



I-69 EVANSVILLE TO INDIANAPOLIS TIER 2 STUDIES

Section 5—Final Environmental Impact Statement

**APPENDIX F
FINAL WETLAND TECHNICAL REPORT**

I-69 EVANSVILLE TO INDIANAPOLIS
Tier 2 Studies
Final Wetland Technical Report
Section 5, SR 37 south of Bloomington to SR 39
March 2013



Prepared for

Federal Highway Administration and
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1.0 INTRODUCTION

1.1 *Purpose of the Study*

This Wetland Technical Report is a support document to the Final Environmental Impact Statement (FEIS), and is intended to present detailed information regarding the identification, characterization and evaluation of wetland resources within the Section 5 corridor. This document also describes measures that have been utilized throughout project development to avoid, minimize and mitigate impacts to wetlands. Finally, this document describes the unavoidable impacts to wetlands associated with the Alternatives in the FEIS.

This report is intended to be the primary tool for facilitating discussion of proposed wetland impacts in Section 5 with State and Federal regulatory agencies and documenting compliance with regulatory requirements to avoid, minimize and mitigate wetland impacts.

1.2 *The Study Corridor*

1.2.1 **General Description**

The Section 5 EIS Study Corridor is a 22-mile section of the Preferred Alternative 3C Corridor selected during Tier 1 environmental studies for the proposed I-69 project from Evansville, Indiana to Indianapolis, Indiana. The Section 5 EIS Study Corridor is a 2,000-foot wide area centered on existing State Route 37 (SR 37) from southwest of Bloomington in Monroe County, Indiana to just south of Martinsville in Morgan County, Indiana. As proposed, I-69 will follow SR 37 from the Section 4 Interchange located south of Bloomington, north to the State Route 39 (SR 39) interchange in Martinsville. The proposed I-69 alignment will involve upgrading the existing four-lane, divided highway to interstate design standards. Each of the Alternatives Carried Forward for Detailed Analysis differ in regards to the location and configuration of additional travel lanes, interchanges, frontage roads, and other connector routes. **Figure 1** and **Figure 2** depict the relationship of the Alternatives on United States Geological Survey (USGS) topographic maps and aerial photographs, respectively.

In general, land uses within the Study Corridor are more urbanized in and near the Cities of Bloomington and Martinsville. Land uses adjacent to SR 37 between Bloomington and Martinsville are agricultural, public and institutional (Morgan-Monroe State Forest) with scattered residential and commercial development. Within the Study Corridor the predominant land use includes upland; transportation, communication, or utilities; agriculture; and single family residential.

Since early settlement, agricultural land in Indiana has been, and continues to be, one of the most valuable natural resources within the state. Indiana ranks second (in the U.S.) in the percent of land that is considered prime farmland (55%). The United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) uses soils information to identify areas of prime farmland. Prime farmland soils account for 20% of the total land area in Monroe County, and 59% of the total land area in Morgan County (USDA NRCS, 2007). The Study



Corridor traverses large tracts in agricultural use in the Beanblossom area of Monroe County and the Liberty Church area of Morgan County.

Most wetlands in the Section 5 corridor are found along rivers and streams and within their associated floodplains. Major wetland areas affected by the Alternatives include resources associated with Beanblossom Creek, Bryant Creek and Indian Creek.

Several other smaller wetland complexes exist in the project corridor as well as along unnamed streams and in isolated depressional areas. Refer to **Figure 1** for depictions of the Section 5 Corridor and Alternatives on U.S. Geological Survey Base Mapping. Refer to **Figure 2** for depictions of Alternatives with Labeled Wetlands and Ponds on 2010 aerial photographs.



2.0 Regulatory Definitions

2.1 Waters of the U.S. and Wetlands

Waters of the U.S. include navigable waterways and their tributaries, but also special aquatic sites such as wetlands. Wetlands are jointly defined by the U.S. Environmental Protection Agency (USEPA) 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 (33 CFR 328.3).

2.2 Waters of the State and Isolated Wetlands

Waters of the State are generally defined as “the accumulations of water, surface and underground, natural and artificial, public and private, or a part of the accumulations of water that are wholly or partially within, flowing through, or border upon Indiana,” and include streams and wetlands that fall under the jurisdiction of the USACE (IC 13-11-2-265). “Isolated” wetlands do not have a direct connection to a navigable waterway, and are not subject to regulation under Section 404 of the Clean Water Act. The state of Indiana regulates isolated wetlands through the Indiana Department of Environmental Management (IDEM) Isolated Wetlands Regulatory Program (IC 13-18-22).

As part of this program, isolated wetlands are grouped into one of three Classes based upon wetland quality (IC 13-18-22).

- Class I isolated wetlands are low quality resources where anthropogenic activities have altered greater than 50 percent of the area, and support only the minimal aquatic/hydrologic functionality.
- Class II isolated wetlands are wetlands that fall into one of the 18 rare and ecologically important wetland types, but have been significantly disturbed or altered by anthropogenic activities.
- Class III isolated wetlands are high quality resources representing one of 18 rare and ecologically important wetland types, have been minimally impacted by anthropogenic activities, and support more than the minimal aquatic/hydrologic functionality.

Different wetland classes have different mitigation requirements.



2.3 Wetland Identification

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

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

Several sources of information were consulted to identify potential wetlands and wetland soil units within the Section 5 corridor. These included the U.S. Fish and Wildlife Service's (USFWS's) *National Wetland Inventory* (NWI) and the Natural Resources Conservation Service's (NRCS) *Soil Survey* for Morgan and Monroe counties. These maps identified potential wetland areas within the corridor.

The delineation of wetlands and other “waters of the U.S.” within the preferred alternative were based on the methodology described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (Environmental Laboratory, 2010) as required by current Corps policy that was in effect during the time this survey was completed.

Prior to the fieldwork, the background information was reviewed to establish the probability and approximate location of wetlands. Next, a general reconnaissance of the project area was conducted to determine site conditions. The alternatives carried forward for detailed analysis were then walked with the specific intent of determining wetland boundaries. Data stations were established at locations within and near the wetland areas to document soil characteristics, evidence of hydrology, and dominant vegetation. Although a full soil profile was not examined to confirm soil series designations, soils were examined to a depth of at least 16 inches to assess soil characteristics and site hydrology. Complete descriptions of typical soil series can be found in the soil survey for Morgan and Monroe counties. The I-69 Evansville to Indianapolis Section 5 field survey of surface water resources was completed during 2005, 2006, 2011, 2012, and 2013.

2.4 Wetland Types

Wetlands are important ecologically, socially, and economically to the health of Indiana's environment. Some ecological functions of wetlands are:

- Nutrient primary production and transport
- Habitat and sanctuary for animals
- Hydrological support for adjacent communities
- Shoreline protection
- Storm/flood water storage and peak flow reduction

- Groundwater recharge
- Water purification
- Water supply
- Affect climatic conditions (temperature, oxygen, and carbon dioxide cycles)
- Support isolated genetic population pools
- Species reproduction and development

In addition, wetlands support many human activities. Some activities are as follows:

- Commercial fisheries
- Recreation (hunting, fishing, boating, and swimming)
- Forestry products
- Agricultural products
- Aesthetics
- Educational centers
- Peat mining

Short descriptions of the types of wetlands and open water systems that occur within the Section 5 Corridor are detailed below.

