonation and interspersion	1	1	1	1
Stratification	1	1	3	1
Tree canopy	1	1	3	1
Mature trees	1	1	1	1
Animal Habitat Measure Score (min = 8, max = 24)	**10**	**10**	**16**	**11**
Animal Habitat Measure Rating	**poor**	**poor**	**fair**	**poor**
Botanical Measures **(all except exotics dependent upon community type)**				
Number of dominant plant taxa observed	1	1	1	1
Conservatism rating	2	2	1	2
Total hydrophytic taxa observed	1	2	1	1
Number of indicator taxa	1	1	1	1
Exotic species rating	3	3	3	3
Botanical Measure Score (min = 5, max = 15)	**8**	**9**	**7**	**8**
Botanical Measure Rating	**poor**	**fair**	**poor**	**poor**
Hydrology Measures				
Water quality protection (= no. of yes answers)	2	2	3	2
Flood and storm water storage (= no. of yes answers)	1	1	3	3
Site/Hydrology Score (min = 11, max = 33)	**17**	**17**	**23**	**21**
Site/Hydrology Rating	**poor**	**poor**	**fair**	**fair**

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Date Report Generated: 2/10/2010
Wetland site: W76
Data reference # **W76**
Date of site visit: 06/01/05
Total wetland area: 4.47 acres

Polygon Information		
Polygon ID	76	76A
Polygon Size (acres)	3.85	0.62
Wetland Community Type	SW	SC
Red Flag (Special) Indicators		
Special Hydrologic Conditions	N	N
Special Community Type	N	N
Rare-Threatened-Endangered Species	N	N
Animal Habitat Measures		
Wetland size and connectivity	3	3
Surrounding land use	1	1
Standing water	2	2
Dead woody material	1	1
Zonation and interspersion	1	1
Stratification	3	3
Tree canopy	3	1
Mature trees	1	1
Animal Habitat Measure Score (min = 8, max = 24)	**15**	**13**
Animal Habitat Measure Rating	**fair**	**poor**
Botanical Measures **(all except exotics dependent upon community type)**		
Number of dominant plant taxa observed	1	1
Conservatism rating	2	2
Total hydrophytic taxa observed	1	2
Number of indicator taxa	1	1
Exotic species rating	3	3
Botanical Measure Score (min = 5, max = 15)	**8**	**9**
Botanical Measure Rating	**poor**	**fair**
Hydrology Measures		
Water quality protection (= no. of yes answers)	2	3
Flood and storm water storage (= no. of yes answers)	3	3
Site/Hydrology Score (min = 11, max = 33)	**21**	**23**
Site/Hydrology Rating	**fair**	**fair**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W80
Data reference # **W80**
Date of site visit: 06/01/05
Total wetland area: 0.28 acres

Polygon Information	
Polygon ID	80
Polygon Size (acres)	0.28
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	1
Standing water	3
Dead woody material	1
Zonation and interspersion	2
Stratification	3
Tree canopy	1
Mature trees	1
Animal Habitat Measure Score (min = 8, max = 24)	**13**
Animal Habitat Measure Rating	**poor**
Botanical Measures **(all except exotics dependent upon community type)**	
Number of dominant plant taxa observed	3
Conservatism rating	1
Total hydrophytic taxa observed	3
Number of indicator taxa	2
Exotic species rating	3
Botanical Measure Score (min = 5, max = 15)	**12**
Botanical Measure Rating	**good**
Hydrology Measures	
Water quality protection (= no. of yes answers)	2
Flood and storm water storage (= no. of yes answers)	3
Site/Hydrology Score (min = 11, max = 33)	**21**
Site/Hydrology Rating	**fair**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W80A
Data reference # **W80A**
Date of site visit: 06/01/05
Total wetland area: 8.91 acres

Polygon Information				
Polygon ID	80A	80B	80C	80D
Polygon Size (acres)	1.88	0.66	6.14	0.23
Wetland Community Type	SHM	SW	SW	SHM
Red Flag (Special) Indicators				
Special Hydrologic Conditions	N	Y	Y	N
Special Community Type	N	N	N	N
Rare-Threatened-Endangered Species	N	N	N	N
Animal Habitat Measures				
Wetland size and connectivity	2	2	2	2
Surrounding land use	2	2	2	2
Standing water	2	2	2	2
Dead woody material	2	2	2	1
Zonation and interspersion	1	1	1	1
Stratification	1	3	3	1
Tree canopy	1	3	3	1
Mature trees	1	3	3	1
Animal Habitat Measure Score (min = 8, max = 24)	**12**	**18**	**18**	**11**
Animal Habitat Measure Rating	**poor**	**fair**	**fair**	**poor**
Botanical Measures **(all except exotics dependent upon community type)**				
Number of dominant plant taxa observed	1	3	2	1
Conservatism rating	1	2	2	2
Total hydrophytic taxa observed	3	2	1	1
Number of indicator taxa	1	1	1	1
Exotic species rating	3	3	3	3
Botanical Measure Score (min = 5, max = 15)	**9**	**11**	**9**	**8**
Botanical Measure Rating	**fair**	**fair**	**fair**	**poor**
Hydrology Measures				
Water quality protection (= no. of yes answers)	3	3	3	3
Flood and storm water storage (= no. of yes answers)	2	2	2	2
Site/Hydrology Score (min = 11, max = 33)	**21**	**21**	**21**	**21**
Site/Hydrology Rating	**fair**	**fair**	**fair**	**fair**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W89
Data reference # **W89**
Date of site visit: 06/01/05
Total wetland area: 0.78 acres

Polygon Information	
Polygon ID	89
Polygon Size (acres)	0.78
Wetland Community Type	SHM
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	2
Dead woody material	1
Zonation and interspersion	2
Stratification	1
Tree canopy	1
Mature trees	1
Animal Habitat Measure Score (min = 8, max = 24)	**13**
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	2
Number of indicator taxa	1
Exotic species rating	2
Botanical Measure Score (min = 5, max = 15)	**7**
Botanical Measure Rating	**poor**
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)	**25**
Site/Hydrology Rating	**fair**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W95A
Data reference # **W95A**
Date of site visit: 06/01/05
Total wetland area: 1.05 acres

Polygon Information	
Polygon ID	95A
Polygon Size (acres)	1.05
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	1
Standing water	1
Dead woody material	3
Zonation and interspersion	1
Stratification	3
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	1
Total hydrophytic taxa observed	1
Number of indicator taxa	1
Exotic species rating	3
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**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W115
Data reference # **W115**
Date of site visit: 06/01/05
Total wetland area: 0.69 acres

Polygon Information		
Polygon ID	115	116
Polygon Size (acres)	0.08	0.61
Wetland Community Type	SC	WM
Red Flag (Special) Indicators		
Special Hydrologic Conditions	N	N
Special Community Type	N	N
Rare-Threatened-Endangered Species	N	N
Animal Habitat Measures		
Wetland size and connectivity	1	1
Surrounding land use	1	1
Standing water	1	1
Dead woody material	1	1
Zonation and interspersion	1	1
Stratification	1	3
Tree canopy	1	1
Mature trees	1	1
Animal Habitat Measure Score (min = 8, max = 24)	**8**	**10**
Animal Habitat Measure Rating	**poor**	**poor**
Botanical Measures **(all except exotics dependent upon community type)**		
Number of dominant plant taxa observed	1	1
Conservatism rating	2	2
Total hydrophytic taxa observed	1	1
Number of indicator taxa	1	1
Exotic species rating	3	2
Botanical Measure Score (min = 5, max = 15)	**8**	**7**
Botanical Measure Rating	**poor**	**poor**
Hydrology Measures		
Water quality protection (= no. of yes answers)	1	1
Flood and storm water storage (= no. of yes answers)	3	3
Site/Hydrology Score (min = 11, max = 33)	**19**	**19**
Site/Hydrology Rating	**fair**	**fair**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W117
Data reference # **W117**
Date of site visit: 06/01/05
Total wetland area: 4.66 acres

Polygon Information	
Polygon ID	117
Polygon Size (acres)	4.66
Wetland Community Type	SW
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	1
Standing water	1
Dead woody material	3
Zonation and interspersion	1
Stratification	3
Tree canopy	3
Mature trees	3
Animal Habitat Measure Score (min = 8, max = 24)	**16**
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	2
Number of indicator taxa	1
Exotic species rating	3
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**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W118
Data reference # **W118**
Date of site visit: 06/01/05
Total wetland area: 231 acres

Polygon Information	
Polygon ID	118
Polygon Size (acres)	231.00
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	2
Standing water	2
Dead woody material	2
Zonation and interspersion	3
Stratification	3
Tree canopy	3
Mature trees	3
Animal Habitat Measure Score (min = 8, max = 24)	**21**
Animal Habitat Measure Rating	**good**
Botanical Measures **(all except exotics dependent upon community type)**	
Number of dominant plant taxa observed	3
Conservatism rating	2
Total hydrophytic taxa observed	3
Number of indicator taxa	2
Exotic species rating	3
Botanical Measure Score (min = 5, max = 15)	**13**
Botanical Measure Rating	**good**
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)	**25**
Site/Hydrology Rating	**fair**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W120
Data reference # **W120**
Date of site visit: 06/01/05
Total wetland area: 3.1 acres

Polygon Information			
Polygon ID	120	120A	120B
Polygon Size (acres)	1.26	0.62	1.22
Wetland Community Type	SC	SM	SC
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	1	1	1
Standing water	1	1	1
Dead woody material	1	1	1
Zonation and interspersion	1	1	2
Stratification	1	1	1
Tree canopy	1	1	1
Mature trees	2	2	2
Animal Habitat Measure Score (min = 8, max = 24)	**9**	**9**	**10**
Animal Habitat Measure Rating	**poor**	**poor**	**poor**
Botanical Measures **(all except exotics dependent upon community type)**			
Number of dominant plant taxa observed	1	1	1
Conservatism rating	2	1	3
Total hydrophytic taxa observed	1	3	2
Number of indicator taxa	1	1	1
Exotic species rating	3	3	3
Botanical Measure Score (min = 5, max = 15)	**8**	**9**	**10**
Botanical Measure Rating	**poor**	**fair**	**fair**
Hydrology Measures			
Water quality protection (= no. of yes answers)	0	0	0
Flood and storm water storage (= no. of yes answers)	4	4	4
Site/Hydrology Score (min = 11, max = 33)	**19**	**19**	**19**
Site/Hydrology Rating	**fair**	**fair**	**fair**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W166
Data reference # **W166**
Date of site visit: 06/01/05
Total wetland area: 0.23 acres

Polygon Information	
Polygon ID	166
Polygon Size (acres)	0.23
Wetland Community Type	SM
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	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)	**9**
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)	1
Flood and storm water storage (= no. of yes answers)	3
Site/Hydrology Score (min = 11, max = 33)	**19**
Site/Hydrology Rating	**fair**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W176A
Data reference # **W176A**
Date of site visit: 06/01/05
Total wetland area: 3.94 acres

Polygon Information	
Polygon ID	176A
Polygon Size (acres)	3.94
Wetland Community Type	SM
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	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	2
Total hydrophytic taxa observed	2
Number of indicator taxa	1
Exotic species rating	3
Botanical Measure Score (min = 5, max = 15)	**9**
Botanical Measure Rating	**fair**
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)	**25**
Site/Hydrology Rating	**fair**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W178
Data reference # **W178**
Date of site visit: 06/01/05
Total wetland area: 27.83 acres

Polygon Information					
Polygon ID	178	178A	178B	179	179A
Polygon Size (acres)	3.93	1.42	4.69	15.68	2.11
Wetland Community Type	SW	SM	SM	SW	SW
Red Flag (Special) Indicators					
Special Hydrologic Conditions	N	N	N	N	N
Special Community Type	N	N	N	N	N
Rare-Threatened-Endangered Species	N	N	N	N	N
Animal Habitat Measures					
Wetland size and connectivity	3	3	3	3	3
Surrounding land use	2	2	2	2	2
Standing water	1	2	2	1	1
Dead woody material	1	1	1	1	1
Zonation and interspersion	3	1	1	3	1
Stratification	3	3	3	3	1
Tree canopy	3	1	1	3	1
Mature trees	3	1	1	3	1
Animal Habitat Measure Score (min = 8, max = 24)	**19**	**14**	**14**	**19**	**11**
Animal Habitat Measure Rating	**good**	**fair**	**fair**	**good**	**poor**
Botanical Measures **(all except exotics dependent upon community type)**					
Number of dominant plant taxa observed	2	1	1	2	1
Conservatism rating	2	2	2	2	2
Total hydrophytic taxa observed	2	1	1	2	3
Number of indicator taxa	1	1	1	1	1
Exotic species rating	3	2	3	3	3
Botanical Measure Score (min = 5, max = 15)	**10**	**7**	**8**	**10**	**10**
Botanical Measure Rating	**fair**	**poor**	**poor**	**fair**	**fair**
Hydrology Measures					
Water quality protection (= no. of yes answers)	4	4	4	4	4
Flood and storm water storage (= no. of yes answers)	5	5	5	5	5
Site/Hydrology Score (min = 11, max = 33)	**29**	**29**	**29**	**29**	**29**
Site/Hydrology Rating	**good**	**good**	**good**	**good**	**good**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W186
Data reference # **W186**
Date of site visit: 06/01/05
Total wetland area: 0.8 acres

Polygon Information	
Polygon ID	186
Polygon Size (acres)	0.80
Wetland Community Type	SM
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	1
Mature trees	1
Animal Habitat Measure Score (min = 8, max = 24)	**9**
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)	0
Flood and storm water storage (= no. of yes answers)	3
Site/Hydrology Score (min = 11, max = 33)	**17**
Site/Hydrology Rating	**poor**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W189
Data reference # **W189**
Date of site visit: 06/01/05
Total wetland area: 0.92 acres

Polygon Information	
Polygon ID	189
Polygon Size (acres)	0.92
Wetland Community Type	SM
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	2
Botanical Measure Score (min = 5, max = 15)	**6**
Botanical Measure Rating	**poor**
Hydrology Measures	
Water quality protection (= no. of yes answers)	2
Flood and storm water storage (= no. of yes answers)	3
Site/Hydrology Score (min = 11, max = 33)	**21**
Site/Hydrology Rating	**fair**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W190
Data reference # **W190**
Date of site visit: 06/01/05
Total wetland area: 0.56 acres

Polygon Information		
Polygon ID	190	190PSS
Polygon Size (acres)	0.10	0.46
Wetland Community Type	SHM	SC
Red Flag (Special) Indicators		
Special Hydrologic Conditions	N	N
Special Community Type	N	N
Rare-Threatened-Endangered Species	N	N
Animal Habitat Measures		
Wetland size and connectivity	2	2
Surrounding land use	2	2
Standing water	2	2
Dead woody material	1	2
Zonation and interspersion	1	1
Stratification	3	3
Tree canopy	1	1
Mature trees	1	1
Animal Habitat Measure Score (min = 8, max = 24)	**13**	**14**
Animal Habitat Measure Rating	**poor**	**fair**
Botanical Measures **(all except exotics dependent upon community type)**		
Number of dominant plant taxa observed	1	1
Conservatism rating	2	1
Total hydrophytic taxa observed	1	1
Number of indicator taxa	1	1
Exotic species rating	2	2
Botanical Measure Score (min = 5, max = 15)	**7**	**6**
Botanical Measure Rating	**poor**	**poor**
Hydrology Measures		
Water quality protection (= no. of yes answers)	3	3
Flood and storm water storage (= no. of yes answers)	4	4
Site/Hydrology Score (min = 11, max = 33)	**25**	**25**
Site/Hydrology Rating	**fair**	**fair**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W190B
Data reference # **W190B**
Date of site visit: 06/01/05
Total wetland area: 0.05 acres

Polygon Information	
Polygon ID	190B
Polygon Size (acres)	0.05
Wetland Community Type	SW
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	3
Zonation and interspersion	2
Stratification	3
Tree canopy	3
Mature trees	3
Animal Habitat Measure Score (min = 8, max = 24)	**19**
Animal Habitat Measure Rating	**good**
Botanical Measures **(all except exotics dependent upon community type)**	
Number of dominant plant taxa observed	2
Conservatism rating	1
Total hydrophytic taxa observed	1
Number of indicator taxa	1
Exotic species rating	3
Botanical Measure Score (min = 5, max = 15)	**8**
Botanical Measure Rating	**poor**
Hydrology Measures	
Water quality protection (= no. of yes answers)	0
Flood and storm water storage (= no. of yes answers)	4
Site/Hydrology Score (min = 11, max = 33)	**19**
Site/Hydrology Rating	**fair**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W190C
Data reference # **W190C**
Date of site visit: 06/01/05
Total wetland area: 0.09 acres

Polygon Information	
Polygon ID	190C
Polygon Size (acres)	0.09
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	3
Standing water	1
Dead woody material	2
Zonation and interspersion	1
Stratification	3
Tree canopy	3
Mature trees	3
Animal Habitat Measure Score (min = 8, max = 24)	**18**
Animal Habitat Measure Rating	**fair**
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)	5
Flood and storm water storage (= no. of yes answers)	4
Site/Hydrology Score (min = 11, max = 33)	**29**
Site/Hydrology Rating	**good**

I-69 Wetland Quality Assessment Profile

Date Report Generated: 2/10/2010
Wetland site: W192
Data reference # **W192**
Date of site visit: 06/01/05
Total wetland area: 0.36 acres

Polygon Information	
Polygon ID	192A
Polygon Size (acres)	0.36
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	3
Standing water	2
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	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)	**8**
Botanical Measure Rating	**poor**
Hydrology Measures	
Water quality protection (= no. of yes answers)	3
Flood and storm water storage (= no. of yes answers)	1
Site/Hydrology Score (min = 11, max = 33)	**19**
Site/Hydrology Rating	**fair**

I-69 TIER 2 STUDY
SECTION 2
FINAL WETLAND ASSESSMENT REPORT

Appendix C
Wetland Matrix for Build Alternatives

Prepared By:

501 N. Broadway
St. Louis, MO 63102

February 2010

Wetland Matrix For I-69 Section 2 Alternatives: Construction Limits

Gray shaded cells indicate wetland polygons that are entirely or partially within the right-of-way of the respective alternative

Wetland ID			Alternative A					Alternative B					DEIS Preferred					FEIS Preferred				
W04	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO					PFO					PFO									
		Indiana Community Type	SW					SW					SW									
		Size (acres)	10.83					10.83					10.83									
		Impact (acres)	0.03					5.05					0.03									
		Animal Habitat	fair					fair					fair									
		Botanical	fair					fair					fair									
		Hydrology	good					good					good									
		Red Flags	N					N					N									
W11	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO					PFO					PFO					PFO				
		Indiana Community Type	FF					FF					FF					FF				
		Size (acres)	54.27					54.27					54.27					54.27				
		Impact (acres)	0.09					0.46					0.09					0.06				
		Animal Habitat	good					good					good					good				
		Botanical	fair					fair					fair					fair				
		Hydrology	good					good					good					good				
		Red Flags	N					N					N					N				
W15	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO					PFO					PFO					PFO				
		Indiana Community Type	FF					FF					FF					FF				
		Size (acres)	3.08					3.08					3.08					3.08				
		Impact (acres)	0.81					0.69					0.81					0.86				
		Animal Habitat	fair					fair					fair					fair				
		Botanical	fair					fair					fair					fair				
		Hydrology	fair					fair					fair					fair				
		Red Flags	N					N					N					N				
W17	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO	PAB				PFO	PAB				PFO	PAB				PFO	PAB			
		Indiana Community Type	FF	DM				FF	DM				FF	DM				FF	DM			
		Size (acres)	9.62	2.01				9.62	2.01				9.62	2.01				9.62	2.01			
		Impact (acres)	2.95	0.39				2.90	0.40				2.95	0.39				3.00	0.40			
		Animal Habitat	good	good				good	good				good	good				good	good			
		Botanical	fair	fair				fair	fair				fair	fair				fair	fair			
		Hydrology	good	good				good	good				good	good				good	good			
		Red Flags	Y	Y				Y	Y				Y	Y				Y	Y			
W32	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO	PEM				PFO	PEM				PFO	PEM				PFO	PEM			
		Indiana Community Type	SW	WM				SW	WM				SW	WM				SW	WM			
		Size (acres)	48.00	4.56				48.00	4.56				48.00	4.56				48.00	4.56			
		Impact (acres)	0.28	2.65				0.26	2.63				0.28	2.65				0.29	2.84			
		Animal Habitat	good	poor				good	poor				good	poor				good	poor			
		Botanical	fair	poor				fair	poor				fair	poor				fair	poor			
		Hydrology	fair	fair				fair	fair				fair	fair				fair	fair			
		Red Flags	N	N				N	N				N	N				N	N			
W37	USACE Jurisdiction: Yes	Cowardin et al. Classification						PFO	PSS	PEM												
		Indiana Community Type						SW	SC	SHM												
		Size (acres)						3.71	4.97	0.19												
		Impact (acres)						1.79	2.05	0.02												
		Animal Habitat						fair	good	poor												
		Botanical						fair	fair	poor												
		Hydrology						fair	fair	good												
		Red Flags						N	N	N												

Wetland Matrix For I-69 Section 2 Alternatives: Construction Limits

Gray shaded cells indicate wetland polygons that are entirely or partially within the right-of-way of the respective alternative

Wetland ID			Alternative A					Alternative B					DEIS Preferred					FEIS Preferred				
W43	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO	PFO	PFO			PFO	PFO	PFO			PFO	PFO	PFO			PFO	PFO	PFO		
		Indiana Community Type	SW	SW	SW			SW	SW	SW			SW	SW	SW			SW	SW	SW		
		Size (acres)	4.72	0.30	3.21			4.72	0.30	3.21			4.72	0.30	3.21			4.72	0.30	3.21		
		Impact (acres)	0.76	0.01	0.00			0.00	0.00	0.48			0.76	0.01	0.00			0.85	0.08	0.00		
		Animal Habitat	good	fair	good			good	fair	good			good	fair	good			good	fair	good		
		Botanical	fair	fair	fair			fair	fair	fair			fair	fair	fair			fair	fair	fair		
		Hydrology	fair	fair	fair			fair	fair	fair			fair	fair	fair			fair	fair	fair		
		Red Flags	N	N	N			N	N	N			N	N	N			N	N	N		
W55A	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO	PSS	PEM	PFO		PFO	PSS	PEM	PFO		PFO	PSS	PEM	PFO		PFO	PSS	PEM	PFO	
		Indiana Community Type	SW	SC	WM	SW		SW	SC	WM	SW		SW	SC	WM	SW		SW	SC	WM	SW	
		Size (acres)	6.98	14.15	0.12	0.82		6.98	14.15	0.12	0.82		6.98	14.15	0.12	0.82		6.98	14.15	0.12	0.82	
		Impact (acres)	3.56	0.00	0.12	0.32		0.00	4.11	0.00	0.00		3.56	0.00	0.12	0.32		3.60	0.00	0.12	0.32	
		Animal Habitat	fair	fair	poor	fair		fair	fair	poor	fair		fair	fair	poor	fair		fair	fair	poor	fair	
		Botanical	fair	fair	poor	poor		fair	fair	poor	poor		fair	fair	poor	poor		fair	fair	poor	poor	
		Hydrology	fair	good	fair	fair		fair	good	fair	fair		fair	good	fair	fair		fair	good	fair	fair	
		Red Flags	N	N	N	N		N	N	N	N		N	N	N	N		N	N	N	N	
W64	USACE Jurisdiction: Yes	Cowardin et al. Classification	PSS	PEM	PSS	PEM		PSS	PEM	PSS	PEM		PSS	PEM	PSS	PEM		PSS	PEM	PSS	PEM	
		Indiana Community Type	SC	SHM	SC	SHM		SC	SHM	SC	SHM		SC	SHM	SC	SHM		SC	SHM	SC	SHM	
		Size (acres)	0.20	0.19	0.38	0.24		0.20	0.19	0.38	0.24		0.20	0.19	0.38	0.24		0.20	0.19	0.38	0.24	
		Impact (acres)	0.00	0.00	0.06	0.15		0.16	0.00	0.00	0.00		0.00	0.00	0.06	0.15		0.00	0.00	0.07	0.15	
		Animal Habitat	poor	poor	fair	poor		poor	poor	fair	poor		poor	poor	fair	poor		poor	poor	fair	poor	
		Botanical	poor	fair	poor	poor		poor	fair	poor	poor		poor	fair	poor	poor		poor	fair	poor	poor	
		Hydrology	poor	poor	fair	fair		poor	poor	fair	fair		poor	poor	fair	fair		poor	poor	fair	fair	
		Red Flags	N	N	N	N		N	N	N	N		N	N	N	N		N	N	N	N	
W76	USACE Jurisdiction: Yes	Cowardin et al. Classification						PFO	PSS													
		Indiana Community Type						SW	SC													
		Size (acres)						3.85	0.62													
		Impact (acres)						1.56	0.44													
		Animal Habitat						fair	poor													
		Botanical						poor	fair													
		Hydrology						fair	fair													
		Red Flags						N	N													
W80	USACE Jurisdiction: No	Cowardin et al. Classification	PAB					PAB					PAB					PAB				
		Indiana Community Type	DM					DM					DM					DM				
		Size (acres)	0.28					0.28					0.28					0.28				
		Impact (acres)	0.28					0.28					0.28					0.28				
		Animal Habitat	poor					poor					poor					poor				
		Botanical	good					good					good					good				
		Hydrology	fair					fair					fair					fair				
		Red Flags	N					N					N					N				
W80A	USACE Jurisdiction: Yes	Cowardin et al. Classification	PEM	PFO	PFO	PEM		PEM	PFO	PFO	PEM		PEM	PFO	PFO	PEM		PEM	PFO	PFO	PEM	
		Indiana Community Type	SHM	SW	SW	SHM		SHM	SW	SW	SHM		SHM	SW	SW	SHM		SHM	SW	SW	SHM	
		Size (acres)	1.88	0.66	6.14	0.23		1.88	0.66	6.14	0.23		1.88	0.66	6.14	0.23		1.88	0.66	6.14	0.23	
		Impact (acres)	1.88	0.66	3.95	0.18		1.88	0.66	5.39	0.18		1.88	0.66	3.95	0.18		1.88	0.66	3.50	0.11	
		Animal Habitat	poor	fair	fair	poor		poor	fair	fair	poor		poor	fair	fair	poor		poor	fair	fair	poor	
		Botanical	fair	fair	fair	poor		fair	fair	fair	poor		fair	fair	fair	poor		fair	fair	fair	poor	
		Hydrology	fair	fair	fair	fair		fair	fair	fair	fair		fair	fair	fair	fair		fair	fair	fair	fair	
		Red Flags	N	Y	Y	N		N	Y	Y	N		N	Y	Y	N		N	Y	Y	N	

Wetland Matrix For I-69 Section 2 Alternatives: Construction Limits

Gray shaded cells indicate wetland polygons that are entirely or partially within the right-of-way of the respective alternative

Wetland ID			Alternative A					Alternative B					DEIS Preferred					FEIS Preferred				
W89	USACE Jurisdiction: No	Cowardin et al. Classification						PEM														
		Indiana Community Type						SHM														
		Size (acres)						0.78														
		Impact (acres)						0.27														
		Animal Habitat						poor														
		Botanical						poor														
		Hydrology						fair														
		Red Flags						N														
W95A	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO										PFO					PFO				
		Indiana Community Type	FF										FF					FF				
		Size (acres)	1.05										1.05					1.05				
		Impact (acres)	0.70										0.70					0.20				
		Animal Habitat	fair										fair					fair				
		Botanical	poor										poor					poor				
		Hydrology	poor										poor					poor				
		Red Flags	N										N					N				
W115	USACE Jurisdiction: Yes	Cowardin et al. Classification						PSS	PEM													
		Indiana Community Type						SC	WM													
		Size (acres)						0.08	0.61													
		Impact (acres)						0.08	0.51													
		Animal Habitat						poor	poor													
		Botanical						poor	poor													
		Hydrology						fair	fair													
		Red Flags						N	N													
W117	USACE Jurisdiction: Yes	Cowardin et al. Classification						PFO														
		Indiana Community Type						SW														
		Size (acres)						4.66														
		Impact (acres)						1.63														
		Animal Habitat						fair														
		Botanical						fair														
		Hydrology						fair														
		Red Flags						N														
W118	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO					PFO					PFO					PFO				
		Indiana Community Type	FF					FF					FF					FF				
		Size (acres)	231.00					231.00					231.00					231.00				
		Impact (acres)	2.37					1.18					2.37					1.93				
		Animal Habitat	good					good					good					good				
		Botanical	good					good					good					good				
		Hydrology	fair					fair					fair					fair				
		Red Flags	N					N					N					N				
W120	USACE Jurisdiction: Yes	Cowardin et al. Classification						PSS	PEM	PSS												
		Indiana Community Type						SC	SM	SC												
		Size (acres)						1.26	0.62	1.22												
		Impact (acres)						0.49	0.48	0.10												
		Animal Habitat						poor	poor	poor												
		Botanical						poor	fair	fair												
		Hydrology						fair	fair	fair												
		Red Flags						N	N	N												

Wetland Matrix For I-69 Section 2 Alternatives: Construction Limits

Gray shaded cells indicate wetland polygons that are entirely or partially within the right-of-way of the respective alternative

Wetland ID			Alternative A					Alternative B					DEIS Preferred					FEIS Preferred				
W166	USACE Jurisdiction: No	Cowardin et al. Classification						PEM														
		Indiana Community Type						SM														
		Size (acres)						0.23														
		Impact (acres)						0.08														
		Animal Habitat						poor														
		Botanical						poor														
		Hydrology						fair														
		Red Flags						N														
W166A	USACE Jurisdiction: Yes	Cowardin et al. Classification						PEM														
		Indiana Community Type						SM														
		Size (acres)						0.58														
		Impact (acres)						0.58														
		Animal Habitat						fair														
		Botanical						fair														
		Hydrology						good														
		Red Flags						Y														
W176A	USACE Jurisdiction: Yes	Cowardin et al. Classification	PEM					PEM					PEM					PEM				
		Indiana Community Type	SM					SM					SM					SM				
		Size (acres)	3.94					3.94					3.94					3.94				
		Impact (acres)	1.29					1.52					1.29					0.64				
		Animal Habitat	poor					poor					poor					poor				
		Botanical	fair					fair					fair					fair				
		Hydrology	fair					fair					fair					fair				
		Red Flags	N					N					N					N				
W178	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO	PEM	PEM	PFO	PFO	PFO	PEM	PEM	PFO	PFO	PFO	PEM	PEM	PFO	PFO	PFO	PEM	PEM	PFO	PFO
		Indiana Community Type	SW	SM	SM	SW	SW	SW	SM	SM	SW	SW	SW	SM	SM	SW	SW	SW	SM	SM	SW	SW
		Size (acres)	3.93	1.42	4.69	15.68	2.11	3.93	1.42	4.69	15.68	2.11	3.93	1.42	4.69	15.68	2.11	3.93	1.42	4.69	15.68	2.11
		Impact (acres)	0.00	0.09	0.17	0.00	0.67	1.33	1.26	3.08	1.90	0.62	0.00	0.09	0.17	0.00	0.67	0.00	0.03	0.15	0.00	0.64
		Animal Habitat	good	fair	fair	good	poor	good	fair	fair	good	poor	good	fair	fair	good	poor	good	fair	fair	good	poor
		Botanical	fair	poor	poor	fair	fair	fair	poor	poor	fair	fair	fair	poor	poor	fair	fair	fair	poor	poor	fair	fair
		Hydrology	good	good	good	good	good	good	good	good	good	good	good	good	good	good	good	good	good	good	good	good
		Red Flags	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
W186	USACE Jurisdiction: Yes	Cowardin et al. Classification						PEM														
		Indiana Community Type						SM														
		Size (acres)						0.80														
		Impact (acres)						0.42														
		Animal Habitat						poor														
		Botanical						poor														
		Hydrology						poor														
		Red Flags						N														
W189	USACE Jurisdiction: Yes	Cowardin et al. Classification	PEM					PEM					PEM					PEM				
		Indiana Community Type	SM					SM					SM					SM				
		Size (acres)	0.92					0.92					0.92					0.92				
		Impact (acres)	0.15					0.81					0.15					0.60				
		Animal Habitat	poor					poor					poor					poor				
		Botanical	poor					poor					poor					poor				
		Hydrology	fair					fair					fair					fair				
		Red Flags	N					N					N					N				

Wetland Matrix For I-69 Section 2 Alternatives: Construction Limits

Gray shaded cells indicate wetland polygons that are entirely or partially within the right-of-way of the respective alternative

Wetland ID			Alternative A					Alternative B					DEIS Preferred					FEIS Preferred				
W190	USACE Jurisdiction: No	Cowardin et al. Classification	PEM	PSS				PEM	PSS				PEM	PSS				PEM	PSS			
		Indiana Community Type	SHM	SC				SHM	SC				SHM	SC				SHM	SC			
		Size (acres)	0.10	0.46				0.10	0.46				0.10	0.46				0.10	0.46			
		Impact (acres)	0.10	0.46				0.10	0.46				0.10	0.46				0.10	0.46			
		Animal Habitat	poor	fair				poor	fair				poor	fair				poor	fair			
		Botanical	poor	poor				poor	poor				poor	poor				poor	poor			
		Hydrology	fair	fair				fair	fair				fair	fair				fair	fair			
		Red Flags	N	N				N	N				N	N				N	N			
W190B	USACE Jurisdiction: No	Cowardin et al. Classification	PFO					PFO					PFO					PFO				
		Indiana Community Type	SW					SW					SW					SW				
		Size (acres)	0.05					0.05					0.05					0.05				
		Impact (acres)	0.05					0.05					0.05					0.05				
		Animal Habitat	good					good					good					good				
		Botanical	poor					poor					poor					poor				
		Hydrology	fair					fair					fair					fair				
		Red Flags	N					N					N					N				
W190C	USACE Jurisdiction: No	Cowardin et al. Classification	PSS					PSS					PSS					PSS				
		Indiana Community Type	SC					SC					SC					SC				
		Size (acres)	0.09					0.09					0.09					0.09				
		Impact (acres)	0.03					0.03					0.03					0.02				
		Animal Habitat	fair					fair					fair					fair				
		Botanical	poor					poor					poor					poor				
		Hydrology	good					good					good					good				
		Red Flags	N					N					N					N				
W192	USACE Jurisdiction: Yes	Cowardin et al. Classification																PFO				
		Indiana Community Type																FF				
		Size (acres)																0.36				
		Impact (acres)																0.09				
		Animal Habitat																fair				
		Botanical																poor				
		Hydrology																fair				
		Red Flags																N				

Indiana Community Type Abbreviations

- B = bog
- DM = deep marsh
- F = fen
- FF = floodplain forest
- SMF - sand/muck flat
- SFB = seasonally flooded basin
- SM = sedge meadow
- SHM = shallow marsh
- SOW = shallow open water
- SC = scrub-carr
- SW = swamp forest
- WM = wet meadow
- WP = wet prairie

Cowardin et al. Classifications

- PEM = palustrine emergent
- PSS = palustrine scrub/shrub
- PFO = palustrine forest
- PAB = palustrine aquatic bed

Red Flag Indicators (for specific information regarding the nature of a red flag indicator designated by "Y", consult the InWRAP data sheets)

- Y = yes
- N = no

Note: USACE jurisdictional status is based on professional opinion only. Official corresdpondace on jurisdictional verification will be completed during permitting.

Wetland Matrix For I-69 Section 2 Alternatives: Right-of-Way Limits

Gray shaded cells indicate wetland polygons that are entirely or partially within the right-of-way of the respective alternative

Wetland ID			Alternative A					Alternative B					DEIS Preferred					FEIS Preferred				
W04	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO					PFO					PFO									
		Indiana Community Type	SW					SW					SW									
		Size (acres)	10.83					10.83					10.83									
		Impact (acres)	0.04					5.30					0.04									
		Animal Habitat	fair					fair					fair									
		Botanical	fair					fair					fair									
		Hydrology	good					good					good									
		Red Flags	N					N					N									
W11	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO					PFO					PFO					PFO				
		Indiana Community Type	FF					FF					FF					FF				
		Size (acres)	54.27					54.27					54.27					54.27				
		Impact (acres)	0.12					0.51					0.12					0.12				
		Animal Habitat	good					good					good					good				
		Botanical	fair					fair					fair					fair				
		Hydrology	good					good					good					good				
		Red Flags	N					N					N					N				
W15	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO					PFO					PFO					PFO				
		Indiana Community Type	FF					FF					FF					FF				
		Size (acres)	3.08					3.08					3.08					3.08				
		Impact (acres)	0.88					0.74					0.88					0.90				
		Animal Habitat	fair					fair					fair					fair				
		Botanical	fair					fair					fair					fair				
		Hydrology	fair					fair					fair					fair				
		Red Flags	N					N					N					N				
W17	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO	PAB				PFO	PAB				PFO	PAB				PFO	PAB			
		Indiana Community Type	FF	DM				FF	DM				FF	DM				FF	DM			
		Size (acres)	9.62	2.01				9.62	2.01				9.62	2.01				9.62	2.01			
		Impact (acres)	3.24	0.43				3.17	0.45				3.24	0.43				3.23	0.43			
		Animal Habitat	good	good				good	good				good	good				good	good			
		Botanical	fair	fair				fair	fair				fair	fair				fair	fair			
		Hydrology	good	good				good	good				good	good				good	good			
		Red Flags	Y	Y				Y	Y				Y	Y				Y	Y			
W32	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO	PEM				PFO	PEM				PFO	PEM				PFO	PEM			
		Indiana Community Type	SW	WM				SW	WM				SW	WM				SW	WM			
		Size (acres)	48.00	4.56				48.00	4.56				48.00	4.56				48.00	4.56			
		Impact (acres)	0.29	2.75				0.27	2.73				0.29	2.75				0.31	2.97			
		Animal Habitat	good	poor				good	poor				good	poor				good	poor			
		Botanical	fair	poor				fair	poor				fair	poor				fair	poor			
		Hydrology	fair	fair				fair	fair				fair	fair				fair	fair			
		Red Flags	N	N				N	N				N	N				N	N			
W37	USACE Jurisdiction: Yes	Cowardin et al. Classification						PFO	PSS	PEM												
		Indiana Community Type						SW	SC	SHM												
		Size (acres)						3.71	4.97	0.19												
		Impact (acres)						1.88	2.32	0.02												
		Animal Habitat						fair	good	poor												
		Botanical						fair	fair	poor												
		Hydrology						fair	fair	good												
		Red Flags						N	N	N												

Wetland Matrix For I-69 Section 2 Alternatives: Right-of-Way Limits

Gray shaded cells indicate wetland polygons that are entirely or partially within the right-of-way of the respective alternative

Wetland ID			Alternative A					Alternative B					DEIS Preferred					FEIS Preferred				
W43	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO	PFO	PFO			PFO	PFO	PFO			PFO	PFO	PFO			PFO	PFO	PFO		
		Indiana Community Type	SW	SW	SW			SW	SW	SW			SW	SW	SW			SW	SW	SW		
		Size (acres)	4.72	0.30	3.21			4.72	0.30	3.21			4.72	0.30	3.21			4.72	0.30	3.21		
		Impact (acres)	0.83	0.01	0.00			0.00	0.00	0.53			0.83	0.01	0.00			0.93	0.10	0.00		
		Animal Habitat	good	fair	good			good	fair	good			good	fair	good			good	fair	good		
		Botanical	fair	fair	fair			fair	fair	fair			fair	fair	fair			fair	fair	fair		
		Hydrology	fair	fair	fair			fair	fair	fair			fair	fair	fair			fair	fair	fair		
		Red Flags	N	N	N			N	N	N			N	N	N			N	N	N		
W55A	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO	PSS	PEM	PFO		PFO	PSS	PEM	PFO		PFO	PSS	PEM	PFO		PFO	PSS	PEM	PFO	
		Indiana Community Type	SW	SC	WM	SW		SW	SC	WM	SW		SW	SC	WM	SW		SW	SC	WM	SW	
		Size (acres)	6.98	14.15	0.12	0.82		6.98	14.15	0.12	0.82		6.98	14.15	0.12	0.82		6.98	14.15	0.12	0.82	
		Impact (acres)	3.71	0.00	0.12	0.34		0.00	4.32	0.00	0.00		3.71	0.00	0.12	0.34		3.84	0.00	0.12	0.38	
		Animal Habitat	fair	fair	poor	fair		fair	fair	poor	fair		fair	fair	poor	fair		fair	fair	poor	fair	
		Botanical	fair	fair	poor	poor		fair	fair	poor	poor		fair	fair	poor	poor		fair	fair	poor	poor	
		Hydrology	fair	good	fair	fair		fair	good	fair	fair		fair	good	fair	fair		fair	good	fair	fair	
		Red Flags	N	N	N	N		N	N	N	N		N	N	N	N		N	N	N	N	
W64	USACE Jurisdiction: Yes	Cowardin et al. Classification	PSS	PEM	PSS	PEM		PSS	PEM	PSS	PEM		PSS	PEM	PSS	PEM		PSS	PEM	PSS	PEM	
		Indiana Community Type	SC	SHM	SC	SHM		SC	SHM	SC	SHM		SC	SHM	SC	SHM		SC	SHM	SC	SHM	
		Size (acres)	0.20	0.19	0.38	0.24		0.20	0.19	0.38	0.24		0.20	0.19	0.38	0.24		0.20	0.19	0.38	0.24	
		Impact (acres)	0.00	0.00	0.10	0.16		0.18	0.00	0.00	0.00		0.00	0.00	0.10	0.16		0.00	0.00	0.14	0.17	
		Animal Habitat	poor	poor	fair	poor		poor	poor	fair	poor		poor	poor	fair	poor		poor	poor	fair	poor	
		Botanical	poor	fair	poor	poor		poor	fair	poor	poor		poor	fair	poor	poor		poor	fair	poor	poor	
		Hydrology	poor	poor	fair	fair		poor	poor	fair	fair		poor	poor	fair	fair		poor	poor	fair	fair	
		Red Flags	N	N	N	N		N	N	N	N		N	N	N	N		N	N	N	N	
W76	USACE Jurisdiction: Yes	Cowardin et al. Classification						PFO	PSS													
		Indiana Community Type						SW	SC													
		Size (acres)						3.85	0.62													
		Impact (acres)						1.66	0.46													
		Animal Habitat						fair	poor													
		Botanical						poor	fair													
		Hydrology						fair	fair													
		Red Flags						N	N													
W80	USACE Jurisdiction: No	Cowardin et al. Classification	PAB					PAB					PAB					PAB				
		Indiana Community Type	DM					DM					DM					DM				
		Size (acres)	0.28					0.28					0.28					0.28				
		Impact (acres)	0.28					0.28					0.28					0.28				
		Animal Habitat	poor					poor					poor					poor				
		Botanical	good					good					good					good				
		Hydrology	fair					fair					fair					fair				
		Red Flags	N					N					N					N				
W80A	USACE Jurisdiction: Yes	Cowardin et al. Classification	PEM	PFO	PFO	PEM		PEM	PFO	PFO	PEM		PEM	PFO	PFO	PEM		PEM	PFO	PFO	PEM	
		Indiana Community Type	SHM	SW	SW	SHM		SHM	SW	SW	SHM		SHM	SW	SW	SHM		SHM	SW	SW	SHM	
		Size (acres)	1.88	0.66	6.14	0.23		1.88	0.66	6.14	0.23		1.88	0.66	6.14	0.23		1.88	0.66	6.14	0.23	
		Impact (acres)	1.88	0.66	4.10	0.19		1.88	0.66	5.48	0.19		1.88	0.66	4.10	0.19		1.88	0.66	4.13	0.17	
		Animal Habitat	poor	fair	fair	poor		poor	fair	fair	poor		poor	fair	fair	poor		poor	fair	fair	poor	
		Botanical	fair	fair	fair	poor		fair	fair	fair	poor		fair	fair	fair	poor		fair	fair	fair	poor	
		Hydrology	fair	fair	fair	fair		fair	fair	fair	fair		fair	fair	fair	fair		fair	fair	fair	fair	
		Red Flags	N	Y	Y	N		N	Y	Y	N		N	Y	Y	N		N	Y	Y	N	

Wetland Matrix For I-69 Section 2 Alternatives: Right-of-Way Limits

Gray shaded cells indicate wetland polygons that are entirely or partially within the right-of-way of the respective alternative

Wetland ID			Alternative A					Alternative B					DEIS Preferred					FEIS Preferred				
W89	USACE Jurisdiction: No	Cowardin et al. Classification						PEM														
		Indiana Community Type						SHM														
		Size (acres)						0.78														
		Impact (acres)						0.30														
		Animal Habitat						poor														
		Botanical						poor														
		Hydrology						fair														
		Red Flags						N														
W95A	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO										PFO					PFO				
		Indiana Community Type	FF										FF					FF				
		Size (acres)	1.05										1.05					1.05				
		Impact (acres)	0.74										0.74					0.25				
		Animal Habitat	fair										fair					fair				
		Botanical	poor										poor					poor				
		Hydrology	poor										poor					poor				
		Red Flags	N										N					N				
W115	USACE Jurisdiction: Yes	Cowardin et al. Classification						PSS	PEM													
		Indiana Community Type						SC	WM													
		Size (acres)						0.08	0.61													
		Impact (acres)						0.08	0.53													
		Animal Habitat						poor	poor													
		Botanical						poor	poor													
		Hydrology						fair	fair													
		Red Flags						N	N													
W117	USACE Jurisdiction: Yes	Cowardin et al. Classification						PFO														
		Indiana Community Type						SW														
		Size (acres)						4.66														
		Impact (acres)						1.73														
		Animal Habitat						fair														
		Botanical						fair														
		Hydrology						fair														
		Red Flags						N														
W118	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO					PFO					PFO					PFO				
		Indiana Community Type	FF					FF					FF					FF				
		Size (acres)	231.00					231.00					231.00					231.00				
		Impact (acres)	2.49					1.24					2.49					2.12				
		Animal Habitat	good					good					good					good				
		Botanical	good					good					good					good				
		Hydrology	fair					fair					fair					fair				
		Red Flags	N					N					N					N				
W120	USACE Jurisdiction: Yes	Cowardin et al. Classification						PSS	PEM	PSS												
		Indiana Community Type						SC	SM	SC												
		Size (acres)						1.26	0.62	1.22												
		Impact (acres)						0.52	0.50	0.16												
		Animal Habitat						poor	poor	poor												
		Botanical						poor	fair	fair												
		Hydrology						fair	fair	fair												
		Red Flags						N	N	N												

Wetland Matrix For I-69 Section 2 Alternatives: Right-of-Way Limits

Gray shaded cells indicate wetland polygons that are entirely or partially within the right-of-way of the respective alternative

Wetland ID			Alternative A					Alternative B					DEIS Preferred					FEIS Preferred				
W166	USACE Jurisdiction: No	Cowardin et al. Classification						PEM														
		Indiana Community Type						SM														
		Size (acres)						0.23														
		Impact (acres)						0.10														
		Animal Habitat						poor														
		Botanical						poor														
		Hydrology						fair														
		Red Flags						N														
W166A	USACE Jurisdiction: Yes	Cowardin et al. Classification						PEM														
		Indiana Community Type						SM														
		Size (acres)						0.58														
		Impact (acres)						0.58														
		Animal Habitat						fair														
		Botanical						fair														
		Hydrology						good														
		Red Flags						Y														
W176A	USACE Jurisdiction: Yes	Cowardin et al. Classification	PEM					PEM					PEM					PEM				
		Indiana Community Type	SM					SM					SM					SM				
		Size (acres)	3.94					3.94					3.94					3.94				
		Impact (acres)	1.52					1.73					1.52					0.98				
		Animal Habitat	poor					poor					poor					poor				
		Botanical	fair					fair					fair					fair				
		Hydrology	fair					fair					fair					fair				
		Red Flags	N					N					N					N				
W178	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO	PEM	PEM	PFO	PFO	PFO	PEM	PEM	PFO	PFO	PFO	PEM	PEM	PFO	PFO	PFO	PEM	PEM	PFO	PFO
		Indiana Community Type	SW	SM	SM	SW	SW	SW	SM	SM	SW	SW	SW	SM	SM	SW	SW	SW	SM	SM	SW	SW
		Size (acres)	3.93	1.42	4.69	15.68	2.11	3.93	1.42	4.69	15.68	2.11	3.93	1.42	4.69	15.68	2.11	3.93	1.42	4.69	15.68	2.11
		Impact (acres)	0.00	0.12	0.18	0.00	0.70	1.49	1.29	3.25	2.04	0.65	0.00	0.12	0.18	0.00	0.70	0.00	0.12	0.18	0.00	0.68
		Animal Habitat	good	fair	fair	good	poor	good	fair	fair	good	poor	good	fair	fair	good	poor	good	fair	fair	good	poor
		Botanical	fair	poor	poor	fair	fair	fair	poor	poor	fair	fair	fair	poor	poor	fair	fair	fair	poor	poor	fair	fair
		Hydrology	good	good	good	good	good	good	good	good	good	good	good	good	good	good	good	good	good	good	good	good
		Red Flags	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
W186	USACE Jurisdiction: Yes	Cowardin et al. Classification						PEM														
		Indiana Community Type						SM														
		Size (acres)						0.80														
		Impact (acres)						0.44														
		Animal Habitat						poor														
		Botanical						poor														
		Hydrology						poor														
		Red Flags						N														
W189	USACE Jurisdiction: Yes	Cowardin et al. Classification	PEM					PEM					PEM					PEM				
		Indiana Community Type	SM					SM					SM					SM				
		Size (acres)	0.92					0.92					0.92					0.92				
		Impact (acres)	0.20					0.85					0.20					0.77				
		Animal Habitat	poor					poor					poor					poor				
		Botanical	poor					poor					poor					poor				
		Hydrology	fair					fair					fair					fair				
		Red Flags	N					N					N					N				

Wetland Matrix For I-69 Section 2 Alternatives: Right-of-Way Limits

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Wetland ID			Alternative A					Alternative B					DEIS Preferred					FEIS Preferred				
W190	USACE Jurisdiction: No	Cowardin et al. Classification	PEM	PSS				PEM	PSS				PEM	PSS				PEM	PSS			
		Indiana Community Type	SHM	SC				SHM	SC				SHM	SC				SHM	SC			
		Size (acres)	0.10	0.46				0.10	0.46				0.10	0.46				0.10	0.46			
		Impact (acres)	0.10	0.46				0.10	0.46				0.10	0.46				0.10	0.46			
		Animal Habitat	poor	fair				poor	fair				poor	fair				poor	fair			
		Botanical	poor	poor				poor	poor				poor	poor				poor	poor			
		Hydrology	fair	fair				fair	fair				fair	fair				fair	fair			
		Red Flags	N	N				N	N				N	N				N	N			
W190B	USACE Jurisdiction: No	Cowardin et al. Classification	PFO					PFO					PFO					PFO				
		Indiana Community Type	SW					SW					SW					SW				
		Size (acres)	0.05					0.05					0.05					0.05				
		Impact (acres)	0.05					0.05					0.05					0.05				
		Animal Habitat	good					good					good					good				
		Botanical	poor					poor					poor					poor				
		Hydrology	fair					fair					fair					fair				
		Red Flags	N					N					N					N				
W190C	USACE Jurisdiction: No	Cowardin et al. Classification	PSS					PSS					PSS					PSS				
		Indiana Community Type	SC					SC					SC					SC				
		Size (acres)	0.09					0.09					0.09					0.09				
		Impact (acres)	0.04					0.04					0.04					0.04				
		Animal Habitat	fair					fair					fair					fair				
		Botanical	poor					poor					poor					poor				
		Hydrology	good					good					good					good				
		Red Flags	N					N					N					N				
W192	USACE Jurisdiction: Yes	Cowardin et al. Classification																PFO				
		Indiana Community Type																FF				
		Size (acres)																0.36				
		Impact (acres)																0.12				
		Animal Habitat																fair				
		Botanical																poor				
		Hydrology																fair				
		Red Flags																N				

Indiana Community Type Abbreviations

- B = bog
- DM = deep marsh
- F = fen
- FF = floodplain forest
- SMF - sand/muck flat
- SFB = seasonally flooded basin
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- Y = yes
- N = no

Note: USACE jurisdictional status is based on professional opinion only. Official corresdpondace on jurisdictional verification will be completed during permitting.

I-69 TIER 2 STUDY
SECTION 2
FINAL WETLAND ASSESSMENT REPORT

Appendix D
InWRAP Data Sheets

Prepared By:

JACOBS

501 N. Broadway
St. Louis, MO 63102

February 2010

INWRAP 2-8-2010

Indiana Wetland Rapid Assessment Protocol **Data Reference #** _____

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: Sect. 2 - W4

Ownership (if known): _____

USGS Topographic Quadrangle(s): FRANCISCO

USGS Watershed map 14-Digit HUC: 05120209080020

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

NWI Polygon ID Number	4				
Cowardin Classification	PFO1				
Polygon Size (hectares)	4.4ha 10.83 acres				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: Lars Carlson Meredith de Carbonnel

Agency: Jacobs Engineering

Date assessed: June 20, 2005 Time assessed: _____

Weather 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.):

None

1.3 Wetland Size:

Size of site under assessment: 4.4 hA (10.83 acres)

Size of total wetland complex (all contiguous wetland polygons): Not contiguous

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
__X__ The wetland site is isolated

General assessment of adjacent land use / land cover in the area forming the perimeter of the wetland site (indicate the % of each):

_____ Native Vegetation - woodland
_____ Native Vegetation - old field / scrub
_____ Agricultural - tilled
100 Agricultural - pasture 1 x 4
_____ Recreation - green space, mowed
_____ Road / highway / railroad bed / parking lot
_____ Industrial
_____ Residential - single family
_____ Commercial or multifamily residential

NWI Polygon # 4 Data Reference # _____
(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):

X Depressional _____ Slope _____ Floodplain _____ Lacustrine
_____ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water present in the polygon? No
- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
X Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ Artificially Drained

2.4 Soil Type:

_____ Organic (i.e. peat, etc.) X Mineral _____ Both Mineral and Organic Present

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

Swamp Forest

2.6 Disturbances of Hydrology (check all that apply): None

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

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common): None

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: NO

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

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

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

_____ Good X Medium _____ Poor

NWI Polygon # 4 Data Reference # _____

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 X 100-75 ___75-50 ___ 50-25 ___ <25

Estimated woody plant foliar cover in the polygon X 100-75 ___75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface:

___ nil (<5% cover) X scattered (5-15% cover) ____ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. Y N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y N Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)? Soils

4. Y N Is the wetland located in a watershed where the majority of the upland soils are clayey and impermeable, or is bedrock within two feet of the top of the soil profile? Soils

5. Y N Is the wetland located in a local watershed which has highly modified runoff conditions due to existing development (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 4 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

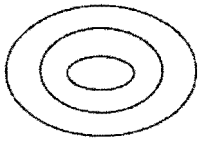
1b. If only one vegetation zone is evident, which best describes the site?

_____ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

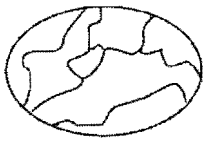
X Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) 3
(Note: V-mark location on the NWI polygon)

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 tree/shrub/herb

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 Toxicodendron Radicans	1	d	
b Fowl Manna grass	4	e	
c Aster sp	3	f	

Dominant **Shrub** Species listed in order of relative abundance.

a Acer rubrum	5	c	
b Ash	3	d	

6 dominant taxa

Dominant **Tree** Species listed in order of relative abundance.

a Acer rubrum	–	c Fraxinus	3
b Ulmus	3	d	

Tree & shrub canopy: nil separate, seldom touching often touching more or less closed

AVEC = 3

Mature trees (>12" dbh) present: yes no

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

Evidence of ponding in spring

NWI Polygon # 4 _____ **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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_____

NWI Polygon # 4 _____ **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 4 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
1 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
III sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 6*
___ beggar's tick spp. (*Bidens*) 3
___ blue vervain (*Verbena hastata*) 3
___ boneset (*Eupatorium perfoliatum*) 4
___ bugleweed spp. (*Lycopus*) 5
1 clearweed spp. (*Pilea*) 3
___ cup plant (*Silphium perfoliatum*) 4
1 false nettle (*Boehmeria cylindrica*) 3
___ *fen betony (*Pedicularis lanceolata*) 6
___ *gentian spp. (*Gentiana & Gentianopsis*) 8
1 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. m., skullcap 5
1 moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
1 other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

NWI Polygon # 4 Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifoius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ *swamp holly & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite

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

Trees - lvs. simple and alternate

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

OTHER _____

In-WRAP Summary Sheet

Date Report Generated: August 2005
Wetland site name: Sect 2 Wetland 4
Data Reference #
Date of Site Visit: June 20, 2005
NWI polygons in Site (quadrangle and NWI id. numbers): 4

TIER 1 SUMMARY:

a. Total wetland area (hectares): 4.4 ha (10.83 ac)

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

Valuable More Favorable Favorable (Neutral)

c. Surrounding land use - numerical rank (max. = 1): .4

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

TIER 2 SUMMARY *NWI Polygon Id.* 4

a. Indiana Wetland community type: Swamp Forest

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

c. Disturbances to site: None

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 Rating: Good (Medium) Poor

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

TIER 3B SUMMARY

a. Zonation and interspersion as indicator of animal habitat: Valuable Favorable (Neutral)

b. Stratification as indicator of animal habitat: (Valuable) Neutral

c. Number of dominant plant taxa observed: 10 Rating: Good (Medium) Poor

d. Average coefficient of conservatism: 3.2 Rating: 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: 34 Rating: (Good) Medium Poor

h. Number of indicator taxa: 2 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** _____

a. Indiana Wetland community type: _____

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: _____

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.): ____ Rating: Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max.): ____ Rating: Good Medium Poor

TIER 3B SUMMARY

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

b. Stratification as indicator of animal habitat: Valuable Neutral

c. Number of dominant plant taxa observed: ____ Rating: Good Medium Poor

d. Average coefficient of conservatism: ____ Rating: 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: ____ Rating: Good Medium Poor

h. Number of indicator taxa: ____ Rating: Good Medium Poor

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: Sec 2 - WII

Ownership (if known): _____

USGS Topographic Quadrangle(s): Oakland City

USGS Watershed map 14-Digit HUC: 05120209080010

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

NWI Polygon ID Number	II	IIA			
Cowardin Classification	PFOIc/POMx	PEM			
Polygon Size (hectares)	22 ha	0.72ha			

54.3acres = 1.8acres

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: Lars Meredith

Agency: Jacobs

Date assessed: June 20 Time assessed: 2:00

Weather 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.):

None

1.3 Wetland Size:

Size of site under assessment: 22ha (54.3 acres) Size of WL smaller than Screen on NWI

Size of total wetland complex (all contiguous wetland polygons): 56 acres 22.7Ha

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 forming the perimeter of the wetland site (indicate the % of each):

1 x .2 = .2

__20__ Native Vegetation - woodland
_____ Native Vegetation - old field / scrub
__80__ Agricultural - tilled .2 x 8 = .16
_____ Agricultural - pasture
_____ Recreation - green space, mowed
_____ Road / highway / railroad bed / parking lot
_____ Industrial
_____ Residential - single family
_____ Commercial or multifamily residential

.36 Rank of land use

NWI Polygon # 11 **Data Reference #** _____
(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 X Floodplain _____ Lacustrine
_____ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water present in the polygon? Yes flowing very slowly

- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
X Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ Artificially Drained

2.4 Soil Type:

_____ Organic (i.e. peat, etc.) X 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):

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

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common): None

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

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

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

_____ Good X Medium _____ Poor

NWI Polygon # 11 Data Reference # _____

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 X 50-25 ___ <25

Estimated woody plant foliar cover in the polygon X 100-75 ___75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface:

___ nil (<5% cover) ___ scattered (5-15% cover) ___ frequent (>15% cover)

3a.2 Water Quality Protection Questions:

1. Y N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. Y N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
   Hurricane Creek - Natural stream flows thru polygon.

6. Y N Is a vegetative buffer area (>15 m wide) 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.
   Average width of buffer area (in meters) 50 approximate slope (percent) 3%

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
   1a. Y N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
   Sed deposition

2. Y N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)? Flood potential present - high soils?

4. Y N Is the wetland located in a watershed where the majority of the upland soils are clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 11 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

1. How many vegetation zones are evident in this wetland polygon? 2

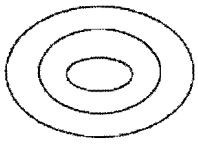
1b. If only one vegetation zone is evident, which best describes the site?

_____ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

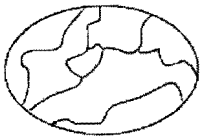
_____ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

What % of the polygon does this vegetative zone occupy?

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

25%

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 Polygonum sp. 4 d _____

b Aster sp. 3 e _____

c Bidens frondosa 3 f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Acer saccharinum 5 c _____

b _____ d _____

Dominant **Tree** Species listed in order of relative abundance.

a Acer saccharinum c Salix sp. 3

b Fraxinus pennsylvanica 3 d _____

Tree & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

Area @ edge of creek → on upland transitional zone

NWI Polygon # 11 Data Reference # _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Clear weed 3
b Bidens Connata 3
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Acer saccharinum 1
b Red maple Acer rubrum 5
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a Silver maple
b _____
c _____
d _____

Tree & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

Zone has very little herbaceous-layer lots of woody debris. Depositional floodplain

3b.2 Dominant Plant Species: Vegetation zone C

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____
b _____
c _____
d _____
e _____
f _____

NWI Polygon # 11 **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

3.2 **Dominant Plant Species: Vegetation zone D**

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 11 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
1 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
111 sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 6*
1 beggar's tick spp. (*Bidens*) 3
___ blue vervain (*Verbena hastata*) 3
___ boneset (*Eupatorium perfoliatum*) 4
___ bugleweed spp. (*Lycopus*) 5
1 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
1 nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
1 other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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NWI Polygon # 11 **Data Reference #** _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *grass of Parnassus (*Parnassia glauca*) 10
___ *Indian plantain (*Cacalia plantaginea*) 10
___ ironweed spp. (*Vernonia*) 4
1 jewelweed, touch-me-not spp. (*Impatiens*) 3
___ lizard's tail (*Saururus cernuus*) 4
___ lobelia spp. (*Lobelia*) 4
___ *marsh marigold (*Caltha palustris*) 7
___ *moonseed (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
1 smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
1 ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite
1 red maple (*Acer rubrum*) 5
1 silver maple (*A. saccharinum*) 1

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

OTHER _____

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In-WRAP Summary Sheet

Date Report Generated: August 2005
Wetland site name: Sec 2 Wetland 11
Data Reference #
Date of Site Visit: June 2005
NWI polygons in Site (quadrangle and NWI id. numbers): PFO1C & PFO1A Classification

TIER 1 SUMMARY:

a. Total wetland area (hectares): 22 ha 54.3 ac

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

(Valuable) More Favorable Favorable Neutral

c. Surrounding land use - numerical rank (max. = 1): .30

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

TIER 2 SUMMARY

NWI Polygon Id. 11

a. Indiana Wetland community type: Floodplain Forest

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

c. Disturbances to site: Ditching

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 Rating: Good (Medium) Poor

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

TIER 3B SUMMARY

a. Zonation and interspersion as indicator of animal habitat: (Valuable) Favorable Neutral

b. Stratification as indicator of animal habitat: (Valuable) Neutral

c. Number of dominant plant taxa observed: 8 Rating: (Good) Medium Poor

d. Average coefficient of conservatism: 3.1 Rating: 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: 16 Rating: Good (Medium) Poor

h. Number of indicator taxa: 2 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** _____

a. Indiana Wetland community type: _____

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: _____

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.): ____ Rating: Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max.): ____ Rating: Good Medium Poor

TIER 3B SUMMARY

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

b. Stratification as indicator of animal habitat: Valuable Neutral

c. Number of dominant plant taxa observed: ____ Rating: Good Medium Poor

d. Average coefficient of conservatism: ____ Rating: 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: ____ Rating: Good Medium Poor

h. Number of indicator taxa: ____ Rating: Good Medium Poor

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: S2-W15

Ownership (if known): _____

USGS Topographic Quadrangle(s): Petersburg

USGS Watershed map 14-Digit HUC: 05120209070050

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

NWI Polygon ID Number	15				
Cowardin Classification	PFO1/PFO1A				
Polygon Size (hectares)	1.23ha				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: Lars + Meredith

Agency: Jacobs

Date assessed: June 20, 05 Time assessed: 2:00 pm

Weather conditions: Sunny, hot

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.):

None

1.3 Wetland Size:

Size of site under assessment: 1.23 ha (3.05 acres)

Size of total wetland complex (all contiguous wetland polygons): 3.05 acres (1.23ha)

1.4 Site Setting:

Degree of isolation from other wetlands or wetland complexes:

X 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 forming the perimeter of the wetland site (indicate the % of each):

_____ Native Vegetation - woodland
_____ Native Vegetation - old field / scrub
95 Agricultural - tilled
_____ Agricultural - pasture
_____ Recreation - green space, mowed

5% Road / highway / railroad bed / parking lot
_____ Industrial
_____ Residential - single family
_____ Commercial or multifamily residential

NWI Polygon # 15 **Data Reference #** _____
(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 X Floodplain _____ Lacustrine
_____ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water present in the polygon? Y

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

Is standing water present in an adjacent polygon? Y

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
X Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ Artificially Drained

2.4 Soil Type:

_____ Organic (i.e. peat, etc.) X 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):

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

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

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
C Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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 X Poor

NWI Polygon # 15 Data Reference # _____

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 cover in the polygon X 100-75 ___75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface:

✓ nil (<5% cover) ___ scattered (5-15% cover) ____ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. **Y N** Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. **Y N** 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?
   3b. **Y N** 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. **Y N** Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. **Y N** Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. **Y N** Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. **Y N** 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. **Y N** Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 15 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

1. How many vegetation zones are evident in this wetland polygon? 3

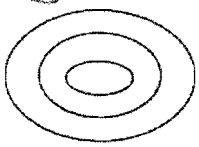
1b. If only one vegetation zone is evident, which best describes the site?

_____ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

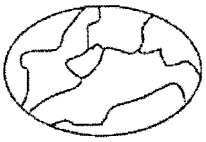
_____ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Phalaris 0 d _____
b Typhaganum 4 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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes (no)

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

Ditched area

NWI Polygon # 15 Data Reference # _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Aster sp. 3 d _____
b Toxicodendron radicans 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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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? Trees + shrubs

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 Pois ivy d _____
b Elymus 4 e _____
c _____ f _____

NWI Polygon # 15 Data Reference # _____

Dominant **Shrub** Species listed in order of relative abundance.

a_____ c_____

b_____ d_____

Dominant **Tree** Species listed in order of relative abundance.

a Acer saccarinum / c_____

b_____ d_____

Tree & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

row of silv. maples in row @ upl. berm

3b.2 Dominant Plant Species: Vegetation zone D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 15 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 10
___ blueflag iris (*Iris virginica*) 5
___ bulrush spp. (*Scirpus / Schoenoplectus*) 5
___ *bur reed spp. (*Sparganium*) 9
1 cat-tail spp. (*Typha*) 1
___ *cotton grass spp. (*Eriophorum*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
11 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
1 c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

1 needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
111 sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium*) 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
1 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. m., skullcap 5
1 moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
1 nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
1 other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

NWI Polygon # 15 Data Reference # _____

___ cress spp. (*Cardamine*) 4
_1_ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
_11_ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *grass of Parnassus (*Parnassia glauca*) 10
___ *Indian plantain (*Cacalia plantaginea*) 10
_1_ ironweed spp. (*Vernonia*) 4
_1_ jewelweed, touch-me-not spp. (*Impatiens*) 3
___ lizard's tail (*Saururus cernuus*) 4
___ lobelia spp. (*Lobelia*) 4
___ *marsh marigold (*Caltha palustris*) 7
___ *moonseed (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
_1_ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
_1_ poison ivy (vine) (*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 cathar. & frangula*) 0
_1_ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifoius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ *swamp holly & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
_1_ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite
___ red maple (*Acer rubrum*) 5
_1_ silver maple (*A. saccharinum*) 1

Trees - lvs. simple and alternate
___ *alder, speckled (*Alnus rugosa*) 9
___ birch, river (*Betula nigra*) 2
___ black gum (*Nyssa sylvatica*) 5
___ cottonwood, eastern (*Populus deltoides*) 1
___ *cottonwood, swamp (*P. heterophylla*, SW) 8
___ elm, Amer. (*Ulmus americana*) 3
_1_ hackberry (*Celtis occidentalis*) 3
___ ironwood (*Carpinus caroliniana*) 5
_1_ oak, pin or white (*Quercus*) 4
___ *oak, Shumard's, sw. chestnut, sw. white 7
___ *papaw (*Asimina triloba*) 6
___ *sugarberry (*Celtis laevigata*, S) 7
___ sweet gum (*Liquidambar styraciflua*) 4
___ sycamore, Amer. (*Platanus occidentalis*) 3
_1_ willow spp. (*Salix*) sp.1=3; *additional=7

OTHER _____

InWrap, Terg revised June 2005

In-WRAP Summary Sheet

Date Report Generated: August 2005
Wetland site name: Patoka Wetland 15
Data Reference # _____
Date of Site Visit: June 20, 05
NWI polygons in Site (quadrangle and NWI id. numbers): PFOI, PFOIA

TIER 1 SUMMARY:

a. Total wetland area (hectares): 1.23 ha (3.05 acres)

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

(Valuable) More Favorable Favorable Neutral

c. Surrounding land use - numerical rank (max. = 1): .19

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

TIER 2 SUMMARY *NWI Polygon Id.* 15

a. Indiana Wetland community type: Floodplain Forest

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

c. Disturbances to site: Ditching

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 Rating: Good Medium (Poor)

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

TIER 3B SUMMARY

a. Zonation and interspersion as indicator of animal habitat: Valuable (Favorable) Neutral

b. Stratification as indicator of animal habitat: (Valuable) Neutral

c. Number of dominant plant taxa observed: 10 Rating: Good (Medium) Poor

d. Average coefficient of conservatism: 2.2 Rating: 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 Rating: (Good) Medium Poor

h. Number of indicator taxa: 4 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** _____

a. Indiana Wetland community type: _____

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: _____

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.): ____ Rating: Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max.): ____ Rating: Good Medium Poor

TIER 3B SUMMARY

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

b. Stratification as indicator of animal habitat: Valuable Neutral

c. Number of dominant plant taxa observed: ____ Rating: Good Medium Poor

d. Average coefficient of conservatism: ____ Rating: 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: ____ Rating: Good Medium Poor

h. Number of indicator taxa: ____ Rating: Good Medium Poor

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: Sec 2 WI7/25 Patoka River

Ownership (if known): Wildlife Refuge

USGS Topographic Quadrangle(s): Petersburg

USGS Watershed map 14-Digit HUC: 05120209080010

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

NWI Polygon ID Number	17/25	19/24			
Cowardin Classification	PFO1	PAB			
Polygon Size (hectares)	3.7 ha 9.1 acres	1.0 ha 2.4 acres			

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: Lars Carlson Meredith de Carbonnel

Agency: _____

Date assessed: June 21, 2005 Time assessed: 7:00 AM

Weather 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.):

None

1.3 Wetland Size:

Size of site under assessment: PFO 17/25 3.7 ha 4.7 ha PAB 19/24 1.0 ha

Size of total wetland complex (all contiguous wetland polygons): 4.7 ha 11.5 acres

1.4 Site Setting:

Degree of isolation from other wetlands or wetland complexes:

X 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 forming the perimeter of the wetland site (indicate the % of each):

25 Native Vegetation - woodland
_____ Native Vegetation - old field / scrub
_____ Agricultural - tilled
70 Agricultural - pasture
_____ Recreation - green space, mowed
5 Road / highway / railroad bed / parking lot
_____ Industrial
_____ Residential - single family
_____ Commercial or multifamily residential

NWI Polygon # 92 17/25 **Data Reference #** _____ InWRAP, TERG May 2000
(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

- If standing water is present, is the water greater than 2 meters in depth? —

Is standing water normally present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
✓ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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
_____ Tiles
_____ Dams
✓ Road or Railroad Embankment
_____ Culvert ✓ in adj. polygon
_____ Other Human Disturbances to the Hydrology (explain):

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common): None

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ 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): Bat habitat copper belly water snake

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

✓ Good _____ Medium _____ Poor

NWI Polygon # 92 17/25 Data Reference # _____ InWRAP, TERG May 2000

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, if not, answer 3b
   3a. Y N 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?
   3b. (Y) N 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) 0

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
   1a. Y N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. (Y) N 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 structures 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 clayey 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?

NWI Polygon # 92 17/25 Data Reference # _____ InWRAP, TERG May 2000

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 interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion **Type Two Interspersion**

☐

3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Roll / photo number(s) _____
(Note: V-mark location on the NWI polygon)

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	Carex Gravida	a	3	e	
b	Poison Ivy	1	1	f	
c				g	
d				h	

Dominant **Shrub** Species listed in order of relative abundance.

a	Red Maple		5	c	
b	Elm		3	d	

Dominant **Tree** Species. Indicate size categories of each tree species: P=pole (3-12"dbh), M=mature (>12")

a	Silver Maple	☐P	✓M	1	c	☐P ☐M
b		☐P	☐M		d	☐P ☐M

Tree and shrub canopy:
☐ nil ☐ separate, seldom touching ☐ often touching ✓ more or less closed

NWI Polygon # 17/25 Data Reference # _____ InWRAP, TERG May 2000

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Roll / photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____ e _____
b _____ f _____
c _____ g _____
d _____ h _____

Dominant **Shrub** Species listed in order of relative abundance.

a _____ c _____
b _____ d _____

Dominant **Tree** Species. Indicate size categories of each tree species: P=pole (3-12"dbh), M=mature (>12")

a _____ ☐P ☐M c _____ ☐P ☐M
b _____ ☐P ☐M d _____ ☐P ☐M

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

3b.2 Dominant Plant Species: Vegetation zone C

Observation Point #3
Roll / photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____ e _____
b _____ f _____
c _____ g _____
d _____ h _____

NWI Polygon # 17/25 Data Reference # _____ InWRAP, TERG May 2000

Dominant **Shrub** Species listed in order of relative abundance.

a_____ c_____

b_____ d_____

Dominant **Tree** Species. Indicate size categories of each tree species: P=pole (3-12"dbh), M=mature (>12")

a_____ ☐P ☐M c_____ ☐P ☐M

b_____ ☐P ☐M d_____ ☐P ☐M

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

3b.2 Dominant Plant Species: Vegetation zone D Observation Point #4
Roll / photo number(s) _____
(Note: V-mark location on the NWI polygon)

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_____ e_____

b_____ f_____

c_____ g_____

d_____ h_____

Dominant **Shrub** Species listed in order of relative abundance.

a_____ c_____

b_____ d_____

Dominant **Tree** Species. Indicate size categories of each tree species: P=pole (3-12"dbh), M=mature (>12")

a_____ ☐P ☐M c_____ ☐P ☐M

b_____ ☐P ☐M d_____ ☐P ☐M

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

3b.3 Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

NWI Polygon # 17/25 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a. *wild rice (*Zizania aquatica*, N) 10;
1 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ *needle sedge spp. (*Eleocharis*) 9
___ blunt needle sedge (*E. obtusa*) 3
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
11 sedge spp. (*Carex*) sp.1=2 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ beggar's tick spp. (*Bidens*) 3
___ blue vervain (*Verbena hastata*) 3
___ boneset (*Eupatorium perfoliatum*) 4
___ bugleweed spp. (*Lycopus*) 5
1 clearweed spp. (*Pilea*) 3
___ cup plant (*Silphium perfoliatum*) 4
1 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*) 5
___ meadow beauty (*Rhexia virginica*) 5
___ mint spp.: e.g. hedge nettle, mtn. m., skullcap 5
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swp. loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
1 other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

NWI Polygon # 17/25 Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *grass of Parnassus (*Parnassia glauca*) 10
___ *Indian plantain (*Cacalia plantaginea*) 10
___ ironweed spp. (*Vernonia*) 4
1 jewelweed, touch-me-not spp. (*Impatiens*) 3
___ lizard's tail (*Saururus cernuus*) 4
___ lobelia spp. (*Lobelia*) 4
___ *marsh marigold (*Caltha palustris*) 7
___ *moonseed (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium* &*Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ buttercup spp: cursed b., hooked b., swamp b.(*Ranunculus*) 5
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
1 poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifoius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ swamp rose (*Rosa palustris*) 5
___ *winterberry (*Ilex verticillata*) 8

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
1 ash spp., white a., green a. (*Fraxinus*) 3
___ *ash, black (*Fraxinus nigra*) 7
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
___ boxelder (*Acer negundo*) 1
___ honey locust (*Gleditsia triacanthos*) 1
___ *kingnut hickory (*Carya laciniosa*) 8
___ *poison sumac (*Rhus vernix*) 10

Trees - lvs. simple and opposite
1 red maple (*Acer rubrum*) 5
1 silver maple (*A. saccharinum*) 1

Trees - lvs. simple and alternate
1 Amer. sycamore (*Platanus occidentalis*) 3
1 black gum (*Nyssa sylvatica*) 5
___ cottonwood, eastern (*Populus deltoides*) 1
___ *cottonwood, swamp (*P. heterophylla*, SW) 8
1 elm spp. (*Ulmus*) 3
1 hackberry (*Celtis occidentalis*) 3
___ ironwood (*Carpinus caroliniana*) 5
1 oaks, pin or white (*Quercus*) 4
___ *oaks, overcup, Shumard's, sw. white 7
___ *papaw (*Asimina triloba*) 6
1 river birch (*Betula nigra*) 2
___ *speckled alder (*Alnus rugosa*) 9
___ sweet gum (*Liquidambar styraciflua*) 4
___ white mulberry (*Morus alba*) 0
___ willow spp. (*Salix*) sp.1=3; *additional=7

OTHER _____

NWI Polygon # 19/24 (PAB) **Data Reference #** _____
(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 present in the polygon? Yes
- If standing water is present, is the water greater than 2 meters in depth? ✓

Is standing water present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

✓ Permanently Flooded
_____ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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
_____ Tiles
_____ Dams
_____ Road or Railroad Embankment
_____ Culvert
_____ Other Human Disturbances to the Hydrology (explain):

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

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
✓ Glossy Buckthorn
✓ Reed canary grass C
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

✓ None observed or known to be present
_____ RTES Present (list): Copper Belly Snake

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

_____ Good ✓ Medium _____ Poor

NWI Polygon # 19/24 Data Reference # _____

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 cover in the polygon ___ 100-75 ___75-50 ✓ 50-25 ___ <25

Amount of dead woody material on the soil surface:

___ nil (<5% cover) ✓ scattered (5-15% cover) ___ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. Y N 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?
   3b. (Y) N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. (Y) N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. (Y) N Is a vegetative buffer area (>15 m wide) 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.
   Average width of buffer area (in meters) 175 approximate slope (percent) 0

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
   1a. Y N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. (Y) N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. (Y) N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 19/24 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

1. How many vegetation zones are evident in this wetland polygon? 2

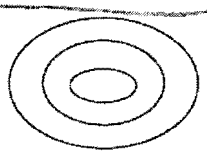
1b. If only one vegetation zone is evident, which best describes the site?

_____ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

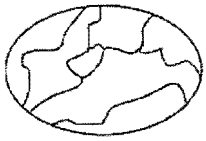
_____ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Lemna

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Lemna 3 d _____

b _____ e _____

c _____ f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Cephalanthus occidentalis 5 c _____

b _____ d _____

Dominant **Tree** Species listed in order of relative abundance.

a None c _____

b _____ d _____

Tree & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

Much more floating plant material than observed in May 2005.

NWI Polygon # 19/24 Data Reference # _____

3b.2 Dominant Plant Species: Vegetation zone B

Fringe

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Clear Weed 5
b Bidens Frondosa 3
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Silver Maple 1
b _____
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a Silver Maple
b _____
c _____
d _____

Tree & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

3b.2 Dominant Plant Species: Vegetation zone C

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____
b _____
c _____
d _____
e _____
f _____

NWI Polygon # 19/24 **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 19/24 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
1 duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
1 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
1 c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
___ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 6*
1 beggar's tick spp. (*Bidens*) 3
___ blue vervain (*Verbena hastata*) 3
___ boneset (*Eupatorium perfoliatum*) 4
___ bugleweed spp. (*Lycopus*) 5
1 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
1 other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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NWI Polygon # 19/24 Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite

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

Trees - lvs. simple and alternate

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

OTHER _____

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In-WRAP Summary Sheet

Date Report Generated: August 2005
Wetland site name: Wetland 17
Data Reference # _____
Date of Site Visit: May & June 21, 2005
NWI polygons in Site (quadrangle and NWI id. numbers): _____

TIER 1 SUMMARY:

a. Total wetland area (hectares): 4.7 ha (11.5 acres)

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

(Valuable) More Favorable Favorable Neutral

c. Surrounding land use - numerical rank (max. = 1): .53

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

TIER 2 SUMMARY

NWI Polygon Id. 17125

a. Indiana Wetland community type: Floodplain forest

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

c. Disturbances to site: Ditching, road embankment, culvert

d. Exotic species rating: (Good) Medium Poor

e. Special Hydrologic Conditions Observed: None

f. Special Community Type: None

g. Rare-Threatened-Endangered Species: bat habitat, copper belly water snake

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 Rating: (Good) Medium Poor

c. Flood and storm water storage - numerical rank (5 max.): 3 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good (Medium) Poor

d. Average coefficient of conservatism: 2.4 Rating: 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: 16 Rating: Good (Medium) Poor

h. Number of indicator taxa: 1 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** Wetland 19/24

a. Indiana Wetland community type: Deep Marsh/ Shallow Open Water
b. Standing water - contribution to animal habitat: (Valuable) Favorable Neutral
c. Disturbances to site: Ditching
d. Exotic species rating: Good (Medium) Poor
e. Special Hydrologic Conditions Observed: None
f. Special Community Type: None
g. Rare-Threatened-Endangered Species: Copper belly water snake
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.): 6 Rating: (Good) Medium Poor
c. Flood and storm water storage - numerical rank (5 max.): 5 Rating: (Good) Medium Poor

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: (Good) Medium Poor
d. Average coefficient of conservatism: 2 Rating: 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: 17 Rating: (Good) Medium Poor
h. Number of indicator taxa: 0 Rating: Good Medium (Poor)

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: Sec 2 - W32

Ownership (if known): _____

USGS Topographic Quadrangle(s): Petersburg

USGS Watershed map 14-Digit HUC: 05120209060090

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

NWI Polygon ID Number	32	32A			
Cowardin Classification	PFO1	PEM			
Polygon Size (hectares)	19.4ha	1.1ha			

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: Lara Meredith

Agency: Jacobs

Date assessed: June 21 2005 Time assessed: 9 AM

Weather 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.):

None

1.3 Wetland Size:

Size of site under assessment: W32 19.4ha (48acres) + W32A 1.1ha (2.7acres)

Size of total wetland complex (all contiguous wetland polygons): 20.5ha (51acres)

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 forming the perimeter of the wetland site (indicate the % of each):

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

NWI Polygon # 1W 32 **Data Reference #** _____
(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 present in the polygon? No
- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
✓ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*):

Swamp Forest

2.6 Disturbances of Hydrology (check all that apply):

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

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common): None

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

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

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

✓ Good _____ Medium _____ Poor

NWI Polygon # W3L Data Reference # _____

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 cover in the polygon ___ 100-75 ___ 75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface:

___ nil (<5% cover) ___ scattered (5-15% cover) ___ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. Y N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y N Is a vegetative buffer area (>15 m wide) 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.
   Average width of buffer area (in meters) 4-15 approximate slope (percent) 5

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
   1a. Y N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 4132 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

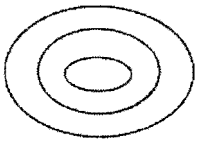
1b. If only one vegetation zone is evident, which best describes the site?

✓ 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 interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



Type Two Interspersion

3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Impatiens capensis 3 d _____
b Bidens frondosa 3 e _____
c Barnyard Grass 0 f _____

Dominant **Shrub** Species listed in order of relative abundance. None

a _____ c _____
b _____ 3 d _____

Dominant **Tree** Species listed in order of relative abundance.

a Fraxinus pensylvanicum c _____
b _____ d _____

Tree & shrub canopy: nil separate, seldom touching (often touching) more or less closed

Mature trees (>12" dbh) present: (yes) no

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

Narrow fringe along ditch. Tips rise sharply to South.

NWI Polygon # W32 Data Reference # _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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_____

NWI Polygon # 32 **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 32 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
- ___ *bladderwort spp. (*Utricularia*, N) 10
- ___ coontail (*Ceratophyllum demersum*, N) 1
- ___ duckweed spp. (*Lemnaceae*) 3
- ___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
- ___ *water lily (*Nymphaea tuberosa*, N) 6
- ___ water shield (*Brasenia schreberi*, N) 4
- ___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
- ___ *pitcher plant (*Sarracenia purpurea*,N) 10
- ___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
- ___ *beak rush spp. (*Rhynchospora*, N) 10
- 1 blueflag iris (*Iris virginica*) 5
- ___ bulrush spp. (*Scirpus / Schoenoplectus*) 5
- ___ *bur reed spp. (*Sparganium*) 9
- ___ cat-tail spp. (*Typha*) 1
- ___ *cotton grass spp. (*Eriophorum*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
- ___ a.*wild rice (*Zizania aquatica*, N) 10;
- 1 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
- 1 c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

- ___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
- ___ nutsedge spp. (*Cyperus*) 2
- ___ *orchid spp.: species (if known)_____
- ___ rush spp. (*Juncus*) 4
- 1 sedge spp. (*Carex*) sp.1=3 *additional=7
- ___ *spiderlily (*Hymenocallis occidentalis*) 9
- ___ sweet flag (*Acorus calamus*) 0
- ___ *3-way sedge (*Dulichium arundinaceum*) 10
- ___ *twig rush (*Cladium mariscoides*, N) 10
- ___ *umbrella sedge (*Fuirena squarrosa*, N) 10
- ___ wild hyacinth (*Camassia scilloides*) 5
- ___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
- ___ *bedstraw spp. (*Galium*) 6
- 1 beggar's tick spp. (*Bidens*) 3
- ___ blue vervain (*Verbena hastata*) 3
- ___ boneset (*Eupatorium perfoliatum*) 4
- ___ bugleweed spp. (*Lycopus*) 5
- 1 clearweed spp. (*Pilea*) 3
- ___ cup plant (*Silphium perfoliatum*) 4
- ___ false nettle (*Boehmeria cylindrica*) 3
- ___ *fen betony (*Pedicularis lanceolata*) 6
- ___ *gentian spp. (*Gentiana & Gentianopsis*) 8
- 1 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. m., skullcap 5
- ___ moneywort (*Lysimachia nummularia*) 0
- ___ monkey flower spp. (*Mimulus*) 4
- 1 nettle (*Urtica procera*) 1
- ___ purple loosestrife (*Lythrum salicaria*) 0
- ___ *richweed (*Collinsonia canadensis*) 8
- ___ *St. John's wort spp.(*Hypericum/Triandeum*)8
- ___ sunflower spp. (*Helianthus*) 4
- ___ *swamp loosestrife (*Decodon verticillatus*, N) 8
- ___ swamp milkweed (*Asclepias incarnata*) 4
- ___ toothcup spp. (*Ammania & Rotala*) 2
- ___ *turtlehead spp. (*Chelone*) 8
- ___ virgin's bower (vine) (*Clematis virginiana*) 3
- ___ water puslane (*Ludwigia palustris*) 3
- ___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
- ___ Amer. bellflower (*Campanula americana*) 4
- ___ *asters: bristly aster (*Aster puniceus*) 7
- ___ *flat-topped aster (*A. umbellatus*) 8
- 1 other aster spp. (e.g. New Engl.-, panicled-a) 3
- ___ *black-eyed Susan (*Rudbeckia fulgida*) 8
- ___ cardinal flower (*Lobelia cardinalis*) 4

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NWI Polygon # 32 Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *grass of Parnassus (*Parnassia glauca*) 10
___ *Indian plantain (*Cacalia plantaginea*) 10
___ ironweed spp. (*Vernonia*) 4
1 jewelweed, touch-me-not spp. (*Impatiens*) 3
___ lizard's tail (*Saururus cernuus*) 4
___ lobelia spp. (*Lobelia*) 4
___ *marsh marigold (*Caltha palustris*) 7
___ *moonseed (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
1 smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 10
___ *Virginia bluebells (*Mertensia virginica*) 6
___ waterhemp (*Amaranthus tuberculatus*) 1
1 wingstem (*Actinomeris alternifolia*) 3

Herbs: dicots - lvs. basal or alternate and compound or deeply lobed
___ aven spp.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
1 poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifoius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ *swamp holly & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

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

Trees - lvs. simple and opposite
1 red maple (*Acer rubrum*) 5
___ silver maple (*A. saccharinum*) 1

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

OTHER yellow birch

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Sugar maple
Red bud

NWI Polygon # 32A **Data Reference #** _____
(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):

X Depressional _____ Slope _____ Floodplain _____ Lacustrine
_____ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water present in the polygon? No
- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
_____ Seasonally Flooded
✓ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*):

Wet Meadow

2.6 Disturbances of Hydrology (check all that apply):

_____ Ditching
_____ Tiles
_____ Dams
_____ Road or Railroad Embankment
_____ Culvert
_____ Other Human Disturbances to the Hydrology (explain):
No.

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common): None

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: No

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 32A Data Reference # _____

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 X 75-50 ___ 50-25 ___ <25

Estimated woody plant foliar cover in the polygon ___ 100-75 ___ 75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface:

X nil (<5% cover) ___ scattered (5-15% cover) ___ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y (N) Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. (Y) N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y (N) Is a vegetative buffer area (>15 m wide) 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. Row cropping surrounds wetland
   Average 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, if not, answer 1b
   1a. Y (N) Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y (N) Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 32 A Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

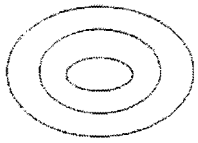
1b. If only one vegetation zone is evident, which best describes the site?

✓ 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 interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



☐

Type Two Interspersion

☐

3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Juncus tenuis 4
b Juncus acuminatus 4
c Eleocharis obtusa 2
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a _____
b _____
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a _____
b _____
c _____
d _____

Tree & shrub canopy: ☒ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closed

Mature trees (>12" dbh) present: ☐ yes ☒ no

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

Developed in old field.

NWI Polygon # 32 A Data Reference # _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # 32A **Data Reference #** _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 32 A Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

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

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite

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

Trees - lvs. simple and alternate

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

OTHER _____

InWrap, Terg revised June 2005

In-WRAP Summary Sheet

Date Report Generated: August 2005
Wetland site name: Wetland 32
Data Reference #
Date of Site Visit: June 21, 2005
NWI polygons in Site (quadrangle and NWI id. numbers): 32, 32A

TIER 1 SUMMARY:

a. Total wetland area (hectares): 20.5 ha (51 acres)

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

(Valuable) More Favorable Favorable Neutral

c. Surrounding land use - numerical rank (max. = 1): .38

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

TIER 2 SUMMARY *NWI Polygon Id.* 32

a. Indiana Wetland community type: Swamp Forest

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

c. Disturbances to site: Ditching

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.): 3 Rating: Good (Medium) Poor

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

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 2.25 Rating: 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: 21 Rating: (Good) Medium Poor

h. Number of indicator taxa: 0 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 32A

a. Indiana Wetland community type: Wet Meadow

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

c. Disturbances to site: None

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 Rating: Good Medium (Poor)

c. Flood and storm water storage - numerical rank (5 max.): 3 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 3.3 Rating: 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 Rating: Good Medium (Poor)

h. Number of indicator taxa: 0 Rating: Good Medium (Poor)

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: Sect 2 - WF 37

Ownership (if known): _____

USGS Topographic Quadrangle(s): Petersburg

USGS Watershed map 14-Digit HUC: 05120209060090

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

NWI Polygon ID Number	37	38	37A		
Cowardin Classification	PFO1	PEM	PSS		
Polygon Size (hectares)	1.3ha	.2 ha	2.1ha		
	3.7 acres	0.55 acres	5.11 acres		

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: Lars Carlson Meredith de Carbonnel

Agency: Jacobs

Date assessed: June 21 Time assessed: 11:00 AM

Weather 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.):

None

1.3 Wetland Size:

Size of site under assessment: 3.79 ha (9.37 ac)

Size of total wetland complex (all contiguous wetland polygons): 3.79 ha (9.37 ac)

1.4 Site Setting:

Degree of isolation from other wetlands or wetland complexes:

_____ The site is connected upstream and downstream with other wetlands
__X__ 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 forming the perimeter of the wetland site (indicate the % of each):

10% Native Vegetation - woodland
_____ Native Vegetation - old field / scrub
80% Agricultural - tilled
_____ Agricultural - pasture
5% Recreation - green space, mowed

5% Road / highway / railroad bed / parking lot
_____ Industrial
_____ Residential - single family
_____ Commercial or multifamily residential

NWI Polygon # WF 37 **Data Reference #** _____
(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):

X Depressional _____ Slope _____ Floodplain _____ Lacustrine
_____ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water present in the polygon? NO
- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
X Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ Artificially Drained

2.4 Soil Type:

_____ Organic (i.e. peat, etc.) X Mineral _____ Both Mineral and Organic Present

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

Swamp Forest

2.6 Disturbances of Hydrology (check all that apply):

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

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

None

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

X 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

NWI Polygon # WF 87 Data Reference # _____

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 cover in the polygon ✓ 100-75 ___ 75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface:

___ nil (<5% cover) ___ scattered (5-15% cover) ✓ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. Y N 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?
   3b. Y N 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? Indications of ponding stained leave

4. Y N Does the wetland **lack** steep slopes (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y N Is a vegetative buffer area (>15 m wide) 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. less than 15m
   Average 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, if not, answer 1b
   1a. Y N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)? ditching but not sign to speed flow due to microtop. + areas of ponding

3. Y N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 37 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

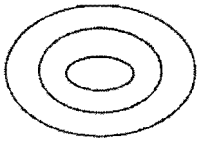
1b. If only one vegetation zone is evident, which best describes the site?

1 Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

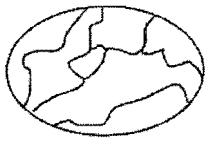
_____ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

What % of the polygon does this vegetative zone occupy?

10 - 25% 25 - 50% 50 - 75% 75 - 90% >90% 100%

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 Fowl Manna Grass 4 d _____
b False Nettle 3 e _____
c Jewel weed. 3 f _____

Dominant **Shrub** Species listed in order of relative abundance. N/A. shrubs infrequent.

a _____ c _____
b _____ d _____

Dominant **Tree** Species listed in order of relative abundance.

a Red Maple 5 c _____
b Gr. Ash 3 d _____

Tree & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site). Polygon need refining. Good bird habitat.

NWI Polygon # 37 Data Reference # _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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_____

NWI Polygon # 37 **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 37 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

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

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 6*
1 beggar's tick spp. (*Bidens*) 3
___ blue vervain (*Verbena hastata*) 3
___ boneset (*Eupatorium perfoliatum*) 4
___ bugleweed spp. (*Lycopus*) 5
1 clearweed spp. (*Pilea*) 3
___ cup plant (*Silphium perfoliatum*) 4
1 false nettle (*Boehmeria cylindrica*) 3
___ *fen betony (*Pedicularis lanceolata*) 6
___ *gentian spp. (*Gentiana & Gentianopsis*) 8
1 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
1 nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
1 other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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NWI Polygon # 37 **Data Reference #** _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite
___ red maple (*Acer rubrum*) 5
___ silver maple (*A. saccharinum*) 1

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

OTHER walnut?

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NWI Polygon # NF 37(A) **Data Reference #** _____
(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):

X Depressional ____ Slope ____ Floodplain ____ Lacustrine
____ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water present in the polygon? NO

- If standing water is present, is the water greater than 2 meters in depth? ____

Is standing water present in an adjacent polygon? ____

2.3 Apparent Hydroperiod (check one):

____ Permanently Flooded ____ Artificially Flooded
X Seasonally Flooded
____ Saturated (surface water seldom present) ____ Artificially Drained
Water at leaves. Deep hoof pr.

2.4 Soil Type:

____ Organic (i.e. peat, etc.) X 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):

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

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common): None

____ Garlic Mustard
____ *Phragmities*
____ Purple Loosestrife
____ Glossy Buckthorn
X Reed canary grass
____ Other (list): ____

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

None

2.9 Presence of Special Community Types: None

____ Bog ____ Fen ____ Wet Sand / Muck Flat ____ Sinkhole pond or swamp

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

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

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

____ Good X Medium ____ Poor

NWI Polygon # WF 376 (A) Data Reference # _____

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 X 75-50 ___ 50-25 ___ <25

Estimated woody plant foliar cover in the polygon X 100-75 ___ 75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface:

___ nil (<5% cover) ___ scattered (5-15% cover) ✓ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. Y N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y N Is a vegetative buffer area (>15 m wide) 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.
   Average width of buffer area (in meters) 50 approximate slope (percent) 30%
   15m on one side - None on other)

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
   1a. Y N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)? ditch

3. Y N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 37A Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

1. How many vegetation zones are evident in this wetland polygon? 2

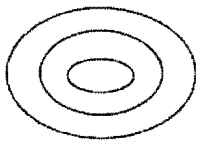
1b. If only one vegetation zone is evident, which best describes the site?

_____ 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 interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



Type Two Interspersion

3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Elymus sp. 4
b Jewel weed 3
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Red maple 5
b Elm 3
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a Red Maple
b River Birch 2
c _____
d _____

Tree & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site). Similar to 37 only sep by upland hill.

culvert across road disch. from WL

NWI Polygon # 37(A) **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

stand of dense saplings

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 Red maple c _____
b _____ d _____

Dominant **Tree** Species listed in order of relative abundance.

a River birch c _____
b _____ d _____

Tree & shrub canopy: nil separate, seldom touching often touching (more or less closed)

Mature trees (>12" dbh) present: yes (no)

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

densely colonized by young trees
no mature trees or herbs.

3b.2 Dominant Plant Species: Vegetation zone C

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # 37A **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 374 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

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

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium*) 6
1 beggar's tick spp. (*Bidens*) 3
___ blue vervain (*Verbena hastata*) 3
___ boneset (*Eupatorium perfoliatum*) 4
___ bugleweed spp. (*Lycopus*) 5
1 clearweed spp. (*Pilea*) 3
___ cup plant (*Silphium perfoliatum*) 4
___ false nettle (*Boehmeria cylindrica*) 3
___ *fen betony (*Pedicularis lanceolata*) 6
___ *gentian spp. (*Gentiana & Gentianopsis*) 8
1 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
1 nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
1 other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *grass of Parnassus (*Parnassia glauca*) 10
___ *Indian plantain (*Cacalia plantaginea*) 10
1 ironweed spp. (*Vernonia*) 4
1 jewelweed, touch-me-not spp. (*Impatiens*) 3
___ lizard's tail (*Saururus cernuus*) 4
___ lobelia spp. (*Lobelia*) 4
___ *marsh marigold (*Caltha palustris*) 7
___ *moonseed (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
1 smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
1 poison ivy (vine) (*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
1 *water hemlock spp. (*Cicuta*) 7
___ water parsnips (*Sium suave*) 5

Shrubs - leaves opposite or whorled
___ bladdernut (*Staphylea trifolia*) 5
___ buckthorn spp. (*Rhamnus cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
1 elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifolius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
1 spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ *swamp holly & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
1 ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
1 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 - lvs. simple and opposite
1 red maple (*Acer rubrum*) 5
1 silver maple (*A. saccharinum*) 1

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

OTHER _____

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NWI Polygon # 38 **Data Reference #** _____
(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):

X Depressional _____ Slope _____ Floodplain _____ Lacustrine
_____ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water present in the polygon? No
- If standing water is present, is the water greater than 2 meters in depth? ✓

Is standing water present in an adjacent polygon? ✓

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
_____ Seasonally Flooded
✓ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*):

Shallow Marsh

2.6 Disturbances of Hydrology (check all that apply):

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

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

_____ Garlic Mustard
F *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
S Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

X 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

NWI Polygon # 38 Data Reference # _____

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 cover in the polygon ___ 100-75 ___ 75-50 ___ 50-25 ✓ <25

Amount of dead woody material on the soil surface:

✓ nil (<5% cover) ___ scattered (5-15% cover) ___ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. **Y** / **N** Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. **Y** / **N** 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?
   3b. **Y** **N** 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. **Y** / **N** Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. **Y** / **N** Is a vegetative buffer area (>15 m wide) 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.
   Average width of buffer area (in meters) 100 approximate slope (percent) 3

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
   1a. **Y** / **N** Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. **Y** **N** 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. **Y** / **N** Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 38 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

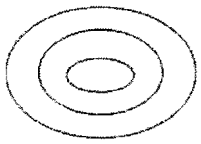
1b. If only one vegetation zone is evident, which best describes the site?

✓ 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.

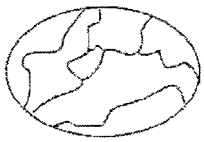
2. If more than one vegetation zone is present in the polygon, which interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



☐

Type Two Interspersion



☐

3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Phragmites
b Wood grass
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a willow
b _____
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a _____
b _____
c _____
d _____

Tree & shrub canopy: ☑ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closed

Mature trees (>12" dbh) present: ☐ yes ☑ no

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

NWI Polygon # 30 **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # 38 **Data Reference #** _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 38 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

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

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 6*
___ beggar's tick spp. (*Bidens*) 3
___ blue vervain (*Verbena hastata*) 3
___ boneset (*Eupatorium perfoliatum*) 4
___ bugleweed spp. (*Lycopus*) 5
1 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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NWI Polygon # 38 Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
1 smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
1 poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite

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

Trees - lvs. simple and alternate

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

OTHER _____

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In-WRAP Summary Sheet

Date Report Generated: August 2005
Wetland site name: Wetland 37
Data Reference #
Date of Site Visit: June 21, 2005
NWI polygons in Site (quadrangle and NWI id. numbers): 37, 37A, 38

TIER 1 SUMMARY:

a. Total wetland area (hectares): (9.36 acres) 3.79ha

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

Valuable (More Favorable) Favorable Neutral

c. Surrounding land use - numerical rank (max. = 1): .30

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

TIER 2 SUMMARY *NWI Polygon Id.* Wetland 37

a. Indiana Wetland community type: Swamp Forest

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

c. Disturbances to site: Ditching

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.): 3 Rating: Good (Medium) Poor

c. Flood and storm water storage - numerical rank (5 max.): 3 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good (Medium) Poor

d. Average coefficient of conservatism: 3.10 Rating: 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 Rating: (Good) Medium Poor

h. Number of indicator taxa: 2 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 37A

a. Indiana Wetland community type: Shrub carr

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

c. Disturbances to site: Ditching

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 Rating: Good (Medium) Poor

c. Flood and storm water storage - numerical rank (5 max.): 3 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 2.4 Rating: 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: 25 Rating: Good (Medium) Poor

h. Number of indicator taxa: 2 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 38

a. Indiana Wetland community type: Shallow Marsh

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

c. Disturbances to site: Ditching & road embankment

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 Rating: Good (Medium) Poor

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

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 2.7 Rating: 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: 8 Rating: Good Medium (Poor)

h. Number of indicator taxa: 0 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** _____

a. Indiana Wetland community type: _____

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: _____

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.): ____ Rating: Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max.): ____ Rating: Good Medium Poor

TIER 3B SUMMARY

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

b. Stratification as indicator of animal habitat: Valuable Neutral

c. Number of dominant plant taxa observed: ____ Rating: Good Medium Poor

d. Average coefficient of conservatism: ____ Rating: 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: ____ Rating: Good Medium Poor

h. Number of indicator taxa: ____ Rating: Good Medium Poor

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: FLAT CREEK - W43

Ownership (if known): _____

USGS Topographic Quadrangle(s): Petersburg

USGS Watershed map 14-Digit HUC: 05120209060096

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

NWI Polygon ID Number	43	44	45	43(B)	
Cowardin Classification	PFO1A	PFO1	PFO	PEM	
Polygon Size (hectares)	1.7 ha	2.5ha	1.3 ha	2.3ha	
	4.18ac	6.23ac	3.21acres	5.7	

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: Lars Carlson Meredith de Carmoney

Agency: Jacobs

Date assessed: June 21 Time assessed: _____

Weather 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.):

None

1.3 Wetland Size:

Size of site under assessment: (19.3 acres) 7.8ha

Size of total wetland complex (all contiguous wetland polygons): 7.8 ha (19.3acres)

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 forming the perimeter of the wetland site (indicate the % of each):

25 Native Vegetation - woodland
_____ Native Vegetation - old field / scrub
_____ Agricultural - tilled
_____ Agricultural - pasture
_____ Recreation - green space, mowed

75 Road / highway / railroad bed / parking lot
_____ Industrial
_____ Residential - single family
_____ Commercial or multifamily residential

NWI Polygon # FLAT CREEK Wetland 43 Data Reference # _____
(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 present in the polygon? ✓

- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? N/A

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
✓ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*):

Swamp Forest

2.6 Disturbances of Hydrology (check all that apply):

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

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common): None

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): _____

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

No

2.9 Presence of Special Community Types: No

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 43 Data Reference # _____

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 cover in the polygon ✓ 100-75 ___75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface:

___ nil (<5% cover) ✓ scattered (5-15% cover) ____ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. (Y) N 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?
   3b. **Y N** 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y (N) Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. **Y** (N) Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. **Y N** 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. (Y) N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 43 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

1. How many vegetation zones are evident in this wetland polygon? 2

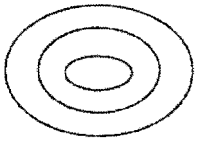
1b. If only one vegetation zone is evident, which best describes the site?

_____ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

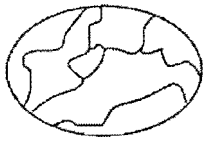
_____ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Impatiens capensis 3
b Pilia pumila 3
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Acer rubrum 5
b _____
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a Acer rubrum 5
b _____ /4
c _____
d _____

Tree & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 43 Data Reference # _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Stinging nettle 2
b Fowl Manna grass 4
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Red Maple 5
b Am. Elm 3
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a Red Maple
b Betula lutea 10
c _____
d _____

Tree & shrub canopy: nil separate, seldom touching often touching (more or less closed)

Mature trees (>12" dbh) present: (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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____
b _____
c _____
d _____
e _____
f _____

NWI Polygon # 43 **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 43 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
\\ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
\ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

| needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
\ rush spp. (*Juncus*) 4
||| sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 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. m., skullcap 5
| moneywort (*Lysimachia nummularia*) 0
\ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
| other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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NWI Polygon # 43 Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *grass of Parnassus (*Parnassia glauca*) 10
___ *Indian plantain (*Cacalia plantaginea*) 10
___ ironweed spp. (*Vernonia*) 4
1 jewelweed, touch-me-not spp. (*Impatiens*) 3
___ lizard's tail (*Saururus cernuus*) 4
___ lobelia spp. (*Lobelia*) 4
___ *marsh marigold (*Caltha palustris*) 7
___ *moonseed (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
1 smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
1 stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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
1 aven spp.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
1 poison ivy (vine) (*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
1 *water hemlock spp. (*Cicuta*) 7
___ water parsnips (*Sium suave*) 5

Shrubs - leaves opposite or whorled
___ bladdernut (*Staphylea trifolia*) 5
___ buckthorn spp. (*Rhamnus cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifoius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ *swamp holly & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
1 ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite
1 red maple (*Acer rubrum*) 5
___ silver maple (*A. saccharinum*) 1

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

OTHER Betula lutea 10

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NWI Polygon # W44 Data Reference # _____
(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):

X Depressional _____ Slope _____ Floodplain _____ Lacustrine
_____ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water present in the polygon? No
- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
X Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ Artificially Drained

2.4 Soil Type:

_____ Organic (i.e. peat, etc.) X Mineral _____ Both Mineral and Organic Present

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

Swamp Forest

2.6 Disturbances of Hydrology (check all that apply):

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

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

S Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
S Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # W 44 Data Reference # _____

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 cover in the polygon ___ 100-75 ✓ 75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface:

✓ nil (<5% cover) ___ scattered (5-15% cover) ___ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. (Y) N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y (N) Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y (N) Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)? ditch assoc. w RR

3. Y (N) Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # W 44 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

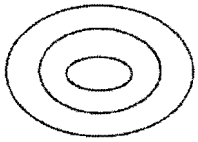
1b. If only one vegetation zone is evident, which best describes the site?

✓ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

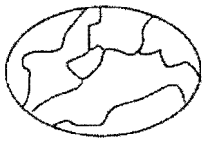
_____ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Nettle 1
b Fowl Manna grass 4
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a gr. Ash 3
b _____
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a Red Maple 5
b Gr. Ash
c _____
d _____

Tree & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no Few

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

Wetland is bisected by railroad. Disturbance due to Hwy

NWI Polygon # 44 Data Reference # _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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_____

NWI Polygon # 44 **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 44 Data Reference # _____

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-coefficents * = species with high conservatism)*

Herbs: non-seed plants
- ___ horsetail, scouring rush spp. (*Equisetum*) 2
- ___ *ferns: marsh shield fern spp. (*Dryopteris*) 7
- ___ *cinnamon fern (*Osmunda cinnamomea*) 9
- ___ *royal fern (*Osmunda regalis*) 8
- _1_ sensitive fern (*Onoclea sensibilis*) 4
- ___ *other: species (if known) _____
- ___ marsh club moss (*Selaginella apoda*) 4
- ___ *Sphagnum moss spp. (*Sphagnum*, N) 10

Herbs: lvs. floating or submergent
- ___ *bladderwort spp. (*Utricularia*, N) 10
- ___ coontail (*Ceratophyllum demersum*, N) 1
- ___ duckweed spp. (*Lemnaceae*) 3
- ___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
- ___ *water lily (*Nymphaea tuberosa*, N) 6
- ___ water shield (*Brasenia schreberi*, N) 4
- ___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
- ___ *pitcher plant (*Sarracenia purpurea*,N) 10
- ___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
- ___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
- ___ a.*wild rice (*Zizania aquatica*, N) 10;
- _11_ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
- _1_ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

- _1_ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
- ___ nutsedge spp. (*Cyperus*) 2
- ___ *orchid spp.: species (if known)_____
- ___ rush spp. (*Juncus*) 4
- _1_ sedge spp. (*Carex*) sp.1=3 *additional=7
- ___ *spiderlily (*Hymenocallis occidentalis*) 9
- ___ sweet flag (*Acorus calamus*) 0
- ___ *3-way sedge (*Dulichium arundinaceum*) 10
- ___ *twig rush (*Cladium mariscoides*, N) 10
- ___ *umbrella sedge (*Fuirena squarrosa*, N) 10
- ___ wild hyacinth (*Camassia scilloides*) 5
- ___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
- ___ *bedstraw spp. (*Galium*) 6
- _1_ 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. m., skullcap 5
- ___ moneywort (*Lysimachia nummularia*) 0
- ___ monkey flower spp. (*Mimulus*) 4
- _1_ nettle (*Urtica procera*) 1
- ___ purple loosestrife (*Lythrum salicaria*) 0
- ___ *richweed (*Collinsonia canadensis*) 8
- ___ *St. John's wort spp.(*Hypericum/Triandeum*)8
- ___ sunflower spp. (*Helianthus*) 4
- ___ *swamp loosestrife (*Decodon verticillatus*, N) 8
- ___ swamp milkweed (*Asclepias incarnata*) 4
- ___ toothcup spp. (*Ammania & Rotala*) 2
- ___ *turtlehead spp. (*Chelone*) 8
- ___ virgin's bower (vine) (*Clematis virginiana*) 3
- ___ water puslane (*Ludwigia palustris*) 3
- ___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
- ___ Amer. bellflower (*Campanula americana*) 4
- ___ *asters: bristly aster (*Aster puniceus*) 7
- ___ *flat-topped aster (*A. umbellatus*) 8
- _11_ other aster spp. (e.g. New Engl.-, panicled-a) 3
- ___ *black-eyed Susan (*Rudbeckia fulgida*) 8
- ___ cardinal flower (*Lobelia cardinalis*) 4

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___ cress spp. (*Cardamine*) 4
_1_ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *grass of Parnassus (*Parnassia glauca*) 10
___ *Indian plantain (*Cacalia plantaginea*) 10
___ ironweed spp. (*Vernonia*) 4
_1_ jewelweed, touch-me-not spp. (*Impatiens*) 3
___ lizard's tail (*Saururus cernuus*) 4
___ lobelia spp. (*Lobelia*) 4
___ *marsh marigold (*Caltha palustris*) 7
___ *moonseed (vine) (*Menlspermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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
_1_ aven spp.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
_1_ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
_1_ 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 - lvs. simple and opposite
_1_ red maple (*Acer rubrum*) 5
___ silver maple (*A. saccharinum*) 1

Trees - lvs. simple and alternate
___ *alder, speckled (*Alnus rugosa*) 9
_1_ birch, river (*Betula nigra*) 2
___ black gum (*Nyssa sylvatica*) 5
___ cottonwood, eastern (*Populus deltoides*) 1
___ *cottonwood, swamp (*P. heterophylla*, SW) 8
___ elm, Amer. (*Ulmus americana*) 3
___ hackberry (*Celtis occidentalis*) 3
___ ironwood (*Carpinus caroliniana*) 5
_1_ oak, pin or white (*Quercus*) 4
___ *oak, Shumard's, sw. chestnut, sw. white 7
___ *papaw (*Asimina triloba*) 6
___ *sugarberry (*Celtis laevigata*, S) 7
___ sweet gum (*Liquidambar styraciflua*) 4
_1_ sycamore, Amer. (*Platanus occidentalis*) 3
___ willow spp. (*Salix*) sp.1=3; *additional=7

OTHER _____

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NWI Polygon # W45 **Data Reference #** _____
(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 present in the polygon? ✓

- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? Yes - in stream

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
✓ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*):

Swamp Forest

2.6 Disturbances of Hydrology (check all that apply):

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

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

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
S Reed canary grass
_____ Other (list): _____

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

No

2.9 Presence of Special Community Types: No

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

2.10 Presence of Known Federal or Indiana Rare, Threatened or Endangered Species: No

_____ 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

NWI Polygon # W45 Data Reference # _____

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 cover in the polygon ✓ 100-75 ___75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface:

___ nil (<5% cover) ___ scattered (5-15% cover) ___ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. (Y) N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y (N) Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y (N) Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. (Y) N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # W45 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

1. How many vegetation zones are evident in this wetland polygon? 2

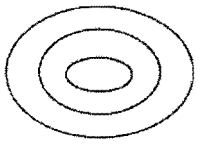
1b. If only one vegetation zone is evident, which best describes the site?