2.4.1 Palustrine Emergent Wetlands (PEM)

Palustrine emergent wetlands (PEM) are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens (Cowardin et al., 1979). The vegetation in emergent wetlands is present for most of the growing season in most years, and is typically dominated by perennial plant species. All water regimes are included except subtidal and irregularly exposed (Cowardin et al., 1979). Characteristic plant species include cattails (*Typha* spp.), sedges and rushes (*Carex* spp., *Scripus* spp., and *Eleocharis* spp.), and wetland grass species including rice cutgrass (*Leersia oryzoides*), and the invasive non-native reed canary grass (*Phalaris arundinacea*). An example of an emergent wetland found within the Study Corridor is shown on the right.



2.4.2 Palustrine Scrub/Shrub Wetlands



Palustrine scrub/shrub wetlands (PSS) 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 (Cowardin et al., 1979). All water regimes, except subtidal, are possible (Cowardin et al., 1979). Plant species associated with scrub/shrub wetlands include willows (*Salix* spp.),

buttonbush (*Cephalanthus occidentalis*), and swamp rose (*Rosa palustris*). The photo above is a typical scrub/shrub wetland identified within the Study Corridor.

2.4.3 Palustrine Forested Wetlands

Palustrine forested wetlands (PFO) are typically located within stream floodplains, and consist of canopy tree species such as red maple (*Acer rubrum*), eastern 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*). Palustrine forested wetlands within the project area are generally ranked high for wildlife habitat using the InWRAP methodology (see Section 3.2.2). Many of these, because of their location within the floodplain, also score high for flood and storm water storage. An example of a palustrine forested wetland within the Study Corridor is shown in the photo on the right.



2.4.4 Aquatic Bed



The palustrine aquatic bed (PAB) classification type 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). 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. The top left photo represents an example of an aquatic bed community located in the Beanblossom/Griffy Creek floodplain.

2.4.5 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. The 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 make 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). No major lakes were identified within the Study Corridor.

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 semi-permanently flooded. Unconsolidated bottoms are characterized by the lack of large stable surfaces for plant and animal attachment (Cowardin et al., 1979). An example of a typical pond within the Study Corridor is shown in the photo on the right.



2.4.6 Farmed Wetlands

Sections 401 and 404 of the Clean Water Act also regulate wetlands that have been temporarily converted for active agricultural use; these wetlands are termed “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 Swampbuster provisions of the 1996 Farm Bill allow for the continuation of agricultural activities on certified wetlands and are 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 IDEM.



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3.0 Methodology

3.1 Study Corridor Wetland Investigations

3.1.1 Background Information

An office review of available resources was conducted to better predict where wetlands might occur within the Study Corridor. Resources reviewed included the data generated from the I-69 Tier 1 environmental studies, USGS Topographic Quadrangle maps (including the Bloomington, Clear Creek, Hindustan, Martinsville, and Modesto quads), large-scale aerial photography and planimetric project mapping, NWI data, the Indiana hydric soils list, and soil surveys for Monroe and Morgan Counties. Following the review of this information, potential wetland areas, including NWI wetlands and farmed wetland locations, were identified on field maps.

3.1.2 Field Reconnaissance

Field surveys were conducted in September 2004 and in June 2005 at each potential wetland location within the Study Corridor. Additional surveys were conducted at specific locations in May 2006 following the development of preliminary alternatives. Field studies were completed for Alternative 8 in October 2011 and April 2012 with additional field studies for the “Refined Preferred Alternative 8” (RPA 8) completed in February 2013. These studies were conducted to re-evaluate previously identified resources within the corridor, as well as to conduct wetland delineations in accordance with new regulatory guidance. The delineation of wetlands and other “waters of the U.S.” within the preferred alternative were based on the methodology described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (Environmental Laboratory, 2010).

Plant species were identified with the Manual of Vascular Plants of Northeastern United States and Adjacent Canada, 2nd Edition (Gleason and Cronquist, 1991). The wetland indicator status of the observed vegetation was taken from the National List of Plant Species that Occur in Wetlands: Region 5– Midwest (USFWS, 1988). Soil color was identified with Munsell Soil Color Charts (Munsell, 2000). Soil series and taxonomy was determined with the USDA, Soil Survey of Monroe County, Indiana (USDA SCS, 1981), and Soil Survey of Morgan County, Indiana (USDA SCS, 1981).

3.1.3 Approximate Boundary Determination and Field Mapping

The approximate boundaries of wetlands within the Study Corridor were transferred onto planimetric project mapping. Wetland boundaries extending beyond the Study Corridor were approximated from NWI maps to calculate total wetland size.

3.1.4 Classification

All wetlands identified within the Study Corridor have been classified following the Cowardin et al. Classification System (Cowardin et al, 1979). Cowardin classification divides wetlands into five major systems. Each wetland system is further categorized into Class and Subclass by



vegetation type and/or substrate. The classification also describes the water regime of the wetland, including any modifications to its hydrology (Table 1).

The wetlands identified within the Study Corridor are palustrine wetland systems, which include all non-tidal wetlands with persistent vegetation and some small, shallow ponds (Cowardin et al., 1979). Examples of the palustrine wetland classes found within the Study Corridor include emergent wetlands (PEM) characterized by erect, rooted, herbaceous vegetation; scrub-shrub wetlands (PSS) characterized by woody vegetation less than six meters tall; forested wetlands (PFO) characterized by woody vegetation that is six meters tall or taller; and unconsolidated bottom wetlands (PUB), or open water ponds, characterized by lack of large, stable surfaces for plants to attach (Cowardin et al., 1979).

Table 1: Cowardin et al. Classification System, Water Regime, and Special Modifiers				
SYSTEM	PALUSTRINE			
CLASS	UB-UNCONSOLIDATED BOTTOM	EM-EMERGENT	SS-SCRUB-SHRUB	FO-FORESTED
Subclass	1-Cobble/Gravel	1-Persistent	1-Broad-Leaved Deciduous	1-Broad-Leaved Deciduous
	2-Sand	2-Non-persistent	2-Needle-Leaved Deciduous	2-Needle-Leaved Deciduous
	3-Mud		3-Broad-Leaved Evergreen	3-Broad-Leaved Evergreen
	4-Organic		4-Needle-Leaved Evergreen	4-Needle-Leaved Evergreen
			5-Dead	5-Dead
			6-Deciduous	6-Deciduous
			7-Evergreen	7-Evergreen
WATER REGIME		SPECIAL MODIFIERS		
A-Temporarily Flooded	H-Permanently Flooded	b-Beaver	h-Diked/Impounded	
B-Saturated	J-Intermittently Flooded	d-Partially Drained/Ditched	r-Artificial Substrate	
C-Seasonally Flooded/Well Drained	K-Artificially Flooded	f-Farmed	s-Spoil	
D-Seasonally Flooded/Well Drained	W-Intermittently Flooded/Temporary		x-Excavated	
E-Seasonally Flooded/Saturated	Y-Saturated/Semipermanent/Seasonal			
F-Semipermanently Flooded	Z-Intermittently Exposed/Permanent			
G-Intermittently Exposed	U-Unknown			

3.1.5 Farmed Wetlands

Investigations for farmed wetlands and farmed wetland pastures, as defined by NFSAM, were conducted within the Study Corridor following NRCS guidance for farmed wetland determinations. 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 must have been produced once before December 23, 1985.
3. The area must meet the required hydrology criteria for farmed wetlands.
4. The site must not have been abandoned.

After coordination with the Farm Service Agency (FSA), aerial slides taken from 1980 to 1985 and from 1989 to 1992 were examined to identify hydrology signatures present on high wetland potential agricultural lands within the Study Corridor. The results of this review are provided in Section 4.3.

3.2 Detailed Wetland Analysis

3.2.1 Wetland Delineations

For purposes of this report, Preferred Alternative 8 that was identified in the Draft Wetland Technical Report will be referred to as “Alternative 8”. The Preferred Alternative for the Final Wetland Technical Report will be referred to as the “Refined Preferred Alternative 8” and abbreviated “RPA 8” throughout this document.

The wetland data collected during the field reconnaissance (conducted in September 2004, June 2005, May 2006, October 2011, April 2012, and February 2013) was used to identify wetlands located within the preliminary construction limits of each Alternative Carried Forward for Detailed Analysis (identified as Alternative 4, 5, 6, 7, 8 and RPA 8). Field investigations conducted in October 2011, April 2012, and February 2013 included assessing the wetlands potentially impacted by RPA 8 in accordance with the procedure outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (Environmental Laboratory, 2010).

3.2.2 Wetland Quality Assessment

During wetland investigations conducted in June 2005, May 2006, October 2011, April 2012, and February 2013 Version 2.51 of the Indiana Wetland Rapid Assessment Protocol (InWRAP) was used to assess the quality of palustrine wetlands identified within the preliminary construction limits of Alternatives 4, 5, 6, 7, 8, and RPA 8. InWRAP was not performed on wetlands classified as palustrine unconsolidated bottom (PUB) systems because they are generally open water systems, and do have a predominant vegetation component.

The InWRAP methodology was specifically required for the I-69 project to allow for standardized analysis of wetland quality across all section of the project corridor. InWRAP was developed by Taylor University Environmental Research Group (TERG), and provides a methodology for assessing the quality of wetlands of Indiana (TERG, 2005). 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.

InWRAP has three tiers of assessment: Overview, Preliminary Assessment, and Rapid Indicators.



- Tier 1 is an assessment overview that records site identification and critical map data, the site assessment conditions, and the landscape setting. Tier 1 may involve a single wetland polygon or a complex of adjoining wetland polygons (TERG, 2005).
- Tier 2 is a preliminary overall assessment of hydrology, soil type, community type, degree of disturbance, and “red flag” indicators for a single wetland polygon. The Tier 2 assessment concludes with an initial rating of polygon quality (TERG, 2005).
- Tier 3 provides further specific documentation of wetland quality by evaluating hydrological features, wetland plant community health, and the wildlife potential of each wetland polygon (TERG, 2005).



4.0 Results and Discussion

4.1 Study Corridor Wetlands

Wetlands and open water systems are dispersed throughout the Section 5 corridor. The majority of these resources are found along rivers and streams and within their associated floodplains. Forested wetlands are the predominant wetland type within the Section 5 corridor. Emergent wetlands are the second most common type within the corridor. Open water systems within the corridor consist of unconsolidated bottom (pond) features. Using the classification of Cowardin et al. (1979), a total of 64 wetland polygons and 43 open water systems were identified within the Section 5 corridor. The general location of the Study Corridor wetlands in relation to the topography is shown in **Figure 1** and **Figure 2**. NWI wetlands are shown in **Figure 3**.

Generally speaking, NWI wetlands are identified by aerial mapping and are not field-verified. Because of this, wetlands are sometimes erroneously identified, missed, or misidentified. In addition, the criteria used in identifying these wetlands were different from those currently used by the Corps To determine whether the project would impact wetlands in the corridor, it is necessary to verify the accuracy of the NWI data in the field and to conduct alignment area field reconnaissance for any wetlands not included in the NWI data set. Therefore, for the Tier 2 study in Section 5, wetland resources within the 2,000-foot-wide study corridor were identified through a combination of field reconnaissance surveys and GIS mapping.

NWI data indicated the presence of 55 palustrine wetland systems (PEM, PSS, PFO, and PUB) totaling approximately 88.25 acres in the Section 5 corridor. However, the field reconnaissance resulted in the identification and assessment of a total of 107 wetlands in the corridor. Of these, 36 wetlands were identified as palustrine emergent (PEM), 5 as palustrine scrub-shrub (PSS), 21 as palustrine forested (PFO), 43 as open water (PUB,) and 2 as palustrine aquatic bed (PAB). **Table 2** shows the amount and acreage of NWI mapped wetlands and field verified wetlands in the Section 5 corridor.

Wetland Type	Number of NWI Wetlands*	NWI Wetland Acreage*	Number of Field Verified Wetlands	Field Verified Wetland Acreage
Palustrine Emergent (PEM)	7	3.53	36	10.34
Palustrine Forested (PFO)	20	59.10	21	37.52
Palustrine Scrub-Shrub (PSS)	2	5.99	7	3.41
Palustrine Unconsolidated Bottom (PUB)	26	19.63	43	29.68
Palustrine Aquatic Bed (PAB)	0	0.00	2	2.23
Total	55	88.25	107	83.18

* Information obtained from U.S. Fish & Wildlife Service, National Wetlands Inventory, (<http://www.nwi.fws.gov/>)



The field reconnaissance identified wetlands within the corridor ranging in size from less than one tenth of an acre to approximately 10.29 acres. The total area of all forested wetlands within the Section 5 corridor is approximately 37.52 acres. The total area of all scrub/shrub wetlands within the Section 5 corridor is approximately 3.41 acres. The total area of all emergent wetlands within the Section 5 corridor is approximately 10.34 acres. The total area of the open water within the corridor is approximately 29.68 acres. The total area of aquatic bed within the corridor is approximately 2.23 acres.

4.2 Alternatives Carried Forward for Detailed Analysis Wetlands

The following provides a description of each wetland or wetland complex that would be impacted by any of the Alternatives. Wetlands were determined to be either jurisdictional or non-jurisdictional.

As used in this report, the term “wetland” refers to an area on the landscape that meets the COE criteria and consists of a single wetland type (such as palustrine emergent). The term “wetland complex” consists of two or more contiguous or adjoining wetland 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.

The appendices contain the reference information for each of these descriptions.

- Appendix A contains the Wetland Site Forms that provide an overall description of each wetland or complex including mapping and photographic documentation.
- Appendix B contains the Wetland Quality Assessment Profile which generates a rating for three wetland functions, animal habitat, botanical and hydrologic, based on the InWRAP summary data generated during the Tier 2 studies.
- Appendix C contains the Wetland Matrix for I-69 Alternatives Carried Forward for Detailed Analysis which summarizes the assessment results.
- Appendix D 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.
- Appendix E contains the Routine Wetland Determination Forms for wetlands impacted by Refined Preferred Alternative 8.

Refer to Figure 2 for depictions of the Alternatives with labeled wetlands and ponds.



4.2.1 Wetland Resources within Alternatives

The following sections include references to preliminary jurisdiction wetland determinations only. Final jurisdictional wetlands determinations will be made a later date by the USACE.