_____ 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 interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



Type Two Interspersion

3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Impatiens capensis 3
b Pilea pumila
c _____ 3
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Acer rubrum 5
b _____
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a Acer rubrum 5
b _____ 4
c _____
d _____

Tree & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

Floodplain along diffuse channel

NWI Polygon # 45 Data Reference # _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Stinging nettle 2
b Four flora grass 4
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Acer rubrum
b Alnus americana 3
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a Acer rubrum
b Betula lutea 10
c _____
d _____

Tree & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

Fringe on Zone 1

3b.2 Dominant Plant Species: Vegetation zone C

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____
b _____
c _____
d _____
e _____
f _____

NWI Polygon # 45 **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 45 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
1 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
1 c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
1 1 sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 6*
1 beggar's tick spp. (*Bidens*) 3
___ blue vervain (*Verbena hastata*) 3
___ boneset (*Eupatorium perfoliatum*) 4
___ bugleweed spp. (*Lycopus*) 5
1 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. m., skullcap 5
1 moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
1 other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *grass of Parnassus (*Parnassia glauca*) 10
___ *Indian plantain (*Cacalia plantaginea*) 10
___ ironweed spp. (*Vernonia*) 4
1 jewelweed, touch-me-not spp. (*Impatiens*) 3
___ lizard's tail (*Saururus cernuus*) 4
___ lobelia spp. (*Lobelia*) 4
___ *marsh marigold (*Caltha palustris*) 7
___ *moonseed (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
1 smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
1 stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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

1 aven spp.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
1 poison ivy (vine) (*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
1 *water hemlock spp. (*Cicuta*) 7
___ water parsnips (*Sium suave*) 5

Shrubs - leaves opposite or whorled

___ bladdernut (*Staphylea trifolia*) 5
___ buckthorn spp. (*Rhamnus cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
1 ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite

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

Trees - lvs. simple and alternate

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

OTHER Betula lutea

InWrap, Terg revised June 2005

In-WRAP Summary Sheet

Date Report Generated: August 2005
Wetland site name: Wetland 43 Flat Creek
Data Reference # _____
Date of Site Visit: August 2005
NWI polygons in Site (quadrangle and NWI id. numbers): PFO1A

TIER 1 SUMMARY:

a. Total wetland area (hectares): (15.08 acres) 6.1 ha

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

(Valuable) More Favorable Favorable Neutral

c. Surrounding land use - numerical rank (max. = 1): .25

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

TIER 2 SUMMARY

NWI Polygon Id. 43

a. Indiana Wetland community type: Swamp Forest

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

c. Disturbances to site: road or RR embankment

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 Rating: Good Medium (Poor)

c. Flood and storm water storage - numerical rank (5 max.): 3 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good (Medium) Poor

d. Average coefficient of conservatism: 4.3 Rating: 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: 29 Rating: (Good) Medium Poor

h. Number of indicator taxa: 4 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** W44

a. Indiana Wetland community type: Swamp Forest

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

c. Disturbances to site: road or RR embankment

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 Rating: Good Medium (Poor)

c. Flood and storm water storage - numerical rank (5 max.): 2 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 3.3 Rating: 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: 19 Rating: Good (Medium) Poor

h. Number of indicator taxa: 0 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 45 Flat Creek

a. Indiana Wetland community type: Swamp Forest

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

c. Disturbances to site: road or railroad embankment

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 Rating: Good Medium (Poor)

c. Flood and storm water storage - numerical rank (5 max.): 3 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good (Medium) Poor

d. Average coefficient of conservatism: 4.3 Rating: 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 Rating: (Good) Medium Poor

h. Number of indicator taxa: 3 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** _____

a. Indiana Wetland community type: _____

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: _____

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.): ____ Rating: Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max.): ____ Rating: Good Medium Poor

TIER 3B SUMMARY

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

b. Stratification as indicator of animal habitat: Valuable Neutral

c. Number of dominant plant taxa observed: ____ Rating: Good Medium Poor

d. Average coefficient of conservatism: ____ Rating: 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: ____ Rating: Good Medium Poor

h. Number of indicator taxa: ____ Rating: Good Medium Poor

Indiana Wetland Rapid Assessment Protocol **Data Reference #** _____

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: Pride's Creek New Wetland

Ownership (if known): 55(A) 55B 55C 56A

USGS Topographic Quadrangle(s): Oakland City

USGS Watershed map 14-Digit HUC: 05120202100020

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

NWI Polygon ID Number	55A	56A	55B	55C	
Cowardin Classification	PFO	PSS	PEM	PFO	
Polygon Size (hectares)	2.5ha	5.7ha	.44	.36	
	6.28(acres)	14.15	1.09	0.89	

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: LHC MLC

Agency: JACOBS

Date assessed: June 24 Time assessed: 8 AM

Weather 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.):

None

1.3 Wetland Size:

Size of site under assessment: (22.4 acres) 9.05ha

Size of total wetland complex (all contiguous wetland polygons): (22.4 acres) 9.05ha

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 forming the perimeter of the wetland site (indicate the % of each):

30 Native Vegetation - woodland
_____ Native Vegetation - old field / scrub
50 Agricultural - tilled
_____ Agricultural - pasture
_____ Recreation - green space, mowed
20 Road / highway / railroad bed / parking lot
_____ Industrial
_____ Residential - single family
_____ Commercial or multifamily residential

NWI Polygon # 55(A) Data Reference # _____
(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 present in the polygon? Yes
- If standing water is present, is the water greater than 2 meters in depth? NO

Is standing water present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
✓ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*):

Swamp Forest

2.6 Disturbances of Hydrology (check all that apply):

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

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

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): _____

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

ND

2.9 Presence of Special Community Types: ND

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 55A Data Reference # _____

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 cover in the polygon ___ ✓ 100-75 ___75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface:

___ nil (<5% cover) ___ ✓ scattered (5-15% cover) ____ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. (Y) N 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?
   3b. **Y N** 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y (N) Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y (N) Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. **Y N** 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. (Y) N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 55A Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

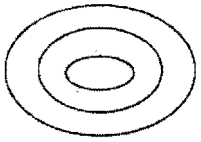
1b. If only one vegetation zone is evident, which best describes the site?

✓ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

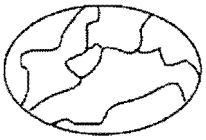
_____ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Nettle 2
b Bent Grass/Bluej 4
c C. Lurida 3
d Honeywort 0
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Gr. Ash saplings 3
b Ro Ma 5
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a Ro Ma 5
b _____
c _____
d _____

Tree & shrub canopy: nil separate, seldom touching often touching (more or less closed)

Mature trees (>12" dbh) present: (yes) no

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

Very mucky wet - forest Not on NWI

NWI Polygon # 55A **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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_____

NWI Polygon # 55A **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 55A Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 10
_1_ blueflag iris (*Iris virginica*) 5
___ bulrush spp. (*Scirpus / Schoenoplectus*) 5
___ *bur reed spp. (*Sparganium*) 9
___ cat-tail spp. (*Typha*) 1
___ *cotton grass spp. (*Eriophorum*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
a.*wild rice (*Zizania aquatica*, N) 10;
_11_ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
_111_ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

Herbs: wide-leafed monocots
___ *arrow arum (*Peltandra virginica*, N) 6
___ arrow-head spp. (*Sagittaria*) 4
_1_ *green dragon (*Arisaema dracontium*) 6
___ Jack-in-the-pulpit (*Arisaema triphyllum*) 4
___ pickerel weed (*Pontederia cordata*, N) 5
___ *skunk cabbage (*Symplocarpus foetidus*) 8
___ *water arum (*Calla palustris*, N) 10
___ water plantain (*Alisma plantago-aquat.*) 2

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium*) 6
_1_ beggar's tick spp. (*Bidens*) 3
___ blue vervain (*Verbena hastata*) 3
___ boneset (*Eupatorium perfoliatum*) 4
___ bugleweed spp. (*Lycopus*) 5
_1_ 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
_1_ Joe-pye weed spp. (*Eupatorium*) 5
___ *loosestrife spp. (*Lysimachia*) 6
___ meadow beauty (*Rhexia virginica*) 5
___ mint spp.: e.g. hedge nettle, mtn. m., skullcap 5
_1_ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
_1_ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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NWI Polygon # SSA

Data Reference # _____

___ cress spp. (*Cardamine*) 4
1 dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *grass of Parnassus (*Parnassia glauca*) 10
___ *Indian plantain (*Cacalia plantaginea*) 10
___ ironweed spp. (*Vernonia*) 4
1 jewelweed, touch-me-not spp. (*Impatiens*) 3
___ lizard's tail (*Saururus cernuus*) 4
___ lobelia spp. (*Lobelia*) 4
___ *marsh marigold (*Caltha palustris*) 7
___ *moonseed (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium* &*Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
1 smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
1 stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
1 *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea*&*Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
1 poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
1 elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

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

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
1 ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite

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

Trees - lvs. simple and alternate

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

OTHER Swamp Chestnut, Elderberry

NWI Polygon # 558 Data Reference # _____
(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 present in the polygon? No
- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? ✓

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
✓ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*):

Wet meadow

2.6 Disturbances of Hydrology (check all that apply): None

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

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common): None

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: No

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 55B Data Reference # _____

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 cover in the polygon ___ 100-75 ___75-50 ___ 50-25 ✓ <25

Amount of dead woody material on the soil surface:

✓ nil (<5% cover) ___ scattered (5-15% cover) ____ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. Y N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y N Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 558 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

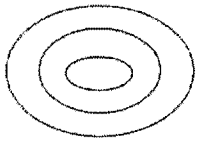
1. How many vegetation zones are evident in this wetland polygon? 1

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.

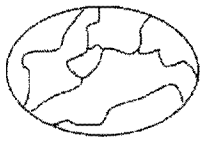
2. If more than one vegetation zone is present in the polygon, which interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



☐

Type Two Interspersion



☐

3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Bent grass
b blue joint.
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a _____
b _____
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a _____
b _____
c _____
d _____

Tree & shrub canopy: ☑ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closed

Mature trees (>12" dbh) present: ☐ yes ☑ no

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

NWI Polygon # 535 **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # 55B **Data Reference #** _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 55B **Data Reference #** _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 10
_1_ blueflag iris (*Iris virginica*) 5
___ bulrush spp. (*Scirpus / Schoenoplectus*) 5
___ *bur reed spp. (*Sparganium*) 9
___ cat-tail spp. (*Typha*) 1
___ *cotton grass spp. (*Eriophorum*, N) 10

Grasses (family *Gramineae*) – Indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
_11_ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
_111_ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium*) 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
_1_ Joe-pye weed spp. (*Eupatorium*) 5
___ *loosestrife spp. (*Lysimachia*) 6
___ meadow beauty (*Rhexia virginica*) 5
___ mint spp.: e.g. hedge nettle, mtn. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
_1_ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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NWI Polygon # 55B3 Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite

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

Trees - lvs. simple and alternate

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

OTHER _____

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NWI Polygon # 55C **Data Reference #** _____
(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 present in the polygon? No
- If standing water is present, is the water greater than 2 meters in depth? ____

Is standing water present in an adjacent polygon? ✓

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*):

Swamp Forest

2.6 Disturbances of Hydrology (check all that apply): None

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

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common): None

____ Garlic Mustard ____ Glossy Buckthorn
____ *Phragmities* ____ Reed canary grass
____ Purple Loosestrife ____ Other (list): None

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

None

2.9 Presence of Special Community Types: None

____ Bog ____ Fen ____ Wet Sand / Muck Flat ____ Sinkhole pond or swamp

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

NWI Polygon # 55c Data Reference # _____

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 cover in the polygon ✓ 100-75 ___ 75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface:

___ nil (<5% cover) ✓ scattered (5-15% cover) ___ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. (Y) N 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?
   3b. **Y N** 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y (N) Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y (N) Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. **Y N** 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y (N) Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 55c Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

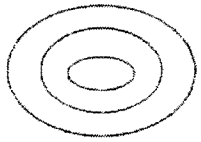
1b. If only one vegetation zone is evident, which best describes the site?

c 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 interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



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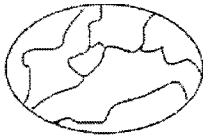
Type Two Interspersion



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3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) None
(Note: V-mark location on the NWI polygon)

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 Nettle 1 d _____

b _____ e _____

c _____ f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Re Maple 5 c _____

b Gr Ash 3 d _____

Dominant **Tree** Species listed in order of relative abundance.

a Re Maple c _____

b _____ d _____

Tree & shrub canopy: ☐ nil ☐ separate, seldom touching ☑ often touching ☐ more or less closed

Mature trees (>12" dbh) present: ☑ yes ☐ no

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

This area characterized as swamp forest - drier than other (55A) forested area - No pools

NWI Polygon # BSC **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

3b.2 Dominant Plant Species: Vegetation zone C

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # 55C **Data Reference #** _____

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 & shrub canopy: □ nil □separate, seldom touching □often touching □more or less closed

Mature trees (>12" dbh) present: □ 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: □ nil □separate, seldom touching □often touching □more or less closed

Mature trees (>12" dbh) present: □ yes □ no

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

NWI Polygon # 55 C **Data Reference #** _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
___ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
___ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania* & *Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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NWI Polygon # SSC Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifoius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ *swamp holly & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite
___ red maple (*Acer rubrum*) 5
___ silver maple (*A. saccharinum*) 1

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

OTHER _____

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NWI Polygon # 56(A) **Data Reference #** _____
(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 present in the polygon? No
- If standing water is present, is the water greater than 2 meters in depth? No

Is standing water 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
____ *Phragmities* 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: None

____ Bog ____ Fen ____ Wet Sand / Muck Flat ____ Sinkhole pond or swamp

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

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

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

____ Good ____ Medium ✓ Poor

NWI Polygon # 56(A) Data Reference # _____

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 cover in the polygon ✓ 100-75 ___ 75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface:

✓ nil (<5% cover) ___ scattered (5-15% cover) ___ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. (Y) N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. (Y) N Is a vegetative buffer area (>15 m wide) 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.
   Average width of buffer area (in meters) 150 approximate slope (percent) 2
   to the west only

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
   1a. (Y) N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland? to one side only
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)? Ditches extensively to the south

3. (Y) N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 56(A) Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

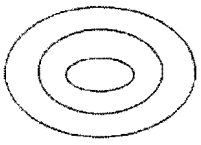
1b. If only one vegetation zone is evident, which best describes the site?

1 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 interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



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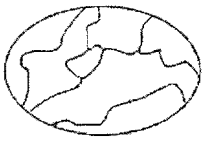
Type Two Interspersion



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3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

What % of the polygon does this vegetative zone occupy?
☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% ☑ >90% 100%

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 Urtica dioica 1
b Carex spp. 3
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Platanis occidentalis 3
b Acer rubrum 5
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a _____
b _____
c _____
d _____

Tree & shrub canopy: ☐ nil ☐ separate, seldom touching ☑ often touching ☐ more or less closed

Mature trees (>12" dbh) present: ☐ yes ☑ no

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

Areas looks to be successional - historically disturbed. Saplings in dense stand w/ no mature trees

NWI Polygon # 56(A) **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # 56A **Data Reference #** _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 56A Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
1 *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
1 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
11 c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

1 needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
1 nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
1 rush spp. (*Juncus*) 4
111 sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
1 *bedstraw spp. (*Galium*) 6
1 beggar's tick spp. (*Bidens*) 3
___ blue vervain (*Verbena hastata*) 3
1 boneset (*Eupatorium perfoliatum*) 4
___ bugleweed spp. (*Lycopus*) 5
1 clearweed spp. (*Pilea*) 3
___ cup plant (*Silphium perfoliatum*) 4
1 false nettle (*Boehmeria cylindrica*) 3
___ *fen betony (*Pedicularis lanceolata*) 6
___ *gentian spp. (*Gentiana & Gentianopsis*) 8
___ giant ragweed (*Ambrosia trifida*) 0
1 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. m., skullcap 5
1 moneywort (*Lysimachia nummularia*) 0
1 monkey flower spp. (*Mimulus*) 4
1 nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
1 other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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NWI Polygon # 56A

Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
_1_ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *grass of Parnassus (*Parnassia glauca*) 10
___ *Indian plantain (*Cacalia plantaginea*) 10
___ ironweed spp. (*Vernonia*) 4
_1_ jewelweed, touch-me-not spp. (*Impatiens*) 3
___ lizard's tail (*Saururus cernuus*) 4
___ lobelia spp. (*Lobelia*) 4
___ *marsh marigold (*Caltha palustris*) 7
___ *moonseed (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
_1_ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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
_1_ *water hemlock spp. (*Cicuta*) 7
___ water parsnips (*Sium suave*) 5

Shrubs - leaves opposite or whorled

___ bladdernut (*Staphylea trifolia*) 5
___ buckthorn spp. (*Rhamnus cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifoius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ *swamp holly & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
_1_ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
_1_ 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 - lvs. simple and opposite

_1_ red maple (*Acer rubrum*) 5
___ silver maple (*A. saccharinum*) 1

Trees - lvs. simple and alternate

___ *alder, speckled (*Alnus rugosa*) 9
___ birch, river (*Betula nigra*) 2
___ black gum (*Nyssa sylvatica*) 5
___ cottonwood, eastern (*Populus deltoides*) 1
___ *cottonwood, swamp (*P. heterophylla*, SW) 8
_1_ elm, Amer. (*Ulmus americana*) 3
___ hackberry (*Celtis occidentalis*) 3
___ ironwood (*Carpinus caroliniana*) 5
___ oak, pin or white (*Quercus*) 4
___ *oak, Shumard's, sw. chestnut, sw. white 7
___ *papaw (*Asimina triloba*) 6
___ *sugarberry (*Celtis laevigata*, S) 7
___ sweet gum (*Liquidambar styraciflua*) 4
_1_ sycamore, Amer. (*Platanus occidentalis*) 3
_1_ willow spp. (*Salix*) sp.1=3; *additional=7

OTHER _____

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In-WRAP Summary Sheet

Date Report Generated: August 2005
Wetland site name: Prides Creek W55(A)
Data Reference #
Date of Site Visit: June 24, 2005
NWI polygons in Site (quadrangle and NWI id. numbers): 55A, 55B, 55C, 456A

TIER 1 SUMMARY:

a. Total wetland area (hectares): 22.4 (9.05ha)

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

Valuable (More Favorable) Favorable Neutral

c. Surrounding land use - numerical rank (max. = 1): .4

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

TIER 2 SUMMARY

NWI Polygon Id. W55(A) Prides Creek

a. Indiana Wetland community type: Swamp Forest

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

c. Disturbances to site: Road embankment

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.): 3 Rating: Good (Medium) Poor

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

TIER 3B SUMMARY

a. Zonation and interspersion as indicator of animal habitat: Valuable Favorable (Neutral)

b. Stratification as indicator of animal habitat: (Valuable) Neutral

c. Number of dominant plant taxa observed: 6 Rating: Good (Medium) Poor

d. Average coefficient of conservatism: 2.8 Rating: 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: 29 Rating: (Good) Medium Poor

h. Number of indicator taxa: 3 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 55B

a. Indiana Wetland community type: wet meadow

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

c. Disturbances to site: None

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.): 3 Rating: Good (Medium) Poor

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

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 4 Rating: 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: 9 Rating: Good Medium (Poor)

h. Number of indicator taxa: 2 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 55C

a. Indiana Wetland community type: Swamp Forest

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

c. Disturbances to site: None

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.): 3 Rating: Good (Medium) Poor

c. Flood and storm water storage - numerical rank (5 max.): 2 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 3 Rating: 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: 14 Rating: Good Medium (Poor)

h. Number of indicator taxa: 0 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 56A

a. Indiana Wetland community type: Shrub carr

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

c. Disturbances to site: Ditching, road encroachment, Looks like formelly mined

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 Rating: (Good) Medium Poor

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

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 3 Rating: 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: 31 Rating: (Good) Medium Poor

h. Number of indicator taxa: 5 Rating: Good (Medium) Poor

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: W64

Ownership (if known): _____

USGS Topographic Quadrangle(s): Petersburg

USGS Watershed map 14-Digit HUC: 05120202100020

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

NWI Polygon ID Number	~~64~~ 65	~~65~~ 64	66	~~67~~ 66A	
Cowardin Classification	PEM	PSS	PSS	PEM	
Polygon Size (hectares)	0.08 0.20 acres	0.08 0.19	0.73 1.81	0.17 0.42	

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: Lora Cardenas Meredith de Carvalho

Agency: JACOBS

Date assessed: June 21 + August 16, 2005 Time assessed: 2:00 + 11:15 respectively

Weather conditions: Hot 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.):

None

1.3 Wetland Size:

Size of site under assessment: 1.06 ha (2.62 acres)

Size of total wetland complex (all contiguous wetland polygons): 1.06 ha (2.62 acres)

1.4 Site Setting:

Degree of isolation from other wetlands or wetland complexes:

X 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 forming the perimeter of the wetland site (indicate the % of each):

_____ Native Vegetation - woodland
_____ Native Vegetation - old field / scrub
75 Agricultural - tilled
25 Agricultural - pasture
_____ Recreation - green space, mowed
_____ Road / highway / railroad bed / parking lot
_____ Industrial
_____ Residential - single family
_____ Commercial or multifamily residential

NWI Polygon # 6/65 Data Reference # _____
(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 present in the polygon? No

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

Is standing water present in an adjacent polygon? _____

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*): Shallow marsh

2.6 Disturbances of Hydrology (check all that apply):

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

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

_____ Garlic Mustard _____ Glossy Buckthorn
S *Phragmities* 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: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 6465 Data Reference # _____

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 cover in the polygon ___ 100-75 __75-50 __ 50-25 ✓<25

Amount of dead woody material on the soil surface: ✓ nil (<5% cover)__ scattered (5-15% cover) frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. (Y) N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y (N) Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y (N) Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. (Y) N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 64 65 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

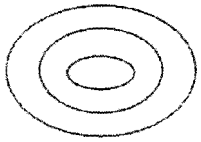
1b. If only one vegetation zone is evident, which best describes the site?

_____ 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 interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



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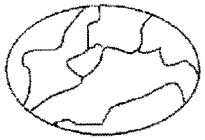
Type Two Interspersion



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3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Typha angustifolia
b Solidago canadensis
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a None
b _____
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a None
b _____
c _____
d _____

Tree & shrub canopy: ☑ nil ☐ separate, seldom touching ☐ often touching ☐ more or less
Mature trees (>12" dbh) present: ☐ yes ☑ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site). Wetland in former mined area. riprap swales lead in but no flow observed

NWI Polygon # 64 65 **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # _____ **Data Reference #** _____

NWI Polygon # GA65 **Data Reference #** _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 64 65 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
✓ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
✓ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
✓ rush spp. (*Juncus*) 4
✓ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium*) 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
✓ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

NWI Polygon # 64 65 **Data Reference #** _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium* &*Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea*&*Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite
___ red maple (*Acer rubrum*) 5
___ silver maple (*A. saccharinum*) 1

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

NWI Polygon # 02 Le4 **Data Reference #** _____
(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 present in the polygon? No
- If standing water is present, is the water greater than 2 meters in depth? No

Is standing water present in an adjacent polygon? ____

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 mining

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

____ Garlic Mustard ____ Glossy Buckthorn
____ *Phragmities* 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: None

____ Bog ____ Fen ____ Wet Sand / Muck Flat ____ Sinkhole pond or swamp

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

NWI Polygon # 9064 Data Reference # _____

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 cover in the polygon ___ 100-75 __75-50 __ 50-25 ___ <25

Amount of dead woody material on the soil surface: ✓ nil (<5% cover)__ scattered (5-15% cover) frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. (Y) N 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?
   3b. **Y N** 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y (N) Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y (N) Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. **Y N** 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. (Y) N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 6564 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

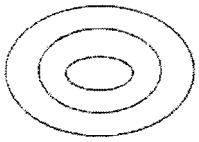
1b. If only one vegetation zone is evident, which best describes the site?

_____ 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 interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



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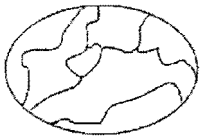
Type Two Interspersion



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3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Impatiens capensis 3
b Juncus effusis 4
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Salix sp. 3
b _____
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a N/A
b _____
c _____
d _____

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

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

NWI Polygon # 6364 **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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_____

NWI Polygon # 65 64 **Data Reference #** _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 6364 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
___ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
11 rush spp. (*Juncus*) 4
1 sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
✓ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium* &*Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea*&*Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifoius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ *swamp holly & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite

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

Trees - lvs. simple and alternate

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

OTHER _____

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NWI Polygon # 66 Data Reference # _____
(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):

X Depressional _____ Slope _____ Floodplain _____ Lacustrine
_____ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water present in the polygon? NO

- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
X Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ Artificially Drained

2.4 Soil Type:

_____ Organic (i.e. peat, etc.) X 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): None

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

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

_____ Garlic Mustard
S *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
S Reed canary grass
_____ 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 Flat _____ Sinkhole pond or swamp

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

X 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

NWI Polygon # 16 Data Reference # _____

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 cover in the polygon ___ 100-75 ✓ 75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface:

___ nil (<5% cover) ✓ scattered (5-15% cover) ___ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. **Y N** Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. **Y N** 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?
   3b. **Y N** 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. **Y N** Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. **Y N** Is a vegetative buffer area (>15 m wide) 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.
   Average width of buffer area (in meters) _____ approximate slope (percent) _____

High H_2O mark on trees adj to pond.

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
   1a. **Y N** Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. **Y N** 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. **Y N** Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 6b Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

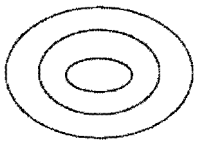
1b. If only one vegetation zone is evident, which best describes the site?

_____ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

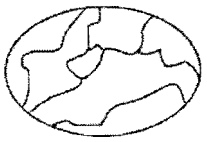
✓ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Toxicodendron radicans (Erns)	1	d	
b Mix grass	4	e	
c reed canary	0	f	

Dominant **Shrub** Species listed in order of relative abundance.

a Salix sp.	3 1/2	c	
b		d	

Dominant **Tree** Species listed in order of relative abundance.

a		c	
b		d	

Tree & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

Reclaimed strip mine lots of frogs. Beaver activity

NWI Polygon # 66 **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # _____ **Data Reference #** _____

NWI Polygon # 16 **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 16 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
- ___ *bladderwort spp. (*Utricularia*, N) 10
- ___ coontail (*Ceratophyllum demersum*, N) 1
- ___ duckweed spp. (*Lemnaceae*) 3
- ___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
- ___ *water lily (*Nymphaea tuberosa*, N) 6
- ___ water shield (*Brasenia schreberi*, N) 4
- ___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
- ___ *pitcher plant (*Sarracenia purpurea*,N) 10
- ___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
- ___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
- ___ a.*wild rice (*Zizania aquatica*, N) 10;
- 1 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
- 11 c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

- ___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
- ___ nutsedge spp. (*Cyperus*) 2
- ___ *orchid spp.: species (if known)_____
- ___ rush spp. (*Juncus*) 4
- ___ sedge spp. (*Carex*) sp.1=3 *additional=7
- ___ *spiderlily (*Hymenocallis occidentalis*) 9
- ___ sweet flag (*Acorus calamus*) 0
- ___ *3-way sedge (*Dulichium arundinaceum*) 10
- ___ *twig rush (*Cladium mariscoides*, N) 10
- ___ *umbrella sedge (*Fuirena squarrosa*, N) 10
- ___ wild hyacinth (*Camassia scilloides*) 5
- ___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
- ___ *bedstraw spp. (*Galium) 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
- 1 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. m., skullcap 5
- ___ moneywort (*Lysimachia nummularia*) 0
- ___ monkey flower spp. (*Mimulus*) 4
- ___ nettle (*Urtica procera*) 1
- ___ purple loosestrife (*Lythrum salicaria*) 0
- ___ *richweed (*Collinsonia canadensis*) 8
- ___ *St. John's wort spp.(*Hypericum/Triandeum*)8
- ___ sunflower spp. (*Helianthus*) 4
- ___ *swamp loosestrife (*Decodon verticillatus*, N) 8
- ___ swamp milkweed (*Asclepias incarnata*) 4
- ___ toothcup spp. (*Ammania & Rotala*) 2
- ___ *turtlehead spp. (*Chelone*) 8
- ___ virgin's bower (vine) (*Clematis virginiana*) 3
- ___ water puslane (*Ludwigia palustris*) 3
- ___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
- ___ Amer. bellflower (*Campanula americana*) 4
- ___ *asters: bristly aster (*Aster puniceus*) 7
- ___ *flat-topped aster (*A. umbellatus*) 8
- ___ other aster spp. (e.g. New Engl.-, panicled-a) 3
- ___ *black-eyed Susan (*Rudbeckia fulgida*) 8
- ___ cardinal flower (*Lobelia cardinalis*) 4

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___ cress spp. (*Cardamine*) 4
1 dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Aplos*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
1 poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite
1 red maple (*Acer rubrum*) 5
___ silver maple (*A. saccharinum*) 1

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

OTHER _____

InWrap, Terg revised June 2005

NWI Polygon # 6/ L6A Data Reference # _____
(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 present in the polygon? NO
- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? YES

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
✓ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*): Shallow Marsh

2.6 Disturbances of Hydrology (check all that apply): None

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

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

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
S Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 07 606A Data Reference # _____

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 cover in the polygon ___ 100-75 __75-50 __ 50-25 ✓ <25

Amount of dead woody material on the soil surface: ✓ nil (<5% cover)__ scattered (5-15% cover) frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y (N) Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. (Y) N 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?
   3b. **Y N** 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y (N) Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. **Y** (N) Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. **Y N** 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y (N) Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 6T1 L6L6A Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

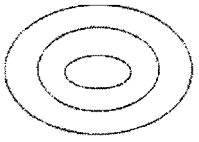
1b. If only one vegetation zone is evident, which best describes the site?

_____ 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.

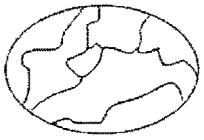
2. If more than one vegetation zone is present in the polygon, which interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



☐

Type Two Interspersion



☐

3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Juncus effusus 4
b Carex lurida 3
c N.K. grass 2
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a None
b _____
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a None
b _____
c _____
d _____

Tree & shrub canopy: ✓nil ☐separate, seldom touching ☐often touching ☐more or less
Mature trees (>12" dbh) present: ☐ yes ✓no

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

Borders Agricultural field - May be mowed

NWI Polygon # 67 L6A **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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_____

NWI Polygon # 67 64A **Data Reference #** _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # Co7 Lole A Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
___ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
11 c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
11 rush spp. (*Juncus*) 4
111 sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 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
1 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

NWI Polygon # 67 1d0A Data Reference # _____

___ cress spp. (*Cardamine*) 4
_1_ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) *3*
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifoius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ *swamp holly & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite

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

Trees - lvs. simple and alternate

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

OTHER _____

In-WRAP Summary Sheet

Date Report Generated: August 2005
Wetland site name: Wetland 164
Data Reference # _____
Date of Site Visit: June 21, 2005
NWI polygons in Site (quadrangle and NWI id. numbers): 164, 165, 166, 166A

TIER 1 SUMMARY:

a. Total wetland area (hectares): 1.06 ha 2.62 acres

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

(Valuable) More Favorable Favorable Neutral

c. Surrounding land use - numerical rank (max. = 1): .25

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

TIER 2 SUMMARY *NWI Polygon Id.* 165

a. Indiana Wetland community type: Shallow Marsh

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

c. Disturbances to site: Mining

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 Rating: Good Medium (Poor)

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

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 5 Rating: 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: 15 Rating: Good (Medium) Poor

h. Number of indicator taxa: 1 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 604

a. Indiana Wetland community type: Shrub Carr

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

c. Disturbances to site: former mining 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 Rating: Good Medium (Poor)

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

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 3.3 Rating: 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: 9 Rating: Good Medium (Poor)

h. Number of indicator taxa: 0 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 100

a. Indiana Wetland community type: Shrub Carr

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

c. Disturbances to site: None

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.): 3 Rating: Good (Medium) Poor

c. Flood and storm water storage - numerical rank (5 max.): 3 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 2 Rating: 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: 10 Rating: Good Medium (Poor)

h. Number of indicator taxa: 0 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 6l6A

a. Indiana Wetland community type: Shallow Marsh

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

c. Disturbances to site: Mining

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 Rating: Good Medium (Poor)

c. Flood and storm water storage - numerical rank (5 max.): 3 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 3.5 Rating: 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: 9 Rating: Good Medium (Poor)

h. Number of indicator taxa: 2 Rating: Good Medium (Poor)

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: W76

Ownership (if known): _____

USGS Topographic Quadrangle(s): Winslow

USGS Watershed map 14-Digit HUC: 05120208170090

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

NWI Polygon ID Number	76	76A			
Cowardin Classification	PFO	PSS			
Polygon Size (hectares)	1.6ha 3.85 acres	0.26ha 0.62 acres			

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: Lars Carlson / Mitchell

Agency: Jacobs

Date assessed: June 22, 2005 Time assessed: 11:00

Weather 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.):

None

1.3 Wetland Size:

Size of site under assessment: 1.8 ha (4.47 acres)

Size of total wetland complex (all contiguous wetland polygons): 1.8ha (4.47 acres)

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 forming the perimeter of the wetland site (indicate the % of each):

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

NWI Polygon # 76 Data Reference # _____
(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 present in the polygon? No
- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
✓ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*):

Swamp forest

2.6 Disturbances of Hydrology (check all that apply):

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

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common): None

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

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

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

_____ Good ✓ Medium _____ Poor

NWI Polygon # 76 Data Reference # _____

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 cover in the polygon ___ 100-75 ___75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface:

✓ nil (<5% cover) ___ scattered (5-15% cover) ___ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. (Y) N 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?
   3b. **Y N** 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y (N) Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y (N) Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. **Y N** 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y (N) Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 760 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

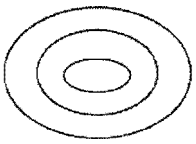
1b. If only one vegetation zone is evident, which best describes the site?

✓ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

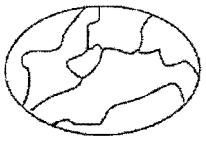
_____ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Impatiens Capensis 3 d _____

b _____ e _____

c _____ f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Fraxinus pennsylvanica 2 c _____

b _____ d _____

Dominant **Tree** Species listed in order of relative abundance.

a Salix sp. 3 c _____

b _____ d _____

Tree & shrub canopy: nil separate, seldom touching (often touching) more or less closed

Mature trees (>12" dbh) present: yes (no)

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

Marginally wet [illegible] swale between two fields

NWI Polygon # 76 **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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_____

NWI Polygon # 76 **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # T6 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
___ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
___ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium*) 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

NWI Polygon # 710 **Data Reference #** _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9 S. gram.
___ *grass of Parnassus (*Parnassia glauca*) 10
___ *Indian plantain (*Cacalia plantaginea*) 10
___ ironweed spp. (*Vernonia*) 4
1 jewelweed, touch-me-not spp. (*Impatiens*) 3
___ lizard's tail (*Saururus cernuus*) 4
___ lobelia spp. (*Lobelia*) 4
___ *marsh marigold (*Caltha palustris*) 7
___ *moonseed (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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
1 aven spp.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
1 ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite
1 red maple (*Acer rubrum*) 5
___ silver maple (*A. saccharinum*) 1

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

OTHER _____

InWrap, Terg revised June 2005

NWI Polygon # 76(A) **Data Reference #** _____
(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):

X Depressional _____ Slope _____ Floodplain _____ Lacustrine
_____ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water present in the polygon? Yes

- If standing water is present, is the water greater than 2 meters in depth? 4 2 in

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
X Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ Artificially Drained

2.4 Soil Type:

_____ Organic (i.e. peat, etc.) X Mineral _____ Both Mineral and Organic Present

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

Shrub marsh

2.6 Disturbances of Hydrology (check all that apply):

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

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

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): None

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

X 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

NWI Polygon # 76 A Data Reference # _____

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 X 100-75 ___75-50 ___ 50-25 ___ <25

Estimated woody plant foliar cover in the polygon ___ 100-75 ___75-50 ___ 50-25 X <25

Amount of dead woody material on the soil surface:

X nil (<5% cover) ___ scattered (5-15% cover) ___ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y N Does the wetland have a significant amount of vegetative (specifically perennial 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?
not directly - but recs runoff from ag. surround

3. If wetland in question is a depressional wetland answer 3a, if not, answer 3b
3a. Y N 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?
3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y N Is a vegetative buffer area (>15 m wide) 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.
Average 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, if not, answer 1b
1a. Y N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 164 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

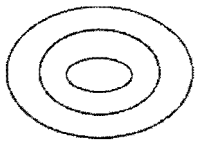
1b. If only one vegetation zone is evident, which best describes the site?

✓ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

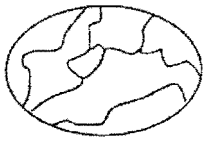
_____ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 Juncus effusis 24 d _____

b Lix. graminoid 4 e _____

c C. canadensis 3 f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Salix 3 c _____

b _____ d _____

Dominant **Tree** Species listed in order of relative abundance.

a _____ c _____

b _____ d _____

Tree & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

Finger of wetland dom by Carex & grasses

3d. water in main portion of wetland

Shrubs more common

NWI Polygon # 76A **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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_____

NWI Polygon # Top **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 76A **Data Reference #** _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
- ___ *bladderwort spp. (*Utricularia*, N) 10
- ___ coontail (*Ceratophyllum demersum*, N) 1
- ___ duckweed spp. (*Lemnaceae*) 3
- ___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
- ___ *water lily (*Nymphaea tuberosa*, N) 6
- ___ water shield (*Brasenia schreberi*, N) 4
- ___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
- ___ *pitcher plant (*Sarracenia purpurea*,N) 10
- ___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
- ___ *beak rush spp. (*Rhynchospora*, N) 10
- ___ blueflag iris (*Iris virginica*) 5
- ___ bulrush spp. (*Scirpus / Schoenoplectus*) 5
- ___ *bur reed spp. (*Sparganium*) 9
- 1 cat-tail spp. (*Typha*) 1
- ___ *cotton grass spp. (*Eriophorum*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
- ___ a.*wild rice (*Zizania aquatica*, N) 10;
- 1 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
- ___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

- ___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
- ___ nutsedge spp. (*Cyperus*) 2
- ___ *orchid spp.: species (if known)_____
- 11 rush spp. (*Juncus*) 4
- 111 sedge spp. (*Carex*) sp.1=3 *additional=7
- ___ *spiderlily (*Hymenocallis occidentalis*) 9
- ___ sweet flag (*Acorus calamus*) 0
- ___ *3-way sedge (*Dulichium arundinaceum*) 10
- ___ *twig rush (*Cladium mariscoides*, N) 10
- ___ *umbrella sedge (*Fuirena squarrosa*, N) 10
- ___ wild hyacinth (*Camassia scilloides*) 5
- ___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
- ___ *bedstraw spp. (*Galium) 6*
- ___ beggar's tick spp. (*Bidens*) 3
- ___ blue vervain (*Verbena hastata*) 3
- 1 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
- 1 Joe-pye weed spp. (*Eupatorium*) 5
- ___ *loosestrife spp. (*Lysimachia*) 6
- ___ meadow beauty (*Rhexia virginica*) 5
- ___ mint spp.: e.g. hedge nettle, mtn. m., skullcap 5
- ___ moneywort (*Lysimachia nummularia*) 0
- ___ monkey flower spp. (*Mimulus*) 4
- ___ nettle (*Urtica procera*) 1
- ___ purple loosestrife (*Lythrum salicaria*) 0
- ___ *richweed (*Collinsonia canadensis*) 8
- ___ *St. John's wort spp.(*Hypericum/Triandeum*)8
- ___ sunflower spp. (*Helianthus*) 4
- ___ *swamp loosestrife (*Decodon verticillatus*, N) 8
- ___ swamp milkweed (*Asclepias incarnata*) 4
- ___ toothcup spp. (*Ammania & Rotala*) 2
- ___ *turtlehead spp. (*Chelone*) 8
- ___ virgin's bower (vine) (*Clematis virginiana*) 3
- ___ water puslane (*Ludwigia palustris*) 3
- ___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
- ___ Amer. bellflower (*Campanula americana*) 4
- ___ *asters: bristly aster (*Aster puniceus*) 7
- ___ *flat-topped aster (*A. umbellatus*) 8
- ___ other aster spp. (e.g. New Engl.-, panicled-a) 3
- ___ *black-eyed Susan (*Rudbeckia fulgida*) 8
- ___ cardinal flower (*Lobelia cardinalis*) 4

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NWI Polygon # 76A **Data Reference #** _____

___ cress spp. (*Cardamine*) 4
_1_ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium* &*Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea*&*Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
_1_ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
_1_ ash, green (*Fraxinus pensylvanica*) 3
_1_ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite
_1_ red maple (*Acer rubrum*) 5
___ silver maple (*A. saccharinum*) 1

Trees - lvs. simple and alternate
___ *alder, speckled (*Alnus rugosa*) 9
___ birch, river (*Betula nigra*) 2
___ black gum (*Nyssa sylvatica*) 5
___ cottonwood, eastern (*Populus deltoides*) 1
___ *cottonwood, swamp (*P. heterophylla*, SW) 8
_1_ elm, Amer. (*Ulmus americana*) 3
___ hackberry (*Celtis occidentalis*) 3
___ ironwood (*Carpinus caroliniana*) 5
_1_ oak, pin or white (*Quercus*) 4
___ *oak, Shumard's, sw. chestnut, sw. white 7
___ *papaw (*Asimina triloba*) 6
___ *sugarberry (*Celtis laevigata*, S) 7
___ sweet gum (*Liquidambar styraciflua*) 4
___ sycamore, Amer. (*Platanus occidentalis*) 3
_1_ willow spp. (*Salix*) sp.1=3; *additional=7

OTHER Dogwood spp

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In-WRAP Summary Sheet

Date Report Generated: August 2005
Wetland site name: 76
Data Reference #
Date of Site Visit: June 22, 2005
NWI polygons in Site (quadrangle and NWI id. numbers): 76, 76A

TIER 1 SUMMARY:

a. Total wetland area (hectares): 1.8ha (4.47 acres)

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

(Valuable) More Favorable Favorable Neutral

c. Surrounding land use - numerical rank (max. = 1): .2

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

TIER 2 SUMMARY *NWI Polygon Id.* 76

a. Indiana Wetland community type: Swamp Forest

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

c. Disturbances to site: Ditching

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 Rating: Good Medium (Poor)

c. Flood and storm water storage - numerical rank (5 max.): 3 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 4.7 Rating: 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: 13 Rating: Good Medium (Poor)

h. Number of indicator taxa: 1 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 76(A)

a. Indiana Wetland community type: Shrub carr

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

c. Disturbances to site: Ditching

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.): 3 Rating: Good (Medium) Poor

c. Flood and storm water storage - numerical rank (5 max.): 3 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 3.5 Rating: 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: 21 Rating: Good (Medium) Poor

h. Number of indicator taxa: 4 Rating: Good Medium (Poor)

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: W80

Ownership (if known): _____

USGS Topographic Quadrangle(s): Sandy Hook

USGS Watershed map 14-Digit HUC: 05120202100

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

NWI Polygon ID Number	80				
Cowardin Classification	PABGh				
Polygon Size (hectares)	0.11 ha 0.27 acres				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: Lars Meredith

Agency: Jacobs

Date assessed: June 22 Time assessed: 7:30 AM

Weather conditions: Sunny hazy

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.):

None

1.3 Wetland Size:

Size of site under assessment: 0.11 ha (0.27 acres)

Size of total wetland complex (all contiguous wetland polygons): (0.27 acres) 0.11 ha

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
__X__ The wetland site is isolated

General assessment of adjacent land use / land cover in the area forming the perimeter of the wetland site (indicate the % of each):

_____ Native Vegetation - woodland
_____ Native Vegetation - old field / scrub
95% Agricultural - tilled
_____ Agricultural - pasture
_____ Recreation - green space, mowed
_____ Road / highway / railroad bed / parking lot
_____ Industrial
_____ Residential - single family
_____ Commercial or multifamily residential

NWI Polygon # 80 **Data Reference #** _____
(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):

X Depressional _____ Slope _____ Floodplain _____ Lacustrine
_____ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water present in the polygon? Yes

- If standing water is present, is the water greater than 2 meters in depth? Yes

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

✓ Permanently Flooded
_____ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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
_____ Tiles
_____ Dams
_____ Road or Railroad Embankment
_____ Culvert
X Other Human Disturbances to the Hydrology (explain): appears to be man made

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

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
S Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 30 Data Reference # _____

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 cover in the polygon ___ 100-75 ___ 75-50 ___ 50-25 ___ <25 0.

Amount of dead woody material on the soil surface:

✓ nil (<5% cover) ___ scattered (5-15% cover) ___ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y N Does the wetland have a significant amount of vegetative (specifically perennial 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?

No disch. points but [illegible] sheet flow for Ag.

3. If wetland in question is a depressional wetland answer 3a, if not, answer 3b
   3a. Y N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y N Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 80 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

1. How many vegetation zones are evident in this wetland polygon? 3

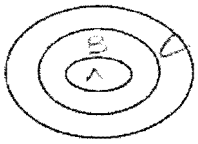
1b. If only one vegetation zone is evident, which best describes the site?

_____ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

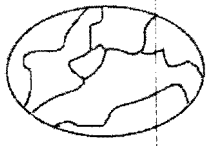
_____ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Lemna 3 d _____

b U.K. aquatic emergent 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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

Open water @ center - floating lemna

NWI Polygon # 30 Data Reference # _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Typha latifolia * 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 & shrub canopy: (nil) separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes (no)

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site). Typha rings open water Highly utilized by blackbirds + frogs

3b.2 Dominant Plant Species: Vegetation zone C

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Juncus effusis d _____
b Apocynum cannabinum (Indian Hemp.) e _____
c _____ f _____

NWI Polygon # 80 **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site). Zone C is patchy - mosaic like w/in zone. lg. patch of Indian hemp lg. patch of Sweets etc.

3b.2 Dominant Plant Species: Vegetation zone D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 80 **Data Reference #** _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
- ___ *bladderwort spp. (*Utricularia*, N) 10
- ___ coontail (*Ceratophyllum demersum*, N) 1
- 1 duckweed spp. (*Lemnaceae*) 3
- ___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
- ___ *water lily (*Nymphaea tuberosa*, N) 6
- ___ water shield (*Brasenia schreberi*, N) 4
- ___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
- ___ *pitcher plant (*Sarracenia purpurea*,N) 10
- ___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
- ___ *beak rush spp. (*Rhynchospora*, N) 10
- ___ blueflag iris (*Iris virginica*) 5
- ___ bulrush spp. (*Scirpus / Schoenoplectus*) 5
- ___ *bur reed spp. (*Sparganium*) 9
- 1 cat-tail spp. (*Typha*) 1
- ___ *cotton grass spp. (*Eriophorum*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
- ___ a.*wild rice (*Zizania aquatica*, N) 10;
- 1 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
- 1 c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

- ___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
- ___ nutsedge spp. (*Cyperus*) 2
- ___ *orchid spp.: species (if known)_____
- 11 rush spp. (*Juncus*) 4
- 1111 sedge spp. (*Carex*) sp.1=3 *additional=7
- ___ *spiderlily (*Hymenocallis occidentalis*) 9
- ___ sweet flag (*Acorus calamus*) 0
- ___ *3-way sedge (*Dulichium arundinaceum*) 10
- ___ *twig rush (*Cladium mariscoides*, N) 10
- ___ *umbrella sedge (*Fuirena squarrosa*, N) 10
- ___ wild hyacinth (*Camassia scilloides*) 5
- ___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
- ___ *bedstraw spp. (*Galium*) 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
- 1 Indian hemp (*Apocynum cannabinum*) 2
- 1 Joe-pye weed spp. (*Eupatorium*) 5
- ___ *loosestrife spp. (*Lysimachia*) 6
- ___ meadow beauty (*Rhexia virginica*) 5
- ___ mint spp.: e.g. hedge nettle, mtn. m., skullcap 5
- ___ moneywort (*Lysimachia nummularia*) 0
- ___ monkey flower spp. (*Mimulus*) 4
- ___ nettle (*Urtica procera*) 1
- ___ purple loosestrife (*Lythrum salicaria*) 0
- ___ *richweed (*Collinsonia canadensis*) 8
- ___ *St. John's wort spp.(*Hypericum/Triandeum*)8
- ___ sunflower spp. (*Helianthus*) 4
- ___ *swamp loosestrife (*Decodon verticillatus*, N) 8
- ___ swamp milkweed (*Asclepias incarnata*) 4
- ___ toothcup spp. (*Ammania & Rotala*) 2
- ___ *turtlehead spp. (*Chelone*) 8
- ___ virgin's bower (vine) (*Clematis virginiana*) 3
- ___ water puslane (*Ludwigia palustris*) 3
- ___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
- ___ Amer. bellflower (*Campanula americana*) 4
- ___ *asters: bristly aster (*Aster puniceus*) 7
- ___ *flat-topped aster (*A. umbellatus*) 8
- ___ other aster spp. (e.g. New Engl.-, panicled-a) 3
- ___ *black-eyed Susan (*Rudbeckia fulgida*) 8
- ___ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

NWI Polygon # 80 Data Reference # _____

___ cress spp. (*Cardamine*) 4
_1_ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
_1_ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
_1_ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite
___ red maple (*Acer rubrum*) 5
___ silver maple (*A. saccharinum*) 1

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

OTHER Virginia dayflower

(Commelina virginica)
unknown aquatic emerge

In-WRAP Summary Sheet

Date Report Generated: August 2005
Wetland site name: 80
Data Reference #
Date of Site Visit: June 22, 2005
NWI polygons in Site (quadrangle and NWI id. numbers): 80

TIER 1 SUMMARY:

a. Total wetland area (hectares): 0.11 ha (0.27 acres)

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

Valuable More Favorable Favorable (Neutral)

c. Surrounding land use - numerical rank (max. = 1): 0.2

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

TIER 2 SUMMARY

NWI Polygon Id. W80

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

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

c. Disturbances to site: Appears to be man-made

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 Rating: Good Medium (Poor)

c. Flood and storm water storage - numerical rank (5 max.): 3 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: (Good) Medium Poor

d. Average coefficient of conservatism: 2.5 Rating: 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: 19 Rating: (Good) Medium Poor

h. Number of indicator taxa: 4 Rating: Good (Medium) Poor

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** _____

a. Indiana Wetland community type: _____

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: _____

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.): ____ Rating: Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max.): ____ Rating: Good Medium Poor

TIER 3B SUMMARY

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

b. Stratification as indicator of animal habitat: Valuable Neutral

c. Number of dominant plant taxa observed: ____ Rating: Good Medium Poor

d. Average coefficient of conservatism: ____ Rating: 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: ____ Rating: Good Medium Poor

h. Number of indicator taxa: ____ Rating: Good Medium Poor

Indiana Wetland Rapid Assessment Protocol **Data Reference #** _____

UPDATED POLYGON SIZES JULY 2009

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: W 80A

Ownership (if known): _____

USGS Topographic Quadrangle(s): Sandy Hook

USGS Watershed map 14-Digit HUC: 05120202100016

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

NWI Polygon ID Number	80A	80B	80C	80D	
Cowardin Classification	PEM	PFO	PFO	PEM	
Polygon Size (hectares)	0.82	0.27	2.5	0.17	
	2.03ac	0.66a	6.10a	0.42ac	

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: Lars Carlson

Agency: Jacobs Civil

Date assessed: 8/16/05 and 6/2009 Time assessed: 5:00 PM

Weather conditions: Hot humid drizzle

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.):

Rain previous night, drizzle ongoing

1.3 Wetland Size:

Size of site under assessment: 0.82 (2.03 acres)

Size of total wetland complex (all contiguous wetland polygons): 3.76 (9.22 acres)

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 forming the perimeter of the wetland site (indicate the % of each):

__25__ Native Vegetation - woodland
_____ Native Vegetation - old field / scrub
_____ Agricultural - tilled
__75__ Agricultural - pasture
_____ Recreation - green space, mowed
_____ Road / highway / railroad bed / parking lot
_____ Industrial
_____ Residential - single family
_____ Commercial or multifamily residential

NWI Polygon # 80A **Data Reference #** _____
(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 present in the polygon? Y
- If standing water is present, is the water greater than 2 meters in depth? N

Is standing water present in an adjacent polygon? Y

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
✓ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*): Shallow Marsh

2.6 Disturbances of Hydrology (check all that apply):

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

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common): None

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): _____

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

Appears to be supported by seep from adj. slope

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 80A Data Reference # _____

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 cover in the polygon ___ 100-75 ___75-50 ___ 50-25 ✓ <25

Amount of dead woody material on the soil surface: ___ nil (<5% cover) ✓ scattered (5-15% cover)

____ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. (Y) N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y (N) Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y (N) Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y (N) Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 3.3A Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

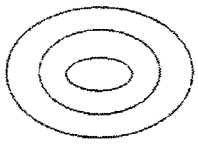
1b. If only one vegetation zone is evident, which best describes the site?

✓ 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 interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



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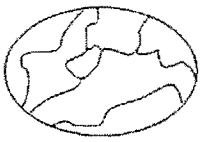
Type Two Interspersion



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3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Typha angustifolia 1 d _____
b Impatiens capensis 3 e _____
c Fowl manna gr. 4 f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Salix sp. 3 c _____
b _____ d _____

Dominant **Tree** Species listed in order of relative abundance.

a N/A c _____
b _____ d _____

Tree & shrub canopy: ☒ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closed

Mature trees (>12" dbh) present: ☐ yes ☒ no

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

NWI Polygon # 80A **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # 80A **Data Reference #** _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 80A Data Reference # _____

3b.3 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-coefficents * = species with high conservatism)*

Herbs: non-seed plants
___ horsetail, scouring rush spp. (*Equisetum*) 2
___ *ferns: marsh shield fern spp. (*Dryopteris*) 7
___ *cinnamon fern (*Osmunda cinnamomea*) 9
___ *royal fern (*Osmunda regalis*) 8
_1_ sensitive fern (*Onoclea sensibilis*) 4
___ *other: species (if known) _____
___ marsh club moss (*Selaginella apoda*) 4
___ *Sphagnum moss spp. (*Sphagnum*, N) 10

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 10
___ blueflag iris (*Iris virginica*) 5
___ bulrush spp. (*Scirpus / Schoenoplectus*) 5
___ *bur reed spp. (*Sparganium*) 9
_1_ cat-tail spp. (*Typha*) 1
___ *cotton grass spp. (*Eriophorum*, N) 10

Grasses (family *Gramineae*) – Indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
_1_ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ blunt needle sedge (*E. obtusa*) 3
___ *other needle sedge spp. (*Eleocharis*) 9
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
___ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
_1_ beggar's tick spp. (*Bidens*) 3
___ blue vervain (*Verbena hastata*) 3
_1_ boneset (*Eupatorium perfoliatum*) 4
___ bugleweed spp. (*Lycopus*) 5
_1_ clearweed spp. (*Pilea*) 3
___ cup plant (*Silphium perfoliatum*) 4
_1_ false nettle (*Boehmeria cylindrica*) 3
___ *fen betony (*Pedicularis lanceolata*) 6
___ *gentian spp. (*Gentiana & Gentianopsis*) 8
_1_ giant ragweed (*Ambrosia trifida*) 0
___ Indian hemp (*Apocynum cannabinum*) 2
___ Joe-pye weed spp. (*Eupatorium*) 5
___ loosestrife spp. (*Lysimachia*) 3
___ meadow beauty (*Rhexia virginica*) 5
___ mint spp.: e.g. hedge nettle, mtn. m., skullcap 5
___ monkey flower spp. (*Mimulus*) 4
_1_ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swp. loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
_1_ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

NWI Polygon # 80A

Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
_1_ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
_1_ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *grass of Parnassus (*Parnassia glauca*) 10
___ *Indian plantain (*Cacalia plantaginea*) 10
___ ironweed spp. (*Vernonia*) 4
_1_ jewelweed, touch-me-not spp. (*Impatiens*) 3
___ lizard's tail (*Saururus cernuus*) 4
___ lobelia spp. (*Lobelia*) 4
___ *marsh marigold (*Caltha palustris*) 7
___ *moonseed (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium* &*Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
_1_ smartweed spp.: jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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

_1_ aven spp.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
_1_ poison ivy (vine) (*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 cathar. & frangula*) 0
_1_ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
_1_ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifolius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ swamp rose (*Rosa palustris*) 5
___ *winterberry (*Ilex verticillata*) 8
Red Bud

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
_1_ 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 - lvs. simple and opposite

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

Trees - lvs. simple and alternate

_1_ Amer. elm (*Ulmus americana*) 3
___ Amer. sycamore (*Platanus occidentalis*) 3
___ black gum (*Nyssa sylvatica*) 5
___ cottonwood, eastern (*Populus deltoides*) 1
___ *cottonwood, swamp (*P. heterophylla*, SW) 8
___ hackberry (*Celtis occidentalis*) 3
_1_ ironwood (*Carpinus caroliniana*) 5
___ oak, pin or white (*Quercus*) 4
___ *oak, Shumard's, sw. chestnut, sw. white 7
___ *papaw (*Asimina triloba*) 6
___ river birch (*Betula nigra*) 2
___ *speckled alder (*Alnus rugosa*) 9
___ *sugarberry (*Celtis laevigata*, S) 7
_1_ sweet gum (*Liquidambar styraciflua*) 4
___ white mulberry (*Morus alba*) 0
_1_ willow spp. (*Salix*) sp.1=3; *additional=7

OTHER _____

NWI Polygon # SOB **Data Reference #** _____
(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 present in the polygon? No
- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? Y

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
✓ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*): Swamp Forest

2.6 Disturbances of Hydrology (check all that apply):

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

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common): None

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): _____

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

Appears to be supported by adj. seep

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 308 Data Reference # _____

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 cover in the polygon ___ 100-75 ✓ 75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface: ___ nil (<5% cover) ✓ scattered (5-15% cover)

_____ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. (Y) N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y (N) Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y (N) Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y (N) Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 808 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

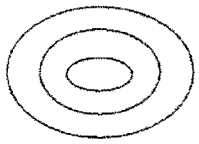
1b. If only one vegetation zone is evident, which best describes the site?