S5W007

This site is classified as a wet meadow wetland, 0.03 acres in size. Alternatives 4, 6, 7, 8 and RPA 8 would avoid this wetland. Alternative 5 would impact 0.03 acres of this wetland. The area showed 75-100% vegetative cover. Cattail dominates the herbaceous species. Hydrology is likely due to roadway runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to its hydrologic connectivity to a tributary of Clear Creek.

S5W011

This site is classified as a wet meadow wetland, 0.01 acres in size. Alternatives 4, 5, 6, 7, 8 and RPA 8 would impact the entire 0.01 acre of this depressional wetland. The area showed 75-100% vegetative cover. Cattail and reed canary grass dominate the herbaceous species. Hydrology is likely due to roadway runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and fair respectively, based on InWRAP summaries for the site. This wetland is apparently isolated. This wetland therefore falls solely under the jurisdiction of IDEM.

S5W021

This site is classified as a seasonally flooded basin, 0.13 acres in size. Alternatives 4, 5, 6, 7, 8 and RPA 8 would impact the entire 0.013 acre of this depressional wetland. The area showed 75-100% vegetative cover. Cattail and reed canary grass dominate the herbaceous species. Hydrology is likely due to roadway runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

S5W024

This wetland complex consists of three wetland polygons totaling 0.24 acres. Polygon 24a is classified as a shrub-carr wetland, 0.02 acres in size. Polygon 24b is classified as a shallow marsh, 0.14 acre in size. Polygon 24c is classified as a shrub-carr wetland 0.08 acre in size. Alternatives 4 and 5 impact approximately 0.01 acre of Polygon 24a and 0.02 acre of Polygon 24b. Alternatives 6, 7, 8 and RPA 8 would not impact any of the wetland polygons for this complex. The area showed 75-100% vegetative cover. Black willow and silky dogwood dominate the shrub-carr polygons 24a and 24c. Cattails dominate the herbaceous species in polygon 24b. Hydrology is likely due to its depressional nature, frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and fair respectively, for each of the polygons in the complex based on InWRAP



summaries for the site. This wetland complex falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Clear Creek.

S5W062

This wetland complex consists of two wetland polygons totaling 3.25 acres. Polygon 62a is classified as a deep marsh, 1.47 acres in size. Polygon 62b is classified as a floodplain forest, 1.78 acres in size. Alternatives 4, 5, 6, 8 and RPA 8 would impact between 0.02 and 0.20 acres of the deep marsh polygon of this floodplain wetland complex. Alternative 7 would avoid impacts to the deep marsh polygon of this complex. Alternatives 4, 5, 6, 7, 8 and RPA 8 impacts would range from 0.11 acre to 0.33 acre of the floodplain forest polygon. Polygon 62a showed less than 25% herbaceous cover. Duckweed and moneywort dominate the deep marsh polygon herbaceous species. Polygon 62b showed between 75-100% herbaceous cover. Moneywort and Canadian woodnettle dominate the floodplain forest polygon herbaceous species. Box elder and American elm are the dominant shrub species in polygon 62b, with green ash and silver maple dominating the tree species within this polygon. Hydrology is likely due to Beanblossom Creek flooding, local runoff, and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are ranked as fair, fair and fair, respectively, based on InWRAP summaries for the deep marsh polygon and fair, poor and good for the floodplain forest polygon within this complex. This wetland falls under the jurisdiction of both the USACE and IDEM due to its hydrologic connectivity to a tributary of Beanblossom Creek.

S5W063

This wetland complex consists of two wetland polygons totaling 2.04 acres. Polygon 63a is classified as a sedge meadow, 1.44 acres in size. Polygon 63b is classified as a floodplain forest, 0.60 acre in size. Alternatives 5, 6, 7 and 8 would impact from 0.58 acre to 1.22 acres of the sedge meadow polygon of this floodplain wetland complex. Alternatives 5, 6, 7, and 8 impacts would range from 0.18 acre to 0.60 acre of the floodplain forest polygon. Alternatives 4 and RPA 8 would avoid impacts to both the sedge meadow and floodplain forest polygons of this complex. Polygon 63a showed between 75-100% herbaceous cover. Carex and cattail dominate the sedge meadow polygon herbaceous species. Polygon 63b showed between 50-75% woody plant cover. Green ash and silver maple are the dominant shrub and tree species in polygon 63b. Hydrology is likely due to Beanblossom Creek flooding, local runoff, and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are ranked as fair, poor and good, respectively, based on InWRAP summaries for the sedge meadow polygon, and fair, poor and good for the floodplain forest polygon within this complex. This wetland falls under the jurisdiction of both the USACE and IDEM due to its hydrologic connectivity to a tributary of Beanblossom Creek.

S5W065

This site is classified as a swamp forest, 0.71 acres in size. Alternatives 4, 5, 6, 7, and 8 impacts would range from 0.18 acre to 0.71 acre of this floodplain wetland. RPA 8 would avoid impacting this wetland. The area showed 25-50% herbaceous cover and 50-75% woody plant cover. Sedges dominate the herbaceous species in this wetland and silver maple, spicebush, and



black walnut dominate the shrub species in this wetland. Silver maple and sycamore are the dominant tree species in this wetland. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as good, poor and good respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

S5W066

This site is classified as a seasonally flooded basin, 0.15 acres in size. Alternatives 4, 5, 6, 7, 8 and RPA 8 impacts would range from 0.08 acre to 0.15 acre of this floodplain wetland. The area showed 75-100% herbaceous cover. This wetland is dominated by softstem bullrush. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as fair, poor and good respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

S5W068

This site is classified as a wet meadow, 0.16 acres in size. Alternatives 4, 5, 6, 7, 8 and RPA 8 impacts would range from 0.01 acre to 0.16 acre of this floodplain wetland. The area showed 50-75% herbaceous cover. Dominant herbaceous species for this wetland include reed canarygrass, broadleaf cattail, common rush, Canada goldenrod, and Pennsylvania smartweed. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and good respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

S5W069

This wetland complex consists of six wetland polygons totaling 3.52 acres. Polygon 69a is classified as a seasonally flooded basin 0.72 acre in size. Polygon 69b is classified as a floodplain forest, 1.67 acres in size. Polygons 69e and 69f are classified as shallow marshes, 0.02 acre and 0.07 acres respectively. Polygon 69g is classified as shallow open water, 0.76 acres in size; and, Polygon 69i is classified as a deep marsh, 0.28 acre in size. Alternatives 6 and 7 would impact from 0.01 acre to 0.02 acres of Polygon 69a. Alternatives 4, 5, 8 and RPA 8 would avoid impacts to Polygon 69a. Alternative 6 would impact 0.05 acre of the floodplain forest polygon (69b) of this complex. Alternatives 4, 5, 7, 8 and RPA 8 would avoid impacts to the floodplain forest polygon. The shallow marsh polygon 69e would be entirely impacted by all of the alternatives. The shallow marsh polygon 69f would be entirely impacted by alternatives 4, 5, 6, 7, and 8. Alternatives 4, 5, 6, 7, and 8 would each impact 0.07 acre of Polygon 69f. RPA 8 would impact 0.04 acre of polygon 69f. The shallow open water polygon (69g) impacts would range from 0.06 acre to 0.20 acres for Alternatives 4, 5, 6, and 8. Alternatives 7 and RPA 8 would avoid impacts to the shallow open water polygon. Alternatives 4, 5, 6, 7, 8 and RPA 8 would impact from 0.27 acre to 0.28 acre of the deep marsh polygon. Polygon 69a showed between 75-100% herbaceous cover with dominant species including bulrush and cattails.