✓ 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 interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



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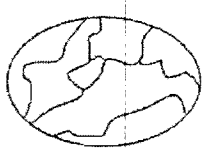
Type Two Interspersion



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3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Impatiens capensis 3
b Toxicodendron radicans 1
c Elymus sp. 4
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Carpinus caroliniana 5
b Red bud
c Ulmus americana 3
d _____

Dominant **Tree** Species listed in order of relative abundance.

a Acer rubrum 5
b Fraxinus penn. 3
c Ulmus americana
d _____

Tree & shrub canopy: ☐ nil ☐ separate, seldom touching ☐ often touching ☒ more or less closed

Mature trees (>12" dbh) present: ☒ yes ☐ no

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

NWI Polygon # 205 **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # 805 **Data Reference #** _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D Observation Point **#4**

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ yes ☐ no

NWI Polygon # 80 B Data Reference # _____

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-coefficents * = species with high conservatism)*

Herbs: non-seed plants

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

Herbs: lvs. floating or submergent

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

Herbs: insectivorous plants

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

Herbs: linear-lvs. or ± leafless monocots

___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – Indicate types & number of species

___ a.*wild rice (*Zizania aquatica*, N) 10;
1 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
1 c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
___ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

Herbs: wide-leafed monocots

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

Herbs: dicots - lvs. opposite/whorled

___ *bedstraw spp. (*Galium*) 6
1 beggar's tick spp. (*Bidens*) 3
___ blue vervain (*Verbena hastata*) 3
1 boneset (*Eupatorium perfoliatum*) 4
___ bugleweed spp. (*Lycopus*) 5
1 clearweed spp. (*Pilea*) 3
___ cup plant (*Silphium perfoliatum*) 4
1 false nettle (*Boehmeria cylindrica*) 3
___ *fen betony (*Pedicularis lanceolata*) 6
___ *gentian spp. (*Gentiana & Gentianopsis*) 8
1 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
1 nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

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

___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
1 other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

NWI Polygon # 80B

Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
1 garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium* &*Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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

1 aven spp.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea*&*Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
1 elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifoius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ swamp rose (*Rosa palustris*) 5
___ *winterberry (*Ilex verticillata*) 8

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
1 ash, green (*Fraxinus pensylvanica*) 3
1 *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
1 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 - lvs. simple and opposite

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

Trees - lvs. simple and alternate

1 Amer. elm (*Ulmus americana*) 3
___ Amer. sycamore (*Platanus occidentalis*) 3
___ black gum (*Nyssa sylvatica*) 5
___ cottonwood, eastern (*Populus deltoides*) 1
___ *cottonwood, swamp (*P. heterophylla*, SW) 8
___ hackberry (*Celtis occidentalis*) 3
1 ironwood (*Carpinus caroliniana*) 5
___ oak, pin or white (*Quercus*) 4
___ *oak, Shumard's, sw. chestnut, sw. white 7
___ *papaw (*Asimina triloba*) 6
___ river birch (*Betula nigra*) 2
___ *speckled alder (*Alnus rugosa*) 9
___ *sugarberry (*Celtis laevigata*, S) 7
1 sweet gum (*Liquidambar styraciflua*) 4
___ white mulberry (*Morus alba*) 0
1 willow spp. (*Salix*) sp.1=3; *additional=7

OTHER redbud

NWI Polygon # PSO C **Data Reference #** _____
(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 present in the polygon? No

- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? Y

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*): Swamp Forest

2.6 Disturbances of Hydrology (check all that apply):

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

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

None

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): _____

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

Supported by adjacent seep

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 80 e Data Reference # _____

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 cover in the polygon ___ 100-75 ___75-50 ✓50-25 ___ <25

Amount of dead woody material on the soil surface: __ nil (<5% cover) ✓ scattered (5-15% cover) frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. Y N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y N Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 90C Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

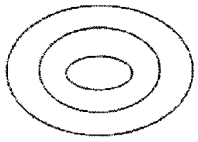
1b. If only one vegetation zone is evident, which best describes the site?

✓ 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.

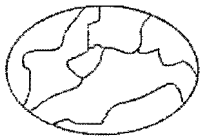
2. If more than one vegetation zone is present in the polygon, which interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



☐

Type Two Interspersion



☐

3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Toxicodendron rad. 1 d _____
b Impatiens capensis 3 e _____
c Elymus sp 4 f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Ulmus americana 3 c _____
b _____ d _____

Dominant **Tree** Species listed in order of relative abundance.

a Acer Rubrum 5 c _____
b Fraxinus penn. 3 d _____

Tree & shrub canopy: ☐ nil ☑ separate, seldom touching ☐ often touching ☐ more or less
Mature trees (>12" dbh) present: ☑ yes ☐ no

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

NWI Polygon # BOC _____ **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # _____ **Data Reference #** _____

BUC

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 80C Data Reference # _____

3b.3 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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
___ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ blunt needle sedge (*E. obtusa*) 3
___ *other needle sedge spp. (*Eleocharis*) 9
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
___ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ 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*) 3
___ meadow beauty (*Rhexia virginica*) 5
___ mint spp.: e.g. hedge nettle, mtn. m., skullcap 5
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swp. loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

NWI Polygon # 80 C Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
1 garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
1 *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium* &*Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea*&*Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
1 poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
1 elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifolius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ swamp rose (*Rosa palustris*) 5
___ *winterberry (*Ilex verticillata*) 8

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
1 ash, green (*Fraxinus pensylvanica*) 3
X *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
1 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 - lvs. simple and opposite
___ red maple (*Acer rubrum*) 5
___ silver maple (*A. saccharinum*) 1

Trees - lvs. simple and alternate
1 Amer. elm (*Ulmus americana*) 3
___ Amer. sycamore (*Platanus occidentalis*) 3
___ black gum (*Nyssa sylvatica*) 5
___ cottonwood, eastern (*Populus deltoides*) 1
___ *cottonwood, swamp (*P. heterophylla*, SW) 8
___ hackberry (*Celtis occidentalis*) 3
1 ironwood (*Carpinus caroliniana*) 5
___ oak, pin or white (*Quercus*) 4
___ *oak, Shumard's, sw. chestnut, sw. white 7
___ *papaw (*Asimina triloba*) 6
___ river birch (*Betula nigra*) 2
___ *speckled alder (*Alnus rugosa*) 9
___ *sugarberry (*Celtis laevigata*, S) 7
1 sweet gum (*Liquidambar styraciflua*) 4
___ white mulberry (*Morus alba*) 0
1 willow spp. (*Salix*) sp.1=3; *additional=7

OTHER _____

NWI Polygon # 001 **Data Reference #** _____
(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 present in the polygon? No

- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? Y

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
✓ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*): Shallow Marsh

2.6 Disturbances of Hydrology (check all that apply): None

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

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

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn None
_____ Reed canary grass
_____ Other (list): _____

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

Supported by adjacent

2.9 Presence of Special Community Types: None.

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 602 Data Reference # _____

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 cover in the polygon ✓ ___ 100-75 __75-50 __ 50-25 ✓ <25

Amount of dead woody material on the soil surface: ✓ nil (<5% cover)__ scattered (5-15% cover) frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. **Y N** Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. **Y N** 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?
   3b. **Y N** 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. **Y N** Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. **Y N** Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. **Y N** Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. **Y N** 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. **Y N** Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 80D. Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

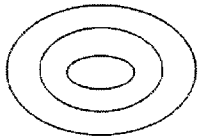
1b. If only one vegetation zone is evident, which best describes the site?

✓ 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.

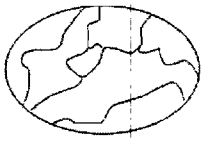
2. If more than one vegetation zone is present in the polygon, which interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



☐

Type Two Interspersion



☐

3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Impatiens capensis 3
b Fowl manna grass 4
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a None
b _____
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a None
b _____
c _____
d _____

Tree & shrub canopy: ☑ nil ☐ separate, seldom touching ☐ often touching ☐ more or less
Mature trees (>12" dbh) present: ☐ yes ☑ no

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

NWI Polygon # BOP **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # _____ **Data Reference #** _____

NWI Polygon # 807 **Data Reference #** _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 80D **Data Reference #** _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
11 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
___ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 6*
1 beggar's tick spp. (*Bidens*) 3
___ blue vervain (*Verbena hastata*) 3
___ boneset (*Eupatorium perfoliatum*) 4
___ bugleweed spp. (*Lycopus*) 5
1 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
1 nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
1 other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
1 *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *grass of Parnassus (*Parnassia glauca*) 10
___ *Indian plantain (*Cacalia plantaginea*) 10
___ ironweed spp. (*Vernonia*) 4
1 jewelweed, touch-me-not spp. (*Impatiens*) 3
___ lizard's tail (*Saururus cernuus*) 4
___ lobelia spp. (*Lobelia*) 4
___ *marsh marigold (*Caltha palustris*) 7
___ *moonseed (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium* &*Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
1 smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifoius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ *swamp holly & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite
___ red maple (*Acer rubrum*) 5
___ silver maple (*A. saccharinum*) 1

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

OTHER _____

InWrap, Terg revised June 2005

In-WRAP Summary Sheet

Date Report Generated: August 2005
Wetland site name: W80(A)
Data Reference #
Date of Site Visit: August 16, 2005
NWI polygons in Site (quadrangle and NWI id. numbers): 80A 80B 80C 80D (Not shown in NWI)

TIER 1 SUMMARY:

a. Total wetland area (hectares): 3.96 Ha (9.88 acres)

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

Valuable More Favorable (Favorable) Neutral

c. Surrounding land use - numerical rank (max. = 1): .55

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

TIER 2 SUMMARY *NWI Polygon Id.* W80(A)

a. Indiana Wetland community type: Shallow Marsh

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

c. Disturbances to site: ditching

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.): 3 Rating: Good (Medium) Poor

c. Flood and storm water storage - numerical rank (5 max.): 2 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 2.8 Rating: 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: 24 Rating: (Good) Medium Poor

h. Number of indicator taxa: 1 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 80B

a. Indiana Wetland community type: Swamp Forest

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

c. Disturbances to site: Ditching

d. Exotic species rating: (Good) Medium Poor

e. Special Hydrologic Conditions Observed: possibly supported by seep

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.): 3 Rating: Good (Medium) Poor

c. Flood and storm water storage - numerical rank (5 max.): 2 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion as indicator of animal habitat: Valuable Favorable (Neutral)

b. Stratification as indicator of animal habitat: (Valuable) Neutral

c. Number of dominant plant taxa observed: 8 Rating: (Good) Medium Poor

d. Average coefficient of conservatism: 3.4 Rating: 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 Rating: Good (Medium) Poor

h. Number of indicator taxa: 1 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 80C

a. Indiana Wetland community type: Swamp Forest

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

c. Disturbances to site: Ditching

d. Exotic species rating: (Good) Medium Poor

e. Special Hydrologic Conditions Observed: possibly supported by seep

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.): 3 Rating: Good (Medium) Poor

c. Flood and storm water storage - numerical rank (5 max.): 2 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion as indicator of animal habitat: Valuable Favorable (Neutral)

b. Stratification as indicator of animal habitat: (Valuable) Neutral

c. Number of dominant plant taxa observed: 10 Rating: Good (Medium) Poor

d. Average coefficient of conservatism: 3.2 Rating: 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: 10 Rating: Good Medium (Poor)

h. Number of indicator taxa: 1 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 80D

a. Indiana Wetland community type: Shallow Marsh

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

c. Disturbances to site: Ditching

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.): 3 Rating: Good (Medium) Poor

c. Flood and storm water storage - numerical rank (5 max.): 2 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 2.5 Rating: 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: 11 Rating: Good Medium (Poor)

h. Number of indicator taxa: 1 Rating: Good Medium (Poor)

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: Sect 2 W89

Ownership (if known): _____

USGS Topographic Quadrangle(s): Sandy Hook

USGS Watershed map 14-Digit HUC: 05120208170096

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

NWI Polygon ID Number	89				
Cowardin Classification	PEM				
Polygon Size (hectares)	0.32ha 0.78acres				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: Lars Carlson Meredith de Carbonnel

Agency: Jacobs Civil Inc.

Date assessed: June 22, 05 Time assessed: 11:30 am

Weather conditions: Hazy Sun

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.):

None

1.3 Wetland Size:

Size of site under assessment: 0.32 ha (0.78 acres)

Size of total wetland complex (all contiguous wetland polygons): 0.32 ha (0.78 acres)

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 forming the perimeter of the wetland site (indicate the % of each):

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

NWI Polygon # 89 **Data Reference #** _____
(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 present in the polygon? Y

- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

✓ Permanently Flooded
_____ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*):

Shallow emergent

2.6 Disturbances of Hydrology (check all that apply):

_____ Ditching
_____ Tiles
_____ Dams
_____ Road or Railroad Embankment
_____ Culvert
✓ Other Human Disturbances to the Hydrology (explain): Former mining site likely wetland was created by mining activities

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

_____ Garlic Mustard
S *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 89 Data Reference # _____

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 cover in the polygon ___ 100-75 ___ 75-50 ___ 50-25 ✓ <25

Amount of dead woody material on the soil surface:

✓ nil (<5% cover) ___ scattered (5-15% cover) ___ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y (N) Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. (Y) N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. (Y) N Is a vegetative buffer area (>15 m wide) 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.
   Average width of buffer area (in meters) ≥ 15m approximate slope (percent) 7
   Wetland in ravine with steep slopes on both sides

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
   1a. (Y) N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y (N) Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 89 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

1. How many vegetation zones are evident in this wetland polygon? 2

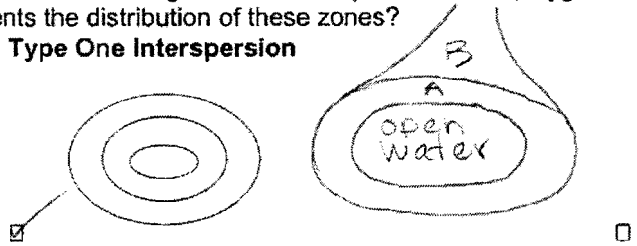
1b. If only one vegetation zone is evident, which best describes the site?

_____ 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.

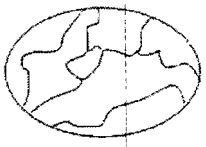
2. If more than one vegetation zone is present in the polygon, which interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



☑ ☐

Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Phragmites australis * O
b Typha sp. I
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a _____
b _____
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a _____
b _____
c _____
d _____

Tree & shrub canopy: ☑ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closed

Mature trees (>12" dbh) present: ☐ yes ☑ no

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

No amphibians. Water orange in color

NWI Polygon # 89 **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Phragmites australis
b u.k grass like 4
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Honey locust 1
b _____
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a _____
b _____
c _____
d _____

Tree & shrub canopy: ☑ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closed

Mature trees (>12" dbh) present: ☐ yes ☑ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site). Very low quality wetland. Highly disturbed by mining. No wildlife observed.

3b.2 Dominant Plant Species: Vegetation zone C

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____
b _____
c _____
d _____
e _____
f _____

NWI Polygon # 89 Data Reference # _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 39 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 10
___ blueflag iris (*Iris virginica*) 5
1 bulrush spp. (*Scirpus / Schoenoplectus*) 5
___ *bur reed spp. (*Sparganium*) 9
1 cat-tail spp. (*Typha*) 1
___ *cotton grass spp. (*Eriophorum*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
1 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
11 c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
11 sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 6*
1 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

NWI Polygon # 89 Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
1 smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

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

Trees - lvs. simple and opposite

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

Trees - lvs. simple and alternate

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

OTHER _____

InWrap, Terg revised June 2005

In-WRAP Summary Sheet

Date Report Generated: August 2005
Wetland site name: W89
Data Reference #
Date of Site Visit: June 2005
NWI polygons in Site (quadrangle and NWI id. numbers): 89

TIER 1 SUMMARY:

a. Total wetland area (hectares): .32ha (0.78 acres)

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

Valuable (More Favorable) Favorable Neutral

c. Surrounding land use - numerical rank (max. = 1): 1.0

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

TIER 2 SUMMARY *NWI Polygon Id.* W89

a. Indiana Wetland community type: Shallow Emergent Marsh

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

c. Disturbances to site: Former Mining 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.): 3 Rating: Good (Medium) Poor

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

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 1.5 Rating: 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: 17 Rating: Good (Medium) Poor

h. Number of indicator taxa: 2 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** _____

a. Indiana Wetland community type: _____

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: _____

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.): ____ Rating: Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max.): ____ Rating: Good Medium Poor

TIER 3B SUMMARY

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

b. Stratification as indicator of animal habitat: Valuable Neutral

c. Number of dominant plant taxa observed: ____ Rating: Good Medium Poor

d. Average coefficient of conservatism: ____ Rating: 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: ____ Rating: Good Medium Poor

h. Number of indicator taxa: ____ Rating: Good Medium Poor

Tier 1: Assessment Overview

S18 T1N R7W

1.1 Site Identification:

Wetland site name: 95A

Ownership (if known): _____

USGS Topographic Quadrangle(s): Sandy Hook

USGS Watershed map 14-Digit HUC: 05120208170090

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

NWI Polygon ID Number					
Cowardin Classification	PFO				
Polygon Size (hectares)	0.4ha 1.05acres				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: M. Turgeon M de Carbonnel

Agency: JACOBS for INDOT

Date assessed: 7/21/09 Time assessed: 4:00PM

Weather conditions: Overcast 81°

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.):

None

1.3 Wetland Size:

Size of site under assessment: 0.4 Hectares (1.05 acres)
Size of total wetland complex (all contiguous wetland polygons): 0.4 Hectares

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
__X__ 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 forming the perimeter of the wetland site (indicate the % of each):

_____ Native Vegetation - woodland
_____ Native Vegetation - old field / scrub
__X__ Agricultural - tilled
_____ Agricultural - pasture
_____ Recreation - green space, mowed
_____ Road / highway / railroad bed / parking lot
_____ Industrial
_____ Residential - single family
_____ Commercial or multifamily residential

NWI Polygon # 95A **Data Reference #** _____
(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
__X__ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water present in the polygon? N
- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded _____ Artificially Flooded
__X__ Seasonally Flooded
_____ Saturated (surface water seldom present) _____ Artificially Drained

2.4 Soil Type:

_____ Organic (i.e. peat, etc.) __X__ Mineral _____ Both Mineral and Organic Present

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

2.6 Disturbances of Hydrology (check all that apply):

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

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

None

_____ Garlic Mustard _____ Glossy Buckthorn
_____ *Phragmities* _____ 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: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

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

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

_____ Good __X__ Medium _____ Poor

NWI Polygon # 95A Data Reference # _____

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 X <25

Estimated woody plant foliar cover in the polygon X 100-75 __75-50 __ 50-25 ___ <25

Amount of dead woody material on the soil surface: __ nil (<5% cover) __ scattered (5-15% cover) X frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. Y N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y N Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland? Ditched

2. Y N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 95A Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

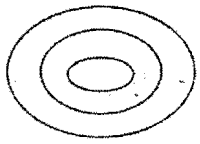
1b. If only one vegetation zone is evident, which best describes the site?

1 Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

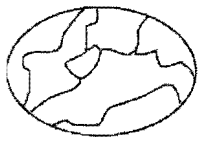
_____ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion **Type Two Interspersion**



☐ ☐



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Rubus idaeus 0 (FACU) d _____
b Glyceria striata 4 e _____
c Lonicera japonica 0 (FACU) _____

Dominant **Shrub** Species listed in order of relative abundance.

a Acer rubrum 5 c _____
b Cornus stolinifera 4 d _____

Dominant **Tree** Species listed in order of relative abundance.

a Red Maple* 5 c Ulmus americana 3
b Quercus macrocarpa 4 d _____

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

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

NWI Polygon # 95 A **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # 95A **Data Reference #** _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 95A Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a. *wild rice (*Zizania aquatica*, N) 10;
II b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
___ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium*) 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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NWI Polygon # 95A

Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifoius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ *swamp holly & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite

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

Trees - lvs. simple and alternate

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

OTHER _____

InWrap, Terg revised June 2005

In-WRAP Summary Sheet

Date Report Generated: July 2009
Wetland site name: 95A
Data Reference #
Date of Site Visit: July 21, 2009
NWI polygons in Site (quadrangle and NWI id. numbers): Not shown on NWI

TIER 1 SUMMARY:

a. Total wetland area (hectares): 1.05acres

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

Valuable More Favorable (Favorable) Neutral

c. Surrounding land use - numerical rank (max. = 1): 2

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

TIER 2 SUMMARY *NWI Polygon Id.* 95A

a. Indiana Wetland community type: Floodplain Forest

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

c. Disturbances to site: Ditching

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 Rating: Good Medium (Poor)

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

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good (Medium) Poor

d. Average coefficient of conservatism: 2.9 Rating: 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: 10 Rating: Good Medium (Poor)

h. Number of indicator taxa: 0 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** _____

a. Indiana Wetland community type: _____

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: _____

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.): ____ Rating: Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max.): ____ Rating: Good Medium Poor

TIER 3B SUMMARY

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

b. Stratification as indicator of animal habitat: Valuable Neutral

c. Number of dominant plant taxa observed: ____ Rating: Good Medium Poor

d. Average coefficient of conservatism: ____ Rating: 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: ____ Rating: Good Medium Poor

h. Number of indicator taxa: ____ Rating: Good Medium Poor

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: W 115

Ownership (if known): _____

USGS Topographic Quadrangle(s): Sandy Hook T2NR7W33

USGS Watershed map 14-Digit HUC: 05120208170090
East Fork White River - Mud Creek

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

NWI Polygon ID Number	115	116			
Cowardin Classification	PSS	PEM			
Polygon Size (hectares)	.03ha 0.08ac	0.24ha 0.61 acres			

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: Lars Carlson

Agency: Jacobs

Date assessed: Jan 10, 06 Time assessed: _____

Weather conditions: Rainy

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.):

None

1.3 Wetland Size:

Size of site under assessment: (0.69 acres) 0.28ha

Size of total wetland complex (all contiguous wetland polygons): (0.69 acres) 0.28ha

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 forming the perimeter of the wetland site (indicate the % of each):

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

NWI Polygon # 115 **Data Reference #** _____
(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 present in the polygon? No
- If standing water is present, is the water greater than 2 meters in depth? ____

Is standing water 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 X Other Human Disturbances to the
____ Dams Hydrology (explain):
____ Road or Railroad Embankment in ag. field

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

None

____ Garlic Mustard ✓ Glossy Buckthorn
____ *Phragmities* 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: No

____ Bog ____ Fen ____ Wet Sand / Muck Flat ____ Sinkhole pond or swamp

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

NWI Polygon # 115 Data Reference # _____

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 cover in the polygon ___ 100-75 ___75-50 ✓ 50-25 ___ <25

Amount of dead woody material on the soil surface:

✓ nil (<5% cover) ___ scattered (5-15% cover) ____ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y (N) Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. (Y) N 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?
   3b. **Y N** 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y (N) Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y (N) Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. **Y N** 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. (Y) N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 115 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

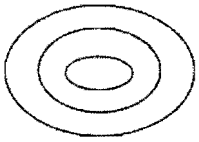
1b. If only one vegetation zone is evident, which best describes the site?

_____ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

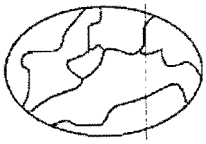
✓ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____ d _____
b _____ e _____
c _____ f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Salix spp. c _____
b _____ d _____

Dominant **Tree** Species listed in order of relative abundance.

a _____ c _____
b _____ d _____

Tree & shrub canopy: nil (separate, seldom touching) often touching more or less closed

Mature trees (>12" dbh) present: yes (no)

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

surrounded by active agriculture

NWI Polygon # 115 **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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_____

NWI Polygon # 115 **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 115 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: Insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
___ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
___ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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NWI Polygon # 115 Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) *3*
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ * dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifoius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ *swamp holly & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite

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

Trees - lvs. simple and alternate

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

OTHER _____

NWI Polygon # 116 **Data Reference #** _____
(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 present in the polygon? No
- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
_____ Seasonally Flooded
✓ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*):

Wet Meadow

2.6 Disturbances of Hydrology (check all that apply):

_____ Ditching
_____ Tiles
_____ Dams
_____ Road or Railroad Embankment
_____ Culvert
X Other Human Disturbances to the Hydrology (explain): In ag. field actively cultivated

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common): None

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: No

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # W116 Data Reference # _____

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 cover in the polygon ___ 100-75 ___ 75-50 ___ 50-25 ✓ <25

Amount of dead woody material on the soil surface:

✓ nil (<5% cover) ___ scattered (5-15% cover) ___ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y (N) Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. (Y) N 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?
   3b. **Y N** 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y (N) Is a vegetative buffer area (>15 m wide) 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. Surrounded by Ag. field
   Average 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, if not, answer 1b
   1a. Y (N) Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. **Y N** 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. (Y) N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 116 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

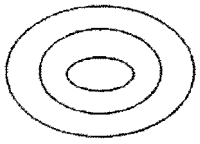
1. How many vegetation zones are evident in this wetland polygon? 1

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.

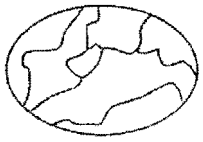
2. If more than one vegetation zone is present in the polygon, which interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



☐

Type Two Interspersion



☐

3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 - herbaceous only

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 Polygonum sp 4
b reed canary grass 0
c Bur reed? 0 9
d _____
e _____
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 & shrub canopy: ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closed

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 116 Data Reference # _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐ separate, seldom touching ☒ often touching ☐ more or less closed

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # 116 **Data Reference #** _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 116 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 10
___ blueflag iris (*Iris virginica*) 5
___ bulrush spp. (*Scirpus / Schoenoplectus*) 5
1 *bur reed spp. (*Sparganium*) 9
___ cat-tail spp. (*Typha*) 1
___ *cotton grass spp. (*Eriophorum*, N) 10

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

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium*) 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

NWI Polygon # 116 Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
11 smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp..(*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifoius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ *swamp holly & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite

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

Trees - lvs. simple and alternate

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

OTHER _____

InWrap, Terg revised June 2005

In-WRAP Summary Sheet

Date Report Generated: Aug 2006
Wetland site name: 115
Data Reference #
Date of Site Visit: Jan 2006
NWI polygons in Site (quadrangle and NWI id. numbers): 115, 116

TIER 1 SUMMARY:

a. Total wetland area (hectares): .28ha (0.69 acres)

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

Valuable More Favorable Favorable (Neutral)

c. Surrounding land use - numerical rank (max. = 1): .2

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

TIER 2 SUMMARY *NWI Polygon Id.* 115

a. Indiana Wetland community type: Shrub carr

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

c. Disturbances to site: in ag field

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.): 1 Rating: Good Medium (Poor)

c. Flood and storm water storage - numerical rank (5 max.): 3 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 4.3 Rating: 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: 10 Rating: Good Medium (Poor)

h. Number of indicator taxa: 0 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 116

a. Indiana Wetland community type: Wet Meadow
b. Standing water - contribution to animal habitat: Valuable Favorable (Neutral)
c. Disturbances to site: in ag field
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.): 1 Rating: Good Medium (Poor)
c. Flood and storm water storage - numerical rank (5 max.): 3 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion as indicator of animal habitat: Valuable Favorable (Neutral)
b. Stratification as indicator of animal habitat: (Valuable) Neutral
c. Number of dominant plant taxa observed: 1 Rating: Good Medium (Poor)
d. Average coefficient of conservatism: 3 Rating: 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 Rating: Good Medium (Poor)
h. Number of indicator taxa: 0 Rating: Good Medium (Poor)

Tier 1: Assessment Overview

1.1 Site Identification: - DAVIESS COUNTY

Wetland site name: WE 117

Ownership (if known): _____

USGS Topographic Quadrangle(s): Sandy Hook

USGS Watershed map 14-Digit HUC: 05120202170090

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

NWI Polygon ID Number	117				
Cowardin Classification	PFO				
Polygon Size (hectares)	1.9ha 4.7acres				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: Lara Meredith

Agency: Jacobs

Date assessed: June 23 Time assessed: 8 AM

Weather 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.):

None

1.3 Wetland Size:

Size of site under assessment: 1.9ha (4.7acres)

Size of total wetland complex (all contiguous wetland polygons): 1.9ha (4.7acres)

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
__X__ The wetland site is isolated

General assessment of adjacent land use / land cover in the area forming the perimeter of the wetland site (indicate the % of each):

_____ Native Vegetation - woodland
_____ Native Vegetation - old field / scrub
99 Agricultural - tilled
_____ Agricultural - pasture
_____ Recreation - green space, mowed
1% Road / highway / railroad bed / parking lot
_____ Industrial
_____ Residential - single family
_____ Commercial or multifamily residential

NWI Polygon # 117 Data Reference # _____
(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):

X Depressional _____ Slope _____ Floodplain _____ Lacustrine
_____ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water present in the polygon? N

- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded _____ Artificially Flooded
✓ Seasonally Flooded
_____ Saturated (surface water seldom present) _____ Artificially Drained

2.4 Soil Type: Evans soil - mostly corn husks + stalks washed in from adj. field

_____ 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*):

Swamp Forest

2.6 Disturbances of Hydrology (check all that apply):

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

Appears to have been isolated by road

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

None

_____ Garlic Mustard _____ Glossy Buckthorn
_____ *Phragmities* _____ 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: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 117 Data Reference # _____

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 cover in the polygon ✓ 100-75 ___75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface:

___ nil (<5% cover) ___ scattered (5-15% cover) ✓ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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?
rec's flow from ag. fields

3. If wetland in question is a depressional wetland answer 3a, if not, answer 3b
3a. (Y) N 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?
3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y (N) Is a vegetative buffer area (>15 m wide) 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.
Average 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, if not, answer 1b
1a. Y (N) Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. (Y) N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 117 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

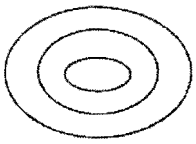
1b. If only one vegetation zone is evident, which best describes the site?

✓ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

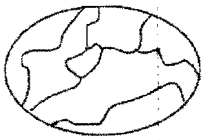
_____ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Aster sp. 3 d _____
b Elymus 4 e _____
c _____ f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Fraxinus pennsylvanicum 3 c _____
b Button bush 5 d _____

Dominant **Tree** Species listed in order of relative abundance.

a Acer saccharinum 1 c _____
b Fraxinus pennsylvanicum (3) d _____

Tree & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

Rec's significant runoff from adjacent fields. Could be locally imp. filter of H_2O for White River watershed.

NWI Polygon # _____ **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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_____

NWI Polygon # 117 **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 117 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
11 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
1 sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 6*
1 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
1 false nettle (*Boehmeria cylindrica*) 3
___ *fen betony (*Pedicularis lanceolata*) 6
___ *gentian spp. (*Gentiana & Gentianopsis*) 8
1 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
1 other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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NWI Polygon # 117 Data Reference # _____

___ cress spp. (*Cardamine*) 4
1 dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *grass of Parnassus (*Parnassia glauca*) 10
___ *Indian plantain (*Cacalia plantaginea*) 10
___ ironweed spp. (*Vernonia*) 4
1 jewelweed, touch-me-not spp. (*Impatiens*) 3
1 lizard's tail (*Saururus cernuus*) 4
___ lobelia spp. (*Lobelia*) 4
___ *marsh marigold (*Caltha palustris*) 7
___ *moonseed (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
1 poison ivy (vine) (*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 cathar. & frangula*) 0
1 buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
1 ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite
___ red maple (*Acer rubrum*) 5
1 silver maple (*A. saccharinum*) 1

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

OTHER _____

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In-WRAP Summary Sheet

Date Report Generated: September 2005
Wetland site name: WF 117
Data Reference #
Date of Site Visit: June 23, 2005
NWI polygons in Site (quadrangle and NWI id. numbers): 117

TIER 1 SUMMARY:

a. Total wetland area (hectares): 1.9ha 4.7acres

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

Valuable More Favorable Favorable (Neutral)

c. Surrounding land use - numerical rank (max. = 1): 0.2

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

TIER 2 SUMMARY *NWI Polygon Id.* 117

a. Indiana Wetland community type: Swamp Forest

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

c. Disturbances to site: ditching from adj. cornfield

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 Rating: Good Medium (Poor)

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

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good (Medium) Poor

d. Average coefficient of conservatism: 3.2 Rating: 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: 110 Rating: Good (Medium) Poor

h. Number of indicator taxa: 0 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** _____

a. Indiana Wetland community type: _____

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: _____

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.): ____ Rating: Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max.): ____ Rating: Good Medium Poor

TIER 3B SUMMARY

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

b. Stratification as indicator of animal habitat: Valuable Neutral

c. Number of dominant plant taxa observed: ____ Rating: Good Medium Poor

d. Average coefficient of conservatism: ____ Rating: 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: ____ Rating: Good Medium Poor

h. Number of indicator taxa: ____ Rating: Good Medium Poor

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: NF - 118

Ownership (if known): _____

USGS Topographic Quadrangle(s): Sandy Hook

USGS Watershed map 14-Digit HUC: 05120208170090

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

NWI Polygon ID Number	118				
Cowardin Classification	PFO1C				
Polygon Size (hectares)	93.5ha 231ac				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: Lara Morrison Meredith de Carlo

Agency: Jacobs

Date assessed: June 23, 05 Time assessed: 9 AM

Weather conditions: Sunny Hot

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.):

None

1.3 Wetland Size:

Size of site under assessment: 118 + 119 together 93.5ha 231 acres

Size of total wetland complex (all contiguous wetland polygons): 93.5ha 231 acres

1.4 Site Setting:

two PFO Function the same - : UNWRAPPED together.

Degree of isolation from other wetlands or wetland complexes:

- X 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 forming the perimeter of the wetland site (indicate the % of each):

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

NWI Polygon # 118 **Data Reference #** _____
(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 X Floodplain _____ Lacustrine
_____ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water present in the polygon? ✓

- If standing water is present, is the water greater than 2 meters in depth? No.

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
✓ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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 some
_____ Tiles
_____ Dams
_____ Road or Railroad Embankment
_____ Culvert
_____ Other Human Disturbances to the Hydrology (explain):

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

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): None

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 118 Data Reference # _____

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 cover in the polygon ✓ 100-75 ___75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface:

___ nil (<5% cover) ✓ scattered (5-15% cover) ___ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. Y N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y N Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 118 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

1. How many vegetation zones are evident in this wetland polygon? 2

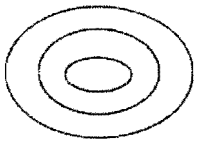
1b. If only one vegetation zone is evident, which best describes the site?

_____ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

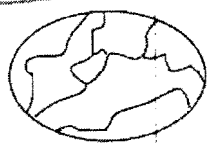
_____ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Lizard's tale 4 d _____

b Rumex sp. 4 e _____

c _____ f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Buttonbush 5 c _____

b _____ d _____

Dominant **Tree** Species listed in order of relative abundance.

a _____ c _____

b _____ d _____

Tree & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

this zone outlined along concrete

NWI Polygon # 118 Data Reference # _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Aster 3
b poison ivy 1
c Carex intumescens 3
d Elymus 4
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Hackberry 3
b Acer rubrum 5
c Acer saccharinum 1
d _____

Dominant **Tree** Species listed in order of relative abundance.

a Acer saccharinum 1
b Fraxinus p. 3
c Quercus palustris 4
d _____

Tree & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).
Some large Populus obs. along channel

3b.2 Dominant Plant Species: Vegetation zone C

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____
b _____
c _____
d _____
e _____
f _____

NWI Polygon # 118 **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 118 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
1 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
11 sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium*) 6
1 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
1 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
1 *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
1 other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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NWI Polygon # 113 Data Reference # _____

___ cress spp. (*Cardamine*) 4
_1_ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *grass of Parnassus (*Parnassia glauca*) 10
___ *Indian plantain (*Cacalia plantaginea*) 10
___ ironweed spp. (*Vernonia*) 4
___ jewelweed, touch-me-not spp. (*Impatiens*) 3
_1_ lizard's tail (*Saururus cernuus*) 4
___ lobelia spp. (*Lobelia*) 4
___ *marsh marigold (*Caltha palustris*) 7
___ *moonseed (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
_1_ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
_1_ poison ivy (vine) (*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 cathar. & frangula*) 0
_1_ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
_1_ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
_1_ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
___ boxelder (*Acer negundo*) 1
___ hickory, bitternut (*Carya cordiformis*) 5
_1_ *hickory, shellbark (*Carya laciniosa*) 8
_1_ honey locust (*Gleditsia triacanthos*) 1
___ *poison sumac (*Rhus vernix*) 10

Trees - lvs. simple and opposite

_1_ red maple (*Acer rubrum*) 5
_1_ silver maple (*A. saccharinum*) 1

Trees - lvs. simple and alternate

___ *alder, speckled (*Alnus rugosa*) 9
_1_ birch, river (*Betula nigra*) 2
___ black gum (*Nyssa sylvatica*) 5
_1_ cottonwood, eastern (*Populus deltoides*) 1
___ *cottonwood, swamp (*P. heterophylla*, SW) 8
___ elm, Amer. (*Ulmus americana*) 3
_1_ hackberry (*Celtis occidentalis*) 3
___ ironwood (*Carpinus caroliniana*) 5
_1_ oak, pin or white (*Quercus*) 4
___ *oak, Shumard's, sw. chestnut, sw. white 7
___ *papaw (*Asimina triloba*) 6
___ *sugarberry (*Celtis laevigata*, S) 7
___ sweet gum (*Liquidambar styraciflua*) 4
_1_ sycamore, Amer. (*Platanus occidentalis*) 3
___ willow spp. (*Salix*) sp.1=3; *additional=7

OTHER Cornelian

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In-WRAP Summary Sheet

Date Report Generated: Sept 2005
Wetland site name: _____
Data Reference # 118
Date of Site Visit: June 23, 2005
NWI polygons in Site (quadrangle and NWI id. numbers): 118

TIER 1 SUMMARY:

a. Total wetland area (hectares): 93.5ha (231 acres)

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

(Valuable) More Favorable Favorable Neutral

c. Surrounding land use - numerical rank (max. = 1): 4

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

TIER 2 SUMMARY

NWI Polygon Id. 118

a. Indiana Wetland community type: Floodplain Forest

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

c. Disturbances to site: some ditching

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.): 3 Rating: Good (Medium) Poor

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

TIER 3B SUMMARY

a. Zonation and interspersion as indicator of animal habitat: (Valuable) Favorable Neutral

b. Stratification as indicator of animal habitat: (Valuable) Neutral

c. Number of dominant plant taxa observed: 12 Rating: (Good) Medium Poor

d. Average coefficient of conservatism: 3.3 Rating: 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 Rating: (Good) Medium Poor

h. Number of indicator taxa: 5 Rating: Good (Medium) Poor

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** _____

a. Indiana Wetland community type: _____

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: _____

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.): ____ Rating: Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max.): ____ Rating: Good Medium Poor

TIER 3B SUMMARY

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

b. Stratification as indicator of animal habitat: Valuable Neutral

c. Number of dominant plant taxa observed: ____ Rating: Good Medium Poor

d. Average coefficient of conservatism: ____ Rating: 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: ____ Rating: Good Medium Poor

h. Number of indicator taxa: ____ Rating: Good Medium Poor

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: W120

Ownership (if known): _____

USGS Topographic Quadrangle(s): Sandy Hook

USGS Watershed map 14-Digit HUC: 05120202090070

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

NWI Polygon ID Number	120	120A	120B		
Cowardin Classification	PSS	PEM	PEM		
Polygon Size (hectares)	0.51ha 1.26ac	0.62ha 0.62ac	0.49ha 1.2acres		

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: LHC MLC

Agency: JACOBS Civil

Date assessed: June 28 Time assessed: _____

Weather conditions: Sunny Hot.

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.):

None

1.3 Wetland Size:

Size of site under assessment: 1.2 ha (3.08 acres)

Size of total wetland complex (all contiguous wetland polygons): 1.2 ha (3.08 acres)

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 forming the perimeter of the wetland site (indicate the % of each):

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

NWI Polygon # 125 Data Reference # _____
(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 present in the polygon? NO
- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
_____ Seasonally Flooded
✓ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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): None

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

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

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
S Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 120 Data Reference # _____

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 cover in the polygon ___ 100-75 ___75-50 __ 50-25 ___ <25

Amount of dead woody material on the soil surface: __ nil (<5% cover)__ scattered (5-15% cover) frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. **Y N** Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. **Y N** 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?
   3b. **Y N** 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. **Y N** Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. **Y N** Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. **Y N** Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. **Y N** 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. **Y N** Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 120 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

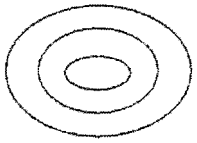
1b. If only one vegetation zone is evident, which best describes the site?

✓ 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.

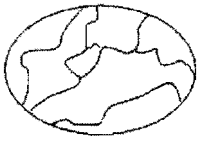
2. If more than one vegetation zone is present in the polygon, which interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



☐

Type Two Interspersion



☐

3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Nettle 2 d _____
b Elymus 4 e _____
c _____ f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Silver maple 1 c _____
b Red maple 5 d _____

Dominant **Tree** Species listed in order of relative abundance.

a Salix 3 c _____
b _____ d _____

Tree & shrub canopy: ☐ nil ☑ separate, seldom touching ☐ often touching ☐ more or less
Mature trees (>12" dbh) present: ☑ yes ☐ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site). Surrounded by ag. Topographic position does not lend to flood storage or attenuation

NWI Polygon # 120 **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # 120 Data Reference # _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 120 **Data Reference #** _____

3b.3 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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
1 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ blunt needle sedge (*E. obtusa*) 3
___ *other needle sedge spp. (*Eleocharis*) 9
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
___ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ 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
1 giant ragweed (*Ambrosia trifida*) 0
___ Indian hemp (*Apocynum cannabinum*) 2
___ Joe-pye weed spp. (*Eupatorium*) 5
___ loosestrife spp. (*Lysimachia*) 3
___ meadow beauty (*Rhexia virginica*) 5
___ mint spp.: e.g. hedge nettle, mtn. m., skullcap 5
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swp. loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

NWI Polygon # 120 Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
1 garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4
___ sneezeweed (*Helenium autumnale*) 3
1 stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
1 poison ivy (vine) (*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 cathar. & frangula*) 0
1 buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifolius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ swamp rose (*Rosa palustris*) 5
___ *winterberry (*Ilex verticillata*) 8

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
1 ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite
1 red maple (*Acer rubrum*) 5
1 silver maple (*A. saccharinum*) 1

Trees - lvs. simple and alternate
___ Amer. elm (*Ulmus americana*) 3
1 Amer. sycamore (*Platanus occidentalis*) 3
___ black gum (*Nyssa sylvatica*) 5
___ cottonwood, eastern (*Populus deltoides*) 1
___ *cottonwood, swamp (*P. heterophylla*, SW) 8
___ hackberry (*Celtis occidentalis*) 3
___ ironwood (*Carpinus caroliniana*) 5
1 oak, pin or white (*Quercus*) 4
___ *oak, Shumard's, sw. chestnut, sw. white 7
___ *papaw (*Asimina triloba*) 6
___ river birch (*Betula nigra*) 2
___ *speckled alder (*Alnus rugosa*) 9
___ *sugarberry (*Celtis laevigata*, S) 7
1 sweet gum (*Liquidambar styraciflua*) 4
___ white mulberry (*Morus alba*) 0
1 willow spp. (*Salix*) sp.1=3; *additional=7

OTHER _____

InWrap, Terg revised June 2005

NWI Polygon # WF 120A Data Reference # _____
(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 present in the polygon? No.
- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
_____ Seasonally Flooded
✓ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*):

wet meadow

2.6 Disturbances of Hydrology (check all that apply): None

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

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

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
S Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 120A Data Reference # _____

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 cover in the polygon ___ 100-75 ___75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface:

___ nil (<5% cover) ___ scattered (5-15% cover) ___ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. Y N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y N Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

Mod upslope from ag land

NWI Polygon # 120A Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

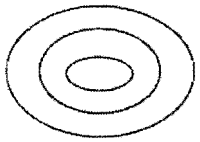
1b. If only one vegetation zone is evident, which best describes the site?

_____ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

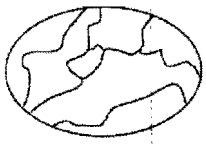
✓ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Sedge meadow

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Carex spp 3 d _____

b Phalaris 0 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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

"finger" of sedge along field

NWI Polygon # NI20A Data Reference # _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # 120A- **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 1204 **Data Reference #** _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
- ___ *bladderwort spp. (*Utricularia*, N) 10
- ___ coontail (*Ceratophyllum demersum*, N) 1
- ___ duckweed spp. (*Lemnaceae*) 3
- ___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
- ___ *water lily (*Nymphaea tuberosa*, N) 6
- ___ water shield (*Brasenia schreberi*, N) 4
- ___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
- ___ *pitcher plant (*Sarracenia purpurea*,N) 10
- ___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
- ___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
- ___ a.*wild rice (*Zizania aquatica*, N) 10;
- 1 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
- ___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

- 1 needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
- 1 nutsedge spp. (*Cyperus*) 2
- ___ *orchid spp.: species (if known)_____
- 1 rush spp. (*Juncus*) 4
- 111 sedge spp. (*Carex*) sp.1=3 *additional=7
- ___ *spiderlily (*Hymenocallis occidentalis*) 9
- ___ sweet flag (*Acorus calamus*) 0
- ___ *3-way sedge (*Dulichium arundinaceum*) 10
- ___ *twig rush (*Cladium mariscoides*, N) 10
- ___ *umbrella sedge (*Fuirena squarrosa*, N) 10
- ___ wild hyacinth (*Camassia scilloides*) 5
- ___ *yellow-eyed grass (*Xyris torta*, N) 9

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

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

Herbs (vines): dicots - lvs. alternate or basal and simple
- ___ Amer. bellflower (*Campanula americana*) 4
- ___ *asters: bristly aster (*Aster puniceus*) 7
- ___ *flat-topped aster (*A. umbellatus*) 8
- ___ other aster spp. (e.g. New Engl.-, panicled-a) 3
- ___ *black-eyed Susan (*Rudbeckia fulgida*) 8
- ___ cardinal flower (*Lobelia cardinalis*) 4

NWI Polygon # 120A **Data Reference #** _____

___ cress spp. (*Cardamine*) 4
_1_ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
_1_ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) *3*
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
_1_ poison ivy (vine) (*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 cathar. & frangula*) 0
_1_ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
_1_ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite
_1_ red maple (*Acer rubrum*) 5
_1_ silver maple (*A. saccharinum*) 1

Trees - lvs. simple and alternate
___ *alder, speckled (*Alnus rugosa*) 9
___ birch, river (*Betula nigra*) 2
___ black gum (*Nyssa sylvatica*) 5
___ cottonwood, eastern (*Populus deltoides*) 1
___ *cottonwood, swamp (*P. heterophylla*, SW) 8
___ elm, Amer. (*Ulmus americana*) 3
___ hackberry (*Celtis occidentalis*) 3
___ ironwood (*Carpinus caroliniana*) 5
_1_ oak, pin or white (*Quercus*) 4
___ *oak, Shumard's, sw. chestnut, sw. white 7
___ *papaw (*Asimina triloba*) 6
___ *sugarberry (*Celtis laevigata*, S) 7
_1_ sweet gum (*Liquidambar styraciflua*) 4
_1_ sycamore, Amer. (*Platanus occidentalis*) 3
_1_ willow spp. (*Salix*) sp.1=3; *additional=7

OTHER Wormwood Ragweed

InWrap, Terg revised June 2005

NWI Polygon # W120B **Data Reference #** _____
(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 present in the polygon? No

- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
_____ Seasonally Flooded
✓ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*): Sedge / wet meadow and scrub shrub complex
WET MEADOW W120B

2.6 Disturbances of Hydrology (check all that apply): None

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

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

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
S Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 1205 Data Reference # _____

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 cover in the polygon ___ 100-75 __75-50 ✓ 50-25 ___ <25

Amount of dead woody material on the soil surface: ✓ nil (<5% cover)__ scattered (5-15% cover) frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y (N) Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. Y (N) 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y (N) Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y (N) Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. (Y) N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 1208 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

1. How many vegetation zones are evident in this wetland polygon? X 2

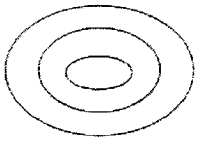
1b. If only one vegetation zone is evident, which best describes the site?

_____ 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.

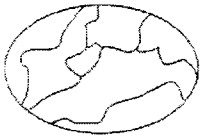
2. If more than one vegetation zone is present in the polygon, which interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



☒

Type Two Interspersion



☐

3b.2 Dominant Plant Species: Vegetation zone A

Veg meadow

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Salix spp (9) 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 & shrub canopy: ☒ nil ☐ separate, seldom touching ☐ often touching ☐ more or less

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 120B **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Salix sp (3) 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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # 1208 **Data Reference #** _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 1206 **Data Reference #** _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

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

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

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

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

NWI Polygon # 120B

Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
1 *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
11 smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite

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

Trees - lvs. simple and alternate

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

OTHER _____

InWrap, Terg revised June 2005

In-WRAP Summary Sheet

Date Report Generated: September 2005
Wetland site name: WTLD
Data Reference #
Date of Site Visit: June 23, 2005
NWI polygons in Site (quadrangle and NWI id. numbers): 120, 120A, 120B

TIER 1 SUMMARY:

a. Total wetland area (hectares): 3.1 acres

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

Valuable More Favorable Favorable (Neutral)

c. Surrounding land use - numerical rank (max. = 1): .2

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

TIER 2 SUMMARY *NWI Polygon Id.* 120

a. Indiana Wetland community type: Shrub carr

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

c. Disturbances to site: None observed

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 Rating: Good Medium (Poor)

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

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 3 Rating: 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: 14 Rating: Good Medium (Poor)

h. Number of indicator taxa: 0 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 120A

a. Indiana Wetland community type: Wet Meadow
b. Standing water - contribution to animal habitat: Valuable Favorable (Neutral)
c. Disturbances to site: None Observed
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 Rating: Good Medium (Poor)
c. Flood and storm water storage - numerical rank (5 max.): 4 Rating: (Good) Medium Poor

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)
d. Average coefficient of conservatism: 1.5 Rating: 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 Rating: (Good) Medium Poor
h. Number of indicator taxa: 2 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 120B

a. Indiana Wetland community type: Wet Meadow

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

c. Disturbances to site: None

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 Rating: Good Medium (Poor)

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

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 10 Rating: (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 Rating: Good (Medium) Poor

h. Number of indicator taxa: 3 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** _____

a. Indiana Wetland community type: _____

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: _____

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.): ____ Rating: Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max.): ____ Rating: Good Medium Poor

TIER 3B SUMMARY

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

b. Stratification as indicator of animal habitat: Valuable Neutral

c. Number of dominant plant taxa observed: ____ Rating: Good Medium Poor

d. Average coefficient of conservatism: ____ Rating: 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: ____ Rating: Good Medium Poor

h. Number of indicator taxa: ____ Rating: Good Medium Poor

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: WF 1166 - mowed PEM Sandy Hook Road

Ownership (if known): _____

USGS Topographic Quadrangle(s): Sandy Hook

USGS Watershed map 14-Digit HUC: 05120202090

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

NWI Polygon ID Number	1166				
Cowardin Classification	PEM				
Polygon Size (hectares)	0.09ha 0.23acres				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: LHC MLC

Agency: JACOBS

Date assessed: June 23 Time assessed: _____

Weather conditions: Sunny 90°

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.):

None

1.3 Wetland Size:

Size of site under assessment: 0.09ha (0.23 acres)

Size of total wetland complex (all contiguous wetland polygons): 0.09ha (0.23 acres)

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
__X__ The wetland site is isolated

General assessment of adjacent land use / land cover in the area forming the perimeter of the wetland site (indicate the % of each):

_____ Native Vegetation - woodland
_____ Native Vegetation - old field / scrub
_____ Agricultural - tilled
__X__ Agricultural - pasture
_____ Recreation - green space, mowed
_____ Road / highway / railroad bed / parking lot
_____ Industrial
_____ Residential - single family
_____ Commercial or multifamily residential

NWI Polygon # 1106 **Data Reference #** _____
(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):

X Depressional ____ Slope ____ Floodplain ____ Lacustrine
____ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water present in the polygon? No

- If standing water is present, is the water greater than 2 meters in depth? ____

Is standing water present in an adjacent polygon? ____

2.3 Apparent Hydroperiod (check one):

____ Permanently Flooded
____ Seasonally Flooded
X Saturated (surface water seldom present)
____ Artificially Flooded
____ 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*):

Sedge Meadow

2.6 Disturbances of Hydrology (check all that apply): None

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

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

____ Garlic Mustard
____ *Phragmities*
____ Purple Loosestrife
____ Glossy Buckthorn
S Reed canary grass
____ Other (list): _____

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

None

2.9 Presence of Special Community Types: No

____ Bog ____ Fen ____ Wet Sand / Muck Flat ____ Sinkhole pond or swamp

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

X 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 X Poor
Mowed

NWI Polygon # 1606 Data Reference # _____

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 X 100-75 ___75-50 ___ 50-25 ___ <25

Estimated woody plant foliar cover in the polygon ___ 100-75 ___75-50 ___ 50-25 X <25

Amount of dead woody material on the soil surface:

X nil (<5% cover) ___ scattered (5-15% cover) ____ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y (N) Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. Y (N) 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?
   3b. **Y N** 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y (N) Is a vegetative buffer area (>15 m wide) 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.
   Average width of buffer area (in meters) _____ approximate slope (percent) _____
   Area is mowed field adj. to tilled fields

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
   1a. Y (N) Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. **Y N** 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y (N) Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 11a2 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

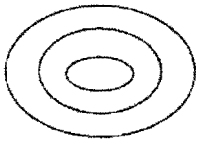
1b. If only one vegetation zone is evident, which best describes the site?

1 Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

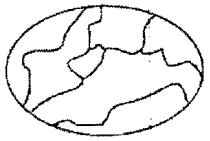
_____ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Carex tribuloides 3
b Phalaris 0
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a _____
b _____
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a _____
b _____
c _____
d _____

Tree & shrub canopy: (nil) separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes (no)

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

NWI Polygon # 166 **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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_____

NWI Polygon # 1610 **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 1606 **Data Reference #** _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
- ___ *bladderwort spp. (*Utricularia*, N) 10
- ___ coontail (*Ceratophyllum demersum*, N) 1
- ___ duckweed spp. (*Lemnaceae*) 3
- ___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
- ___ *water lily (*Nymphaea tuberosa*, N) 6
- ___ water shield (*Brasenia schreberi*, N) 4
- ___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
- ___ *pitcher plant (*Sarracenia purpurea*,N) 10
- ___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
- ___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
- ___ a.*wild rice (*Zizania aquatica*, N) 10;
- 1 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
- 1 c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

- ___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
- ___ nutsedge spp. (*Cyperus*) 2
- ___ *orchid spp.: species (if known)_____
- ___ rush spp. (*Juncus*) 4
- 111 sedge spp. (*Carex*) sp.1=3 *additional=7
- ___ *spiderlily (*Hymenocallis occidentalis*) 9
- ___ sweet flag (*Acorus calamus*) 0
- ___ *3-way sedge (*Dulichium arundinaceum*) 10
- ___ *twig rush (*Cladium mariscoides*, N) 10
- ___ *umbrella sedge (*Fuirena squarrosa*, N) 10
- ___ wild hyacinth (*Camassia scilloides*) 5
- ___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
- ___ *bedstraw spp. (*Galium) 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
- 1 Joe-pye weed spp. (*Eupatorium*) 5
- ___ *loosestrife spp. (*Lysimachia*) 6
- ___ meadow beauty (*Rhexia virginica*) 5
- ___ mint spp.: e.g. hedge nettle, mtn. m., skullcap 5
- ___ moneywort (*Lysimachia nummularia*) 0
- ___ monkey flower spp. (*Mimulus*) 4
- ___ nettle (*Urtica procera*) 1
- ___ purple loosestrife (*Lythrum salicaria*) 0
- ___ *richweed (*Collinsonia canadensis*) 8
- ___ *St. John's wort spp.(*Hypericum/Triandeum*)8
- ___ sunflower spp. (*Helianthus*) 4
- ___ *swamp loosestrife (*Decodon verticillatus*, N) 8
- ___ swamp milkweed (*Asclepias incarnata*) 4
- ___ toothcup spp. (*Ammania & Rotala*) 2
- ___ *turtlehead spp. (*Chelone*) 8
- ___ virgin's bower (vine) (*Clematis virginiana*) 3
- ___ water puslane (*Ludwigia palustris*) 3
- ___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
- ___ Amer. bellflower (*Campanula americana*) 4
- ___ *asters: bristly aster (*Aster puniceus*) 7
- ___ *flat-topped aster (*A. umbellatus*) 8
- ___ other aster spp. (e.g. New Engl.-, panicled-a) 3
- ___ *black-eyed Susan (*Rudbeckia fulgida*) 8
- ___ cardinal flower (*Lobelia cardinalis*) 4

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NWI Polygon # 1160 Data Reference # _____

___ cress spp. (*Cardamine*) 4
__1__ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
__1__ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifoius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ *swamp holly & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite
___ red maple (*Acer rubrum*) 5
___ silver maple (*A. saccharinum*) 1

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

OTHER _____

InWrap, Terg revised June 2005

In-WRAP Summary Sheet

Date Report Generated: September 2005
Wetland site name: WF 1660
Data Reference #
Date of Site Visit: June 23, 2005
NWI polygons in Site (quadrangle and NWI id. numbers): 1660

TIER 1 SUMMARY:

a. Total wetland area (hectares): 0.09 ha (0.23 acres)

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

Valuable More Favorable Favorable (Neutral)

c. Surrounding land use - numerical rank (max. = 1): 0.4

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

TIER 2 SUMMARY *NWI Polygon Id.* 1660

a. Indiana Wetland community type: sedge meadow

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

c. Disturbances to site: mowed - only to cropping

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.): 1 Rating: Good Medium (Poor)

c. Flood and storm water storage - numerical rank (5 max.): 3 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 1.5 Rating: 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: 8 Rating: Good Medium (Poor)

h. Number of indicator taxa: 0 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** _____

a. Indiana Wetland community type: _____

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: _____

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.): ____ Rating: Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max.): ____ Rating: Good Medium Poor

TIER 3B SUMMARY

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

b. Stratification as indicator of animal habitat: Valuable Neutral

c. Number of dominant plant taxa observed: ____ Rating: Good Medium Poor

d. Average coefficient of conservatism: ____ Rating: 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: ____ Rating: Good Medium Poor

h. Number of indicator taxa: ____ Rating: Good Medium Poor

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: WF 166A - Not on Maps - Near Spring to Open water.

Ownership (if known): _____

USGS Topographic Quadrangle(s): Sandy Hook

USGS Watershed map 14-Digit HUC: 05120202090030

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

NWI Polygon ID Number	166A				
Cowardin Classification	PEM				
Polygon Size (hectares)	0.23ha 0.58acres				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: LHC TLC

Agency: Jacobs

Date assessed: June 23 Time assessed: 12:00

Weather 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.):

None

1.3 Wetland Size:

Size of site under assessment: 0.23ha (0.58 acres)

Size of total wetland complex (all contiguous wetland polygons): 0.23ha (0.58acres)

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 forming the perimeter of the wetland site (indicate the % of each):

__90__ Native Vegetation - woodland
_____ Native Vegetation - old field / scrub
_____ Agricultural - tilled
_____ Agricultural - pasture
_____ Recreation - green space, mowed
__10__ Road / highway / railroad bed / parking lot
_____ Industrial
_____ Residential - single family
_____ Commercial or multifamily residential

NWI Polygon # 1660A **Data Reference #** _____
(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 present in the polygon? Yes
- If standing water is present, is the water greater than 2 meters in depth? NO

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

✓ Permanently Flooded
_____ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*):

Shallow marsh / Shallow Open Water /

2.6 Disturbances of Hydrology (check all that apply):

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

Natural spring pooling @ roadway

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

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
C Reed canary grass *
_____ Other (list): _____

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

Seep or Head Spring

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 166A Data Reference # _____

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 cover in the polygon ___ 100-75 ___75-50 ___ 50-25 ✓<25

Amount of dead woody material on the soil surface:

✓ nil (<5% cover) ___ scattered (5-15% cover) ____ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. **Y N** 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?
   3b. **Y** (**N**) 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?
   ↳No surface H_2O downgrad. stop @ Road

4. **Y** (**N**) Does the wetland **lack** steep slopes (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. **Y** (**N**) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. (**Y**) **N** Is a vegetative buffer area (>15 m wide) 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.
   Average width of buffer area (in meters) 60 approximate slope (percent) 15
   Forested buffer on one side only

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
   1a. **Y N** Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. (**Y**) **N** 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. (**Y**) **N** Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # WleA Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

1. How many vegetation zones are evident in this wetland polygon? 2

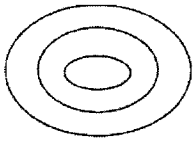
1b. If only one vegetation zone is evident, which best describes the site?

_____ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

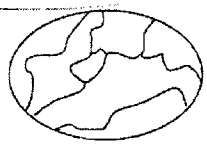
_____ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Meadow area

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Phalaris arundinacea 3 d _____

b Carex lurida 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 & shrub canopy: nil / separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes / no

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

borders on O.W zone w/ Lemna

Land owner indicated seep is piped or tiled under field

NWI Polygon # 166A **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Blue joint grass 4
b False nettle 3
c Jewel weed 3
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Acer negundo 1
b Acer rubrum 5
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a Acer rubrum 5
b Q palustris 4
c _____
d _____

Tree & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____
b _____
c _____
d _____
e _____
f _____

NWI Polygon # 1616A **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # Wet A **Data Reference #** _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
___ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
___ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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NWI Polygon # 1602A **Data Reference #** _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *grass of Parnassus (*Parnassia glauca*) 10
___ *Indian plantain (*Cacalia plantaginea*) 10
___ ironweed spp. (*Vernonia*) 4
1 jewelweed, touch-me-not spp. (*Impatiens*) 3
___ lizard's tail (*Saururus cernuus*) 4
___ lobelia spp. (*Lobelia*) 4
___ *marsh marigold (*Caltha palustris*) 7
___ *moonseed (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
1 smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

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

Trees - lvs. simple and opposite
1 red maple (*Acer rubrum*) 5
___ silver maple (*A. saccharinum*) 1

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

OTHER _____

InWrap, Terg revised June 2005

In-WRAP Summary Sheet

Date Report Generated: September 2005
Wetland site name: WF 1606A
Data Reference #
Date of Site Visit: June 23
NWI polygons in Site (quadrangle and NWI id. numbers): 1606A

TIER 1 SUMMARY:

a. Total wetland area (hectares): 0.23ha (0.58ac)

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

Valuable (More Favorable) Favorable Neutral

c. Surrounding land use - numerical rank (max. = 1): .8

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

TIER 2 SUMMARY *NWI Polygon Id.* 1606A

a. Indiana Wetland community type: Shallow marsh

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

c. Disturbances to site: road embankment, Spring pooling @ roadway

d. Exotic species rating: Good (Medium) Poor

e. Special Hydrologic Conditions Observed: Natural Spring

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.): 3 Rating: Good (Medium) Poor

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

TIER 3B SUMMARY

a. Zonation and interspersion as indicator of animal habitat: (Valuable) Favorable Neutral

b. Stratification as indicator of animal habitat: Valuable (Neutral)

c. Number of dominant plant taxa observed: 8 Rating: (Good) Medium Poor

d. Average coefficient of conservatism: 2.9 Rating: 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: 16 Rating: Good (Medium) Poor

h. Number of indicator taxa: 1 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** _____

a. Indiana Wetland community type: _____

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: _____

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.): ____ Rating: Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max.): ____ Rating: Good Medium Poor

TIER 3B SUMMARY

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

b. Stratification as indicator of animal habitat: Valuable Neutral

c. Number of dominant plant taxa observed: ____ Rating: Good Medium Poor

d. Average coefficient of conservatism: ____ Rating: 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: ____ Rating: Good Medium Poor

h. Number of indicator taxa: ____ Rating: Good Medium Poor

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: WF 176 (A)

Ownership (if known): _____

USGS Topographic Quadrangle(s): Washington

USGS Watershed map 14-Digit HUC: 05120202090030

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

NWI Polygon ID Number	176A				
Cowardin Classification	PEM				
Polygon Size (hectares)	1.5ha (3.74 acres)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: LHC MLC

Agency: JAC OBS

Date assessed: June 23 Time assessed: 3 00

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.):

Sunny Dry

1.3 Wetland Size:

Size of site under assessment: 1.5ha (3.74 acres)

Size of total wetland complex (all contiguous wetland polygons): 1.5ha (3.74ac)

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 forming the perimeter of the wetland site (indicate the % of each):

75% Native Vegetation - woodland
_____ Native Vegetation - old field / scrub
_____ Agricultural - tilled
_____ Agricultural - pasture
_____ Recreation - green space, mowed

25% Road / highway / railroad bed / parking lot
_____ Industrial
_____ Residential - single family
_____ Commercial or multifamily residential

NWI Polygon # 176A **Data Reference #** _____
(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 present in the polygon? No
- If standing water is present, is the water greater than 2 meters in depth? No

Is standing water present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

✓ Permanently Flooded
✓ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*):

Sedge Meadow

2.6 Disturbances of Hydrology (check all that apply): None

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

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common): None

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 176(A) Data Reference # _____

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 cover in the polygon ___ 100-75 ___75-50 ___ 50-25 ✓ <25

Amount of dead woody material on the soil surface:

✓ nil (<5% cover) ___ scattered (5-15% cover) _____ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. (Y) N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y (N) Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y (N) Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. (Y) N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 176 (A) Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

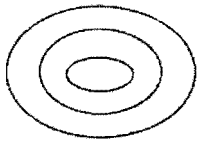
1b. If only one vegetation zone is evident, which best describes the site?

✓ 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 interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



Type Two Interspersion

3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Juncus canadensis
b Elymus sp.
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a _____
b _____
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a _____
b _____
c _____
d _____

Tree & shrub canopy: (nil) separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes (no)

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

New "polygon" across road from this. May get sheet flow from roadway

NWI Polygon # 176A **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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_____

NWI Polygon # 1764 **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 176A **Data Reference #** _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
- ___ *bladderwort spp. (*Utricularia*, N) 10
- ___ coontail (*Ceratophyllum demersum*, N) 1
- ___ duckweed spp. (*Lemnaceae*) 3
- ___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
- ___ *water lily (*Nymphaea tuberosa*, N) 6
- ___ water shield (*Brasenia schreberi*, N) 4
- ___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
- ___ *pitcher plant (*Sarracenia purpurea*,N) 10
- ___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
- ___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
- ___ a.*wild rice (*Zizania aquatica*, N) 10;
- 1 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
- ___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

- ___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
- ___ nutsedge spp. (*Cyperus*) 2
- ___ *orchid spp.: species (if known)_____
- 11 rush spp. (*Juncus*) 4
- 11 sedge spp. (*Carex*) sp.1=3 *additional=7
- ___ *spiderlily (*Hymenocallis occidentalis*) 9
- ___ sweet flag (*Acorus calamus*) 0
- ___ *3-way sedge (*Dulichium arundinaceum*) 10
- ___ *twig rush (*Cladium mariscoides*, N) 10
- ___ *umbrella sedge (*Fuirena squarrosa*, N) 10
- ___ wild hyacinth (*Camassia scilloides*) 5
- ___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
- ___ *bedstraw spp. (*Galium) 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
- 11 Joe-pye weed spp. (*Eupatorium*) 5
- ___ *loosestrife spp. (*Lysimachia*) 6
- ___ meadow beauty (*Rhexia virginica*) 5
- ___ mint spp.: e.g. hedge nettle, mtn. m., skullcap 5
- 1 moneywort (*Lysimachia nummularia*) 0
- ___ monkey flower spp. (*Mimulus*) 4
- ___ nettle (*Urtica procera*) 1
- ___ purple loosestrife (*Lythrum salicaria*) 0
- ___ *richweed (*Collinsonia canadensis*) 8
- ___ *St. John's wort spp.(*Hypericum/Triandeum*)8
- ___ sunflower spp. (*Helianthus*) 4
- ___ *swamp loosestrife (*Decodon verticillatus*, N) 8
- 1 swamp milkweed (*Asclepias incarnata*) 4
- ___ toothcup spp. (*Ammania & Rotala*) 2
- ___ *turtlehead spp. (*Chelone*) 8
- ___ virgin's bower (vine) (*Clematis virginiana*) 3
- ___ water puslane (*Ludwigia palustris*) 3
- ___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
- ___ Amer. bellflower (*Campanula americana*) 4
- ___ *asters: bristly aster (*Aster puniceus*) 7
- ___ *flat-topped aster (*A. umbellatus*) 8
- ___ other aster spp. (e.g. New Engl.-, panicled-a) 3
- ___ *black-eyed Susan (*Rudbeckia fulgida*) 8
- ___ cardinal flower (*Lobelia cardinalis*) 4

NWI Polygon # 12cA Data Reference # _____

___ cress spp. (*Cardamine*) 4
_1_ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *grass of Parnassus (*Parnassia glauca*) 10
___ *Indian plantain (*Cacalia plantaginea*) 10
_1_ 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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium* &*Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) *3*
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea*&*Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
_1_ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite

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

Trees - lvs. simple and alternate

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

OTHER _____

InWrap, Terg revised June 2005

In-WRAP Summary Sheet

Date Report Generated: Sept 2005
Wetland site name: 176A
Data Reference #
Date of Site Visit: June 23, 2005
NWI polygons in Site (quadrangle and NWI id. numbers): 176A

TIER 1 SUMMARY:

a. Total wetland area (hectares): 1.5ha (3.74 acres)

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

Valuable More Favorable Favorable (Neutral)

c. Surrounding land use - numerical rank (max. = 1): .75

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

TIER 2 SUMMARY

NWI Polygon Id. 176A

a. Indiana Wetland community type: Sedge Meadow

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

c. Disturbances to site: mowed surrounding wet area

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.): 3 Rating: Good (Medium) Poor

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

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 4 Rating: 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: 17 Rating: Good (Medium) Poor

h. Number of indicator taxa: 2 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** _____

a. Indiana Wetland community type: _____

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: _____

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.): ____ Rating: Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max.): ____ Rating: Good Medium Poor

TIER 3B SUMMARY

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

b. Stratification as indicator of animal habitat: Valuable Neutral

c. Number of dominant plant taxa observed: ____ Rating: Good Medium Poor

d. Average coefficient of conservatism: ____ Rating: 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: ____ Rating: Good Medium Poor

h. Number of indicator taxa: ____ Rating: Good Medium Poor

Indiana Wetland Rapid Assessment Protocol **Data Reference #** _____

Tier 1: Assessment Overview

1.1 Site Identification:

178ab 179 + 179a

Wetland site name: WF 178 Veale Creek

Ownership (if known): _____

USGS Topographic Quadrangle(s): Washington

USGS Watershed map 14-Digit HUC: 05120202090030

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

NWI Polygon ID Number	178	178A	178B	179	179A
Cowardin Classification	PFOIA	PEM	PEM	PFO	PFO
Polygon Size (hectares)	1.6ha	0.6ha	0.8ha	6.2ha	1.8ha
	3.95	1.48	1.89	15.37	4.49 acres

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: LHC MLC

Agency: JACOBS

Date assessed: June 2305 Time assessed: 2:30

Weather 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.):

None

1.3 Wetland Size:

Size of site under assessment: 11.2 ha (27.6 acres)

Size of total wetland complex (all contiguous wetland polygons): 11.2ha (27.6 acres)

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 forming the perimeter of the wetland site (indicate the % of each):

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

NWI Polygon # 178 **Data Reference #** _____
(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 present in the polygon? N

- If standing water is present, is the water greater than 2 meters in depth? N

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
✓ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*):

Swamp Forest

2.6 Disturbances of Hydrology (check all that apply): None

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

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

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
S Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 178 Data Reference # _____

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 cover in the polygon ___ 100-75 ✓ 75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface:

✓ nil (<5% cover) ___ scattered (5-15% cover) ___ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. Y N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y N Is a vegetative buffer area (>15 m wide) 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. minor
   Average width of buffer area (in meters) 17 approximate slope (percent) 0

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
   1a. Y N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 178 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

1. How many vegetation zones are evident in this wetland polygon? 2

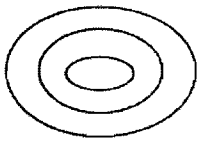
1b. If only one vegetation zone is evident, which best describes the site?

_____ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

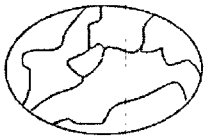
_____ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Jewelweed 3 d _____

b nettle 2 e _____

c Bent grass 4 f _____

Dominant **Shrub** Species listed in order of relative abundance.

a red maples 5 c _____

b gr. ash 3 d _____

Dominant **Tree** Species listed in order of relative abundance.

a Red maple 5 c _____

b _____ d _____

Tree & shrub canopy: nil separate, seldom touching (often touching) more or less closed

Mature trees (>12" dbh) present: (yes) no

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

Sediment deposition across the site - far from channel. Soils compact clay

NWI Polygon # 178 **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Juncus effusus * d _____
b _____ e _____
c _____ f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Acer rubrum FAC d _____
b Fraxinus pennsyl FACW c _____

Dominant **Tree** Species listed in order of relative abundance.

a _____ c _____
b _____ d _____

Tree & shrub canopy: (nil) separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes (no)

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site). sedge meadow on fringe & throughout in open area

3b.2 Dominant Plant Species: Vegetation zone C

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # 178 **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 178 **Data Reference #** _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
___ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
___ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

NWI Polygon # 178 Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *grass of Parnassus (*Parnassia glauca*) 10
___ *Indian plantain (*Cacalia plantaginea*) 10
___ ironweed spp. (*Vernonia*) 4
1 jewelweed, touch-me-not spp. (*Impatiens*) 3
___ lizard's tail (*Saururus cernuus*) 4
___ lobelia spp. (*Lobelia*) 4
___ *marsh marigold (*Caltha palustris*) 7
___ *moonseed (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
11 smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
1 poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
1 ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite
1 red maple (*Acer rubrum*) 5
___ silver maple (*A. saccharinum*) 1

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

OTHER yellow birch

InWrap, Terg revised June 2005

NWI Polygon # 178a **Data Reference #** _____
(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 present in the polygon? N

- If standing water is present, is the water greater than 2 meters in depth? —

Is standing water present in an adjacent polygon? Y

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
_____ Seasonally Flooded
✓ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*):

Sedge Meadow

2.6 Disturbances of Hydrology (check all that apply): None

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

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common): None

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
C Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 178a Data Reference # _____

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 cover in the polygon ___ 100-75 ___75-50 ___ 50-25 ✓ <25

Amount of dead woody material on the soil surface:

✓ nil (<5% cover) ___ scattered (5-15% cover) ____ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. Y N 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?
   3b. (Y) N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. (Y) N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. (Y) N Is a vegetative buffer area (>15 m wide) 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.
   Average width of buffer area (in meters) 50 approximate slope (percent) 1

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
   1a. Y N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. (Y) N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. (Y) N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 178a Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

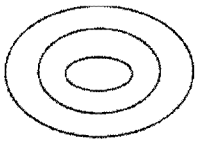
1b. If only one vegetation zone is evident, which best describes the site?

✓ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

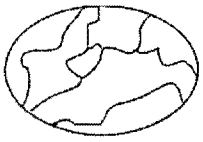
_____ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Juncus effusus 4
b Phalaris arundinacea 0
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Acer rubrum 5
b Fraxinus pennsylvanica 3
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a _____
b _____
c _____
d _____

Tree & shrub canopy: ✓nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes ✓no

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

None

NWI Polygon # 178a **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B Observation Point #2

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 Observation Point #3

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # 178a **Data Reference #** _____

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 & shrub canopy: □ nil □separate, seldom touching □often touching □more or less closed

Mature trees (>12" dbh) present: □ 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: □ nil □separate, seldom touching □often touching □more or less closed

Mature trees (>12" dbh) present: □ yes □ no

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

NWI Polygon # 17Bc **Data Reference #** _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
III b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
I c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
I rush spp. (*Juncus*) 4
III sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 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
I 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

NWI Polygon # 178c

Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
1 smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
1 ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite

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

Trees - lvs. simple and alternate

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

OTHER _____

NWI Polygon # 178 b. Data Reference # _____
(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 present in the polygon? No

- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? Y

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
_____ Seasonally Flooded
✓ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*): Sedge Meadow

2.6 Disturbances of Hydrology (check all that apply): None

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

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

None

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 1786 Data Reference # _____

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 cover in the polygon ___ 100-75 __75-50 ✓ 50-25 ___ <25

Amount of dead woody material on the soil surface: ✓ nil (<5% cover)__ scattered (5-15% cover) frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. Y N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y N Is a vegetative buffer area (>15 m wide) 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.
   Average width of buffer area (in meters) 100 approximate slope (percent) 2

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
   1a. Y N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 1786 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

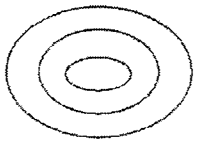
1b. If only one vegetation zone is evident, which best describes the site?

✓ 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 interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



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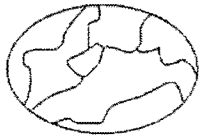
Type Two Interspersion



☐

3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the ~~NWI polygon~~)

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 Juncus effusis 4
b _____
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Acer rubrum 5
b Fraxinus pennsylv. 3
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a _____
b _____
c _____
d _____

Tree & shrub canopy: ☑ nil ☐ separate, seldom touching ☐ often touching ☐ more or less
Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 178b Data Reference # _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # 178b **Data Reference #** _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D Observation Point **#4**

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 178b Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
___ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
___ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium*) 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifoius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ *swamp holly & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite

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

Trees - lvs. simple and alternate

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

OTHER _____

InWrap, Terg revised June 2005

NWI Polygon # 119 **Data Reference #** _____
(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 present in the polygon? N

- If standing water is present, is the water greater than 2 meters in depth? N

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
✓ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*): Swamp Forest

2.6 Disturbances of Hydrology (check all that apply): None

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

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

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
S Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 179 Data Reference # _____

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 cover in the polygon ___ 100-75 ✓ 75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface: ✓ nil (<5% cover) ___ scattered (5-15% cover) frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. **Y N** 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?
   3b. (Y) N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. (Y) N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. (Y) N Is a vegetative buffer area (>15 m wide) 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.
   Average width of buffer area (in meters) 17 approximate slope (percent) 0

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
   1a. **Y N** Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. (Y) N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. (Y) N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 179 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

1. How many vegetation zones are evident in this wetland polygon? 2

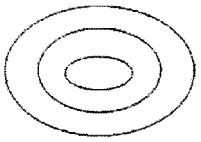
1b. If only one vegetation zone is evident, which best describes the site?

_____ 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.

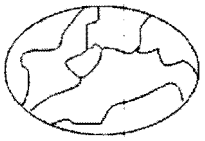
2. If more than one vegetation zone is present in the polygon, which interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



☐

Type Two Interspersion



☑

3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Impatiens capensis 3 d _____
b Urtica dioca 2 e _____
c _____ f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Acer rubrum 5 c _____
b Fraxinus pennsylvanica 3 d _____

Dominant **Tree** Species listed in order of relative abundance.

a Acer rubrum c _____
b _____ d _____

Tree & shrub canopy: ☐ nil ☐ separate, seldom touching ☑ often touching ☐ more or less
Mature trees (>12" dbh) present: ☑ yes ☐ no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site). SIGNS OF FLOODING INCLUDING DEPOSITION OF SILT

NWI Polygon # 179 **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Juncus effusus 4 d _____
b _____ e _____
c _____ f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Acer rubrum c _____
b Fraxinus pennsylvanica d _____

Dominant **Tree** Species listed in order of relative abundance.

a _____ c _____
b _____ d _____

Tree & shrub canopy: ☑ nil ☐ separate, seldom touching ☐ often touching ☐ more or less

Mature trees (>12" dbh) present: ☐ yes ☑ no

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

3b.2 Dominant Plant Species: Vegetation zone C

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # 179 **Data Reference #** _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 179 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
___ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
1 c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
1 sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 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
1 false nettle (*Boehmeria cylindrica*) 3
___ *fen betony (*Pedicularis lanceolata*) 6
___ *gentian spp. (*Gentiana & Gentianopsis*) 8
1 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
1 other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

NWI Polygon # 179 Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *grass of Parnassus (*Parnassia glauca*) 10
___ *Indian plantain (*Cacalia plantaginea*) 10
___ ironweed spp. (*Vernonia*) 4
1 jewelweed, touch-me-not spp. (*Impatiens*) 3
___ lizard's tail (*Saururus cernuus*) 4
___ lobelia spp. (*Lobelia*) 4
___ *marsh marigold (*Caltha palustris*) 7
___ *moonseed (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
11 smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
1 stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
1 poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifoius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ *swamp holly & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
1 ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite

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

Trees - lvs. simple and alternate

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

OTHER Birch (yellow) ✓

NWI Polygon # 179 A **Data Reference #** _____
(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 present in the polygon? N
- If standing water is present, is the water greater than 2 meters in depth? N

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
✓ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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): None

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

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

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
S Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: No

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 179A Data Reference # _____

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 cover in the polygon ___ 100-75 ✓ 75-50 __ 50-25 ___ <25

Amount of dead woody material on the soil surface: ✓ nil (<5% cover)__ scattered (5-15% cover) frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. Y N 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?
   3b. (Y) N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. (Y) N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. (Y) N Is a vegetative buffer area (>15 m wide) 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.
   Average width of buffer area (in meters) 32 approximate slope (percent) 7

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
   1a. Y N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. (Y) N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. (Y) N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 179a Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

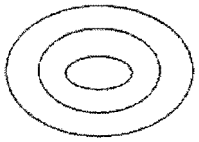
1b. If only one vegetation zone is evident, which best describes the site?

_____ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

1 Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

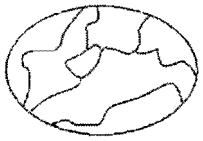
2. If more than one vegetation zone is present in the polygon, which interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



☐

Type Two Interspersion



☐

3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 nettle 3 d _____
b _____ e _____
c _____ f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Acer rubrum 5 c _____
b Fraxinus pennsylv. 3 d _____

Dominant **Tree** Species listed in order of relative abundance.

a _____ c _____
b _____ d _____

Tree & shrub canopy: ☐ nil ☑ separate, seldom touching ☐ often touching ☐ more or less
Mature trees (>12" dbh) present: ☐ yes ☑ no

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

NWI Polygon # 179a Data Reference # _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # 179 A Data Reference # _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 179 A Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
/// b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
| c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
| rush spp. (*Juncus*) 4
||| sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium*) 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. m., skullcap 5
| moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
| other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *grass of Parnassus (*Parnassia glauca*) 10
___ *Indian plantain (*Cacalia plantaginea*) 10
___ ironweed spp. (*Vernonia*) 4
_1_ jewelweed, touch-me-not spp. (*Impatiens*) 3
___ lizard's tail (*Saururus cernuus*) 4
___ lobelia spp. (*Lobelia*) 4
___ *marsh marigold (*Caltha palustris*) 7
___ *moonseed (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
_11_ smartweed spp.: jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
_1_ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifolius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ swamp rose (*Rosa palustris*) 5
___ *winterberry (*Ilex verticillata*) 8

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite
_1_ red maple (*Acer rubrum*) 5
___ silver maple (*A. saccharinum*) 1

Trees - lvs. simple and alternate
_1_ Amer. elm (*Ulmus americana*) 3
___ Amer. sycamore (*Platanus occidentalis*) 3
___ black gum (*Nyssa sylvatica*) 5
_1_ cottonwood, eastern (*Populus deltoides*) 1
___ *cottonwood, swamp (*P. heterophylla*, SW) 8
___ hackberry (*Celtis occidentalis*) 3
___ ironwood (*Carpinus caroliniana*) 5
_1_ oak, pin or white (*Quercus*) 4
___ *oak, Shumard's, sw. chestnut, sw. white 7
___ *papaw (*Asimina triloba*) 6
___ river birch (*Betula nigra*) 2
___ *speckled alder (*Alnus rugosa*) 9
___ *sugarberry (*Celtis laevigata*, S) 7
___ sweet gum (*Liquidambar styraciflua*) 4
___ white mulberry (*Morus alba*) 0
___ willow spp. (*Salix*) sp.1=3; *additional=7

OTHER _____

In-WRAP Summary Sheet

Date Report Generated: September 2005
Wetland site name: Veale Creek WF 178
Data Reference # _____
Date of Site Visit: June 23, 2005
NWI polygons in Site (quadrangle and NWI id. numbers): 178, 178a, 178b, 179, 179A

TIER 1 SUMMARY:

a. Total wetland area (hectares): 11.2 ha (27.6 acres)

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

(Valuable) More Favorable Favorable Neutral

c. Surrounding land use - numerical rank (max. = 1): .6

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

TIER 2 SUMMARY

NWI Polygon Id. 178

a. Indiana Wetland community type: Swamp Forest

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

c. Disturbances to site: None

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 Rating: Good (Medium) Poor

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

TIER 3B SUMMARY

a. Zonation and interspersion as indicator of animal habitat: (Valuable) Favorable Neutral

b. Stratification as indicator of animal habitat: (Valuable) Neutral

c. Number of dominant plant taxa observed: 10 Rating: Good (Medium) Poor

d. Average coefficient of conservatism: 3.5 Rating: 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: 19 Rating: Good (Medium) Poor

h. Number of indicator taxa: 0 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 178A

a. Indiana Wetland community type: Sedge Meadow

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

c. Disturbances to site: None

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 Rating: Good (Medium) Poor

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

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 3 Rating: 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: 14 Rating: Good Medium (Poor)

h. Number of indicator taxa: 2 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 178B

a. Indiana Wetland community type: Sedge Meadow

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

c. Disturbances to site: None

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 Rating: Good (Medium) Poor

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

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 4 Rating: 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: 11 Rating: Good Medium (Poor)

h. Number of indicator taxa: 0 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 179

a. Indiana Wetland community type: Swamp Forest

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

c. Disturbances to site: None

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 Rating: Good (Medium) Poor

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

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good (Medium) Poor

d. Average coefficient of conservatism: 3.4 Rating: 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: 19 Rating: Good (Medium) Poor

h. Number of indicator taxa: 0 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 179A

a. Indiana Wetland community type: Floodplain Forest

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

c. Disturbances to site: None

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 Rating: Good (Medium) Poor

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

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 3.7 Rating: 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: 22 Rating: (Good) Medium Poor

h. Number of indicator taxa: 2 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** _____

a. Indiana Wetland community type: _____

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: _____

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.): ____ Rating: Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max.): ____ Rating: Good Medium Poor

TIER 3B SUMMARY

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

b. Stratification as indicator of animal habitat: Valuable Neutral

c. Number of dominant plant taxa observed: ____ Rating: Good Medium Poor

d. Average coefficient of conservatism: ____ Rating: 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: ____ Rating: Good Medium Poor

h. Number of indicator taxa: ____ Rating: Good Medium Poor

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: W 1860

Ownership (if known): _____

USGS Topographic Quadrangle(s): Montgomery

USGS Watershed map 14-Digit HUC: 05120202090020

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

NWI Polygon ID Number	1860				
Cowardin Classification	PFOA				
Polygon Size (hectares)	0.32ha 0.8ac				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: HTC MLC

Agency: Jacobs

Date assessed: June 13 Time assessed: _____

Weather conditions: Hot 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.):

None

1.3 Wetland Size:

Size of site under assessment: 0.32ha 0.8 acres

Size of total wetland complex (all contiguous wetland polygons): 0.8 acres

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

outlet to ditch

General assessment of adjacent land use / land cover in the area forming the perimeter of the wetland site (indicate the % of each):

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

NWI Polygon # 186 **Data Reference #** _____
(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 present in the polygon? No
- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
✓ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*):

Sedge Meadow

2.6 Disturbances of Hydrology (check all that apply):

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

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

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): _____

None

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 186 Data Reference # _____

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 cover in the polygon ___ 100-75 ___75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface:

___ nil (<5% cover) ___ scattered (5-15% cover) ____ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. Y N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y N Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 186 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

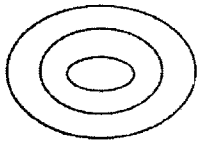
1b. If only one vegetation zone is evident, which best describes the site?

_____ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

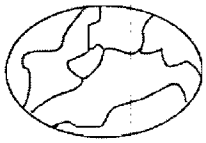
✓ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Carex lurida 3
b Soybeans 0
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a _____
b _____
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a _____
b _____
c _____
d _____

Tree & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

Area is under cultivation

NWI Polygon # 186 **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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_____

NWI Polygon # 184 **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 186 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a. *wild rice (*Zizania aquatica*, N) 10;
___ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
___ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

NWI Polygon # 186 Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite
___ red maple (*Acer rubrum*) 5
___ silver maple (*A. saccharinum*) 1

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

OTHER _____

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In-WRAP Summary Sheet

Date Report Generated: September 2005
Wetland site name: W 186
Data Reference #
Date of Site Visit: June 2005
NWI polygons in Site (quadrangle and NWI id. numbers): 186

TIER 1 SUMMARY:

a. Total wetland area (hectares): .32 ha (.8 ac)

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

Valuable (More Favorable) Favorable Neutral

c. Surrounding land use - numerical rank (max. = 1): .2

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

TIER 2 SUMMARY

NWI Polygon Id. WF 186

a. Indiana Wetland community type: Sedge Meadow

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

c. Disturbances to site: ditching, culvert, planted / filled

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 Rating: Good Medium (Poor)

c. Flood and storm water storage - numerical rank (5 max.): 3 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 1.5 Rating: 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: 10 Rating: Good Medium (Poor)

h. Number of indicator taxa: 1 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** _____

a. Indiana Wetland community type: _____

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: _____

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.): ____ Rating: Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max.): ____ Rating: Good Medium Poor

TIER 3B SUMMARY

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

b. Stratification as indicator of animal habitat: Valuable Neutral

c. Number of dominant plant taxa observed: ____ Rating: Good Medium Poor

d. Average coefficient of conservatism: ____ Rating: 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: ____ Rating: Good Medium Poor

h. Number of indicator taxa: ____ Rating: Good Medium Poor

Indiana Wetland Rapid Assessment Protocol **Data Reference #** _____

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: PEM W189

Ownership (if known): _____

USGS Topographic Quadrangle(s): Montgomery

USGS Watershed map 14-Digit HUC: 05120202090020

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

NWI Polygon ID Number	189	189A			
Cowardin Classification	PEM	PEM			
Polygon Size (hectares)	0.20ha 0.51ac	0.008 .02			

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: LHC / MLC

Agency: Jacobs

Date assessed: June 23 Time assessed: 4 PM

Weather 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.):

None

1.3 Wetland Size:

Size of site under assessment: 0.20ha (0.53acres)

Size of total wetland complex (all contiguous wetland polygons): 0.20ha (0.53acres)

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 forming the perimeter of the wetland site (indicate the % of each):

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

NWI Polygon # 189 **Data Reference #** _____
(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 present in the polygon? Yes
- If standing water is present, is the water greater than 2 meters in depth? No

Is standing water 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*):

Shallow Marsh

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
F *Phragmities* _____ 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: No

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

NWI Polygon # 189 Data Reference # _____

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 cover in the polygon ___ 100-75 ___ 75-50 ___ 50-25 ✓ <25

Amount of dead woody material on the soil surface:

✓ nil (<5% cover) ___ scattered (5-15% cover) ___ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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?
adjacent to Pt. 50

3. If wetland in question is a depressional wetland answer 3a, if not, answer 3b
3a. (Y) N 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?
3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?
lg. impervious areas - 2 roadways

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y (N) Is a vegetative buffer area (>15 m wide) 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.
Average 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, if not, answer 1b
1a. (Y) N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)? culvert outlet

3. (Y) N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 189 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

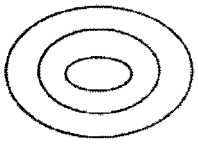
1b. If only one vegetation zone is evident, which best describes the site?

_____ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

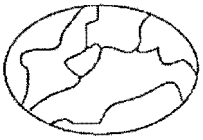
✓ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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

Type One Interspersion



Type Two Interspersion



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Typha* 1 2
b Phrag 0 0
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a _____
b _____
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a _____
b _____
c _____
d _____

Tree & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 189 **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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_____

NWI Polygon # 189 **Data Reference #** _____

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: nil separate, seldom touching often touching more or less closed

Mature trees (>12" dbh) present: yes no

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

NWI Polygon # 189 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a. *wild rice (*Zizania aquatica*, N) 10;
___ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
___ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium*) 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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NWI Polygon # 189 Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifoius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ *swamp holly & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite
___ red maple (*Acer rubrum*) 5
___ silver maple (*A. saccharinum*) 1

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

OTHER _____

InWrap, Terg revised June 2005

In-WRAP Summary Sheet

Date Report Generated: Sept 2005
Wetland site name: W189
Data Reference #
Date of Site Visit: June 2005
NWI polygons in Site (quadrangle and NWI id. numbers): 189

TIER 1 SUMMARY:

a. Total wetland area (hectares): 0.20 ha (0.51 acres)

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

Valuable (More Favorable) Favorable Neutral

c. Surrounding land use - numerical rank (max. = 1): .24

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

TIER 2 SUMMARY *NWI Polygon Id.* 189

a. Indiana Wetland community type: Shallow Marsh

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

c. Disturbances to site: Wetland is essentially ditch next to RT50 Roadway

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 Rating: Good Medium (Poor)

c. Flood and storm water storage - numerical rank (5 max.): 3 Rating: Good (Medium) Poor

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 0.5 Rating: 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 Rating: Good Medium (Poor)

h. Number of indicator taxa: 0 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** _____

a. Indiana Wetland community type: _____

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: _____

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.): ____ Rating: Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max.): ____ Rating: Good Medium Poor

TIER 3B SUMMARY

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

b. Stratification as indicator of animal habitat: Valuable Neutral

c. Number of dominant plant taxa observed: ____ Rating: Good Medium Poor

d. Average coefficient of conservatism: ____ Rating: 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: ____ Rating: Good Medium Poor

h. Number of indicator taxa: ____ Rating: Good Medium Poor

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: W - 190

Ownership (if known): _____

USGS Topographic Quadrangle(s): Sandy Hook

USGS Watershed map 14-Digit HUC: 05120201

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

NWI Polygon ID Number	190	190			
Cowardin Classification	PEM	PSS			
Polygon Size (hectares)	0.11acres	0.4acres			

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: Lars Carlson

Agency: Jacobs

Date assessed: Jan. 10, 06 Time assessed: _____

Weather conditions: Rainy

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.):

None

1.3 Wetland Size:

Size of site under assessment: 0.21ha (0.51 acres)

Size of total wetland complex (all contiguous wetland polygons): 0.21 ha (0.51 acres)

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 forming the perimeter of the wetland site (indicate the % of each):

_____ Native Vegetation - woodland
50% Native Vegetation - old field / scrub
_____ Agricultural - tilled
_____ Agricultural - pasture
_____ Recreation - green space, mowed
5% Road / highway / railroad bed / parking lot
45 Industrial
_____ Residential - single family
_____ Commercial or multifamily residential

NWI Polygon # 190 **Data Reference #** _____
(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 present in the polygon? Yes
- If standing water is present, is the water greater than 2 meters in depth? N

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

✓ Permanently Flooded
_____ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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*):

Shallow emergent Marsh

2.6 Disturbances of Hydrology (check all that apply): None

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

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

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
✓ Reed canary grass C
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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 X Medium _____ Poor

NWI Polygon # 190 Data Reference # _____

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 cover in the polygon ___ 100-75 ___ 75-50 ___ 50-25 ✓ <25

Amount of dead woody material on the soil surface:

✓ nil (<5% cover) ___ scattered (5-15% cover) ___ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. (Y) N 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?
   3b. **Y N** 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. (Y) N Is a vegetative buffer area (>15 m wide) 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.
   Average width of buffer area (in meters) 100' approximate slope (percent) 10%

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
   1a. (Y) N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. **Y N** 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y (N) Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 190 Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

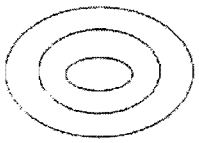
1b. If only one vegetation zone is evident, which best describes the site?

_____ 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.

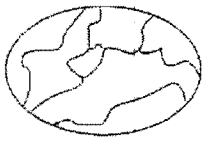
2. If more than one vegetation zone is present in the polygon, which interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



☐

Type Two Interspersion



☐

3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Reed Canary Grass 0 d _____
b Burr Reed 0 e _____
c Eleocharis 2 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 & shrub canopy: ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less closed

Mature trees (>12" dbh) present: ☐ yes ☒ no

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

Large disturbed area (trucking) located adjacent and upslope from wetland. Allows runoff into wetland.

NWI Polygon # 190 **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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. _____

NWI Polygon # 190 **Data Reference #** _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 190 Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
___ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
___ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium*) 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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NWI Polygon # 190 Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium* &*Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea*&*Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifoius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ *swamp holly & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite

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

Trees - lvs. simple and alternate

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

OTHER _____

NWI Polygon # W190 (PSS portion) **Data Reference #** _____
(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 present in the polygon? NO

- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? ✓

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
✓ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ 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
_____ Tiles
_____ Dams
_____ Road or Railroad Embankment
_____ Culvert
_____ Other Human Disturbances to the Hydrology (explain):

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

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
F ✓ Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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 X Medium _____ Poor

NWI Polygon # 190 Data Reference # _____

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 cover in the polygon ___ 100-75 __75-50 ✓ 50-25 ___ <25

Amount of dead woody material on the soil surface: __ nil (<5% cover) ✓ scattered (5-15% cover) frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. (Y) N 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?
   3b. **Y N** 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. (Y) N Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. (Y) N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. **Y N** 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y (N) Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 190 PSS Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

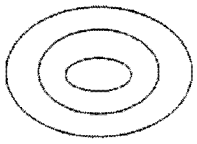
1b. If only one vegetation zone is evident, which best describes the site?

_____ 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.

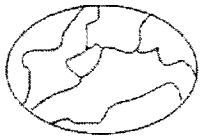
2. If more than one vegetation zone is present in the polygon, which interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



☐

Type Two Interspersion



☐

3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____ d _____
b _____ e _____
c _____ f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Salix 70% 3 c Populus deltoides 1
b Ash 2 d _____

Dominant **Tree** Species listed in order of relative abundance.

a _____ c _____
b _____ d _____

Tree & shrub canopy: ☐ nil ☐ separate, seldom touching ☐ often touching ☐ more or less
Mature trees (>12" dbh) present: ☐ yes ☑ no

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

NWI Polygon # 190 (1987) Data Reference # _____

3b.2 Dominant Plant Species: Vegetation zone B Observation Point #2

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ 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 Observation Point #3

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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_____

NWI Polygon # 190 (955) **Data Reference #** _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 190 (PSS) Data Reference # _____

3b.3 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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 10
___ blueflag iris (*Iris virginica*) 5
___ bulrush spp. (*Scirpus / Schoenoplectus*) 5
1 *bur reed spp. (*Sparganium*) 9
___ cat-tail spp. (*Typha*) 1
___ *cotton grass spp. (*Eriophorum*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
___ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
1 c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ blunt needle sedge (*E. obtusa*) 3
___ *other needle sedge spp. (*Eleocharis*) 9
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
___ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
1 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*) 3
___ meadow beauty (*Rhexia virginica*) 5
___ mint spp.: e.g. hedge nettle, mtn. m., skullcap 5
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swp. loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

NWI Polygon # 190 (PSS) Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifolius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ swamp rose (*Rosa palustris*) 5
___ *winterberry (*Ilex verticillata*) 8

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
___ ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite

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

Trees - lvs. simple and alternate

___ Amer. elm (*Ulmus americana*) 3
___ Amer. sycamore (*Platanus occidentalis*) 3
___ black gum (*Nyssa sylvatica*) 5
___ cottonwood, eastern (*Populus deltoides*) 1
___ *cottonwood, swamp (*P. heterophylla*, SW) 8
___ hackberry (*Celtis occidentalis*) 3
___ ironwood (*Carpinus caroliniana*) 5
___ oak, pin or white (*Quercus*) 4
___ *oak, Shumard's, sw. chestnut, sw. white 7
___ *papaw (*Asimina triloba*) 6
___ river birch (*Betula nigra*) 2
___ *speckled alder (*Alnus rugosa*) 9
___ *sugarberry (*Celtis laevigata*, S) 7
___ sweet gum (*Liquidambar styraciflua*) 4
___ white mulberry (*Morus alba*) 0
___ willow spp. (*Salix*) sp.1=3; *additional=7

OTHER _____

InWrap, Terg revised June 2005

In-WRAP Summary Sheet

Date Report Generated: Jan 2006
Wetland site name: W-190
Data Reference #
Date of Site Visit: Jan 10, 2006
NWI polygons in Site (quadrangle and NWI id. numbers): (Not NWI Listed) 190

TIER 1 SUMMARY:

a. Total wetland area (hectares): 0.19 ha (0.47 acres)

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

Valuable More Favorable (Favorable) Neutral

c. Surrounding land use - numerical rank (max. = 1): .45

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

TIER 2 SUMMARY *NWI Polygon Id.* 190

a. Indiana Wetland community type: Shallow Emergent Marsh

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

c. Disturbances to site: adj to trucking facility

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.): 3 Rating: Good (Medium) Poor

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

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 3.3 Rating: 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: 10 Rating: Good Medium (Poor)

h. Number of indicator taxa: 1 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** 190 PSS

a. Indiana Wetland community type: Shrub carr

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

c. Disturbances to site: trucking-dumping

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.): 3 Rating: Good (Medium) Poor

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

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 2.3 Rating: 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: 10 Rating: Good Medium (Poor)

h. Number of indicator taxa: 1 Rating: Good Medium (Poor)

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: Arda Road New Wetland 190B

Ownership (if known): SIBTINRBN

USGS Topographic Quadrangle(s): Sandy Hook

USGS Watershed map 14-Digit HUC: 05120201

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

NWI Polygon ID Number	190B				
Cowardin Classification	PFO				
Polygon Size (hectares)	0.06ha				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: M. Turgeon M. deCarbonnel

Agency: JACOBS for INDOT

Date assessed: 7/21/09 Time assessed: 3:00PM

Weather 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.):

None

1.3 Wetland Size:

Size of site under assessment: 0.14 acres .06ha

Size of total wetland complex (all contiguous wetland polygons): 0.14 .06ha

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
__X__ 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 forming the perimeter of the wetland site (indicate the % of each):

_____ Native Vegetation - woodland
_____ Native Vegetation - old field / scrub
__X__ Agricultural - tilled
__X__ Agricultural - pasture
_____ Recreation - green space, mowed
__X__ Road / highway / railroad bed / parking lot
_____ Industrial
__X__ Residential - single family
_____ Commercial or multifamily residential

NWI Polygon # W190 **Data Reference #** _____
(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):

X Depressional _____ Slope _____ Floodplain _____ Lacustrine
_____ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water present in the polygon? Y

- If standing water is present, is the water greater than 2 meters in depth? ? unknown depth

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

X Permanently Flooded
_____ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ Artificially Drained

2.4 Soil Type:

X 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): None

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

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common): None

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): _____

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

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

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

_____ Good X Medium _____ Poor

NWI Polygon # 190 B Data Reference # _____

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 cover in the polygon ___ 100-75 ✓ 75-50 __ 50-25 ___ <25

Amount of dead woody material on the soil surface: __ nil (<5% cover)__ scattered (5-15% cover) frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. Y N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y N Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y N Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 190 B Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

1. How many vegetation zones are evident in this wetland polygon? 2

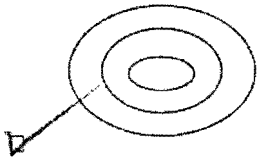
1b. If only one vegetation zone is evident, which best describes the site?

_____ 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.

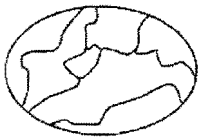
2. If more than one vegetation zone is present in the polygon, which interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



Type Two Interspersion

☐



3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Aster sp. 3
b poison ivy 1
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Green Ash. 3
b _____
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a Silver maple 1
b _____
c _____
d _____

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

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

depressional wetland w/ open water portion

NWI Polygon # 190 B **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Lemna spp 3 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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # _____ **Data Reference #** _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 190 B Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – Indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
___ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
___ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

NWI Polygon # 1908 Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
1 poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & 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 & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
1 ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
1 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 - lvs. simple and opposite

1 red maple (*Acer rubrum*) 5
1 silver maple (*A. saccharinum*) 1

Trees - lvs. simple and alternate

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

OTHER violet, lonicera

In-WRAP Summary Sheet

Date Report Generated: July 21, 2009
Wetland site name: WW190B
Data Reference #
Date of Site Visit: July 21, 2009
NWI polygons in Site (quadrangle and NWI id. numbers): Not listed on NWI

TIER 1 SUMMARY:

a. Total wetland area (hectares): 0.15 acres

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

Valuable More Favorable (Favorable) Neutral

c. Surrounding land use - numerical rank (max. = 1): 0.33

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

TIER 2 SUMMARY *NWI Polygon Id.* 190B

a. Indiana Wetland community type: Shrub Carr

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

c. Disturbances to site: berm downstream end appears man made

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 Rating: Good Medium (Poor)

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

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good (Medium) Poor

d. Average coefficient of conservatism: 2.0 Rating: 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 Rating: Good Medium (Poor)

h. Number of indicator taxa: 0 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** _____

a. Indiana Wetland community type: _____

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: _____

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.): ____ Rating: Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max.): ____ Rating: Good Medium Poor

TIER 3B SUMMARY

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

b. Stratification as indicator of animal habitat: Valuable Neutral

c. Number of dominant plant taxa observed: ____ Rating: Good Medium Poor

d. Average coefficient of conservatism: ____ Rating: 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: ____ Rating: Good Medium Poor

h. Number of indicator taxa: ____ Rating: Good Medium Poor

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: W 190 C (Arda off Road)

Ownership (if known): SIBTINRBN

USGS Topographic Quadrangle(s): Sandy Hook

USGS Watershed map 14-Digit HUC: _____

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

NWI Polygon ID Number	190C				
Cowardin Classification	PSS				
Polygon Size (hectares)	0.03ha				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: Mike Turgeon & Meredith de Carbonnel

Agency: Jacobs

Date assessed: 7/21/09 Time assessed: 3:30PM

Weather 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.):

None

1.3 Wetland Size:

Size of site under assessment: 0.03 Ha (0.1 acres)
Size of total wetland complex (all contiguous wetland polygons): 0.03 Ha

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
__X__ 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 forming the perimeter of the wetland site (indicate the % of each):

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

NWI Polygon # 190 C **Data Reference #** _____
(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):

__X__ Depressional _____ Slope _____ Floodplain _____ Lacustrine
_____ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water present in the polygon? No

- If standing water is present, is the water greater than 2 meters in depth? _____

Is standing water present in an adjacent polygon? _____

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
__X__ Seasonally Flooded
_____ Saturated (surface water seldom present)
_____ Artificially Flooded
_____ Artificially Drained

2.4 Soil Type:

_____ Organic (i.e. peat, etc.) __X__ 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
_____ Tiles
_____ Dams
_____ Road or Railroad Embankment
None
_____ Culvert
_____ Other Human Disturbances to the Hydrology (explain):

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

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
None
_____ Glossy Buckthorn
_____ Reed canary grass
_____ Other (list): _____

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

No

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

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

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

__X__ Good _____ Medium _____ Poor

NWI Polygon # 190 c Data Reference # _____

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 X 50-25 ___ <25

Estimated woody plant foliar cover in the polygon ___ 100-75 __75-50 X 50-25 ___ <25

Amount of dead woody material on the soil surface: __ nil (<5% cover) X scattered (5-15% cover) frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. (Y) N 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?
   3b. **Y N** 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. (Y) N Is a vegetative buffer area (>15 m wide) 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.
   Average width of buffer area (in meters) 80 approximate slope (percent) 2

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
   1a. (Y) N Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. **Y N** 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y (N) Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 190 c Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

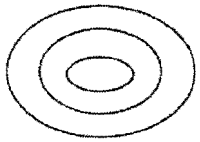
1b. If only one vegetation zone is evident, which best describes the site?

_____ Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

1 Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

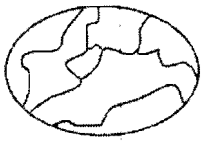
2. If more than one vegetation zone is present in the polygon, which interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



☐

Type Two Interspersion



☐

3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 Rice cut grass 4
b Jewel weed 3
c Lemna spp. 3
d Clearweed 3
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a Ash 3
b _____
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a Silver Maple 1
b Ash 3
c _____
d _____

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

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site). Center of polygon has sparse herbaceous layer - likely from flooding in spring. Soils have sulfur smell when disturbed.

NWI Polygon # 190 C **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 _____

NWI Polygon # 190C **Data Reference #** _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D Observation Point #4

Photo number(s) _____

(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 190 C Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
1 duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a. *wild rice (*Zizania aquatica*, N) 10;
1 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other _____
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
___ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 6*
___ beggar's tick spp. (*Bidens*) 3
___ blue vervain (*Verbena hastata*) 3
___ boneset (*Eupatorium perfoliatum*) 4
___ bugleweed spp. (*Lycopus*) 5
1 clearweed spp. (*Pilea*) 3
___ cup plant (*Silphium perfoliatum*) 4
1 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania & Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water-puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

NWI Polygon # 190C **Data Reference #** _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis, S. patula, S. riddellii*) 9
___ *grass of Parnassus (*Parnassia glauca*) 10
___ *Indian plantain (*Cacalia plantaginea*) 10
___ ironweed spp. (*Vernonia*) 4
1 jewelweed, touch-me-not spp. (*Impatiens*) 3
___ lizard's tail (*Saururus cernuus*) 4
___ lobelia spp. (*Lobelia*) 4
___ *marsh marigold (*Caltha palustris*) 7
___ *moonseed (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium &Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
1 smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
___ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) 3
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea&Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
1 poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate
___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifoius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ *swamp holly & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped
___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound
___ *ash, black (*Fraxinus nigra*) 7
1 ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite
1 red maple (*Acer rubrum*) 5
1 silver maple (*A. saccharinum*) 1

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

OTHER _____

In-WRAP Summary Sheet

Date Report Generated: July 2009
Wetland site name: 190C
Data Reference #
Date of Site Visit: July 2009
NWI polygons in Site (quadrangle and NWI id. numbers): (Not NWI listed)

TIER 1 SUMMARY:

a. Total wetland area (hectares): 0.1 acres

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

Valuable More Favorable (Favorable) Neutral

c. Surrounding land use - numerical rank (max. = 1): 1.0

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

TIER 2 SUMMARY *NWI Polygon Id.* 190C

a. Indiana Wetland community type: shrub carr

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

c. Disturbances to site: None

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 Rating: (Good) Medium Poor

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

TIER 3B SUMMARY

a. Zonation and interspersion as indicator of animal habitat: Valuable Favorable (Neutral)

b. Stratification as indicator of animal habitat: (Valuable) Neutral

c. Number of dominant plant taxa observed: 10 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 2.8 Rating: 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: 12 Rating: Good Medium (Poor)

h. Number of indicator taxa: 0 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** _____

a. Indiana Wetland community type: _____

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: _____

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.): ____ Rating: Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max.): ____ Rating: Good Medium Poor

TIER 3B SUMMARY

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

b. Stratification as indicator of animal habitat: Valuable Neutral

c. Number of dominant plant taxa observed: ____ Rating: Good Medium Poor

d. Average coefficient of conservatism: ____ Rating: 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: ____ Rating: Good Medium Poor

h. Number of indicator taxa: ____ Rating: Good Medium Poor

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: W192

Ownership (if known): _____

USGS Topographic Quadrangle(s): Sandy Hook, IN

USGS Watershed map 14-Digit HUC: 05120208170090

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

NWI Polygon ID Number	192A				
Cowardin Classification	PFO				
Polygon Size (hectares)	0.36 ac.				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team members: Matt Riehle, Luke Hildenbrand

Agency: BLA, Inc

Date assessed: 12/16/09 Time assessed: 12:30 pm CDT

Weather conditions: Sunny, 32 deg. F

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 Size:

Size of site under assessment: 0.36 ac (0.15 ha)

Size of total wetland complex (all contiguous wetland polygons): 0.36 ac (0.15 ha)

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
X 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 forming the perimeter of the wetland site (indicate the % of each):

70 Native Vegetation - woodland
5 Native Vegetation - old field / scrub
25 Agricultural - tilled
_____ Agricultural - pasture
_____ Recreation - green space, mowed
_____ Road / highway / railroad bed / parking lot
_____ Industrial
_____ Residential - single family
_____ Commercial or multifamily residential

NWI Polygon # 192A **Data Reference #** _____
(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):

X Depressional _____ Slope _____ Floodplain _____ Lacustrine
_____ Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

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

Is standing water present in an adjacent polygon? N/A

2.3 Apparent Hydroperiod (check one):

_____ Permanently Flooded
_____ Seasonally Flooded
X Saturated (surface water seldom present)
_____ Artificially Flooded
_____ Artificially Drained

2.4 Soil Type:

_____ Organic (i.e. peat, etc.) X 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
_____ Tiles
_____ Dams
_____ Road or Railroad Embankment
X Culvert (Downstream)
_____ Other Human Disturbances to the Hydrology (explain):

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

_____ Garlic Mustard
_____ *Phragmities*
_____ Purple Loosestrife
_____ Glossy Buckthorn
_____ Reed canary grass
S Other (list): Lonicera maackii

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

None

2.9 Presence of Special Community Types: None

_____ Bog _____ Fen _____ Wet Sand / Muck Flat _____ Sinkhole pond or swamp

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

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

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

_____ Good X Medium _____ Poor

NWI Polygon # 192A Data Reference # _____

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 X <25

Estimated woody plant foliar cover in the polygon X 100-75 ___75-50 ___ 50-25 ___ <25

Amount of dead woody material on the soil surface:

___ nil (<5% cover) X scattered (5-15% cover) ____ frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. (Y) N Does the wetland have a significant amount of vegetative (specifically perennial 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, if not, answer 3b
   3a. (Y) N 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?
   3b. Y N 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 (>12%), large impervious areas, moderate slopes (6-12%) with row cropping, or areas with severe overgrazing within 100 meters of its border?