Polygon 69b showed between 25-50% woody plant cover, with green ash and red maple as the dominant tree species. Polygon 69e showed between 75-100% herbaceous cover with rice cutgrass and arrowleaf tearthumb as the dominant herbaceous species. Polygon 69f showed between 25-50% herbaceous cover with rice cutgrass and arrowleaf tearthumb as the dominant herbaceous species. Dominant shrub species for Polygon 69f included sandbar willow and buttonbush. Polygon 69g showed less than 25% herbaceous and woody plant cover, with duckweed as the dominant herbaceous species. Polygon 69i showed between 50-75% herbaceous cover and less than 25% woody plant cover. Dominant herbaceous species included rice cutgrass, reed canarygrass, and spikerush. Dominant woody species included green ash and black willow. Hydrology is likely due to Beanblossom Creek flooding, local runoff, and poorly drained soils. Botanical diversity is rated as poor for Polygons 69b and 69e, and fair for Polygons 69a, 69f, 69g, and 69i. Animal habitat is rated as poor for Polygons 69a, 69g, and 69i, fair for Polygons 69e and 69f, and good for Polygon 69b. Hydrologic function is rated as fair for Polygons 69e, 69g and 69i and good for Polygons 69a, 69b and 69f. This wetland falls under the jurisdiction of both the USACE and IDEM due to its hydrologic connectivity to a tributary of Beanblossom Creek.

S5W070

This wetland complex consists of three wetland polygons totaling 10.92 acres. Polygon 70a is classified as a shallow marsh, 0.54 acre in size; Polygon 70b is classified as a swamp forest, 10.29 acres in size; and, Polygon 70c is classified as a shallow marsh 0.09 acres in size. Alternatives 4, 5, 6, 8 and RPA 8 would impact between 0.05 and 0.40 acres of Polygon 70a. Alternatives 4, 5, 6, and 8 would impact between 0.08 and 0.09 acre of Polygon 70c. Alternative 7 would avoid impacts to the two shallow marsh polygons (70a and 70b). RPA 8 would avoid impacts to polygon 70c. Alternatives 4, 5, 6, 7, 8 and RPA 8 impacts to the swamp forest polygon would range from 0.02 acre to 3.76 acres. Polygons 70a and 70c showed between 75-100% herbaceous cover. Cattails, soft rush, rice cutgrass, and sedges were the dominant herbaceous species for both of these polygons. Polygon 70b showed between 50-75% woody plant cover. Spicebush and sweet gum were the dominant shrub species for 70b, with red maple and pin oak as dominant tree species. Hydrology is likely due to its floodplain nature of the wetland, local runoff, and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are ranked as fair, poor and good, respectively, based on InWRAP summaries for the shallow marsh polygons and good, poor and good for the swamp forest polygon within this complex. This wetland falls under the jurisdiction of both the USACE and IDEM due to its hydrologic connectivity to a tributary of Beanblossom Creek.

S5W071

This site is classified as a floodplain forest, 31.75 acres in size. Alternatives 4, 5, and 6 impacts would range from 0.02 acre to 0.05 acre of this floodplain wetland. Alternative 7, 8 and RPA 8 would avoid this wetland. The area showed 25-50% herbaceous cover and 50-75% woody plant cover. Dominant herbaceous species for this wetland include moneywort, goldenrod, and snakeroot. Dominant woody species included boxelder and spicebush for shrub species, and green ash, silver maple, and sycamore for tree species. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and



hydrologic function are rated as good, fair and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

S5W080

This site is classified as a floodplain forest, 0.56 acres in size. Alternatives 4, 5, 7, 8 and RPA 8 would avoid impacting this wetland. Alternative 6 would impact 0.01 acre of this wetland. The area showed 50-75% herbaceous cover and 25-50% woody plant cover. Dominant herbaceous species for this wetland include moneywort. Dominant woody species included boxelder and spicebush for shrub species, and green ash, sycamore, and silver maple for tree species. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as good, fair and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

S5W091

This site is classified as a seasonally flooded basin, 0.88 acres in size. All six alternatives would impact this entire wetland. This wetland showed 75-100% herbaceous cover and less than 25% woody plant cover. Dominant herbaceous species for this wetland include reed canarygrass, goldenrod, sedges, and cattail. Dominant woody species included black willow, sycamore and cottonwood. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as fair, poor and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Bryant Creek.

S5W095

This site is classified as a floodplain forest, 0.19 acres in size. Alternative 7 would impact 0.01 acre of this floodplain forest. Alternatives 4, 5, 6, 8 and RPA 8 would avoid impacting this wetland. This wetland showed less than 25% herbaceous cover and between 50-75% woody plant cover. Dominant herbaceous species for this wetland include jewelweed and wingstem. Dominant woody species included sycamore. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as fair, poor and good respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Bryant Creek.

S5W104

This site is classified as a sedge meadow, 0.40 acres in size. Alternatives 4 and 5 would impact 0.25 acre of this depressional wetland. Alternatives 6, 7, 8, and RPA 8 would avoid impacting this wetland. This wetland showed between 75-100% herbaceous cover. Dominant herbaceous species for this wetland include knotweed, reed canarygrass, sedges, and woolgrass. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, fair and good respectively, based



on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Little Indian Creek.

S5W109

This site is classified as a shrub-carr, 1.01 acres in size. Alternatives 4, 5, 6, 7, 8 and RPA 8 impacts range from 0.12 acre to 0.38 acre of this floodplain wetland. The area showed 75-100% herbaceous cover and 25-50% woody plant cover. Dominant herbaceous species for this wetland include reed canarygrass and knotweed. Dominant woody species included black willow and sycamore. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Indian Creek.

S5W119

This site is classified as a seasonally flooded basin, 0.05 acres in size. All six alternatives would impact this entire wetland. This wetland showed 75-100% herbaceous cover and less than 25% woody plant cover. Dominant herbaceous species for this wetland include cattail, sedges, bulrush, and ladythumb. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and poor respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Bryant Creek.

S5W120

This site is classified as a seasonally flooded basin, 0.20 acres in size. All six alternatives would impact from 0.02 acre to 0.06 acre of this emergent wetland. This wetland showed 75-100% herbaceous cover and less than 25% woody plant cover. Dominant herbaceous species for this wetland include cattail and joe pye weed. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Bryant Creek.

S5W121

This site is classified as a seasonally flooded basin, 0.04 acres in size. All six alternatives would impact this entire wetland. This wetland showed 75-100% herbaceous cover and less than 25% woody plant cover. Dominant herbaceous species for this wetland include rushes, beggarticks and asters. Hydrology is likely due to local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Little Indian Creek.