5. Y (N) Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?

6. Y (N) Is a vegetative buffer area (>15 m wide) 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.
   Average 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, if not, answer 1b
   1a. Y (N) Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
   1b. Y N 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 structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?

3. Y (N) Is the flood potential high in the sub-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 clayey 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 (e.g. >50% area in row crop, commercial, or residential use)?

NWI Polygon # 192A Data Reference # _____

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

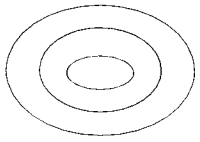
1. How many vegetation zones are evident in this wetland polygon? 1

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.
X
_____ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

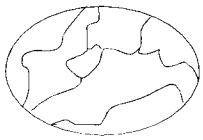
2. If more than one vegetation zone is present in the polygon, which interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



☐

Type Two Interspersion



☐

3b.2 Dominant Plant Species: Vegetation zone A

Observation Point #1
Photo number(s) 1-4
(Note: V-mark location on the NWI polygon)

What % of the polygon does this vegetative zone occupy?
☐ 10 - 25% ☐ 25 - 50% ☐ 50 - 75% ☐ 75 - 90% X >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 None
b _____
c _____
d _____
e _____
f _____

Dominant **Shrub** Species listed in order of relative abundance.

a None
b _____
c _____
d _____

Dominant **Tree** Species listed in order of relative abundance.

a Acer rubrum
b Acer saccharinum
c Ulmus rubra
d Salix nigra

Tree & shrub canopy: ☐ nil ☐ separate, seldom touching X often touching ☐ more or less closed

Mature trees (>12" dbh) present: X yes ☐ no

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

NWI Polygon # 192A **Data Reference #** _____

3b.2 Dominant Plant Species: Vegetation zone B

Observation Point #2
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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

Observation Point #3
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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_____

NWI Polygon # 192A **Data Reference #** _____

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ 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 D

Observation Point #4
Photo number(s) _____
(Note: V-mark location on the NWI polygon)

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 & shrub canopy: ☐ nil ☐separate, seldom touching ☐often touching ☐more or less closed

Mature trees (>12" dbh) present: ☐ yes ☐ no

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

NWI Polygon # 192A Data Reference # _____

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-coefficents * = species with high conservatism)*

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

Herbs: lvs. floating or submergent
___ *bladderwort spp. (*Utricularia*, N) 10
___ coontail (*Ceratophyllum demersum*, N) 1
___ duckweed spp. (*Lemnaceae*) 3
___ *pondweed spp. (*Potamogeton*) 8 (except 0 for introduced *P. crispus*)
___ *water lily (*Nymphaea tuberosa*, N) 6
___ water shield (*Brasenia schreberi*, N) 4
___ *yellow spatterdock spp. (*Nuphar*) 6

Herbs: insectivorous plants
___ *pitcher plant (*Sarracenia purpurea*,N) 10
___ *sundew spp. (*Drosera*, N) 10

Herbs: linear-lvs. or ± leafless monocots
___ *beak rush spp. (*Rhynchospora*, N) 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*, N) 10

Grasses (family *Gramineae*) – indicate types & number of species
___ a.*wild rice (*Zizania aquatica*, N) 10;
1 b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other (INK CIRCLE) NECES
___ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass *Echinochloa*]

___ needle sedge spp. (*Eleocharis*) sp.1=2 *additional=8
___ nutsedge spp. (*Cyperus*) 2
___ *orchid spp.: species (if known)_____
___ rush spp. (*Juncus*) 4
___ sedge spp. (*Carex*) sp.1=3 *additional=7
___ *spiderlily (*Hymenocallis occidentalis*) 9
___ sweet flag (*Acorus calamus*) 0
___ *3-way sedge (*Dulichium arundinaceum*) 10
___ *twig rush (*Cladium mariscoides*, N) 10
___ *umbrella sedge (*Fuirena squarrosa*, N) 10
___ wild hyacinth (*Camassia scilloides*) 5
___ *yellow-eyed grass (*Xyris torta*, N) 9

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

Herbs: dicots - lvs. opposite/whorled
___ *bedstraw spp. (*Galium) 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. m., skullcap 5
___ moneywort (*Lysimachia nummularia*) 0
___ monkey flower spp. (*Mimulus*) 4
___ nettle (*Urtica procera*) 1
___ purple loosestrife (*Lythrum salicaria*) 0
___ *richweed (*Collinsonia canadensis*) 8
___ *St. John's wort spp.(*Hypericum/Triandeum*)8
___ sunflower spp. (*Helianthus*) 4
___ *swamp loosestrife (*Decodon verticillatus*, N) 8
___ swamp milkweed (*Asclepias incarnata*) 4
___ toothcup spp. (*Ammania* & *Rotala*) 2
___ *turtlehead spp. (*Chelone*) 8
___ virgin's bower (vine) (*Clematis virginiana*) 3
___ water puslane (*Ludwigia palustris*) 3
___ winged loosestrife (*Lythrum alatum*) 5

Herbs (vines): dicots - lvs. alternate or basal and simple
___ Amer. bellflower (*Campanula americana*) 4
___ *asters: bristly aster (*Aster puniceus*) 7
___ *flat-topped aster (*A. umbellatus*) 8
___ other aster spp. (e.g. New Engl.-, panicled-a) 3
___ *black-eyed Susan (*Rudbeckia fulgida*) 8
___ cardinal flower (*Lobelia cardinalis*) 4

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NWI Polygon # 192A

Data Reference # _____

___ cress spp. (*Cardamine*) 4
___ dock spp.: swamp-, water-, pale- (*Rumex*) 4
___ garlic mustard (*Alliaria petiolata*) 0
___ golden ragwort (*Senecio aureus*) 4
___ *goldenrod spp. (*Solidago ohioensis*, *S. patula*, *S. riddellii*) 9
___ *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 (vine) (*Menispermum canadense*) 6
___ primrose-willow spp.(*Epilobium* &*Ludwigia*) 3
___ rose mallow spp. (*Hibiscus*) 4
___ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
___ sneezeweed (*Helenium autumnale*) 3
___ stinging nettle (*Laportea canadensis*) 2
___ *swamp saxifrage (*Saxifraga pa.*) 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.: rough a., white a. (*Geum*) 2
1 *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
___ chervil (*Chaerophyllum procumbens*) *3*
___ *cowbane (*Oxypolis rigidior*) 7
___ *great angelica (*Angelica atropurpurea*) 6
___ hog peanut/ gd. nut spp. (*Amphicarpaea*&*Apios*) 5
___ honewort (*Cryptotaenia canadensis*) 3
___ meadow rue spp. (*Thalictrum*) 5
___ poison ivy (vine) (*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 cathar. & frangula*) 0
___ buttonbush (*Cephalanthus occidentalis*) 5
___ dogwood, red-osier (*Cornus stolonifera*) 4
___ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
___ dogwood, gray (*C. racemosa*) 2
___ elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

___ *cranberry spp. (*Vaccinium*, N) 10
___ *dwarf birch (*Betula pumila*, N) 10
___ *highbush blueberry (*V. corymbosum*, N) 9
___ *leatherleaf (*Chamaedaphne calycul.*, N) 10
___ meadowsweet & hardhack spp.(*Spiraea*) 4
___ *ninebark (*Physocarpus opulifoius*) 7
___ *shrubby cinquefoil (*Potentilla fruticosa*) 9
___ spice bush (*Lindera benzoin*) 5
___ *swamp dewberry (*Rubus hispidus*) 6
___ *swamp holly & winterberry (*Ilex* spp.) 7
___ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

___ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

___ *ash, black (*Fraxinus nigra*) 7
1 ash, green (*Fraxinus pensylvanica*) 3
___ *ash, pumpkin (*Fraxinus tomentosa*, SW) 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 - lvs. simple and opposite

1 red maple (*Acer rubrum*) 5
1 silver maple (*A. saccharinum*) 1

Trees - lvs. simple and alternate

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

OTHER Lonicera maacki

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In-WRAP Summary Sheet

Date Report Generated: 12/21/09
Wetland site name: W192
Data Reference #
Date of Site Visit: 12/16/09
NWI polygons in Site (quadrangle and NWI id. numbers): 192A

TIER 1 SUMMARY:

a. Total wetland area (hectares): 0.36 ac. (0.15 ha)

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

Valuable More Favorable (Favorable) Neutral

c. Surrounding land use - numerical rank (max. = 1): 0.79

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

TIER 2 SUMMARY *NWI Polygon Id.* 192A

a. Indiana Wetland community type:

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

c. Disturbances to site: Culvert - approx. 100 ft. downstream

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.): 3 Rating: Good (Medium) Poor

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

TIER 3B SUMMARY

a. Zonation and interspersion 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 Rating: Good Medium (Poor)

d. Average coefficient of conservatism: 3.5 Rating: 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: 11 Rating: Good Medium (Poor)

h. Number of indicator taxa: 2 Rating: Good Medium (Poor)

Supplemental page for wetland sites with multiple NWI polygons:

TIER 2 SUMMARY ***NWI Polygon Id.*** _____

a. Indiana Wetland community type: _____

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: _____

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.): ____ Rating: Good Medium Poor

c. Flood and storm water storage - numerical rank (5 max.): ____ Rating: Good Medium Poor

TIER 3B SUMMARY

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

b. Stratification as indicator of animal habitat: Valuable Neutral

c. Number of dominant plant taxa observed: ____ Rating: Good Medium Poor

d. Average coefficient of conservatism: ____ Rating: 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: ____ Rating: Good Medium Poor

h. Number of indicator taxa: ____ Rating: Good Medium Poor

I-69 TIER 2 STUDY
SECTION 2
FINAL WETLAND ASSESSMENT REPORT

Appendix E
USACE Delineation Data Sheets

Prepared By:

JACOBS

501 N. Broadway
St. Louis, MO 63102

February 2010

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 169 Indiana WII City/County: Gibson Sampling Date: 7/19/09

Applicant/Owner: INDOT State: IN Sampling Point: WF24W

Investigator(s): M.Turgeon MdeC Section, Township, Range: 11 / T2S / R9W

Landform (hillslope, terrace, etc.): @base of hill in flat terrace area Local relief (concave, convex, none): rolling hills

Slope (%): 0-4% Lat: 38.320 435 Long: -87.351906 Datum: NAD 1983 UTM Zone 16

Soil Map Unit Name: Wakeland silt loam NWI classification: PFO

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer saccharinum	80%	Y	FACW
2.			
3.			
4.			
5.			
	80% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Acer saccharinum	30%	Y	FACW
2. Ulmus americana	20%	Y	FACW-
3.			
4.			
5.			
	50% = Total Cover		
Herb Stratum (Plot size: 5')			
1. Cyperus diandrus	15%	Y	FACW+
2. Glyceria striata	15%	Y	OBL
3. Boehmeria cylindrica	20%	Y	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	50% = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. —			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

Y Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ 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 ✓ No _____

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

SOIL

Sampling Point: WF7W

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR5/3		10YR6/1	25	D	M	silt loam	
			10YR4/4	10	C	M		
6-12"	10YR5/2		10YR6/1	30	D	M		
			10YR4/4	10	C	M		

[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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- X 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)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- X 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): 4"

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

Wetland Hydrology Present? Yes X 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 W11 City/County: Gibson Sampling Date: 7/19/09

Applicant/Owner: INDOT State: _____ Sampling Point: WF27D

Investigator(s): M. Turgeon MdeCarbonnel Section, Township, Range: 11 / T2S / R9W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): rolling hills

Slope (%): 0-4% Lat: 38.370435 Long: -87.351906 Datum: WGS 1983 UTM 16P

Soil Map Unit Name: Wakefield silt loam NWI classification: Non wetland

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus americana	40%	Y	FACU
2. Acer saccharinum	20%	Y	FACW
3. Acer rubrum	20%	Y	FAC
4.			
5.			
	80% = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1. Lonicera tartarica	30%	Y	FACU
2. Acer rubrum	40%	Y	FAC
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size: 5')			
1. Eupatorium serotinum	10%	N	FACW
2. Rubus sp	100%	Y	NL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	70% = Total Cover		

Woody Vine Stratum (Plot size: 30')			
1. Campsis radicans	20%		FAC
2.			
	20% = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WT24D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR3/3		—		—		silt loam	
2-12	10YR4/3		—		—			

[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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators: None

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? (includes capillary fringe) Yes ____ No X Depth (inches): _____

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: W 15 City/County: Gibson Sampling Date: 7/19/09
Applicant/Owner: INDOT State: IN Sampling Point: WF 5W
Investigator(s): M. Turgeon M deCarlo Section, Township, Range: 11 / T2S / R9W
Landform (hillslope, terrace, etc.): broad channel Local relief (concave, convex, none): concave
Slope (%): 1 Lat: 38.378459 Long: -87.343143 Datum: NAD 1983 UTM Zone 16N
Soil Map Unit Name: Bonnie Silt loam NWI classification: PFO
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:
Two path w/in wetland – not called out, but is up vegetation

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	30%	Y	FAC
2. Acer saccharinum	100%	Y	FACW
3. Liquidamber styraciflua	10%	N	FACW
4.			
5.			
	100	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
	0	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Urtica dioca	10%	Y	FAC
2. Lysimachia nummularia	10%	Y	FACW+
3. Aster sp.	5%	N	–
4. Impatiens capensis	10%	Y	FAC
5. Cicuta maculata	5%	N	OBL
6. Viola sp.	5%	N	–
7. Plantago major	1%	N	FAC
8.			
9.			
10.			
	46	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
	0	= Total Cover	

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ 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 ✓ No _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WFSW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18"	10YR5/2	90	5YR5/4	10%	C	M	clay	

[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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

Crayfish burrows throughout Rhizospheres. Small mottles & Depletions become prevelent 6-12"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- X Sediment Deposits (B2)
- X Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- X 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)
- X 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)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- X Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 8"

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: 169 Indiana W15 City/County: Gibson Sampling Date: 7/19/09

Applicant/Owner: INDOT State: IN Sampling Point: WF 5D

Investigator(s): M. TURLEON, MJC Section, Township, Range: 11 / T5 / R9W

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none

Slope (%): 0 Lat: 38.378455 Long: -87.343143 Datum: NAD 1983 Zone 16N

Soil Map Unit Name: NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No X

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes	No X	

Remarks: Area upslope from wetland is under active cultivation

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5')			
1. Glycine max	80%	Y	NL
2. Xanthium strumarium	20%	N	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

N Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ 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 No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WF 5D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 12	10YR5/4		—			—	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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators: None

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? (includes capillary fringe) Yes _____ No X Depth (inches): _____

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 W17/25 City/County: Pike Sampling Date: 7/19/09

Applicant/Owner: INDOT State: IN Sampling Point: WF7W

Investigator(s): M. Turgeon MdeC Section, Township, Range: 31 / T1S / R8W

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Floodplain Pab/a

Slope (%): 0-4 Lat: 38.383749 Long: -87.339121 Datum: NAD 1983 UTM Zone 16N

Soil Map Unit Name: Stendal Silt loam NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer saccharinum	70%	Y	FACW
2. Carya ovata	10%	N	FACU
3.			
4.			
5.			
	80	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Acer saccharinum	20%	Y	FACW
2.			
3.			
4.			
5.			
	20	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Bidens frondosa	5%	Y	FACW
2. Toxicodendron radicans	5%	Y	FAC
3. Smilax glauca	5%	Y	FAC
4. Saururus cernus	5%	Y	OBL
5.			
6.			
7.			
8.			
9.			
10.			
	20	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ 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 ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WF7W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
leaf litter								
0-20"	10YR 5/2	70%	10YR 4/4	30%	C	M	silty loam	floods

[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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

area dry @ survey but signs of high water levels. Was inundated on 2006 visit

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- X Sediment Deposits (B2)
- X Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- X 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 _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 6"

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Water stains on trees @ Edge

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 169 W17/25 City/County: Pike Sampling Date: 7/19/09

Applicant/Owner: INDOT State: _____ Sampling Point: WF7D

Investigator(s): MTiwacon Mde C Section, Township, Range: 31/T1S/R8W

Landform (hillslope, terrace, etc.): broadfield Local relief (concave, convex, none): microtopography

Slope (%): 0-4 Lat: 38.93749 Long: 87.33912 Datum: NAD 1983 UTM Zone 16N

Soil Map Unit Name: Stendal Silt Loam NWI classification: Not Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ✓, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____ No ✓	
Wetland Hydrology Present?	Yes _____ No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Phytolacca americana	10	N	NL
2. Polygonum caepastosum	20	N	UPL
3. Calystegia sepium	25	Y	FAC
4. Glycine max	25	Y	NL
5. Diodia teres	30%	Y	FACU
6. Mimulus sp	2%	N	—
7.			
8.			
9.			
10.			
	112% = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1. None			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ 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 _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)

Area under cultivation - mix of upl species within planted (soybean) field

SOIL

Sampling Point: WF7D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16"	10YR5/4	100					silt loam	
16"-20"	10YR7/4	100					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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

in a tilled (fallow) field

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? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: adj to Patoka

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: W32A City/County: PIKE Sampling Date: 7/20/09

Applicant/Owner: INDOT State: IN Sampling Point: WFB14W

Investigator(s): M Turgeon MdeC Section, Township, Range: 31/R8W/T1S

Landform (hillslope, terrace, etc.): gentle hillslope Local relief (concave, convex, none): Concave Microtopography

Slope (%): 2 Lat: 38.401140904 10 Long: -87.37916536360 Datum: NAD 1983 utm zone 16

Soil Map Unit Name: Belknap silt loam NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation X, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks: Fig Field - meadow

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1. Salix nigra	20%	Y	OBL
2. Platanus occidentalis	10%	Y	FACW
3.			
4.			
5.			
	30 = Total Cover		

Herb Stratum (Plot size: 5')			
1. Juncus effusis	30%	Y	OBL
2. Solidago rugosa	40%	Y	FAC+
3. Juncus (Jenuis	10%	N	FAC
4. Juncus accuminatus	10%	N	OBL
5. Eleocharis obtusa	10%	N	OBL
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WP B14 W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18"	10YR 4/2	65%	10YR 4/4	20%	C	M	Silt loam	
			10YR 6/2	15%	D	M		

[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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:

C&D @ 6" depth

concentrations and depletions seen at 6" depth

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)
- X 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)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- X Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): _____

Water Table Present? Yes ____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: W32A City/County: PIKE Sampling Date: 7/20/09
Applicant/Owner: INDOT State: IN Sampling Point: WF3140
Investigator(s): M. Turpen MdeCarbonnel Section, Township, Range: 31 / 2SW / T1S
Landform (hillslope, terrace, etc.): fallow field edge Local relief (concave, convex, none): microtopography
Slope (%): 2 Lat: 38.401140040410 Long: -87.32516536360 Datum: NAD 1983 UTM Zone 16N
Soil Map Unit Name: Wakeland silt loam NWI classification: Not wetland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks: upslope

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Solidago rugosa	20%	Y	FACU
2. Andropogon gerardii	20%	Y	FAC-
3. Asclepias exaltata	10%	N	FACU
4. Urtica dioica	10%	N	FACW
5. Rubus idaeus	10%	N	FACU-
6. Rosa multiflora	20%	Y	FACU
7.			
8.			
9.			
10.			
	90% = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species	10	x 2 =	20
FAC species	40	x 3 =	120
FACU species	40	x 4 =	160
UPL species		x 5 =	
Column Totals:	90 (A)		300 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:
Y Dominance Test is >50%
N Prevalence Index is ≤3.0[1]
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
Y Problematic Hydrophytic Vegetation[1] (Explain)
disturbed field edge
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Field-transition of vegetation is not dinstinct - but soils show changes

SOIL

Sampling Point: WB 14D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 5/4	100	—		—		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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No horizons - filled soil

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? (includes capillary fringe) Yes _____ No X Depth (inches): _____

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: W43 Forested City/County: PIKE Sampling Date: 7/20/09

Applicant/Owner: INDOT State: IN Sampling Point: WF 1W

Investigator(s): M. Turgeon MdeC Section, Township, Range: 16 / R8W / T1S

Landform (hillslope, terrace, etc.): hill slope Local relief (concave, convex, none): microtopography (wheel ruts @ edge)

Slope (%): 1 Lat: 38.428373 Long: -87.307142 Datum: NAD 1983 UTM Zone 16N

Soil Map Unit Name: Wakeland silt loam NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	60%	Y	FAC
2. Ulmus americanus	20	Y	FACW
3.			
4.			
5.			
	80	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Fraxinus pennsylvanica	20%	Y	FACW
2.			
3.			
4.			
5.			
	20	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Toxicodendron radicans	30%	Y	FACW
2. Onoclea sensibilis	20%	Y	FACW
3. Pilea pumila	10%	N	FACW
4. Urtic dioca	5	N	FACW
5. Mik grass	5	N	—
6.			
7. Campanula americana	5%	N	FAC
8. Diarthalium clandestinum	5%	N	FACW
9.			
10.			
	80	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. Parthenocissus quinq	10%	Y	FAC
2.			
	10	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WF1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR5/2	70	10YR5/4	30	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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X 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)
- X 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)
- X 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)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- X Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: W43 City/County: PIKE Sampling Date: 7/20/09

Applicant/Owner: INDOT State: IN Sampling Point: WFD

Investigator(s): M. Turgeon M de Carbonnel Section, Township, Range: 16/R8W/T1S

Landform (hillslope, terrace, etc.): I Local relief (concave, convex, none): —

Slope (%): 1 Lat: 38.429373 Long: -87.307142 Datum: NAD 1983 UTM 16N

Soil Map Unit Name: Wakeland silt loam NWI classification: not wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Liriodendron tulip.	20%	Y	FAC
2. Acer rubrum	30%	Y	FAC
3. Liquidamber styraciflua	10%	N	FACW
4.			
5.			
	60%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Sassafrass albidum	10	Y	FACU
2. Acer rubrum	10	Y	FAC
3.			
4.			
5.			
	20%	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Rubus idaeus	40	Y	FAC
2. Toxicodendron radicans	20	Y	FAC
3. Parthenocissus quinquif.	5	N	FAC
4. Campsis radicans	5	N	FAC
5. multiflora rose	5	N	FACU
6.			
7.			
8.			
9.			
10.			
	75%	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. Parthenocissus quing	5	Y	FAC
2. Toxicodendron radicans	5	Y	FAC
	10	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 86% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WF1D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR4/1	100	—				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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ 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)

None

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 55B City/County: PIKE Sampling Date: 7/20/09
Applicant/Owner: INDOT State: IN Sampling Point: WFB3W
Investigator(s): MTuraeon, MDeC Section, Township, Range: 3 T1S / R8W
Landform (hillslope, terrace, etc.): relatively flat Local relief (concave, convex, none): Flat w/ microtop.
Slope (%): 0% Lat: 38.459788823500 Long: -87.27586545240 Datum: NAD 1983 UTM Zone 16N
Soil Map Unit Name: Bonnie Silt Loam NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks: hummocks & hollows channels w/ standing water Emerg wetland on edge of field

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	40	Y	FAC
2.			
3.			
4.			
5.			
	40 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
	0 = Total Cover		

Herb Stratum (Plot size: 5')			
1. Phalaris arund.	Y	65%	FACW+
2. Impatiens capensis	Y	25%	FACW
3. Pilea pumila	N	5	FACW
4. Verbena nastata	N	5%	FACW+
5. Solidago sp.	N	2%	—
6.			
7.			
8.			
9.			
10.			
	112% = Total Cover		

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
	0 = Total Cover		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Monostand of Phalaris btw. field & wooded wetland

SOIL

Sampling Point: WFB3W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18"	10YR 5/2	75	10YR 4/4	25	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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X 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)
- X 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)
- X 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 X No _____ Depth (inches): 2"

Water Table Present? Yes X No _____ Depth (inches): surface

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): surface

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 55B City/County: Pike Sampling Date: 7/20/09

Applicant/Owner: INDOT State: IN Sampling Point: WFB3D

Investigator(s): MTuvgoon Mdec Section, Township, Range: 3/R8W/T1S

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none

Slope (%): 0 Lat: 38.45978823500 Long: -87.27588545240 Datum: NAD 1983 UTM Zone 16N

Soil Map Unit Name: Bonnie Silt loam NWI classification: not wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		

Herb Stratum (Plot size: 5')			
1. Glycerin max	80%	Y	NL
2. Soybean Rotfield			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	80 = Total Cover		

Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ 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 _____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WFB3D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
	SEE REMARKS							

[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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

Soil profile not completed due to concern for crop damage in planted soy bean field.

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? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Planted soybean field Upland area det. by plants & hydrology

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: W166 City/County: PIKE Sampling Date: 7/20/17

Applicant/Owner: INDOT State: IN Sampling Point: WP1W

Investigator(s): M. Turgeon MdeC Section, Township, Range: 36 / T1N / R8W

Landform (hillslope, terrace, etc.): slight hillside Local relief (concave, convex, none): convex

Slope (%): 0 Lat: 38.477953 Long: -87.253705 Datum: NAD 1983 UTM Zone 16N

Soil Map Unit Name: Hosmer silt loam NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	60%	Y	OBL
2.			
3.			
4.			
5.			
	60% = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Salix nigra	10%	Y	OBL
2. Acer rubrum	10%	Y	FAC
3.			
4.			
5.			
	20% = Total Cover		
Herb Stratum (Plot size: 5')			
1. carex (no flower)	20%	Y	–
2. Phalaris arundinacea	30%	Y	FACW+
3. Juncus effusis	20%	Y	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	70% = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WF11W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18"	10YR 4/2	75%	10YR 5/6	20%	C	M	silt loam	Mottles
								manganese, C
			10YR 5/1	5%	D	M		

[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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- X Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Depletions & concretion @ 3"

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): 41"

Water Table Present? Yes ✓ No ___ Depth (inches): surface

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): surface

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

adjacent to pond

Remarks:

Willow dominated

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: WL16 City/County: Pike Sampling Date: 7/20/09

Applicant/Owner: INDOT State: IN Sampling Point: WFN D

Investigator(s): MTurgeon MdeC Section, Township, Range: 36/T1N/R8W

Landform (hillslope, terrace, etc.): Slope/gentle Local relief (concave, convex, none): concave

Slope (%): 6% Lat: 38.477953530 Long: -87.253702618 Datum: NAD 1983 UTM Zone 16N

Soil Map Unit Name: Hosmer silt loam NWI classification: not wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: Ag field – Meadow Upland

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Rosa multiflora	5%	Y	FACU
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Apocynum cannabinum	40%	Y	FAC
2. Solidago canadensis	20%	N	FACU
3. Schizachyrium scoparium	30%	Y	FACU
4. Little white Aster	5%	N	—
5. Setaria italica	10%	N	FACU
6. Rumex crispus	10%	N	FAC+
7.			
8.			
9.			
10.			
	105 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. Parthenocissus quinquef.	5%	Y	FAC
2.			
	5 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	46	x 3 =	138
FACU species	65	x 4 =	260
UPL species	0	x 5 =	0
Column Totals:	110 (A)		398 (B)

Prevalence Index = B/A = 3.98

Hydrophytic Vegetation Indicators:

N Dominance Test is >50%

N Prevalence Index is ≤3.0[1]

N 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 ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WF11D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18"	10YR 5/6	100					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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ 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? (includes capillary fringe) Yes _____ No X Depth (inches): _____

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 WFW City/County: Pike Sampling Date: 7/21/09
Applicant/Owner: INDOT State: IN Sampling Point: WFSW
Investigator(s): MTurgeon, MdeCarbonnel Section, Township, Range: 19/T1N/R7W
Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): concave (depression)
Slope (%): 0 Lat: 38, 506449 Long: -87.235063 Datum: NAD 1983 UTM Zone 16N
Soil Map Unit Name: Fair Point Silt Loam, reclaimed NWI classification: PAB
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. Typha latifolia	60	Y	OBL
2. Carex stricta	30	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
- X Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WF8W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
18"	10YR 5/1	70	10YR 4/4	30	C	M/PL	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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

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): 3"

Water Table Present? Yes ✓ No ___ Depth (inches): Surface

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): Surface

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Wetland is located at high point in the landscape & is isolated. The water table appears to be perched.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: W80 I-69 City/County: PIKE Sampling Date: 7/21/09

Applicant/Owner: INDOT State: IN Sampling Point: WF8d

Investigator(s): M, Turgeon, M deCarbonnel Section, Township, Range: 19 / T1N / R7W

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): –

Slope (%): 4% Lat: 38, 506749 Long: -87, 235003 Datum: NAD 1983 UTM Zone 16N

Soil Map Unit Name: Fairpoint silt loam, Reclaimed NWI classification: Not Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____ No ✓	
Wetland Hydrology Present?	Yes ____ No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5)			
1. Setaria Italica	N	10	FACU
2. Zea mays	Y	80	N/L
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index ≤3.0[1]

___ 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 ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WF8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18"	10YR 5/4	100	—		—		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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ 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? (includes capillary fringe) Yes ____ No X Depth (inches): _____

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: W 80B City/County: Pike Sampling Date: 7/21/09

Applicant/Owner: InDOT State: IN Sampling Point: WF A2 W

Investigator(s): MJurgeon M DeGroot Section, Township, Range: S18/T1N/R7W

Landform (hillslope, terrace, etc.): Rolling hills Local relief (concave, convex, none): Convex

Slope (%): 1 Lat: 38.509581 Long: -87.235253 Datum: NAD 1983 UTM Zone 16N

Soil Map Unit Name: Belknap silt loam NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation N/A, Soil N/A, or Hydrology N/A significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Ulmus Americana	30	Y	FACW
2. Acer rubrum	25	Y	FACW
3. Acer negundo	10	N	FACW
4.			
5.			
	65	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Lindera benzoin	20	Y	FACW
2. Ulmus Americana	15	Y	FACW
3. Salix nigra	15	Y	OBL
4.			
5.			
	50	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Typha latifolia	20	Y	OBL
2. Impatiens capensis	20	Y	FACW
3. Stinging Nettle	50	Y	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	90	= Total Cover	

Woody Vine Stratum (Plot size: 15')			
1. Toxicodendron radicans	10	Y	FAC
2.			
	10	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ 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 ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WFA2W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
20	10yr 2/2	100						Saprist

[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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

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 X No ___ Depth (inches): Surface

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): surface

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: W80 B City/County: Pike Sampling Date: 7/21/09
Applicant/Owner: INDOT State: IN Sampling Point: WFAZD
Investigator(s): MTurgeon, M. DeCarlo Section, Township, Range: S18 / T1N / R7W
Landform (hillslope, terrace, etc.): rolling hills Local relief (concave, convex, none): Concave
Slope (%): 1 Lat: 38.589580 Long: -87.231752 Datum: NAD 1983 UTM Zone 16N
Soil Map Unit Name: Belknap Silt loam NWI classification: Not Wetland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	30	Y	FACU
2. Carpinus caroliniana	10	Y	FAC
3.			
4.			
5.			
	40	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Fraxinus americana	10%	Y	FAC
2.			
3.			
4.			
5.			
	10	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Campanula rotundifolia	20	Y	FAC
2. Urtica dioca	40	Y	FACW
3. Phlox sp.	20	Y	—
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	60	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. Rosa multiflora	10	N	FACU
2. Rubus strigosis	15	Y	NL
Parthenocissus quinquefolia	30	= Total Cover	FACU

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 8 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	40	x 3 =	120
FACU species	60	x 4 =	240
UPL species	15	x 5 =	75
Column Totals:	155 (A)		515 (B)

Prevalence Index = B/A = 3.32

Hydrophytic Vegetation Indicators:
N Dominance Test is >50%
N Prevalence Index is ≤3.0[1]
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators 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.)
Vine Total Cover = 55

SOIL

Sampling Point: WETAZD

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 5/3	100					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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

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? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

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: 95A City/County: PIKE Sampling Date: 7/21/09

Applicant/Owner: INDOT State: IN Sampling Point: WETLAND

Investigator(s): M Turgeon MdeC Section, Township, Range: SB/T1N/R7W

Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): riverine

Slope (%): 0 Lat: 38.518337 14920 Long: -87.227350 81900 Datum: NAD 1983 UTM 16N

Soil Map Unit Name: Hosmer silt loam NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks: Narrow vegetated channel

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	40%	Y	FAC
2. Quercus macrocarpa	10%	N	FAC-
3. Ulmus americana	20%	Y	FACW
4.			
5.			
	70	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15)			
1. Acer rubrum	10%	Y	FAC
2. Cornus stolonifera	10%	Y	FACW
3.			
4.			
5.			
	20	= Total Cover	

Herb Stratum (Plot size: 5)			
1. Rubus idaeus	10%	Y	FACU-
2. Glyceria striata	20%	Y	OBL
3. Lonicera japonica	5%	N	FACU
4. Panicum dichotomum	1%	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	36	= Total Cover	

Woody Vine Stratum (Plot size: 30)			
1. Toxicodendron radicans	10%	Y	FAC
2.			
	10	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 86% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: INFZW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR2/2	100	—	—	—	—	Silt loam	
4-18	10YR3/2	70	10YR4/5	10%	C	PL/M	Silt loam	
			10YR4/3	20%	D	M		

[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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- √ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- X 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? (includes capillary fringe) Yes X No 41 Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 95A City/County: PIKE Sampling Date: 7/21/09

Applicant/Owner: INDOT State: IN Sampling Point: WF2D

Investigator(s): MdeCarbonnel MTUVG Section, Township, Range: 28/T1N/R7W

Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): relatively flat

Slope (%): 0 Lat: 38.51833714920 Long: -87.22735691900 Datum: NAD 1983 UTM Zone 16N

Soil Map Unit Name: Hosmer Silt loam NWI classification: Not Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in 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 any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: both sides of wet stream are disturbed - one side soybean - one side lawn

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. rosa multiflora	10%	Y	FACU
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 10')			
1. Digitaria	90%	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ 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 _____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WF2D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	100					Silt loam	
4-18	10YR 4/4	100					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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ 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? (includes capillary fringe) Yes _____ No X Depth (inches): _____

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 W 118 City/County: Davies Sampling Date: 10/19/06
Applicant/Owner: INDOT State: IN Sampling Point: WF1W
Investigator(s): Lars Carlson, Mike Turpen Section, Township, Range: 33/T2N/R7W
Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): none
Slope (%): 4/0 Lat: 38.561435 Long: -87.203624 Datum: NAD 1983 UTM Zone 16N
Soil Map Unit Name: Petrolia Silty Clay loam NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer saccharinum	40	Y	FACW
2. Carya laciniosa	50	Y	FACW
3.			
4.			
5.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. Fraxinus americana	10	Y	FACW
2. Acer saccharinum	30	Y	FACW
3.			
4.			
5.			
	40 = Total Cover		
Herb Stratum (Plot size: 5)			
1. Eupatorium serotinum	30	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: 30)			
1. Toxicodendron radicans	50	Y	FAC
2.			
	____ = Total Cover		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 83% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ 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 ✓ No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WF1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
12	10YR 5/2	70	10YR 4/4	30	C	M	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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X 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 X Depth (inches): —

Water Table Present? Yes X No ___ Depth (inches): 7"

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0"

Wetland Hydrology Present? Yes X 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 W 118 City/County: Davies Sampling Date: 10/19/06
Applicant/Owner: INDOT State: IN Sampling Point: wFid
Investigator(s): Lars Carlson, Michael Tungeon Section, Township, Range: 33/T2N/R7W
Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): none
Slope (%): 4% Lat: 38.56143 Long: -87.203624 Datum: NAD 1983 UTM Zone 16N
Soil Map Unit Name: Petrolia silty clay loam NWI classification: Not wetland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____ No ✓	
Wetland Hydrology Present?	Yes ____ No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Carya laciniosa	30	Y	FACW
2. Fraxinus americana	20	Y	FACU
3. Quercus rubra	40	Y	FACU
4.			
5.			
	80 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1. Cercis canadensis	40	Y	FACU
2. Celtus occidentalis	10	N	FACU
3. Asimina triloba	10	N	FAC
4.			
5.			
	60 = Total Cover		

Herb Stratum (Plot size: 5)			
1. Aster simplex/urus	20	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	20 = Total Cover		

Woody Vine Stratum (Plot size: 30)			
1. Campsis radicans	10	Y	FAC
2.			
	10 = Total Cover		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	—	x 1 =	—
FACW species	50	x 2 =	100
FAC species	30	x 3 =	90
FACU species	100	x 4 =	400
UPL species	—	x 5 =	—
Column Totals:	180 (A)		590 (B)

Prevalence Index = B/A = 3.27

Hydrophytic Vegetation Indicators:
N Dominance Test is >50%
N Prevalence Index is ≤3.0[1]
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
N Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators 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: WF1D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR4/3	90	10YR5/2	5	d	m	silt loam	
			10yr 4/4	5	C	PL		

[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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ 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 F Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): _____

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: 176A City/County: DAVIES Sampling Date: 7/22/09

Applicant/Owner: INDOT State: IN Sampling Point: WF4W

Investigator(s): MTurgeon Mde C Section, Township, Range: S1 / T2N / SW

Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): concave

Slope (%): 0 Lat: 38.683359219O Long: -87.128045410 Datum: NAD 1983 UTM Zone 16N

Soil Map Unit Name: Wakeland Silt loam NWI classification: PEMA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks: Field has been mowed - some signs of remnant plants

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		

Herb Stratum (Plot size: ____)			
1. Phalaris arundinac	80%	Y	FACW
2. Leersia virginica	10%	N	FACW
3. Iva angustifolia	5%	N	OBL
4. Polygonum persicaria	5%	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

Area is problematic - mowed field

SOIL

Sampling Point: WF4W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6A	10YR4/1	100					loam	oxidized rhizospheres
B 6-18"	10YR5/1	80	10YR4/4	20%	C	PL	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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks: Depletions & concentrations w/in 6"

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)
- X 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)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Low area w/in Ag field

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 176 A City/County: Davies Sampling Date: 7/22/09

Applicant/Owner: INDOT State: IN Sampling Point: WF4D

Investigator(s): M Turgeon MdeC Section, Township, Range: 1 / T2N / SW

Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): microtopography

Slope (%): 0 Lat: 38.633314342O Long: -87.128804854IO Datum: NAD 83 UTM Zone 16

Soil Map Unit Name: Wakeland Silt loam NWI classification: Not Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Trifolium pratense	30%	Y	FACU
2. U.K. Grasses	20%	Y	-
3. Echinochloa crusgli	20%	Y	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	70 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ 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 _____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WF4D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
4 0-4	10YR4/4	100	—				Loam	
B 4-18	10YR5/3	80	10YR5/6	10	C	M	loam	
			10YR5/2	10	D	M		

[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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ 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? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Slope above field – & ditch

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 178 A City/County: DAVIES Sampling Date: 7/22/09

Applicant/Owner: INDOT State: IN Sampling Point: WF 1W

Investigator(s): M. Thompson, Mdec Section, Township, Range: 31 / T1S / R8W

Landform (hillslope, terrace, etc.): gentle sloping hillside Local relief (concave, convex, none): Nearly level / microtopography

Slope (%): 0 Lat: 38.637945166 Long: -87.126719582 Datum:

Soil Map Unit Name: Wakeland silt loam NWI classification: PEM / PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks: partially w/in planted field & partially wooded on channel.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer negundo	30%	Y	FAW-
2. Acer rubrum	30%	Y	FACW
3. Fraxinus pennsylvanica	20%	Y	FACW
4.			
5.			
	80	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
	0	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	50%	Y	FACW
2. Scirpus cyperinus	10%	N	OBL
3. Cicuta maculata	5%	N	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	65	= Total Cover	

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

Border of Ag field & Ditch.

SOIL

Sampling Point: WFIW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

	Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
A	0-5"	10YR4/3	95	10YR6/2	5	D	PL	Silt loam	
B	5-18"	10YR5/2	80	10YR4/3	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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks: Ag-field.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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)
- X Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): 8"

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Ditching

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 178A Veale Creek City/County: Davies Sampling Date: 7/22/09
Applicant/Owner: INDOT State: IN Sampling Point: WET D
Investigator(s): M. Thrasher Mde C Section, Township, Range: 31 / T1S/R8W
Landform (hillslope, terrace, etc.): — Local relief (concave, convex, none): None
Slope (%): flat Lat: 38.637294516600 Long: -87.126719582200 Datum: NAD 1983 Utm zone 16N
Soil Map Unit Name: Wakeland silt loam NWI classification: Not wetland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus macrocarpa	10%	Y	FAC-
2. Morus rubra	20%	Y	FAC-
3. Acer rubrum	5%	N	FAC
4.			
5.			
	35 = Total Cover		

Sapling/Shrub Stratum (Plot size: ____)			
1. Rosa multiflora	30%	Y	FACU
2.			
3.			
4.			
5.			
	30 = Total Cover		

Herb Stratum (Plot size: ____)			
1. Glycine Max	30%	Y	NL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	30 = Total Cover		

Woody Vine Stratum (Plot size: ____)			
1. Toxicodendron radicans	5%	Y	FAC+
2.			
	5 = Total Cover		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 = ____	
FACW species ____	x 2 = ____	
FAC species 40	x 3 = 120	
FACU species 30	x 4 = 120	
UPL species 30	x 5 = 150	
Column Totals: 100 (A)	390 (B)	

Prevalence Index = B/A = 3.9

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
N Prevalence Index is ≤3.0[1] NO
N Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WFID

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
B 0-6	10YR5/3	100					silt loam	
C 6-12	10YR6/4	70	10YR6/6	10	C	M	silt loam	
			10YR4/4	20	D	M		

[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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: Plowed field.

HYDROLOGY

Wetland Hydrology Indicators: None

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? (includes capillary fringe) Yes _____ No X Depth (inches): _____

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: W180 @ 50 City/County: DAVIES Sampling Date: July 22
Applicant/Owner: INDOT State: IN Sampling Point: WF 2 W
Investigator(s): M. Turgeon M&EC Section, Township, Range: S6/T2N/R6W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave
Slope (%): 0 Lat: 38.654035985580 Long: -87.1284 1614700 Datum: NAD 1983 UTM Zone 16N
Soil Map Unit Name: IVA Silt loam NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks: between us 50 & access roadway

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: ____)			
1. Grasses	5	N	
2. Scirpus cyperinus	25	Y	OBL
3. Typha latifolia	30	Y	OBL
4. Eupatorium purpureum	9	N	FAC
5. Asclepias syriaca	1	N	NL
6.			
7.			
8.			
9.			
10.			
	67% = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1. Toxicodendron radicans	10%	Y	FAC
2.			
	10 = Total Cover		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Formerly flagged as two wetlands now – meadow is wet connecting them

SOIL

Sampling Point: WF2UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR5/2	70	10YR5/6	20	C	M	Loam	
			10YR6/1	10	D		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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:

depleted soil w/ bright, large concentrations within 6" of surface

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X 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)
- X 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)
- X 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 X No ____ Depth (inches): 4"

Water Table Present? Yes X No ____ Depth (inches): Surface

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): Surface

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Hummock & hollow topography standing water in hollows @ site visit

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 189 City/County: Davies Sampling Date: 7/2X/09

Applicant/Owner: INDOT State: _____ Sampling Point: WF2D

Investigator(s): M. Turgeon Wde C Section, Township, Range: S6/T2N/R6W

Landform (hillslope, terrace, etc.): slope of RT 50 Local relief (concave, convex, none): Convex

Slope (%): +1% Lat: 38.654035985800 Long: -87.128416/4780 Datum: NAD 1983 UTM Zone 16N

Soil Map Unit Name: HA Silt loam NWI classification: Not Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: RT 50 Embankment slope

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Daucus carota	30%	Y	NL
2. Asclepias syriaca	20%	Y	NL
3.			
4. U.K Grasses	10%	N	—
5.			
6.			
7.			
8.			
9.			
10.			
	60 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ 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 _____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

Area upslope is road way and embankment

SOIL

Sampling Point: WF2D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16"	10YR5/4	90	10YR5/6	20	C	M	Loam	Embankment
			10YR4/4	10	D	M		

[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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ 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? (includes capillary fringe) Yes _____ No X Depth (inches): _____

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: W 190 City/County: PIKE Sampling Date: 7/21/09

Applicant/Owner: INDOT State: IN Sampling Point: WF1W

Investigator(s): M. Tavaron MDEC Section, Township, Range: S13 T1N R8W

Landform (hillslope, terrace, etc.): Base of hillslope Local relief (concave, convex, none): concave

Slope (%): 0 Lat: 38.5H 75066760 Long: 87.2460.3059020 Datum: NAD1983 UTM Zone16

Soil Map Unit Name: Fairpoint - Bathgate complex NWI classification: PEMA / PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks: low lying pond @ base of steep slope adj to ~~HE~~ lot w/ cars & dumping

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	80	Y	OBL
2. Betula alleghenensis	10%	N	FACW
3.			
4.			
5.			
	90 = Total Cover		

Sapling/Shrub Stratum (Plot size: ____)			
1. Platanus occidentalis	10%	Y	FACW
2. Fraxinus pennsylvanica	5%	Y	FACW
3.			
4.			
5.			
	15 = Total Cover		

Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	0 = Total Cover		

Woody Vine Stratum (Plot size: ____)			
1. N/A			
2.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WFIW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
16"	10YR 2/2	100	—		—		—	saprist

[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)
- X Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ 2 cm Muck (A10)
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ 5 cm Mucky Peat or Peat (S3)
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Loamy Mucky Mineral (F1)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- __ Coast Prairie Redox (A16)
- __ Iron-Manganese Masses (F12)
- __ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

Soil smells strongly of sulfr. @ 4"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- __ Sediment Deposits (B2)
- __ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- __ Iron Deposits (B5)
- __ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- __ Water-Stained Leaves (B9)
- __ Aquatic Fauna (B13)
- __ True Aquatic Plants (B14)
- X 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)
- X Stunted or Stressed Plants (D1)
- __ Geomorphic Position (D2)
- __ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): 5"

Water Table Present? Yes X No _____ Depth (inches): Surface

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): Surface

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

standing water @ center of resource

Remarks:

Salix have developed buttressed trunk & root system

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: W190 City/County: PIKE Sampling Date: 7/21/09
Applicant/Owner: INDOT State: IN Sampling Point: WF1b
Investigator(s): M. Turgeon MdeC Section, Township, Range: S13 T1N R8N
Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): depressional
Slope (%): 1 Lat: 38.514750666760 Long: -87.246030550 20 Datum: NAD 1983 UTM Zone 16N
Soil Map Unit Name: Fairpoint-Bethesda complex NWI classification: Not wetland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)
Are Vegetation ✓, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	
Remarks:		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	40%	Y	FACU
2. Elaeagnus angust.	20%	Y	FACU
3.			
4.			
5.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. Rosa multiflora	20%	Y	FACU
2. Gleditsia triacanthos	10%	Y	FAC
3.			
4.			
5.			
	30	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Grasses (mown)	80%	Y	–
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. Toxicodendron Radicans	20	Y	FAC
2.			
	20	= Total Cover	

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 20	x 2 =	40
FAC species 30	x 3 =	90
FACU species 60	x 4 =	240
UPL species	x 5 =	
Column Totals: 110 (A)		370 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:
N Dominance Test is >50%
N Prevalence Index is ≤3.0[1]
N 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 _____ No ✓

Remarks: (Include photo numbers here or on a separate sheet.)
Area upslope of wetland is maintained.

SOIL

Sampling Point: WFID

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18"	10YR5/6	100	—		—		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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

disturbed hillside

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? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

hillside

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 190 B City/County: PIKE Sampling Date: 7/21/09

Applicant/Owner: INDOT State: IN Sampling Point: WP4 W

Investigator(s): M. Turacon MdeC Section, Township, Range: S13 T1N R8W

Landform (hillslope, terrace, etc.): steep slope to WL Local relief (concave, convex, none): depressional

Slope (%): 0 Lat: 38.5180 094720 Long: -87.249965466660 Datum: NAD 1983 utm zone 16R

Soil Map Unit Name: Hosmer Silt loam NWI classification: PFO1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer saccharinum (Silver)	80%	Y	FACW
2. Acer rubrum	10%	N	FACW
3. Fraxinus pennsylv.	5%	N	FACW
4. Salix nigra	5%	N	OBL
5.			
	100 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1. Fraxinus pennsylvanicum	10%	Y	FACW
2. Lonicera japonica	5%	Y	FAC+
3.			
4.			
5.			
	15% = Total Cover		

Herb Stratum (Plot size: 5')			
1. Toxicodendron radicans	5%	N	FAC
2. Lemna	70%	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	75% = Total Cover		

Woody Vine Stratum (Plot size:)			
1. Toxicodendron radicans	10%	Y	Fac
2.			
	10% = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WFAW

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18"	10YR 5/1	80	10YR 6/6	20	C	M	loam	large

[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:

- [X] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5)
- [ ] 2 cm Muck (A10)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Mucky Mineral (S1)
- [ ] 5 cm Mucky Peat or Peat (S3)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [X] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- [ ] Coast Prairie Redox (A16)
- [ ] Iron-Manganese Masses (F12)
- [ ] Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes [X] No [ ]

Remarks: Depleted - sulfur smell

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [X] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [X] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [X] Drift Deposits (B3)
- [X] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [X] Aquatic Fauna (B13) FROGS
- [X] True Aquatic Plants (B14)
- [X] 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)
- [X] Drainage Patterns (B10)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [X] Geomorphic Position (D2)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes [X] No [ ] Depth (inches): 5"

Water Table Present? Yes [X] No [ ] Depth (inches): surface

Saturation Present? (includes capillary fringe) Yes [X] No [ ] Depth (inches): surface

Wetland Hydrology Present? Yes [X] No [ ]

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 190 B City/County: PIKE Sampling Date: 7/21/09

Applicant/Owner: INDOT State: IN Sampling Point: WFH D

Investigator(s): MTurgeon MdeC Section, Township, Range: S13 T1N R8W

Landform (hillslope, terrace, etc.): hillside Local relief (concave, convex, none): Concave

Slope (%): 0 Lat: 38.5180096172° Long: -87.24996546660 Datum: NAD 1983 UTM Zone 16N

Soil Map Unit Name: Hosmer silt loam NWI classification: not wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Hickory/Carya ovata	40%	Y	FACU
2. Acer saccharinum	60%	Y	FACW
3.			
4.			
5.			
	100	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Lonicera japonicus	20%	Y	FACU
2. Rosa multiflora	10%	Y	FACU
3.			
4.			
5.			
	30	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Viola sp	5%	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	5	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ 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 ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WFAYD

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10yr 3/1	100	—				Silt loam	
6-18	10yr 4/1	100	—				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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

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? (includes capillary fringe) Yes _____ No X Depth (inches): _____

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: 190C City/County: PIKE Sampling Date: 7/21/09
Applicant/Owner: INDOT State: IN Sampling Point: WF1W
Investigator(s): M Turacon MdeC Section, Township, Range: S15/T1N/R8W
Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): Concave
Slope (%): 1 Lat: 38.51728701170 Long: -82.24860.71650 Datum: NAD1983 UTM Zone 16N
Soil Map Unit Name: Wellston Silt loam NWI classification: PSS
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks: Isolated - several streams feed into an open flat area w/ berm @ far end.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer saccharinum	40%	Y	FACW
2. Fraxinus pennsylv.	30%	Y	FACW
3.			
4.			
5.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: ____)			
1. Fraxinus pennsylv	30%	Y	FACW
2.			
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size: ____)			
1. Pilea pumila	10%	N	
2. Impatiens capensis	10%	N	FACW
3. Lemna	20%	Y	OBL
4. Leersia oryzoh.	40%	Y	OBL
5. polygonum sp	5%	+	—
6.			
7.			
8.			
9.			
10.			
	85 = Total Cover		

Woody Vine Stratum (Plot size: ____)			
1. Virginia creeper	5%	Y	FAC-
2.			
	5 = Total Cover		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
__ Prevalence Index is ≤3.0[1]
__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WF / W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10"	10YR 2/2	100	—		—		SiL/L/CoL	mucky dark smell soil

[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)
- X Histic Epipedon (A2)
- ___ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks: thick mucky soil

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- X 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)
- X Aquatic Fauna (B13) Lemna
- ___ True Aquatic Plants (B14)
- X Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): _____

Water Table Present? Yes ____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): surface

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 190C City/County: PIKE Sampling Date: 7/21/09

Applicant/Owner: INDOT State: IN Sampling Point: WET 1

Investigator(s): MTurgeon MdeCarb Section, Township, Range: S15/T1N/R8W

Landform (hillslope, terrace, etc.): hill side Local relief (concave, convex, none): Gou cave

Slope (%): 0 Lat: 38.51728701170 Long: -87.24860776150 Datum: NAD 1983

Soil Map Unit Name: Wellston silt loam NWI classification: Not wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Sassafras albidum	10%	N	FACU
2. Quercus rubra	50%	Y	FACU
3. Fiber sacchirinum	30%	Y	FACW
4.			
5.			
	90% = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1. Asimina triloba	10%	Y	FAC
2. Rosa multiflora	20%	Y	FACU
3. Sassafrass albidum	5%	N	FACU
4. Carya	5%	N	FACU
5.			
	40% = Total Cover		

Herb Stratum (Plot size: 5')			
1. Urtica dioca	20%	Y	FACW
2. Phytolacca americana	10%	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	30 = Total Cover		

Woody Vine Stratum (Plot size: 30')			
1. Parthanocissus qui.	10%	Y	FACU
2.			
	10 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 43% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

__ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ 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 _____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: WF1d

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
A	10YR3/3	100					loam	
B	10YR4/6	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 Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

None

[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? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

I-69 TIER 2 STUDY
SECTION 2
FINAL WETLAND ASSESSMENT REPORT

Figures 1-1 through 1-5

Prepared By:

JACOBS

501 N. Broadway
St. Louis, MO 63102

February 2010

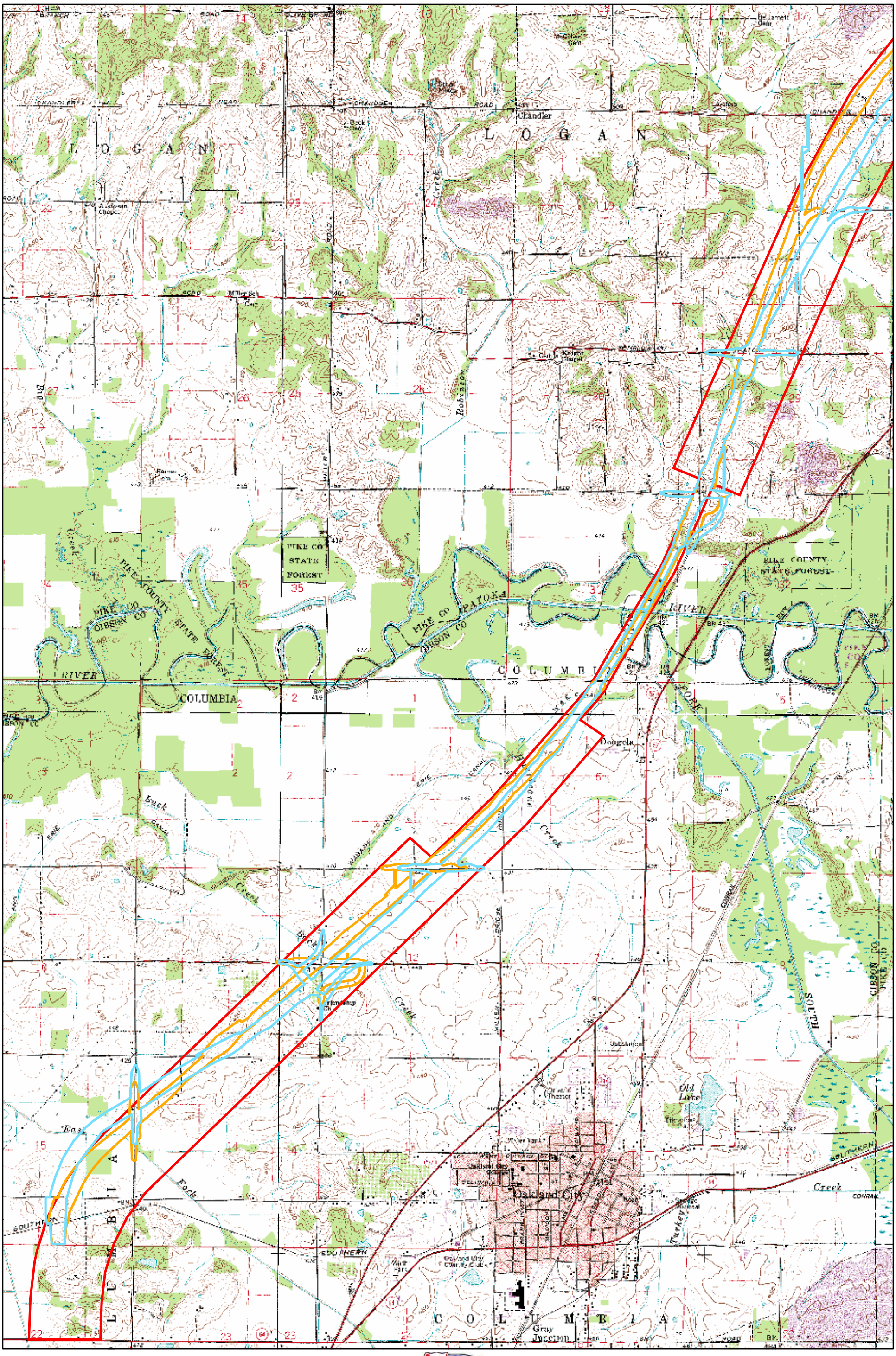
LOGAN
LOGAN
COLUMBIA
COLUMBIA
PIKE CO STATE FOREST
PIKE COUNTY STATE FOREST
PIKE CO
GIBSON CO
PATOKA
RIVER
Chandler
Oakland City
Gray Junction
Dongola
Buck Creek
Creek
Fork
SOUTHERN
Legend
Section 2 Approved Corridor
Alternative A
Alternative B
0
2,500
5,000
Feet
N
I-69 Evansville to Indianapolis
Tier 2 Studies
Section 2
Indiana Department of Transportation
USGS Base with Approved Study Corridor
and DEIS Alternative A & B
HANNUM, WAGLE & CLINE engineering
JACOBS