S5W122

This site is classified as a wet meadow, 0.28 acres in size. Alternatives 4 and 5 would impact this entire depressional wetland. Alternatives 6, 7, 8, and RPA 8 would impact 0.01 acre of this emergent wetland. This wetland showed between 75-100% herbaceous cover. Dominant herbaceous species for this wetland include reed canarygrass, beggarticks, nutsedge and knotweed. Hydrology is likely due to local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Indian Creek.

S5W123

This site is classified as a wet meadow, 0.18 acres in size. Alternatives 4, 5, 6, and 8 impacts would range from 0.01 acre to 0.12 acre of this floodplain wetland. Alternatives 7 and RPA 8 would avoid impacting this wetland. The area showed 75-100% herbaceous cover. Dominant herbaceous species include sedges, and moneywort. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and good respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

S5W124

This site is classified as a wet meadow, 0.14 acres in size. Alternatives 4 and 5 impacts would range from 0.11 acre to 0.13 acre of this floodplain wetland. Alternatives 6, 7, 8 and RPA 8 would avoid impacting this wetland. The area showed 75-100% herbaceous cover. Dominant herbaceous species include soft rush, sedges, and moneywort. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and good respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

S5W125

This wetland complex consists of four wetland polygons totaling 7.40 acres. Polygon 125a is classified as a wet meadow, 3.75 acres in size; Polygon 125d is classified as a wet meadow, 1.03 acres in size; Polygon 125e is classified as a floodplain forest, 0.33 acres in size, and Polygon 125f is classified as a floodplain forest 2.29 acres in size. Alternatives 4, 5, 6, 7, 8 and RPA 8 would impact from 0.43 acre to 1.07 acres of Polygon 125a. Alternatives 6, 7, 8 and RPA 8 would avoid impacts to Polygons 125d and 125e. Alternatives 4 and 5 impacts to Polygon 125d would range from 0.21 to 0.23 acres. Alternatives 4 and 5 impacts to Polygon 125e would range from 0.31 to 0.32 acre. Alternatives 4, 5, 6, 7, 8, and RPA 8 would impact from 0.05 to 0.87 acres of Polygon 125f. Polygons 125a showed between 75-100% herbaceous cover and Polygon 125d showed between 50-75% herbaceous cover. Soft rush, sedges, asters, and knotweed were the dominant herbaceous species for both of these polygons. Polygon 125e showed between 25-50% cover for both the herbaceous and woody species. Dominant



herbaceous species for Polygon 125e include sensitive fern. Spicebush and swamp rose are the dominant shrub species, and green ash and sweet gum are the dominant tree species for Polygon 125e. Polygon 125f showed between 25-50% woody cover and less than 25% herbaceous cover. Sedges are the dominant herbaceous species and spicebush and swamp rose are the dominant shrub species for Polygon 125f. Dominant tree species for Polygon 125f include green ash, red maple, and sweet gum. Hydrology is likely due to frequent flooding, local runoff, and poorly drained soils. Animal habitat is ranked as poor for the wet meadow polygons and good for the floodplain forest polygons. Botanical diversity is ranked as poor for the wet meadow polygons and fair for the floodplain forest polygons. Hydraulic functions are ranked as fair for polygon 125a and good for the remaining polygons. These values are based on the InWRAP summaries for each of the polygons within this complex. This wetland falls under the jurisdiction of both the USACE and IDEM due to its hydrologic connectivity to a tributary of Beanblossom Creek.

S5W126

This site is classified as a floodplain forest, 5.00 acres in size. Alternatives 4 and 5 would impact 1.37 acres of this floodplain wetland. Alternatives 6, 7, 8 and RPA 8 would avoid impacting this wetland. This wetland showed 75-100% herbaceous cover and 25-50% woody plant cover. Dominant herbaceous species for this wetland include sedges. Dominant woody plant species include sweetgum, swamp rose, and green ash. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as good, fair and good respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

S5W127

This site is classified as a floodplain forest, 1.16 acres in size. Alternatives 4 and 5 would impact 0.44 acres of this floodplain wetland. Alternatives 6 and 8 would impact 0.35 acre of this wetland, Alternative 7 would impact 0.16 acre; and RPA 8 would impact 0.10 acre. This wetland showed 75-100% herbaceous cover and 25-50% woody plant cover. Dominant herbaceous species for this wetland include sedges and moneywort. Dominant woody plant species include swamp rose, spicebush, red maple and pin oak. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as good, fair and good respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

S5W128

This site is classified as a floodplain forest, 2.65 acres in size. Alternative 6 would avoid impacting this wetland. Alternatives 4 and 5 would impact 0.32 acres if this floodplain forest. Alternatives 7, 8, and RPA 8 would impact 0.21 acres of this forested wetland. This wetland showed less than 25% herbaceous cover and between 50-75% woody plant cover. Dominant herbaceous species for this wetland include moneywort. Dominant woody species included box elder, green ash, and sycamore. Hydrology is likely due to frequent flooding, local runoff and



poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as good, poor and good respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Bryant Creek.

S5W145

This site is classified as a wet meadow, 0.06 acres in size. Alternatives 4, 5, 6, 8, and RPA 8 would impact this entire wetland. Alternative 7 would impact 0.01 acre of this emergent wetland. This wetland showed between 75-100% herbaceous cover and less than 25% woody plant cover. Dominant herbaceous species for this wetland include sedges, smartweeds, lady's thumb, and touch-me-nots. Dominant woody species included silky willow. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as fair, poor and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Fox Hollow.

S5W146

This site is classified as a floodplain forest, 0.14 acres in size. Alternatives 4, 5, and 8 would impact this entire wetland. Alternatives 6 and RPA 8 would impact 0.01 acre of this emergent wetland and Alternative 7 would impact 0.11 acre of this wetland. This wetland showed between 25-50% herbaceous cover and between 50-75% woody plant cover. Dominant herbaceous species for this wetland include reed canarygrass. Dominant woody species include green ash, American elm, red maple and swamp white oak. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are each rated as fair, poor and fair based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

S5W147

This site is classified as a floodplain forest, 0.23 acres in size. Alternatives 6 would avoid impacting this depressional wetland; while alternatives 4, 5, 7, 8 and RPA 8 would impact from 0.06 acre to 0.23 acres. This wetland showed between 25-50% herbaceous cover and between 50-75% woody plant cover. Dominant herbaceous species for this wetland include needle spikerush. Dominant woody species included black willow, silky dogwood, green ash, and American elm. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as good, fair and good based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Clear Creek.

S5W148

This site is classified as a sedge meadow, 0.09 acres in size. All of the alternatives would impact 0.08 acres of this wetland. This wetland showed between 50-75% herbaceous cover and less than 25% woody plant cover. Dominant herbaceous species for this wetland include cattails and



reed canarygrass. Hydrology is likely due to local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and fair, respectively based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Clear Creek.

S5W149

This wetland complex consists of three wetland polygons totaling 1.27 acres. Polygon 149a and 149b are classified as sedge meadows 0.40 acre and 0.11 acre in size, respectively. Polygon 149c is classified as a swamp forest, 0.76 acre in size. Impacts to polygon 149a range from 0.25 acre to 0.39 acre for alternatives 4, 5, 6, 7, 8 and RPA 8. All six alternatives would impact the entire 0.11 acre of Polygon 149b. Alternative 4, 5, 7, 8 and RPA 8 would avoid impacting Polygon 149c, while Alternative 6 would impact 0.04 acre of this polygon. Polygon 149a and 149b showed between 75-100% herbaceous cover with dominant species including sedges and knotweed. Polygon 149c showed between 25-50% woody plant cover, with green ash, red maple, and silver maple as the dominant tree species. Hydrology is likely due to frequent flooding, local runoff, and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, fair and good for Polygon 149a and 149b, and good, poor and fair for Polygon 149c, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of both the USACE and IDEM due to its hydrologic connectivity to a tributary of Beanblossom Creek.