FIGURE 1-1

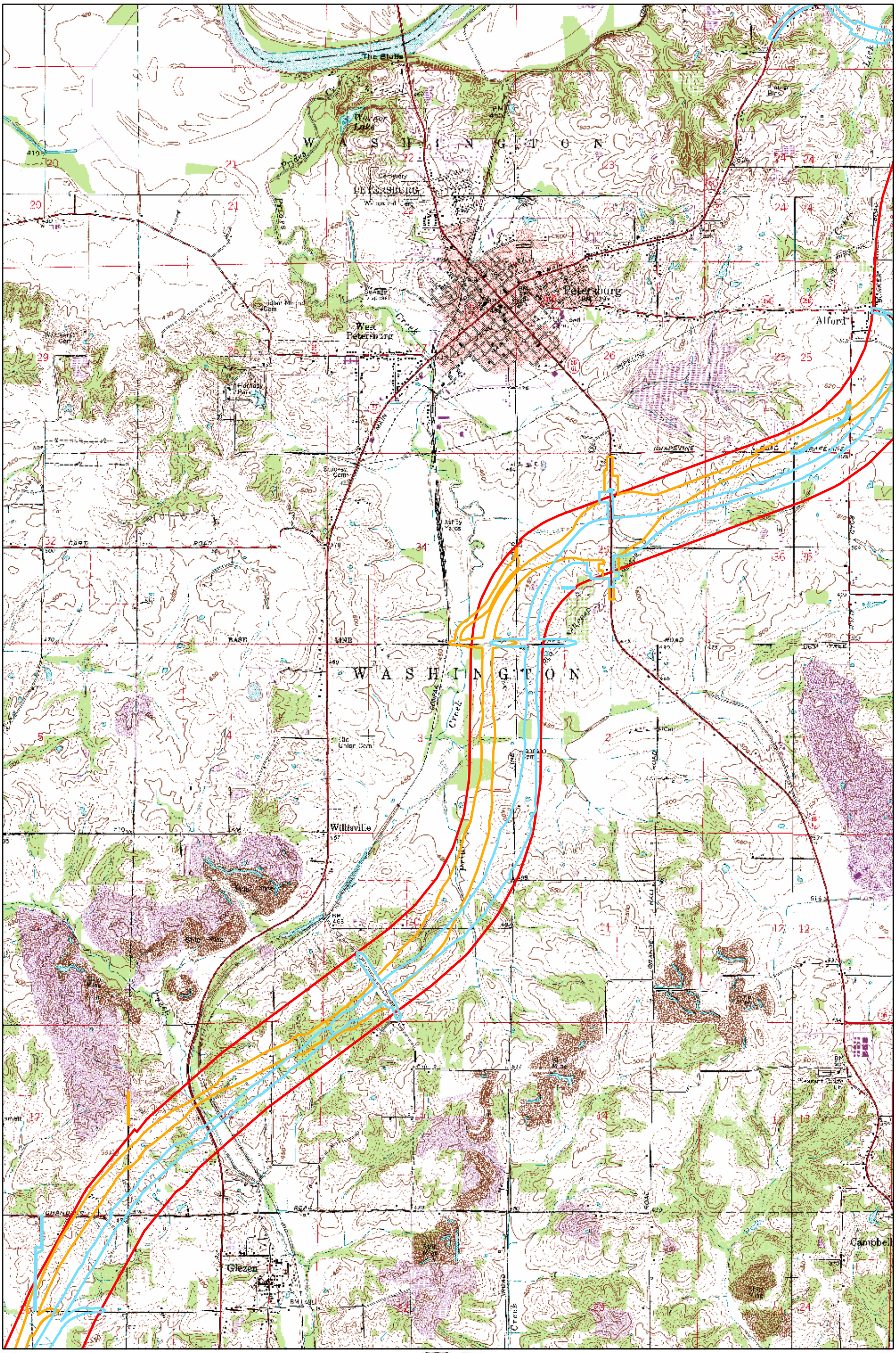
WASHINGTON
Petersburg
West Petersburg
Alford
Willisville
Glezen
Campbell
The Bluffs
Walker Lake
Florida Park
Indian Mound Cem
Old Union Cem
Old Center Cem
Pond Creek
Patoka River
Section Line
Road
Legend
Section 2 Approved Corridor
Alternative A
Alternative B
0
2,500
5,000
Feet
N
I-69 Evansville to Indianapolis
Tier 2 Studies
Section 2
Indiana Department of Transportation
USGS Base with Approved Study Corridor
and DEIS Alternative A & B
HANNUM, WAGLE & CLINE engineering
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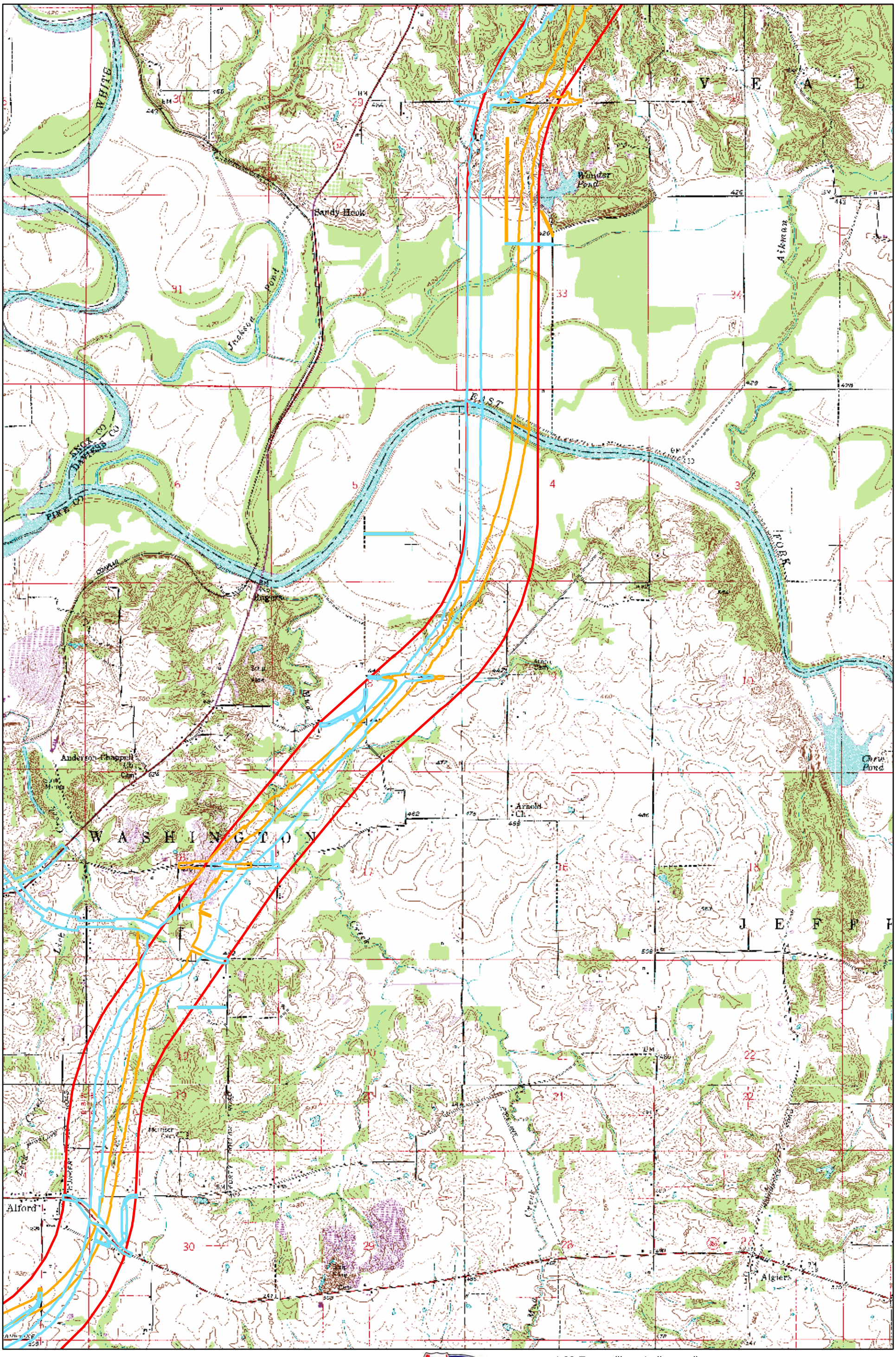
FIGURE 1-2



I-69 Evansville to Indianapolis
Tier 2 Studies
Section 2
Indiana Department of Transportation

USGS Base with Approved Study Corridor and DEIS Alternative A & B

HANNUM, WAGLE & CLINE engineering

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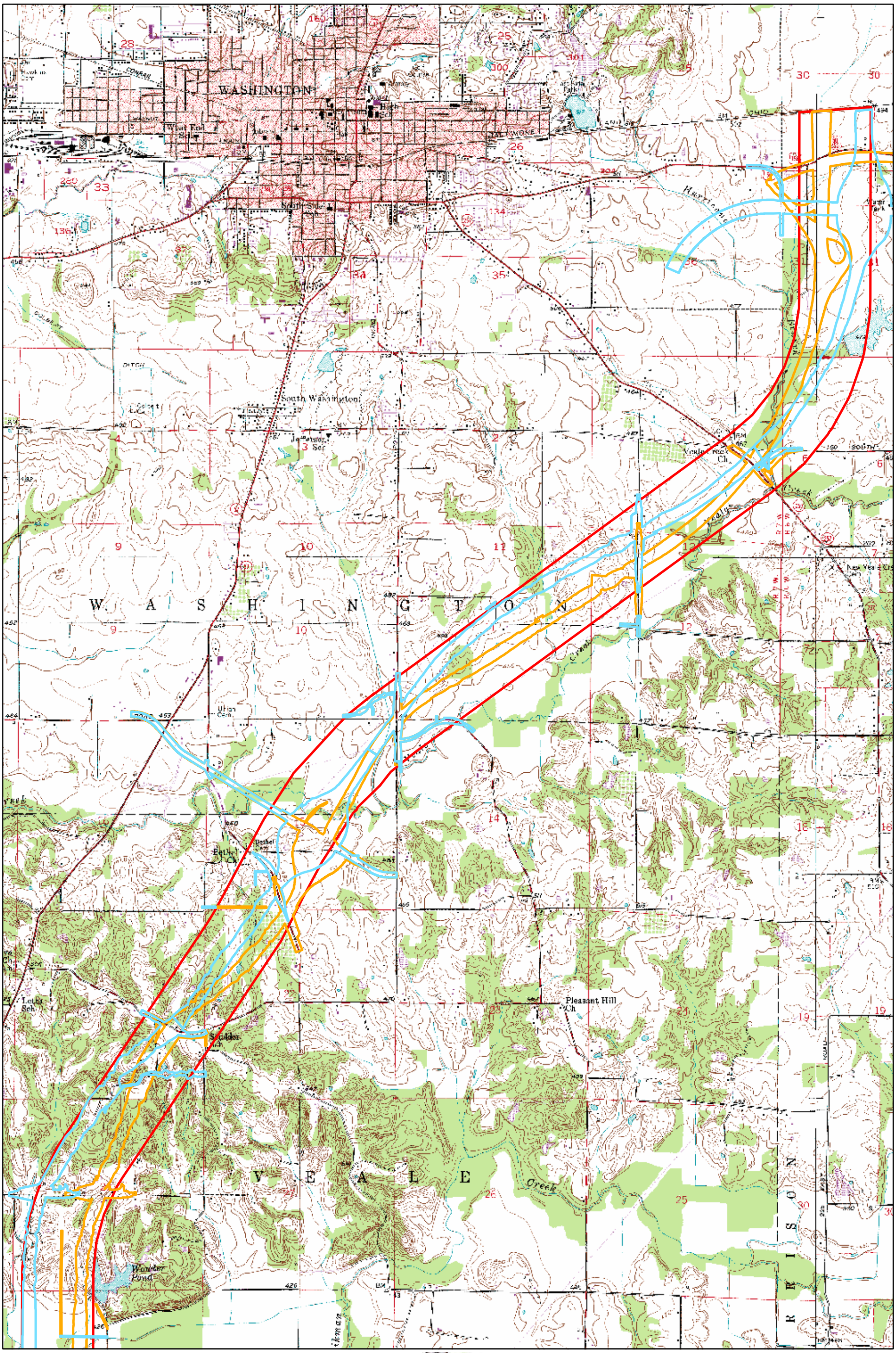
FIGURE 1-3



Legend

- Section 2 Approved Corridor
- Alternative A
- Alternative B

0 2,500 5,000 Feet

N

I-69 Evansville to Indianapolis
Tier 2 Studies
Section 2
Indiana Department of Transportation

USGS Base with Approved Study Corridor and DEIS Alternative A & B

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FIGURE 1-4

Legend

- Section 2 Approved Corridor
- Alternative A
- Alternative B

0 2,500 5,000 Feet

N

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Tier 2 Studies
Section 2
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USGS Base with Approved Study Corridor and DEIS Alternative A & B

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FIGURE 1-5

I-69 TIER 2 STUDY
SECTION 2
FINAL WETLAND ASSESSMENT REPORT

Figures 2-1 through 2-5

Prepared By:

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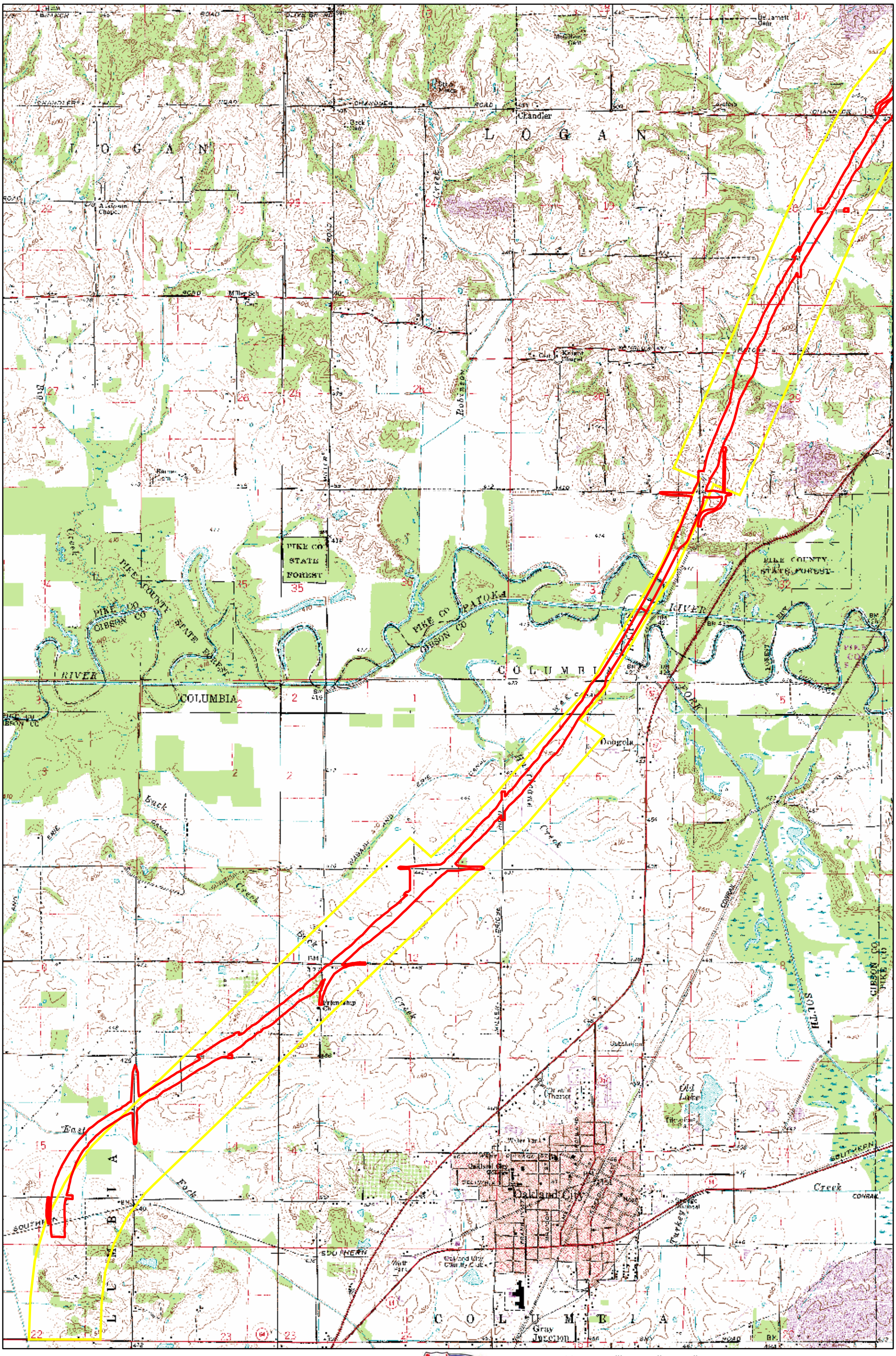
St. Louis, MO 63102

February 2010



Legend

🟨 Section 2 Approved Corridor

🟥 FEIS Refined Preferred

0 2,500 5,000
Feet

N

I-69 Evansville to Indianapolis
Tier 2 Studies
Section 2
Indiana Department of Transportation

USGS Base with Approved Study Corridor and FEIS Refined Preferred Alternative

FIGURE 2-1

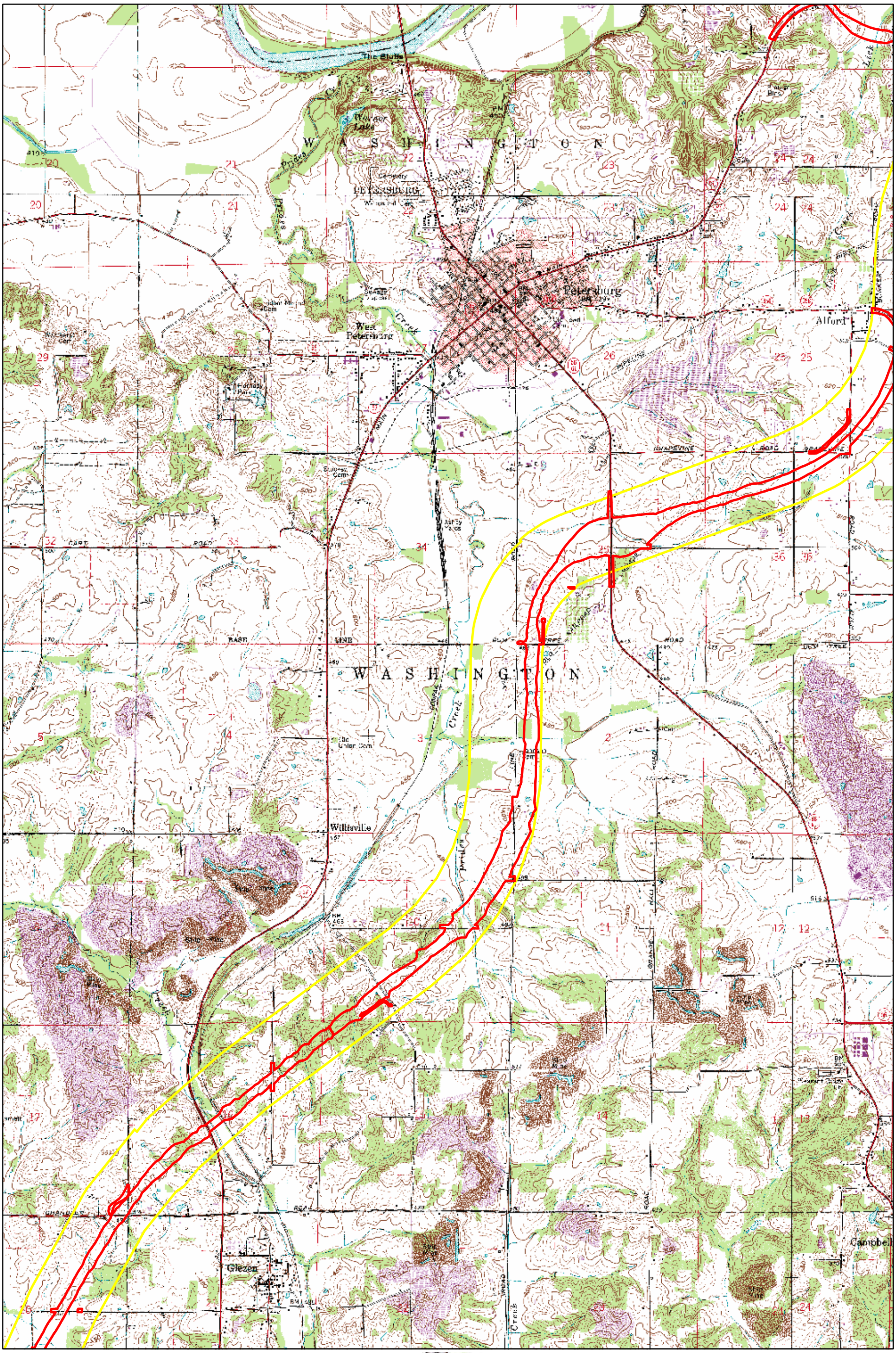

WASHINGTON
Petersburg
West Petersburg
Alford
Willisville
Glezen
Campbell
The Bluffs
Walker Lake
Cemetery
Seagate
Florida Park
Cem
Creek
Road
Line
Trail
Pike
Base
Tree
Grave
Bldg
Mine
Pond
Tank
Ch
Sch
Bridge
Meadow
Orchard
Swamp
Marsh
Levee
Dam
Pipeline
Powerline
Fence
Gate
Trail
Ditch
Drive
Lane
Court
Circle
Place
Terrace
Boulevard
Parkway
Highway
Interstate
Section
Township
Range
Meridian
Quadrangle
Elevation
Contour
Index
Scale
Datum
Projection
Coordinate
Grid
Zone
Legend
Section 2 Approved Corridor
FEIS Refined Preferred
0
2,500
5,000
Feet
N
I-69 Evansville to Indianapolis
Tier 2 Studies
Section 2
Indiana Department of Transportation
USGS Base with Approved Study Corridor
and FEIS Refined Preferred Alternative
HANNUM, WAGLE & CLINE
engineering
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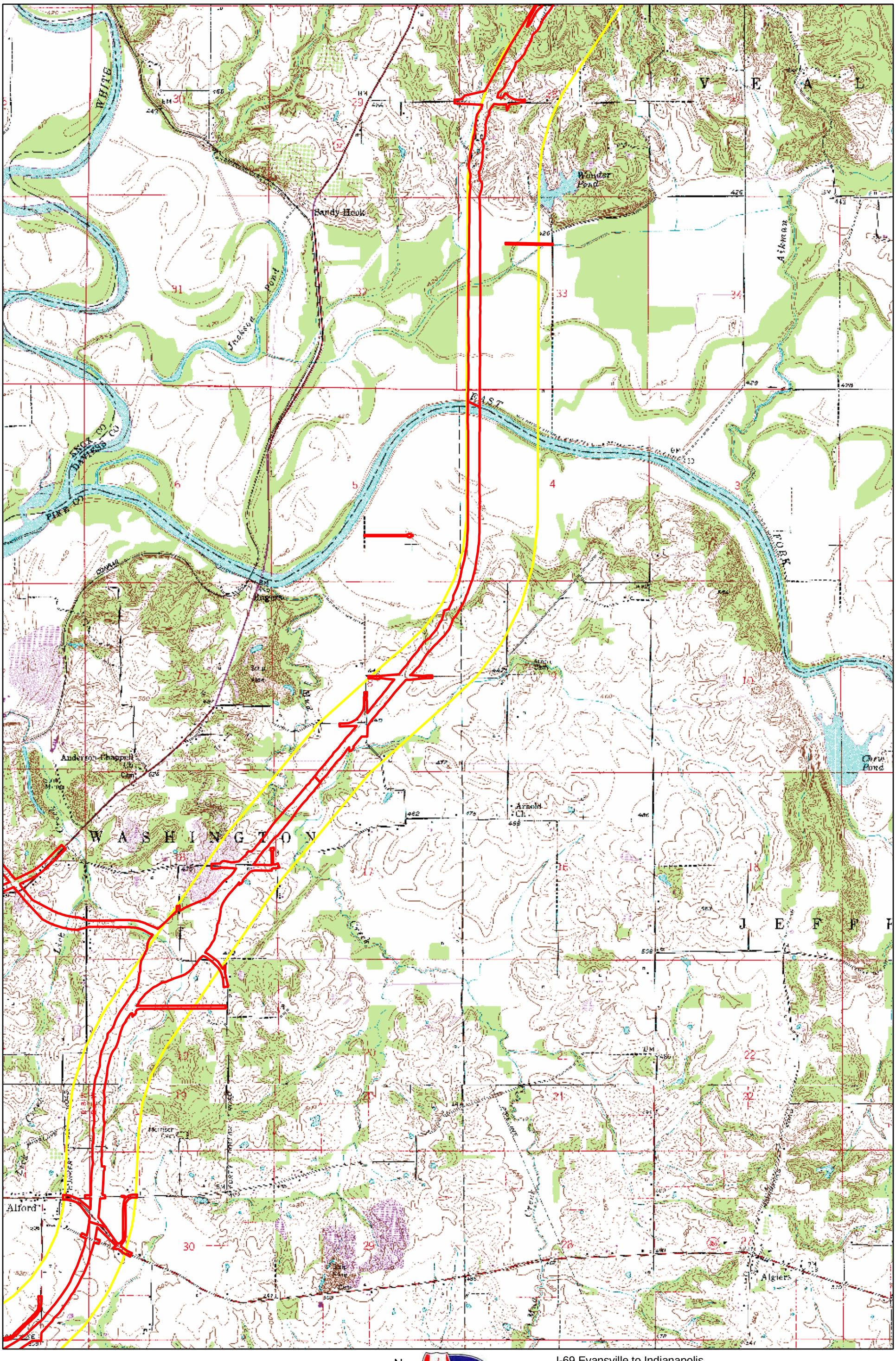
FIGURE 2-2



I-69 Evansville to Indianapolis
Tier 2 Studies
Section 2
Indiana Department of Transportation

USGS Base with Approved Study Corridor and FEIS Refined Preferred Alternative

HANNUM, WAGLE & CLINE engineering

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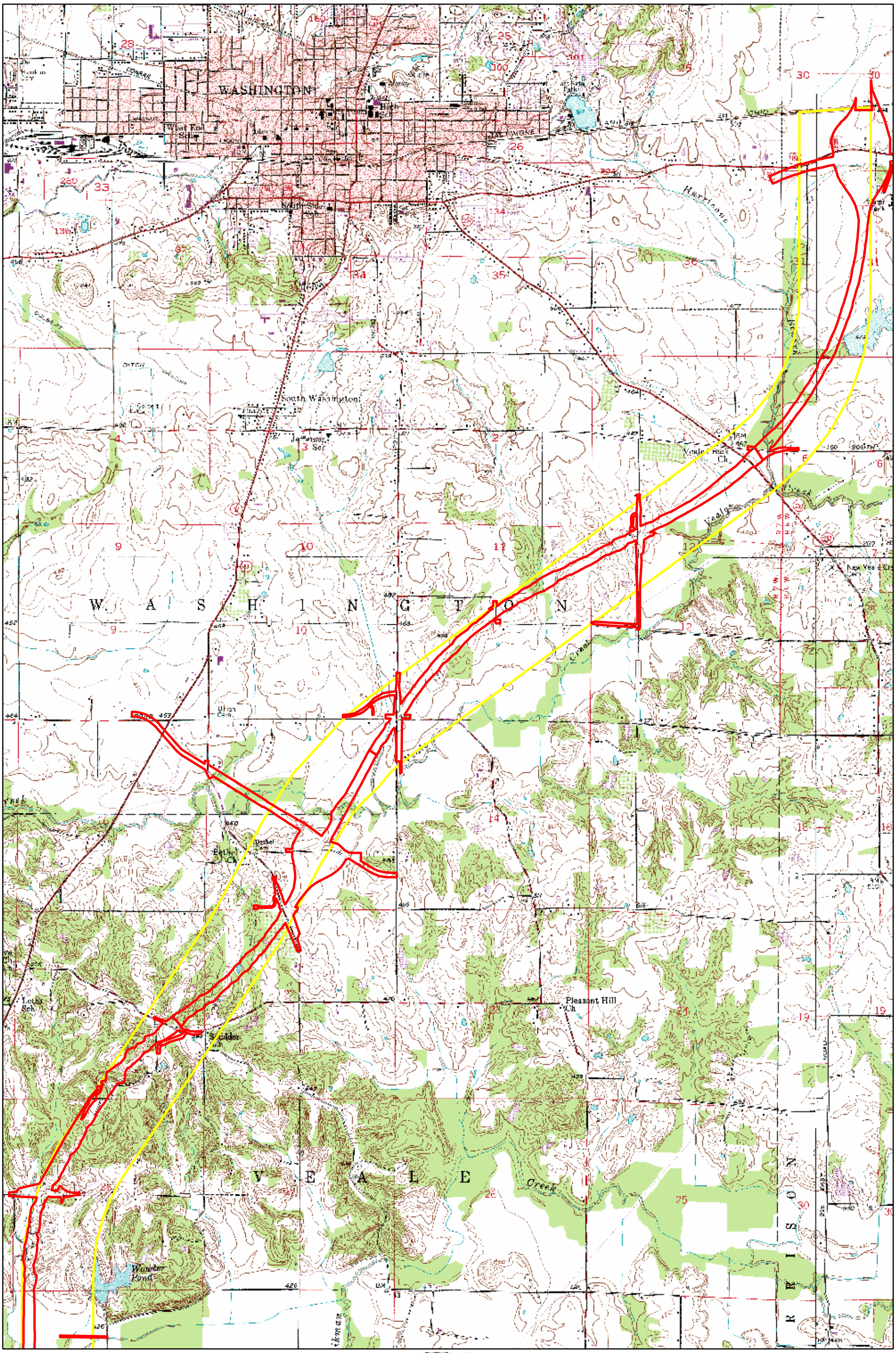
FIGURE 2-3



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Tier 2 Studies
Section 2
Indiana Department of Transportation

USGS Base with Approved Study Corridor and FEIS Refined Preferred Alternative

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FIGURE 2-4

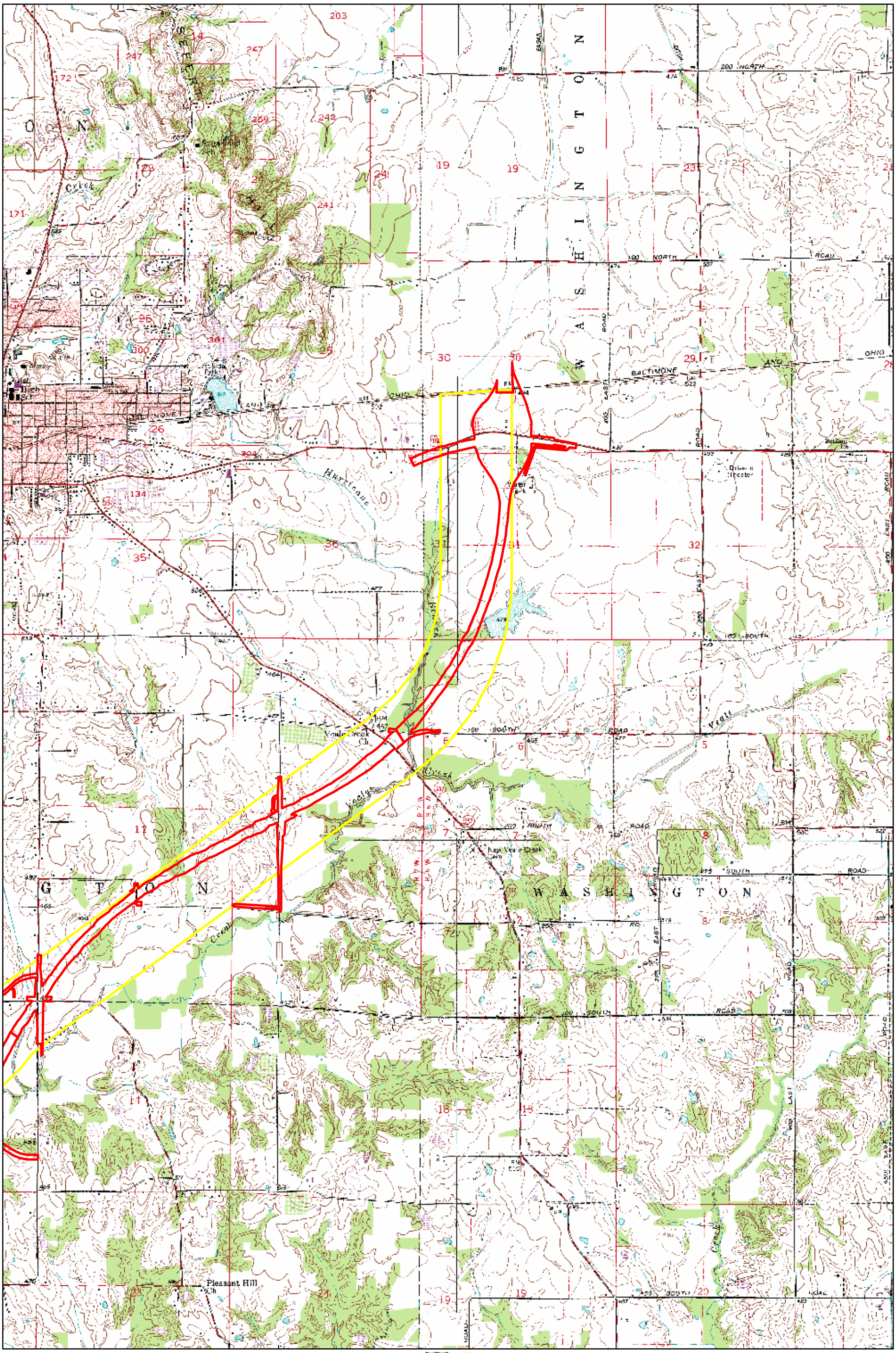
Legend
Section 2 Approved Corridor
FEIS Refined Preferred
0
2,500
5,000
Feet
N
I-69 Evansville to Indianapolis
Tier 2 Studies
Section 2
Indiana Department of Transportation
USGS Base with Approved Study Corridor
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FIGURE 2-5

I-69 TIER 2 STUDY
SECTION 2
FINAL WETLAND ASSESSMENT REPORT

Figure 3-9
Sheets 1 to 13

Prepared By:

JACOBS

501 N. Broadway
St. Louis, MO 63102

February 2010

Oatsville
To Princeton
Subsection 1
End Section 1
Frisco Sewage Plant
West Fork Keg Creek
Norfolk Southern Railway
County Road 125 S
Sec2-W4
Keg Creek
County Road 50 S
INDIANA 64
Seedtick
County Road 950 E
To Oakland City
County Road 1050 E

Wetlands Legend
- PFO
- PAB
- PUB
- PEM
- PSS

Legend
- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Pipelines
- Powerlines
- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

N

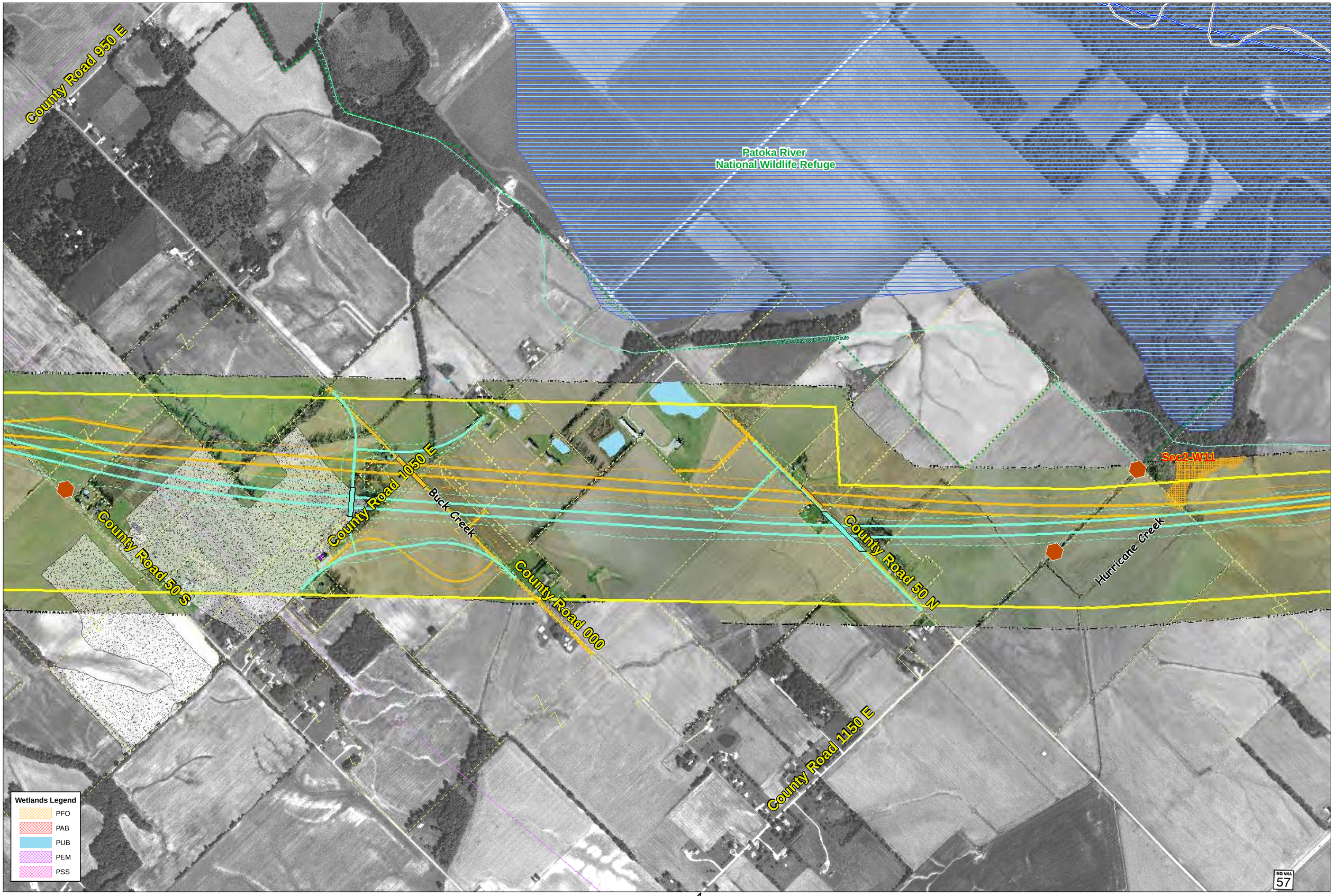
Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

I-69 Evansville to Indianapolis
Tier 2 Studies
Section 2
Indiana Department of Transportation

Proposed DEIS Alternatives A & B with labeled Wetlands & Ponds

HANNUM, WAGLE & CLINE engineering
JACOBS

FIGURE 3-9
Sheet 1 of 13



Legend

- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Pipelines
- Powerlines
- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

N

Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

I-69 Evansville to Indianapolis
Tier 2 Studies
Section 2
Indiana Department of Transportation

Proposed DEIS Alternatives A & B with labeled Wetlands & Ponds

HANNUM, WAGLE & CLINE engineering

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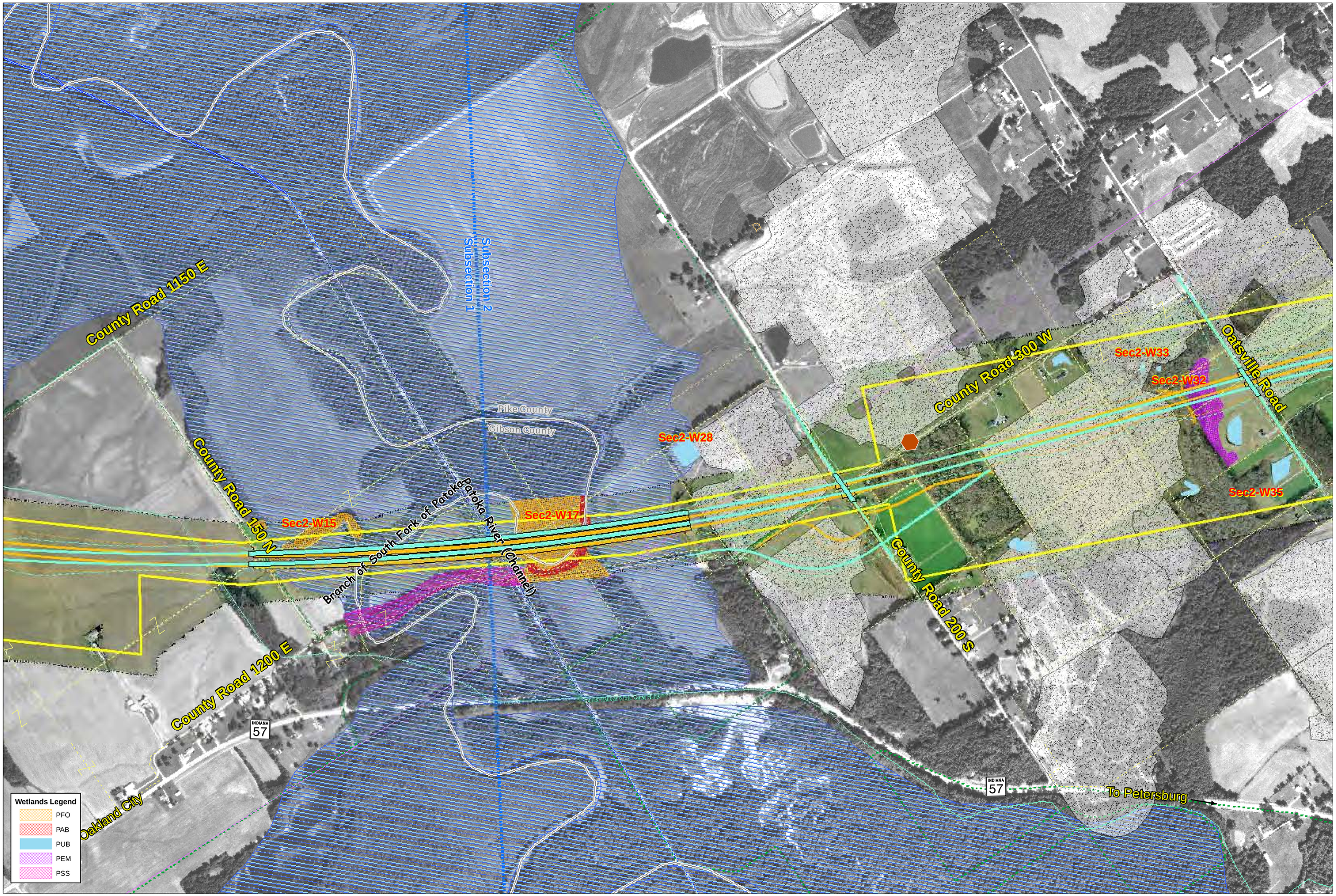
FIGURE 3-9
Sheet 2 of 13



Legend

- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Pipelines
- Powerlines
- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

N

Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

I-69 Evansville to Indianapolis
Tier 2 Studies
Section 2
Indiana Department of Transportation

Proposed DEIS Alternatives A & B with labeled Wetlands & Ponds

HANNUM, WAGLE & CLINE engineering

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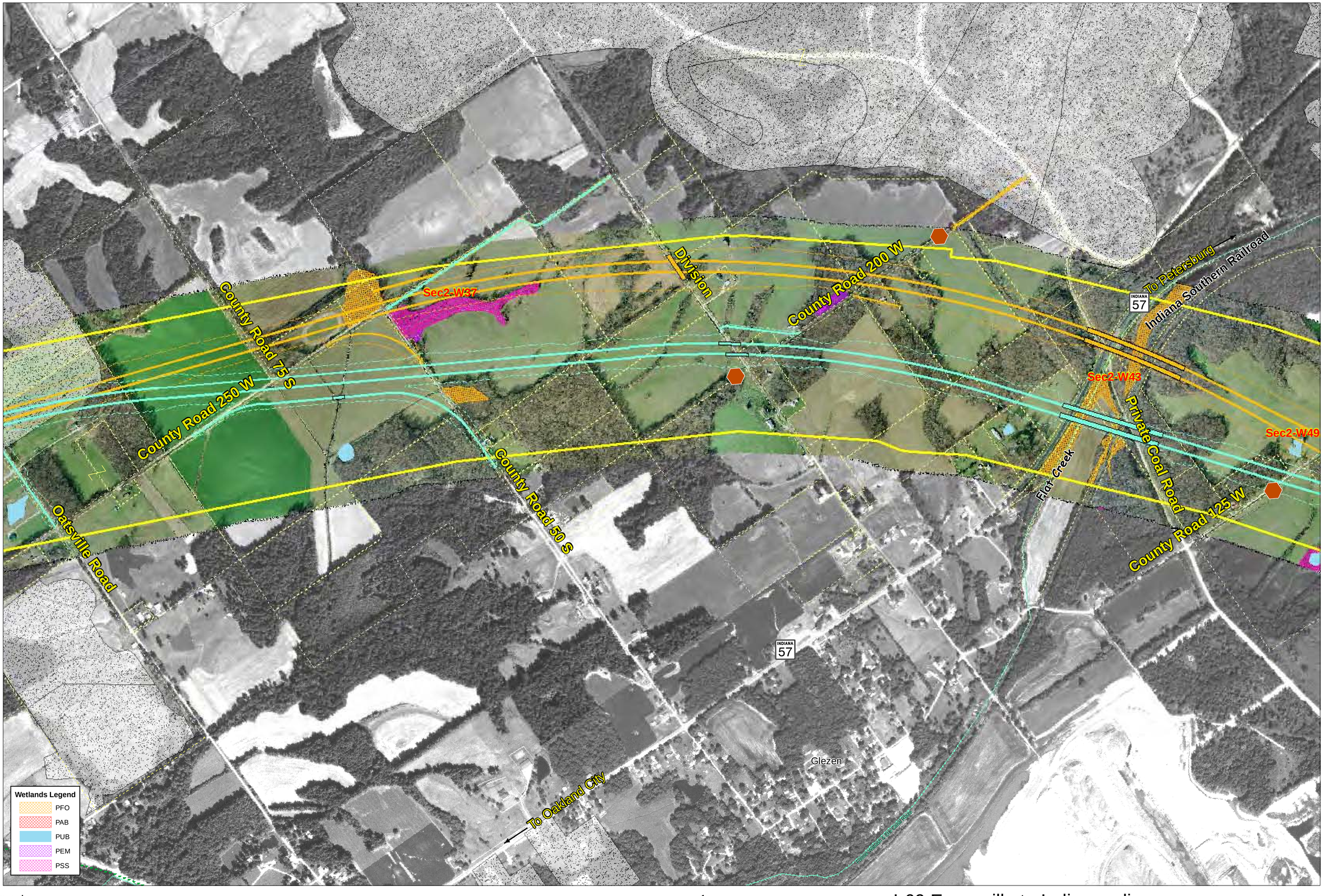
FIGURE 3-9
Sheet 3 of 13



Legend

- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Pipelines
- Powerlines
- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

N

Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

I-69 Evansville to Indianapolis
Tier 2 Studies
Section 2
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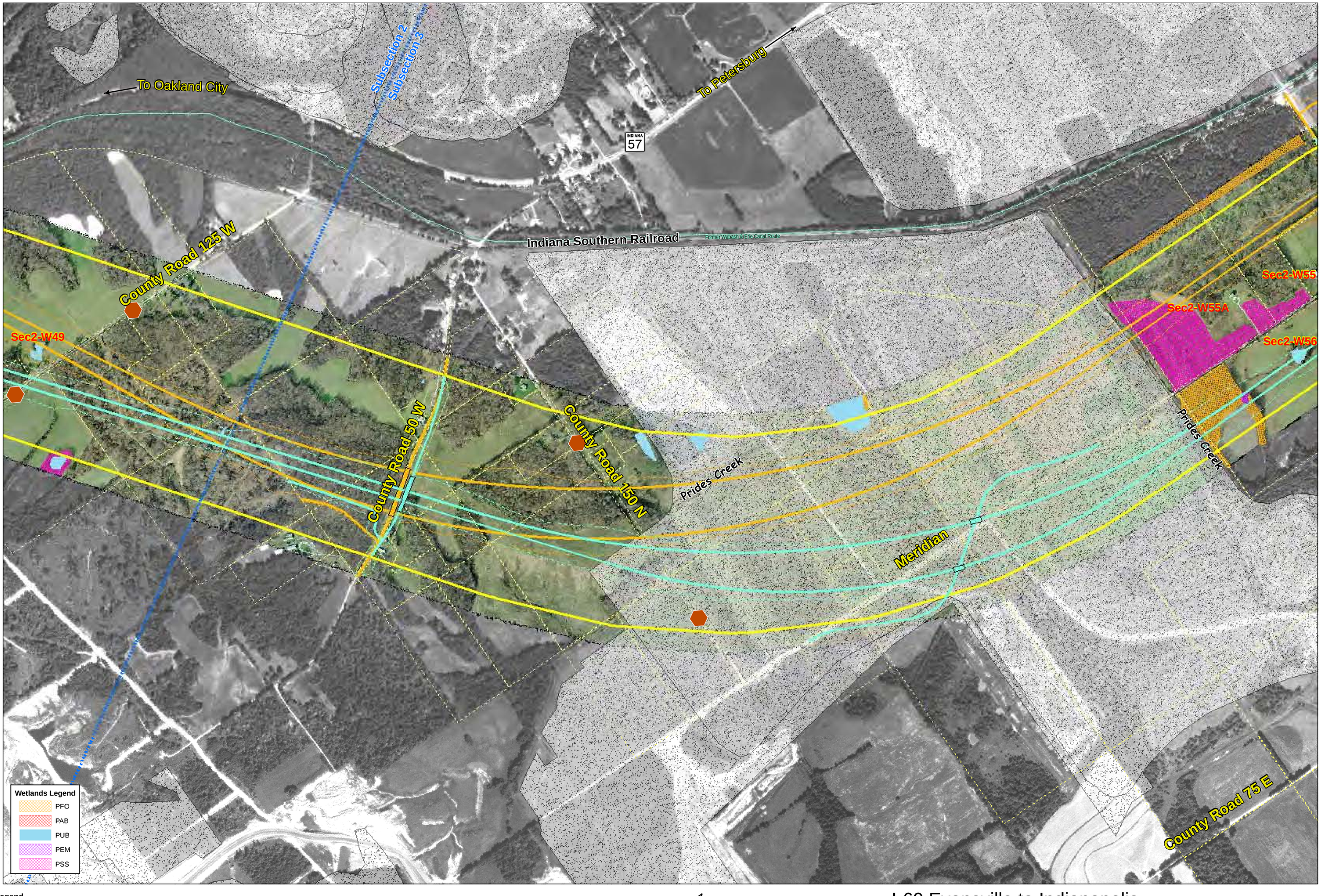
Proposed DEIS Alternatives A & B with labeled Wetlands & Ponds

HANNUM, WAGLE & CLINE engineering

JE JACOBS

FIGURE 3-9
Sheet 4 of 13



Legend

- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Parcels
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- Churches
- Historic Structure
- Lakes/Ponds
- Floodplain
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- Powerlines
- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

N

Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

I-69 Evansville to Indianapolis
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Proposed DEIS Alternatives A & B with labeled Wetlands & Ponds

HANNUM, WAGLE & CLINE engineering

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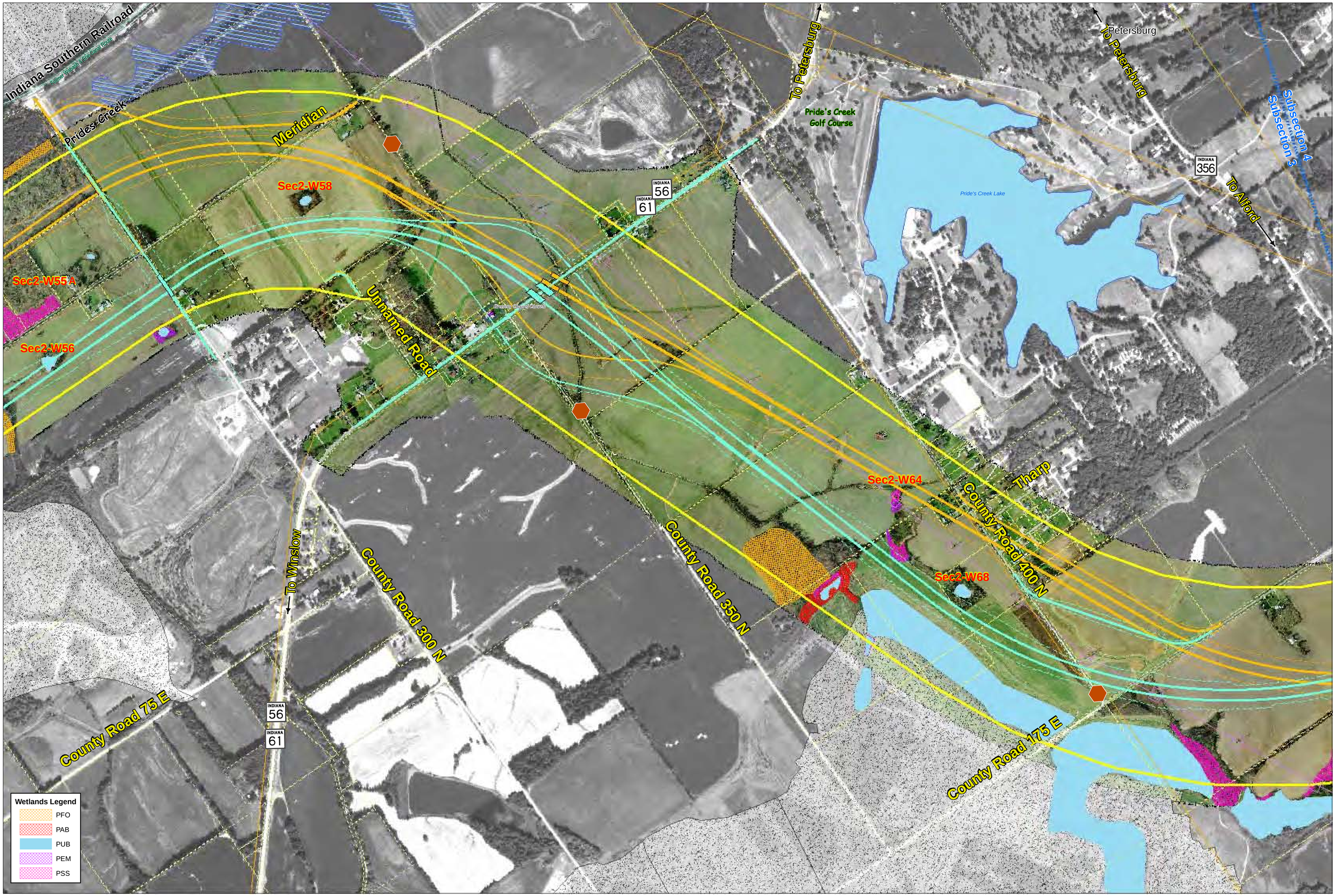
FIGURE 3-9
Sheet 5 of 13



Legend

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- Subsection Break
- Patoka Rv. NWR
- Parcels
- Cemetery Boundaries
- Schools
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- Historic Structure
- Lakes/Ponds
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- Powerlines
- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