S5W150

This site is classified as a wet meadow, 0.07 acres in size. Alternative 4 would impact this entire wetland. Alternatives 5, 6, 7, 8 and RPA 8 would avoid impacting this wetland. This wetland showed 75-100% herbaceous cover and less than 25% woody plant cover. Dominant herbaceous species for this wetland include ricecut grass, touch-me-nots, sedges and false nettle. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as fair, poor and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Bryant Creek.

4.3 Farmed Wetlands Analysis

The farmed wetland review for Monroe County was conducted on June 8, 2005 at the Monroe County FSA in Bloomington, Indiana. The FSA had incomplete slide sets for years 1980 through 1985 and years 1989 to 1990. A review of the available slides covering the Study Corridor for all the above years was conducted for wetland signatures, and it was determined that no farmed wetlands were located within the Monroe County portion of the Study Corridor.

On June 9, 2006, the farmed wetland review for Morgan County was conducted at the Morgan County FSA in Martinsville, Indiana. The FSA had incomplete slide sets for the years 1982 to 1985, and complete sets for years 1989 to 1992. Available slides covering the Study Corridor



were examined for the above years for wetland signatures, and it was determined that no farmed wetlands were located within the portion of the Study Corridor located in Morgan County.

4.4 Project Impacts

Each of the Alternatives would involve direct impacts to Section 404/401 jurisdictional wetlands, as well as isolated features subject to IDEM authority. Collectively, 33 wetland complexes (each comprised of one or more community type polygons) and 10 palustrine unconsolidated bottom (PUB) feature (i.e. ponds) were located within at least one of the Alternatives. Thirty-two (32) of the wetland complexes and eight (8) of the ponds were assessed as Waters of the U.S. subject to USACE jurisdiction. The remaining one (1) wetland and two (2) ponds were determined to be “isolated” and therefore considered to be Waters of the State under the jurisdiction of IDEM only.

Alternative 4 would result in impacts to 29 wetland complexes (excluding PUB ponds) totaling 11.70 acres. Of this, 11.69 acres are Waters of the U.S. under USACE jurisdiction, with the remaining 0.01 acre solely under IDEM jurisdiction. Alternative 5 would result in impacts to 30 wetland complexes (excluding PUB ponds) totaling 16.06 acres. Of this, 16.05 acres are Waters of the U.S. under USACE jurisdiction, with the remaining 0.01 acre solely under IDEM jurisdiction. Alternative 6 would result in impacts to 24 wetland complexes (excluding PUB ponds) totaling 10.96 acres. Of this, 10.95 acres are Waters of the U.S. under USACE jurisdiction, with the remaining 0.01 acre solely under IDEM jurisdiction. Alternative 7 would result in impacts to 24 wetland complexes (excluding PUB ponds) totaling 5.18 acres. Of these, 5.17 acres are Waters of the U.S. under USACE jurisdiction, with the remaining 0.01 acre solely under IDEM jurisdiction. Alternative 8 would result in impacts to 24 wetland complexes (excluding PUB ponds) totaling 9.96 acres. Of this 9.95 acres are Waters of the U.S. under USACE jurisdiction, with the remaining 0.01 acre solely under IDEM jurisdiction. Refined Preferred Alternative 8 would result in impacts to 21 wetland complexes (excluding PUB ponds) totaling 3.43 acres. Of this 3.42 acres are Waters of the U.S. under USACE jurisdiction, with the remaining 0.01 acre solely under IDEM jurisdiction.

A total of 10 palustrine unconsolidated bottom (PUB) features (i.e. ponds) were also located within the collective construction limits of the alternative alignments. 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. Alternative 4 would impact 5 ponds totaling 1.40 acres. Of these, 4 are Waters of the U.S. totaling 0.69 acres. The remaining pond totals 0.71 acre and is isolated, falling under IDEM jurisdiction. Alternative 5 would impact 5 ponds totaling 4.18 acres. Of these, 4 are Waters of the U.S. totaling 3.47 acres. The remaining isolated pond is 0.71 acres and would fall under IDEM jurisdiction or would be considered as “exempt isolated wetlands”. Alternative 6 would impact 3 ponds totaling 5.38 acres. All three ponds are Waters of the U.S. Alternative 7 would impact 3 ponds totaling 9.45 acres. Of these, 2 are Waters of the U.S. totaling 9.40 acres. The remaining isolated pond is 0.05 acre and would fall under IDEM jurisdiction. Alternative 8 would impact 2 ponds totaling 2.50 acres. Both of these ponds are Waters of the U.S. Refined Preferred Alternative 8 would impact one pond totaling 7.27 acres. This pond is a Waters of the U.S.



Table 3 through **Table 8** lists the anticipated impacts by resource type for the Alternatives. In locations where wetlands of different type area located in a 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 Alternatives.

4.4.1 Potential Impacts for Alternative 4

Alternative 4 would result in impacts to 29 wetland complexes (excluding PUB ponds) totaling 11.70 acres. Of this, 11.69 acres are Waters of the U.S. under USACE jurisdiction, with the remaining 0.01 acre solely under IDEM jurisdiction. Alternative 4 would impact 5 ponds totaling 1.40 acres. Of these, 4 are Waters of the U.S. totaling 0.69 acres. The remaining pond totals 0.71 acre and is isolated, falling under IDEM jurisdiction. **Table 3** provides a summary of wetlands and ponds potentially impacted by the construction limits for Alternative 4.

Wetland ID	Jurisdiction		Cowardin et al. (1979) Classification					Total (acres)
	Waters of the U.S.	Waters of the State	PUB (acres)	PAB (acres)	PEM (acres)	PSS (acres)	PFO (acres)	
S5W010	x	x	0.05					0.05
S5W011		x			0.01			0.01
S5W021	x	x			0.13			0.13
S5W024	x	x			0.02	0.01		0.03
S5W053		x	0.71					0.71
S5W061	x	x	0.08					0.08
S5W062	x	x		0.03			0.19	0.22
S5W065	x	x					0.36	0.36
S5W066	x	x			0.15			0.15
S5W068	x	x			0.16			0.16
S5W069	x	x		0.17	0.29	0.07		0.53
S5W070	x	x			0.14		2.44	2.58
S5W071	x	x					0.05	0.05
S5W079	x	x	0.46					0.46
S5W091	x	x				0.88		0.88
S5W102	x	x	0.10					0.10
S5W104	x	x			0.25			0.25
S5W109	x	x				0.37		0.37
S5W119	x	x			0.05			0.05
S5W120	x	x			0.02			0.02
S5W121	x	x			0.04			0.04