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300 150 0 300 600 900 1,200 1,500 1,800
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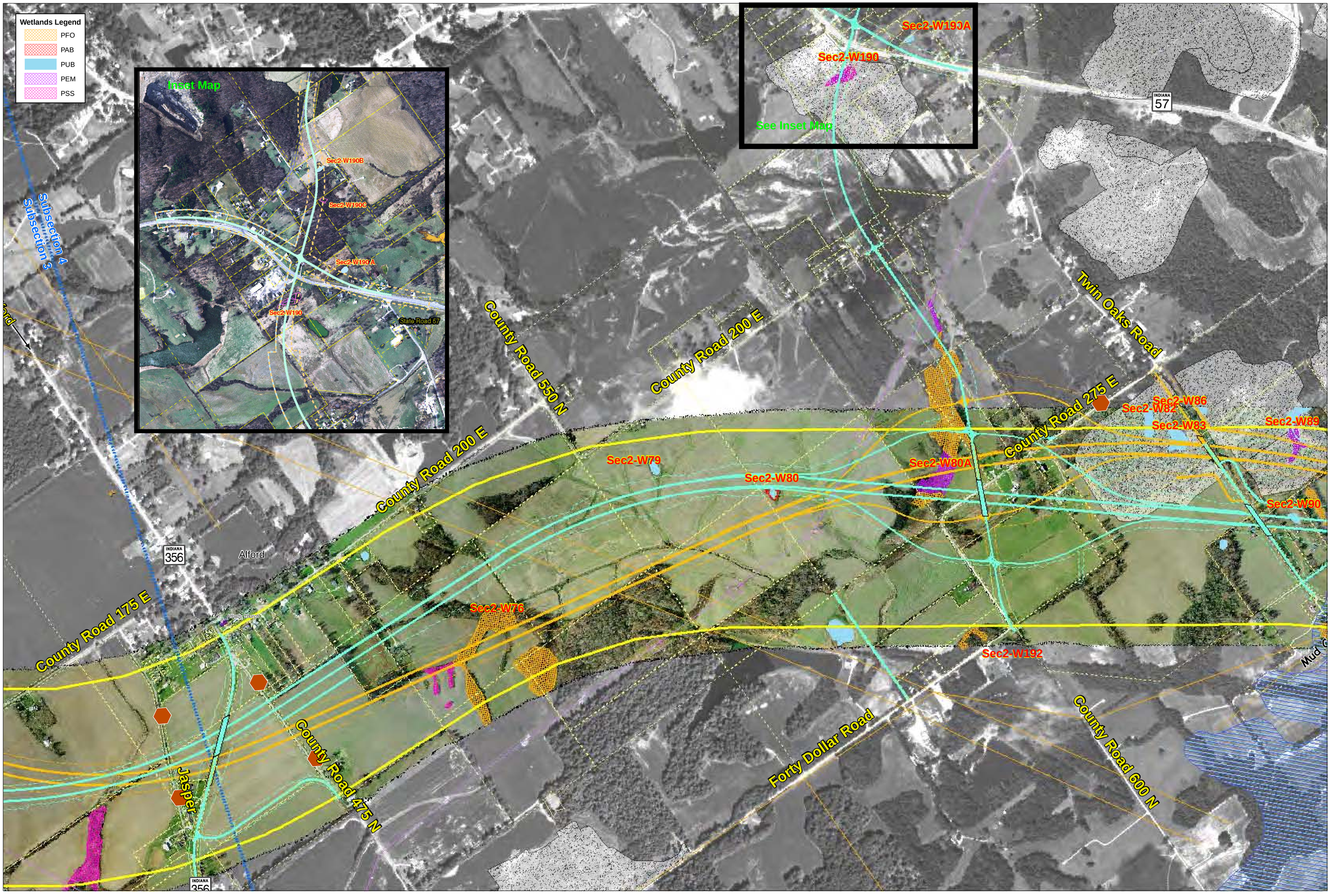
FIGURE 3-9
Sheet 6 of 13



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- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Parcels
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- Lakes/Ponds
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- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

N

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300 150 0 300 600 900 1,200 1,500 1,800
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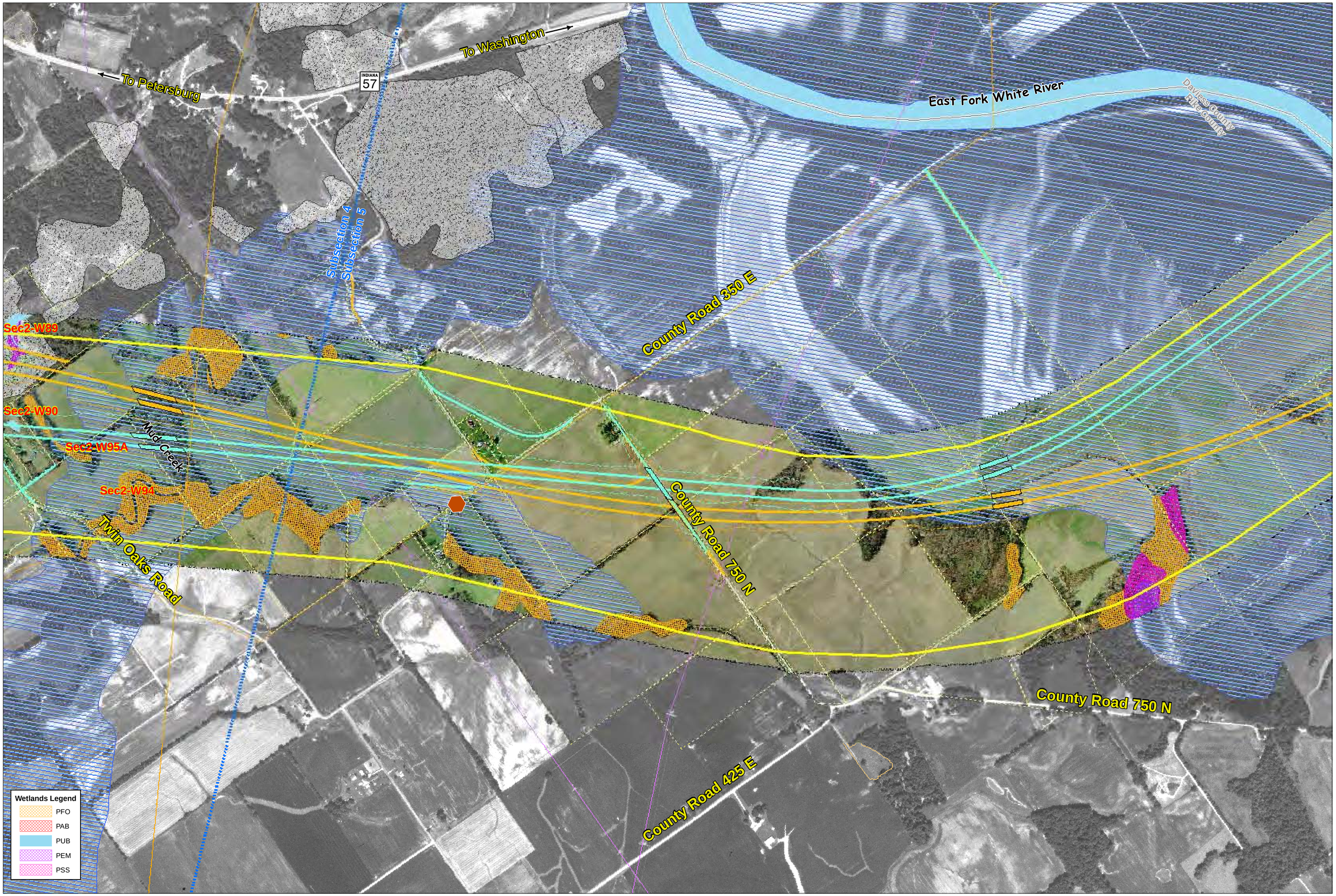
FIGURE 3-9
Sheet 7 of 13



Legend

- Section 2 Approved Corridor
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- Patoka Rv. NWR
- Parcels
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- Churches
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- Lakes/Ponds
- Floodplain
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- Pipelines
- Powerlines
- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

N

Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

INTERSTATE 69

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FIGURE 3-9
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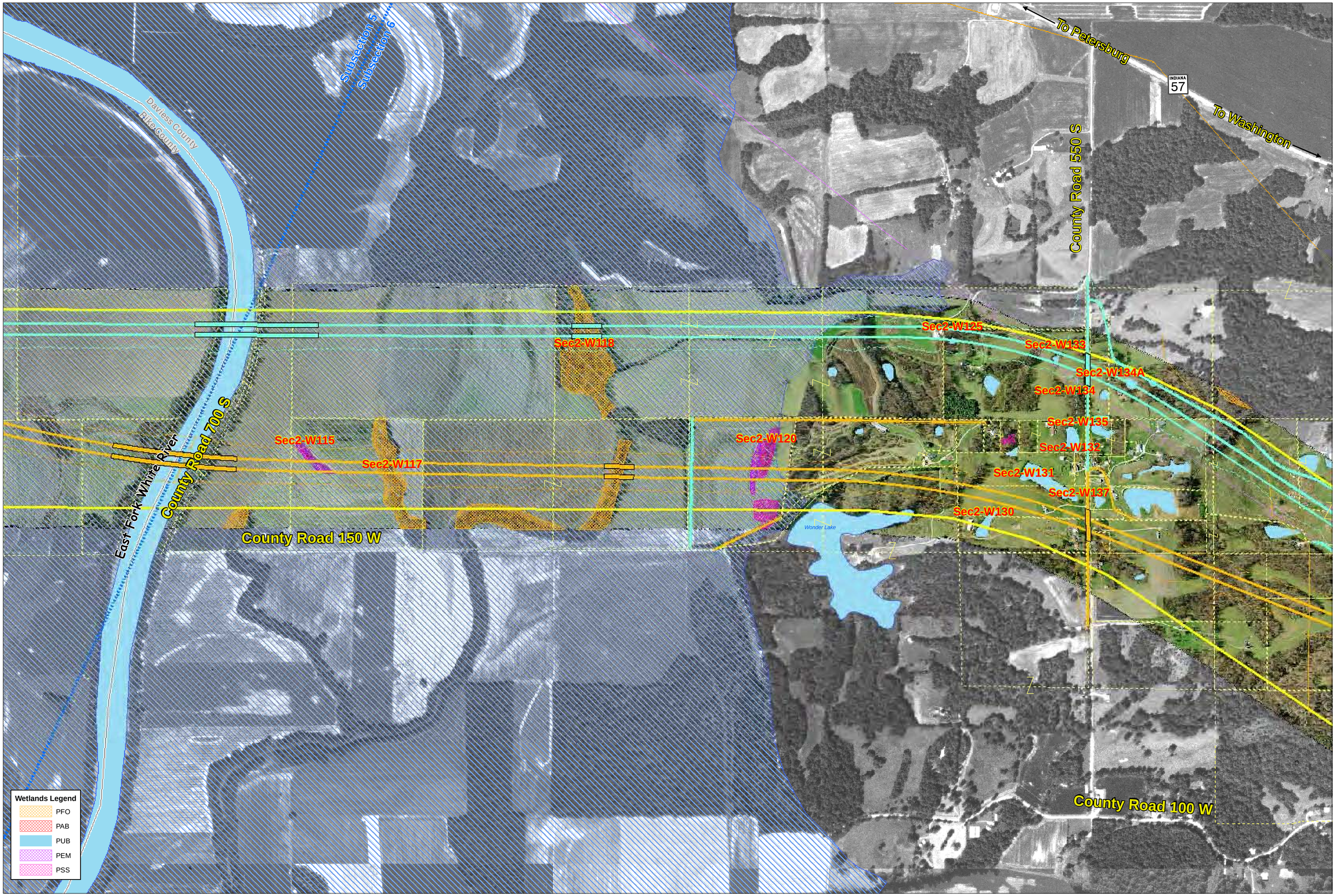

Legend

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- Subsection Break
- Patoka Rv. NWR
- Parcels
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- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

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Feet

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I-69 Evansville to Indianapolis
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FIGURE 3-9
Sheet 9 of 13

Thomas C. Singleton Round Barn

To Petersburg

INDIANA 57

To Washington

Subsection 6
Subsection 7

County Road 400 S

County Road 300 S

Barnes Church

Water Tower

County Road 125 W

Sec2-W153

Sec2-W152

Sec2-W147

Sec2-W152A

Sec2-W159

Sec2-W160

County Road 375 S

Veale Creek

County Road 100 W

County Road 450 S

Sec2-W157

County Road 50 W

Subsection 8
Subsection 7

Wetlands Legend

- PFO
- PAB
- PUB
- PEM
- PSS

Legend

- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
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- Floodplain
- Coal Mines (Reclaimed)
- Pipelines
- Powerlines
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- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

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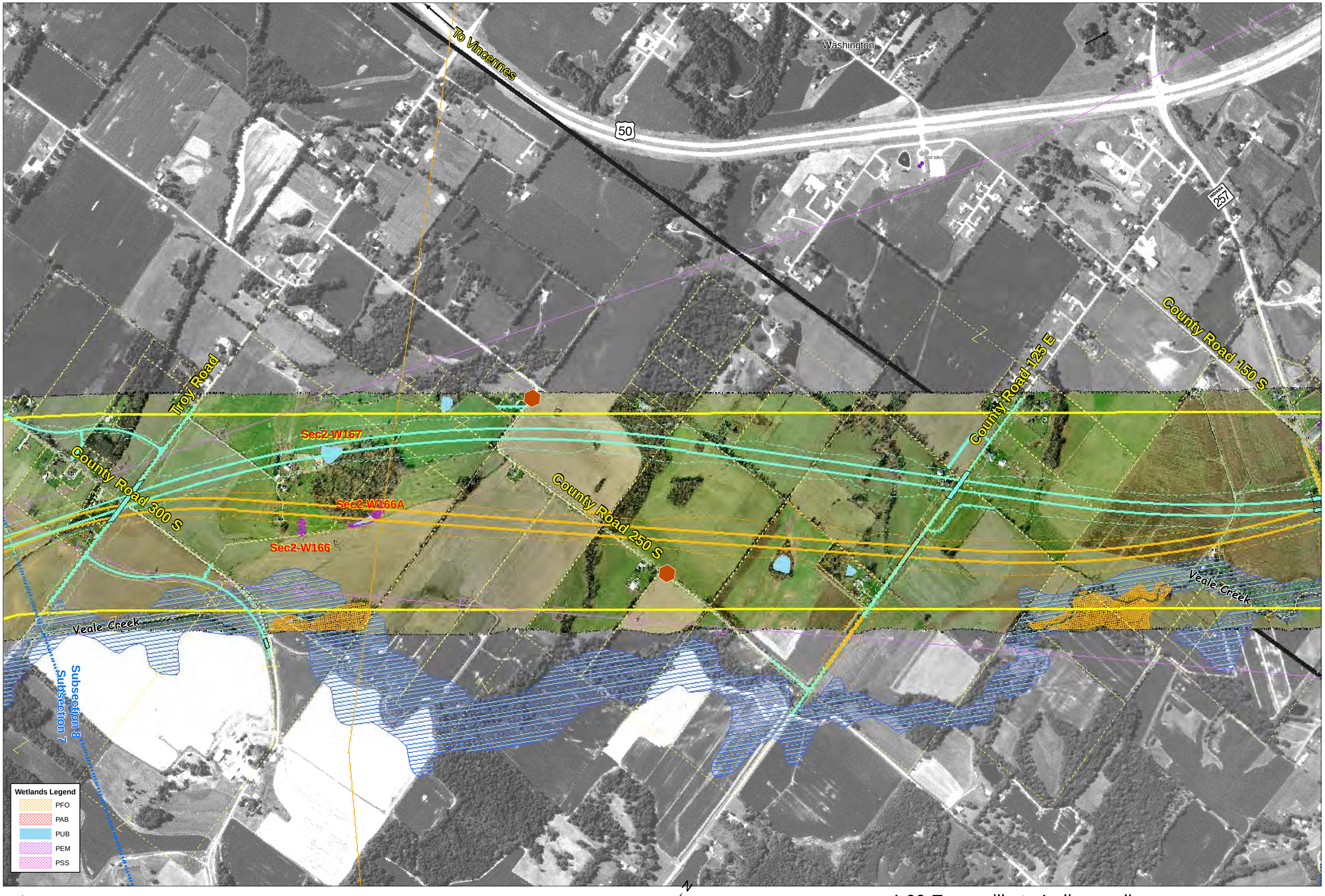
FIGURE 3-9
Sheet 10 of 13



Legend

- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Pipelines
- Powerlines
- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
- Alternative B Mainline and Ramps
- Alternative B Related Roadways
- Alternative B Potential Right-of-Way Limits

Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

I-69 Evansville to Indianapolis
Tier 2 Studies
Section 2
Indiana Department of Transportation

Proposed DEIS Alternatives A & B with labeled Wetlands & Ponds

HANNUM, WAGLE & CLINE engineering

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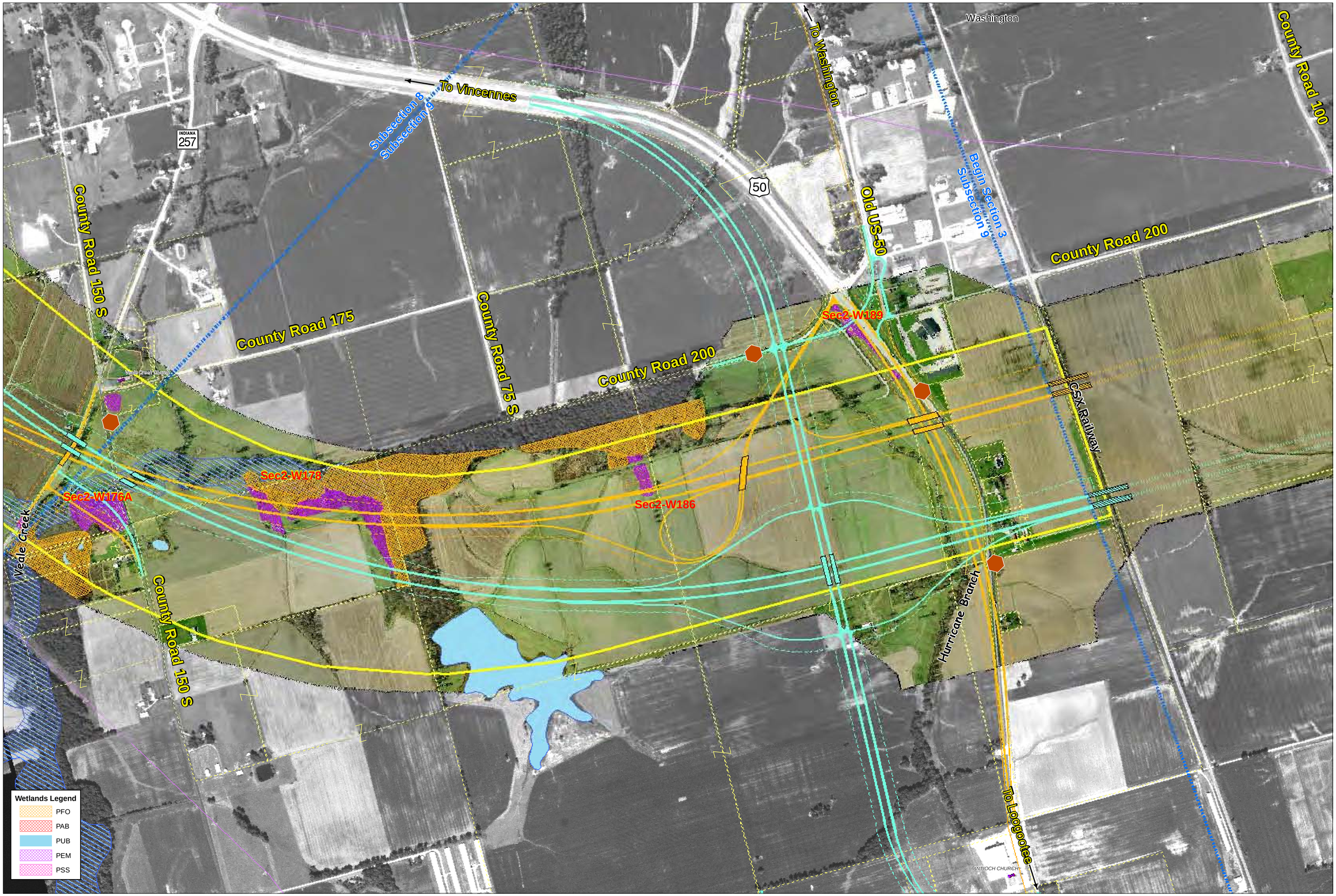
FIGURE 3-9
Sheet 11 of 13



Legend

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- Subsection Break
- Patoka Rv. NWR
- Parcels
- Cemetery Boundaries
- Schools
- Churches
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- Lakes/Ponds
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- Patoka Bridges Historic District
- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
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300 150 0 300 600 900 1,200 1,500 1,800
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Indiana Department of Transportation

Proposed DEIS Alternatives A & B with labeled Wetlands & Ponds

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FIGURE 3-9
Sheet 12 of 13

Washington

County Road 200

CSX Railway

Begin Section 3
Subsection 9

To Washington

Old US-50

Sec2-W189

Hurricane Branch

To Loogootee

ANTIOCH CHURCH

50

County Road 200

Sec2-W186

To Vincennes

Subsection 9

Subsection 8

County Road 75 S

County Road 175

Wetlands Legend

- PFO
- PAB
- PUB
- PEM
- PSS

Legend

- Section 2 Approved Corridor
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- Canals
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- Proposed Road Closure
- Alternative A Bridge
- Alternative A Mainline and Ramps
- Alternative A Related Roadways
- Alternative A Potential Right-of-Way Limits
- Alternative B Bridge
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- Alternative B Potential Right-of-Way Limits

N

Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

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FIGURE 3-9
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I-69 TIER 2 STUDY
SECTION 2
FINAL WETLAND ASSESSMENT REPORT

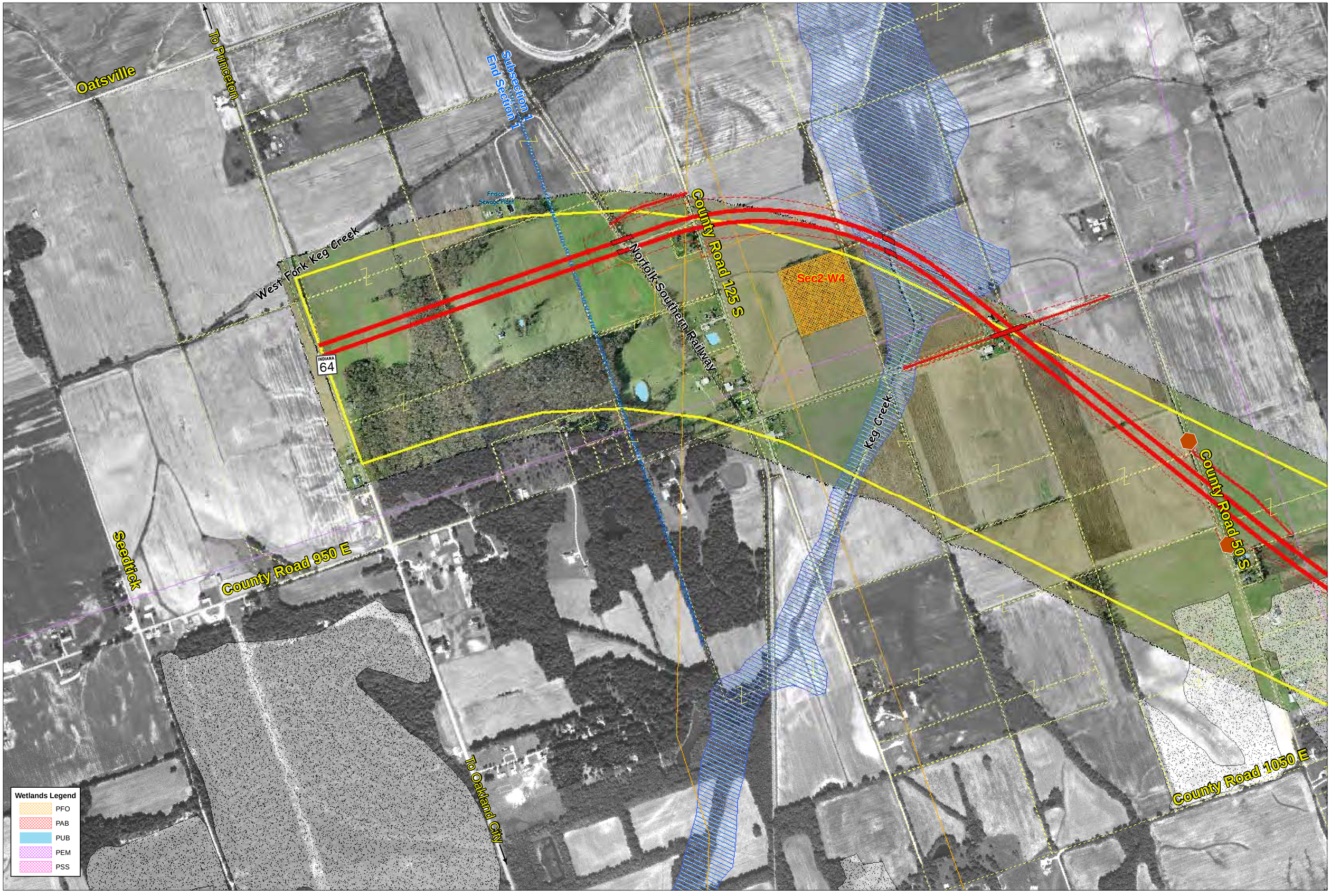
Figure 4-9
Sheets 1 to 12

Prepared By:

JACOBS

501 N. Broadway
St. Louis, MO 63102

February 2010



Legend

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- Subsection Break
- Patoka Rv. NWR
- Parcels
- Cemetery Boundaries
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- Lakes/Ponds
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300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

I-69 Evansville to Indianapolis
Tier 2 Studies
Section 2

Indiana Department of Transportation

Proposed FEIS Refined Preferred Alternative with labeled Wetlands & Ponds

HANNUM, WAGLE & CLINE engineering

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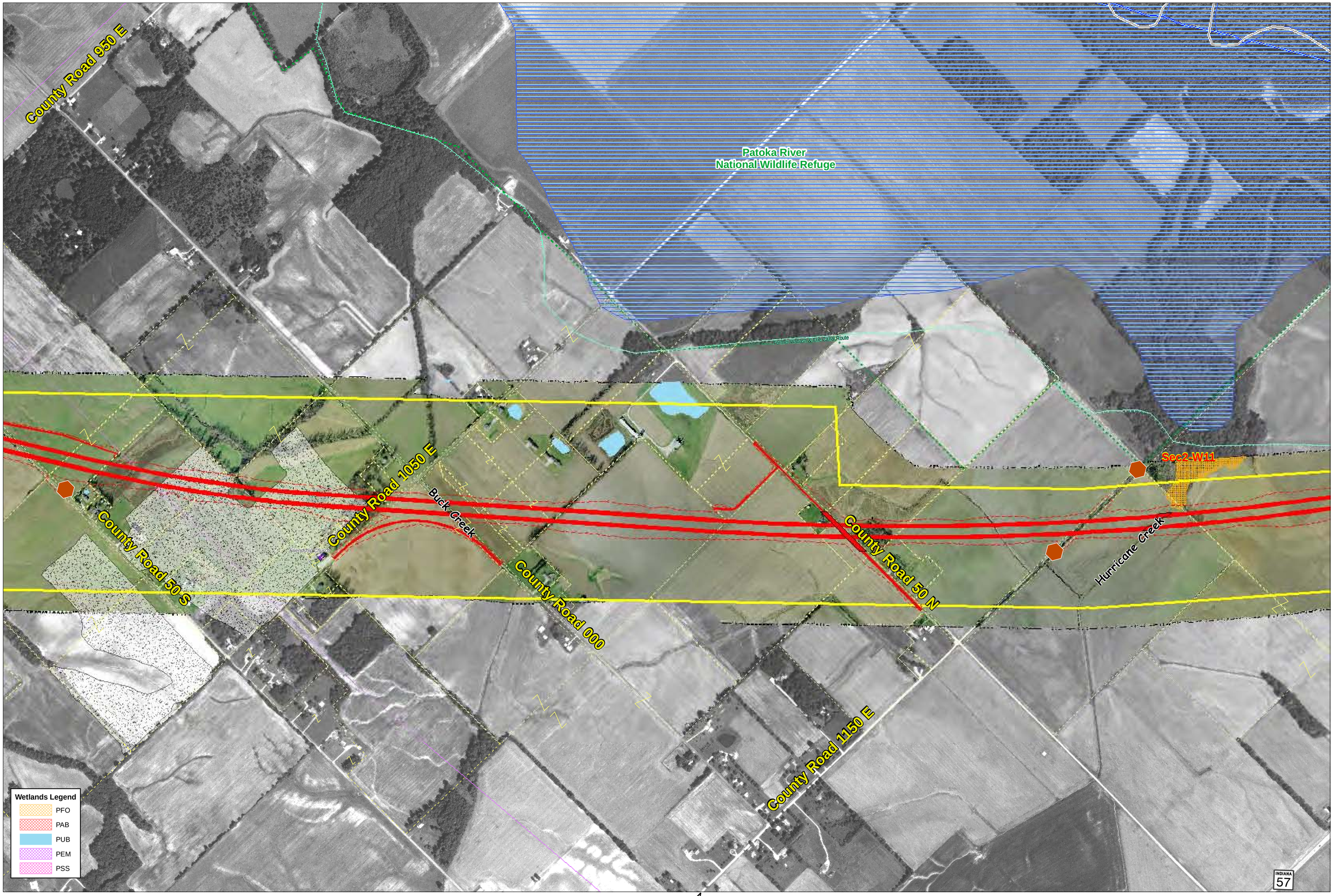
FIGURE 4-9
Sheet 1 of 12



Legend

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Proposed FEIS Refined Preferred Alternative with labeled Wetlands & Ponds

HANNUM, WAGLE & CLINE engineering

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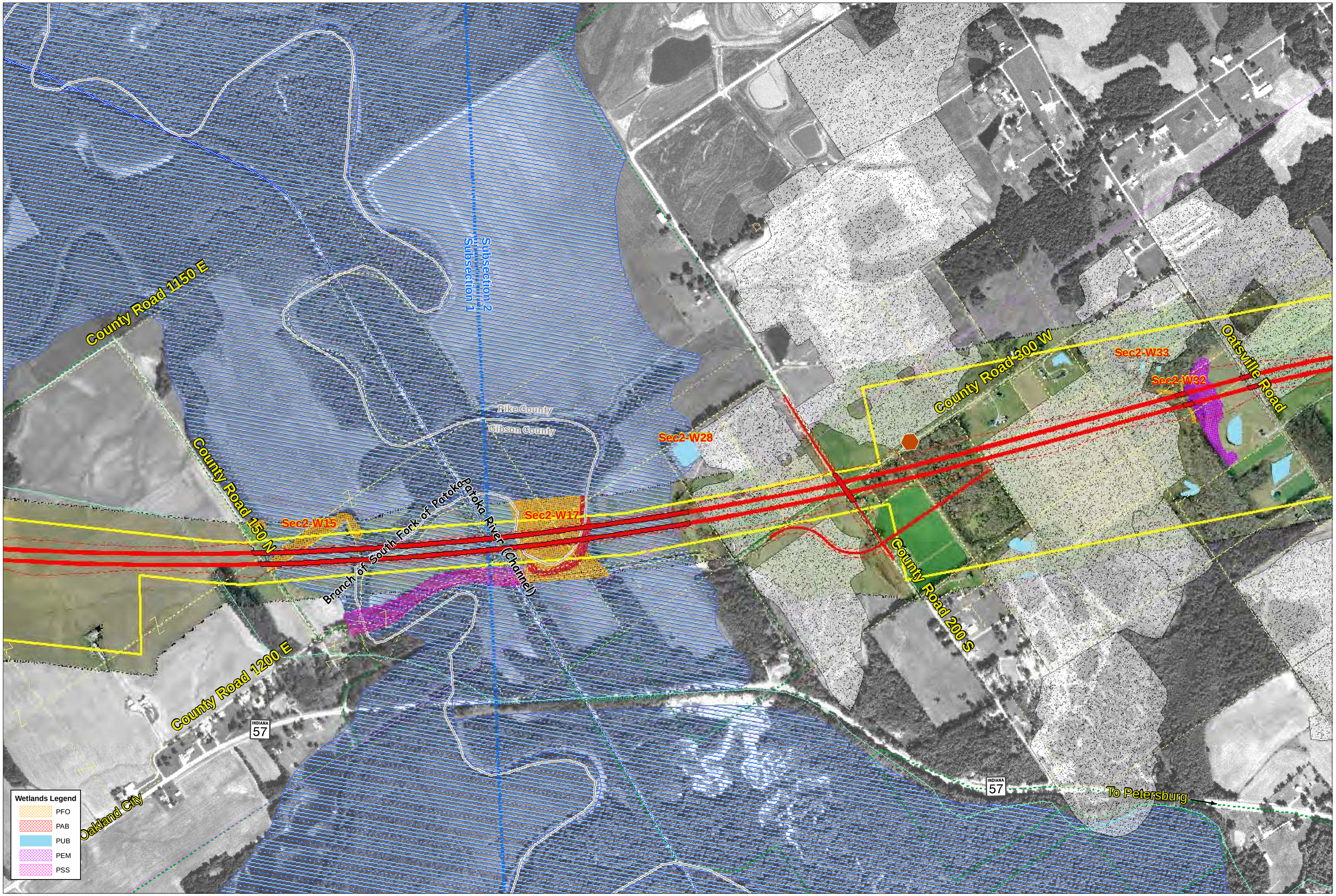
FIGURE 4-9
Sheet 2 of 12



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I-69 Evansville to Indianapolis
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FIGURE 4-9
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Legend

- Section 2 Approved Corridor
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I-69 Evansville to Indianapolis
Tier 2 Studies
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Indiana Department of Transportation

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HANNUM, WAGLE & CLINE engineering

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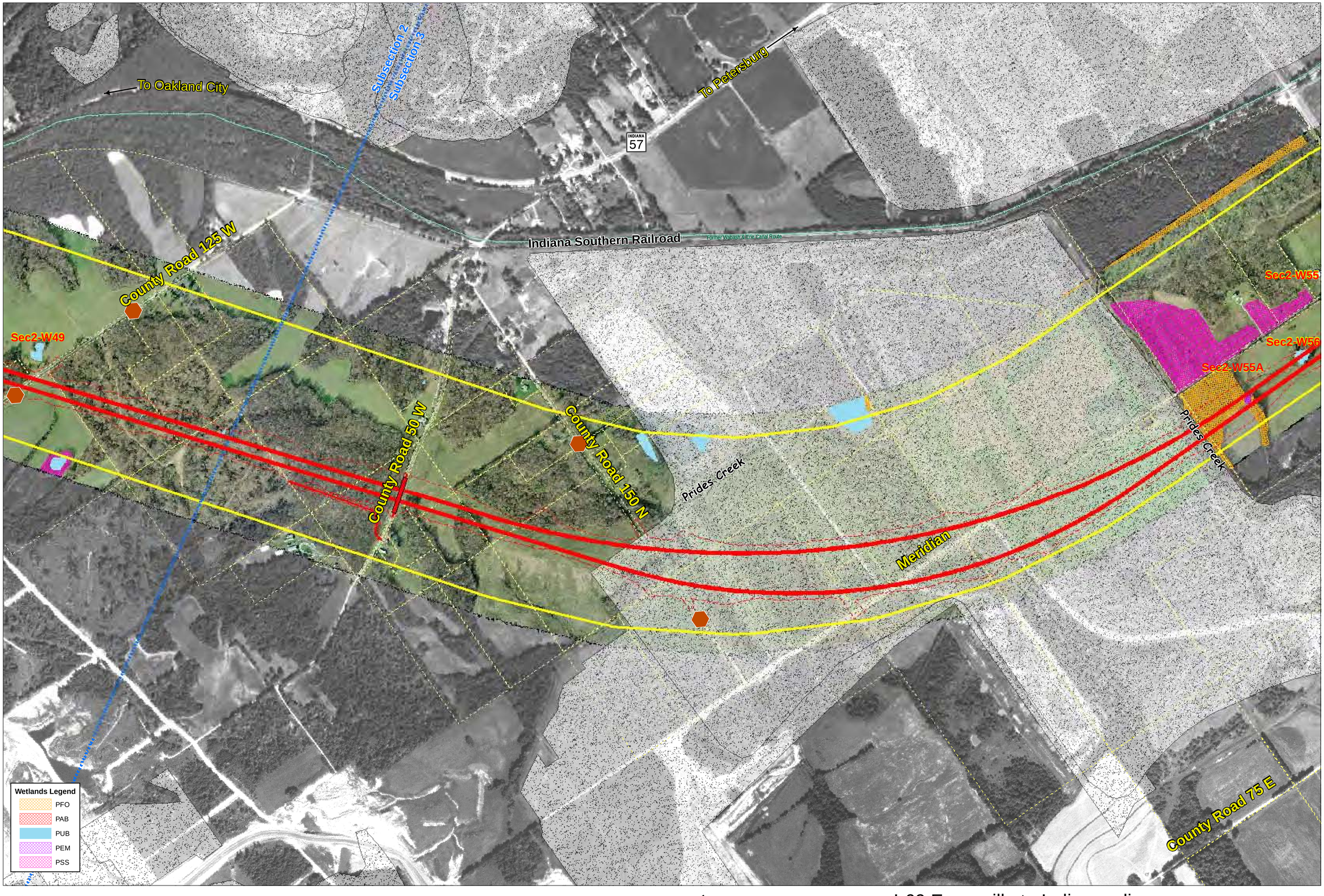
FIGURE 4-9
Sheet 4 of 12



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I-69 Evansville to Indianapolis
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Indiana Department of Transportation

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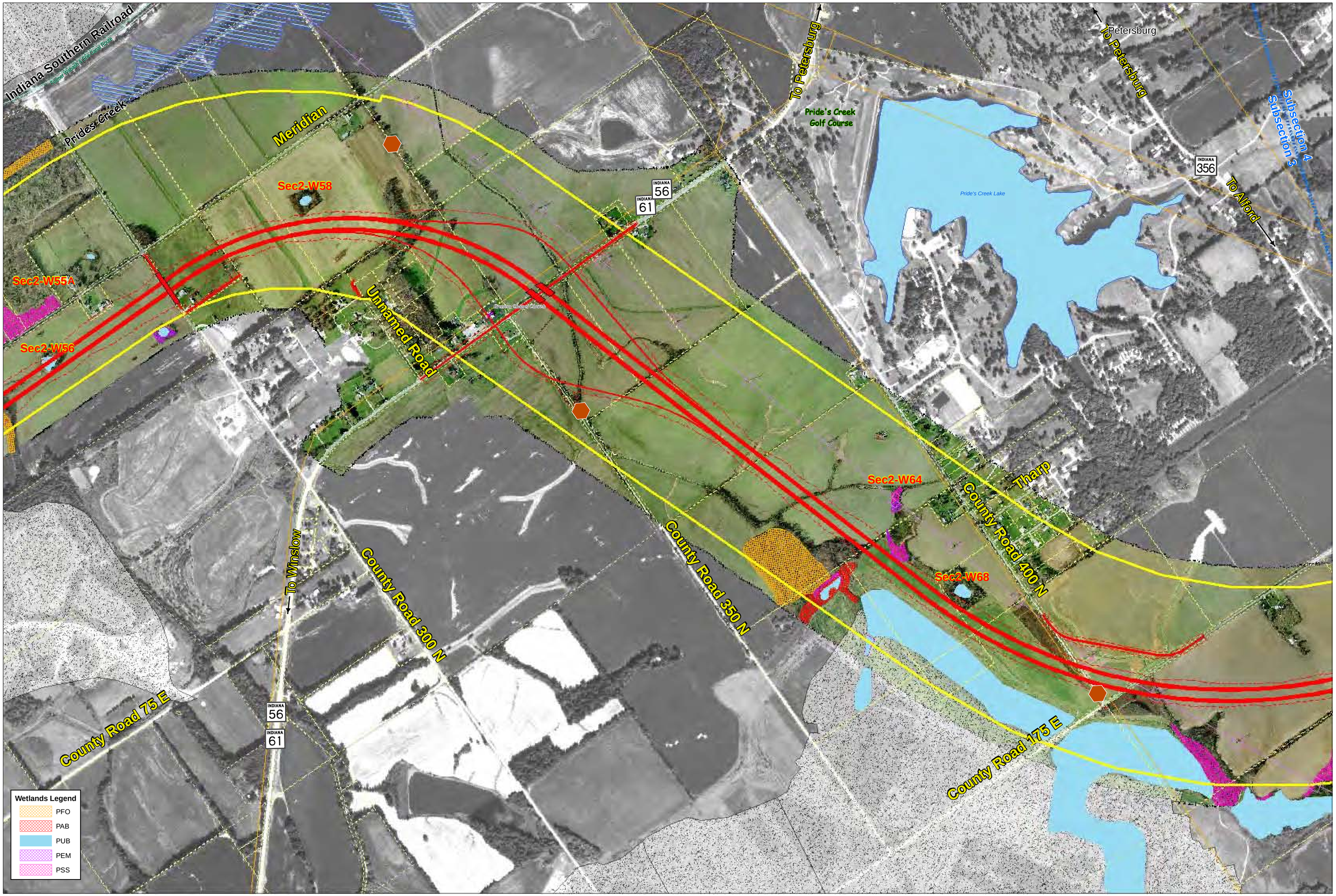
FIGURE 4-9
Sheet 5 of 12



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HANNUM, WAGLE & CLINE engineering

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FIGURE 4-9
Sheet 6 of 12

Wetlands Legend
PFO
PAB
PUB
PEM
PSS

Inset Map
Sec2-W190B
Sec2-W190C
Sec2-W190A
Sec2-W190
State Road 57

Sec2-W190A
Sec2-W190
See Inset map

INDIANA 57

Subsection 4
Subsection 3

To Alford

County Road 550 N
County Road 200 E
Twin Oaks Road
County Road 275 E
Sec2-W86
Sec2-W82
Sec2-W83
Sec2-W89
Sec2-W79
Sec2-W80A
Sec2-W80
Sec2-W90
County Road 200 E
INDIANA 356
Alford
Alford Church
Sec2-W76
Sec2-W192
Mud Creek
County Road 175 E
County Road 475 N
Jasper
Forty Dollar Road
County Road 600 N
INDIANA 356

Legend

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Tier 2 Studies
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Indiana Department of Transportation

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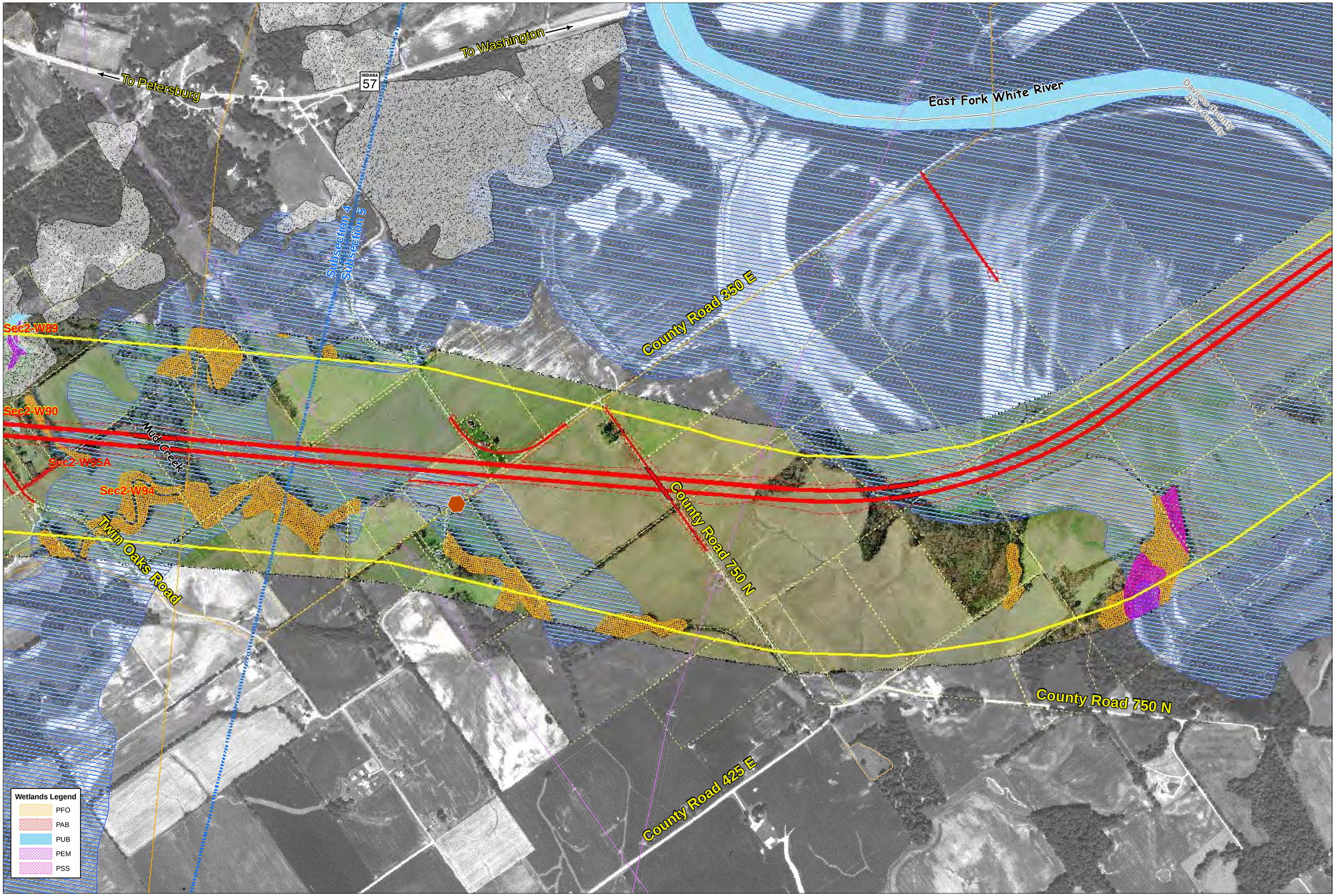
FIGURE 4-9
Sheet 7 of 12



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INTERSTATE 69

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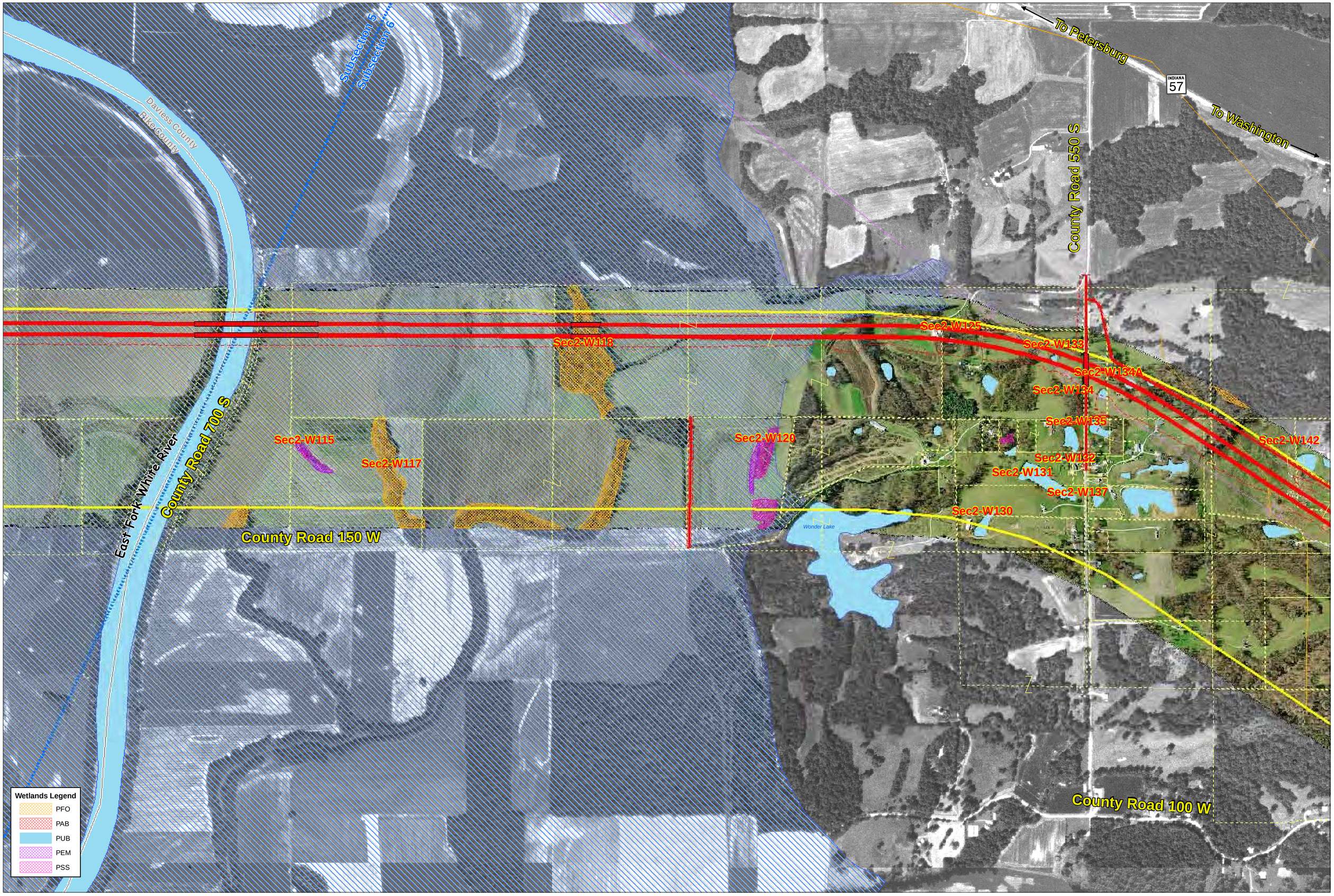
FIGURE 4-9
Sheet 8 of 12



Legend

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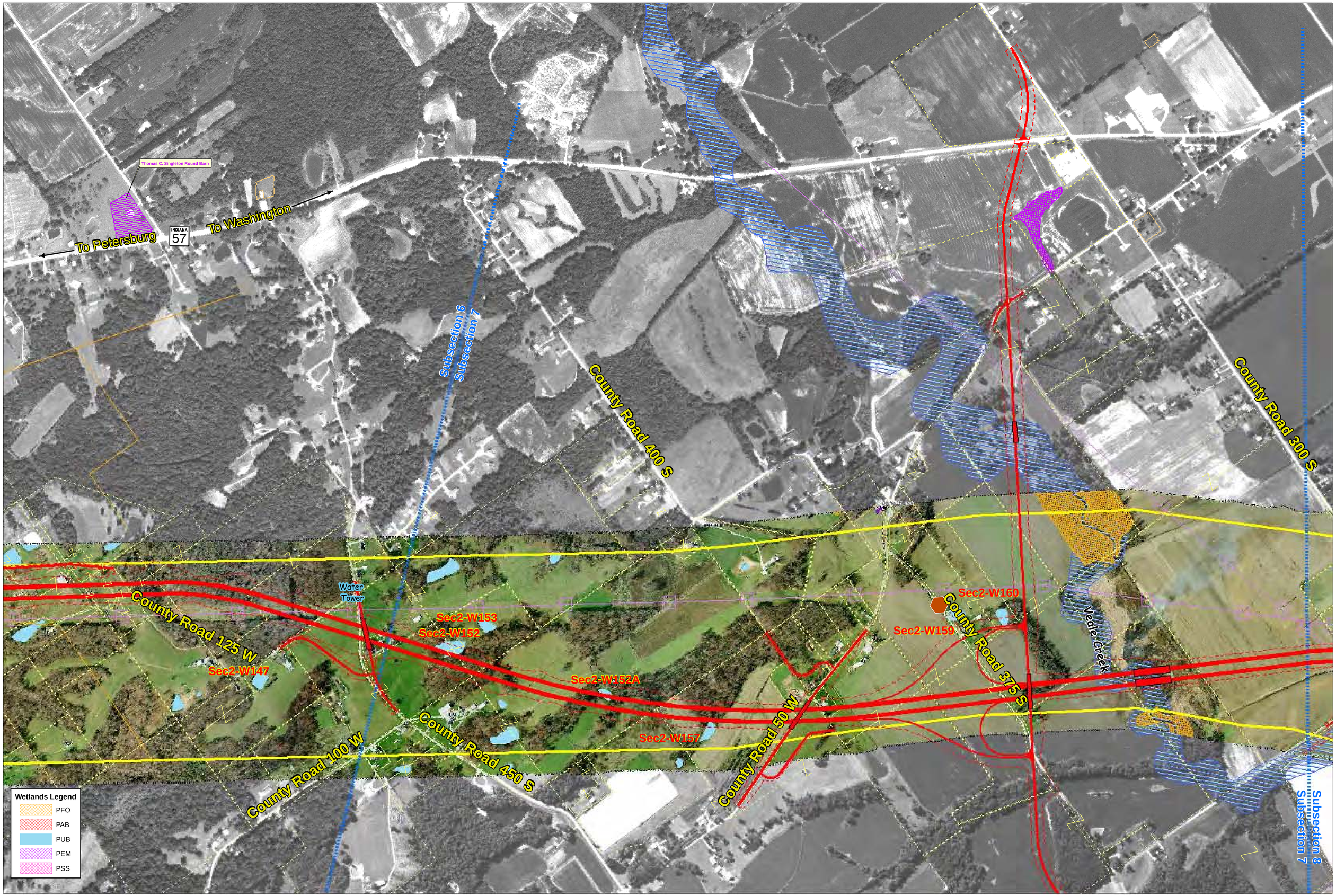
FIGURE 4-9
Sheet 9 of 12



Legend

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Feet

300 150 0 300 600 900 1,200 1,500 1,800

Scale 1"=300'

I-69 Evansville to Indianapolis
Tier 2 Studies
Section 2
Indiana Department of Transportation

Proposed FEIS Refined Preferred Alternative with labeled Wetlands & Ponds

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FIGURE 4-9
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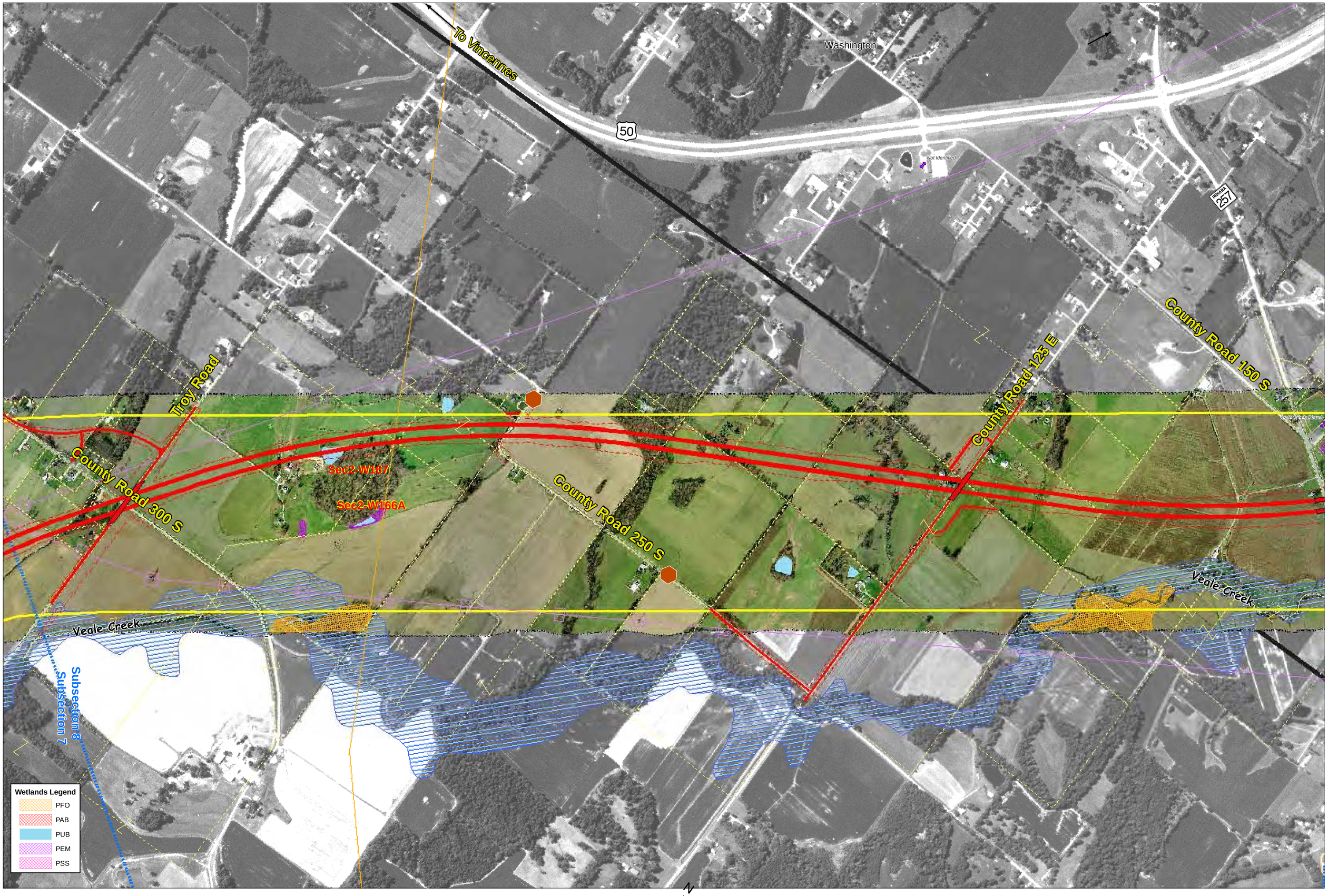

Legend

- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Parcels
- Cemetery Boundaries
- Schools
- Churches
- Historic Structure
- Lakes/Ponds
- Floodplain
- Coal Mines (Reclaimed)
- Pipelines
- Powerlines
- Rivers
- Canals
- Patoka Bridges Historic District
- Proposed Road Closure
- FEIS Preferred Bridge
- FEIS Preferred Mainline and Ramps
- FEIS Preferred Potential Right-of-Way Limits

Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

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FIGURE 4-9
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To Vincennes
Subsection 8
Subsection 9
INDIANA 257
County Road 150 S
County Road 175
County Road 75 S
County Road 200
50
To Washington
Old US-50
Washington
Begin Section 3
Subsection 9
County Road 100
County Road 200
Sec2-W189
CSX Railway
Sec2-W178
Sec2-W176A
Veale Creek
County Road 150 S
Hurricane Branch
To Loogootee
ANTIOCH CHURCH

Wetlands Legend
- PFO
- PAB
- PUB
- PEM
- PSS

Legend
- Section 2 Approved Corridor
- Subsection Break
- Patoka Rv. NWR
- Parcels
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N

Feet
300 150 0 300 600 900 1,200 1,500 1,800
Scale 1"=300'

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FIGURE 4-9
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