Wetland ID	Jurisdiction		Cowardin et al. (1979) Classification					Total (acres)
	Waters of the U.S.	Waters of the State	PUB (acres)	PAB (acres)	PEM (acres)	PSS (acres)	PFO (acres)	
S5W122	x	x			0.28			0.28
S5W123	x	x			0.10			0.10
S5W124	x	x			0.11			0.11
S5W125	x	x			1.28		1.19	2.47
S5W126	x	x					1.37	1.37
S5W127	x	x					0.44	0.44
S5W128	x	x					0.32	0.32
S5W145	x	x			0.06			0.06
S5W146	x	x					0.14	0.14
S5W147	x	x					0.06	0.06
S5W148	x	x			0.08			0.08
S5W149	x	x			0.37			0.37
S5W150	x	x			0.07			0.07
Waters of the US Wetland Impacts								11.69
Waters of the US Pond Impacts								0.69
Waters of the US Total Impacts								12.38
Waters of the State Wetland Impacts								11.70
Waters of the State Pond Impacts								1.40
Waters of the State Total Impacts								13.10

4.4.2 Potential Impacts for Alternative 5

Alternative 5 would result in impacts to 30 wetland complexes (excluding PUB ponds) totaling 16.06 acres. Of this, 16.05 acres are Waters of the U.S. under USACE jurisdiction, with the remaining 0.01 acre solely under IDEM jurisdiction. Alternative 5 would impact 5 ponds totaling 4.18 acres. Of these, 4 are Waters of the U.S. totaling 3.47 acres. The remaining isolated pond is 0.71 acres and would fall under IDEM jurisdiction or would be considered as “exempt isolated wetlands”. **Table 4** provides a summary of wetlands and ponds potentially impacted by the construction limits for Alternative 5.



Table 4: Wetlands and Ponds Identified for Alternative 5

Wetland ID	Jurisdiction		Cowardin et al. (1979) Classification					Total (acres)
	Waters of the U.S.	Waters of the State	PUB (acres)	PAB (acres)	PEM (acres)	PSS (acres)	PFO (acres)	
S5W007	x	x			0.03			0.03
S5W010	x	x	0.05					0.05
S5W011		x			0.01			0.01
S5W021	x	x			0.13			0.13
S5W024	x	x			0.02	0.01		0.03
S5W053		x	0.71					0.71
S5W061	x	x	0.08					0.08
S5W062	x	x		0.20			0.33	0.53
S5W063	x	x			1.22		0.60	1.82
S5W065	x	x					0.71	0.71
S5W066	x	x			0.15			0.15
S5W067	x	x	2.88					2.88
S5W068	x	x			0.16			0.16
S5W069	x	x		0.20	0.29	0.07		0.56
S5W070	x	x			0.49		3.76	4.25
S5W071	x	x					0.05	0.05
S5W079	x	x	0.46					0.46
S5W091	x	x				0.88		0.88
S5W104	x	x			0.25			0.25
S5W109	x	x				0.38		0.38
S5W119	x	x			0.05			0.05
S5W120	x	x			0.02			0.02
S5W121	x	x			0.04			0.04
S5W122	x	x			0.28			0.28
S5W123	x	x			0.12			0.12
S5W124	x	x			0.13			0.13
S5W125	x	x			1.30		1.17	2.47
S5W126	x	x					1.37	1.37
S5W127	x	x					0.44	0.44
S5W128	x	x					0.32	0.32
S5W145	x	x			0.06			0.06



Table 4: Wetlands and Ponds Identified for Alternative 5

Wetland ID	Jurisdiction		Cowardin et al. (1979) Classification					Total (acres)
	Waters of the U.S.	Waters of the State	PUB (acres)	PAB (acres)	PEM (acres)	PSS (acres)	PFO (acres)	
S5W146	x	x					0.14	0.14
S5W147	x	x					0.23	0.23
S5W148	x	x			0.08			0.08
S5W149	x	x			0.37			0.37
Waters of the US Wetland Impacts								16.05
Waters of the US Pond Impacts								3.47
Waters of the US Total Impacts								19.52
Waters of the State Wetland Impacts								16.06
Waters of the State Pond Impacts								4.18
Waters of the State Total Impacts								20.24

4.4.3 Potential Impacts for Alternative 6

Alternative 6 would result in impacts to 24 wetland complexes (excluding PUB ponds) totaling 10.96 acres. Of this, 10.95 acres are Waters of the U.S. under USACE jurisdiction, with the remaining 0.01 acre solely under IDEM jurisdiction. Alternative 6 would impact 3 ponds totaling 5.38 acres. All three ponds are Waters of the U.S. **Table 5** provides a summary of wetlands and ponds potentially impacted by the construction limits for Alternative 6.

Table 5: Wetlands and Ponds Identified for Alternative 6

Wetland ID	Jurisdiction		Cowardin et al. (1979) Classification					Total (acres)
	Waters of the U.S.	Waters of the State	PUB (acres)	PAB (acres)	PEM (acres)	PSS (acres)	PFO (acres)	
S5W011		x			0.01			0.01
S5W021	x	x			0.13			0.13
S5W062	x	x		0.06			0.13	0.19
S5W063	x	x			1.22		0.60	1.82
S5W065	x	x					0.71	0.71
S5W066	x	x			0.12			0.12
S5W067	x	x	2.88					2.88
S5W068	x	x			0.16			0.16
S5W069	x	x		0.11	0.30	0.09	0.05	0.55
S5W070	x	x			0.49		3.63	4.12
S5W071	x	x					0.02	0.02



Wetland ID	Jurisdiction		Cowardin et al. (1979) Classification					Total (acres)
	Waters of the U.S.	Waters of the State	PUB (acres)	PAB (acres)	PEM (acres)	PSS (acres)	PFO (acres)	
S5W072	x	x	0.37					0.37
S5W080	x	x					0.01	0.01
S5W088	x	x	2.13					2.13
S5W091	x	x				0.88		0.88
S5W109	x	x				0.12		0.12
S5W119	x	x			0.05			0.05
S5W120	x	x			0.06			0.06
S5W121	x	x			0.04			0.04
S5W122	x	x			0.01			0.01
S5W123	x	x			0.02			0.02
S5W125	x	x			0.69		0.21	0.9
S5W127	x	x					0.35	0.35
S5W145	x	x			0.06			0.06
S5W146	x	x					0.01	0.01
S5W148	x	x			0.08			0.08
S5W149	x	x			0.50		0.04	0.54
Waters of the US Wetland Impacts								10.95
Waters of the US Pond Impacts								5.38
Waters of the US Total Impacts								16.33
Waters of the State Wetland Impacts								10.96
Waters of the State Pond Impacts								5.38
Waters of the State Total Impacts								16.34

4.4.4 Potential Impacts for Alternative 7

Alternative 7 would result in impacts to 24 wetland complexes (excluding PUB ponds) totaling 5.18 acres. Of these, 5.17 acres are Waters of the U.S. under USACE jurisdiction, with the remaining 0.01 acre solely under IDEM jurisdiction. Alternative 7 would impact 3 ponds totaling 9.45 acres. Of these, 2 are Waters of the U.S. totaling 9.40 acres. The remaining isolated pond is 0.05 acre and would fall under IDEM jurisdiction. **Table 6** provides a summary of wetlands and ponds potentially impacted by the construction limits for Alternative 7.



Wetland ID	Jurisdiction		Cowardin et al. (1979) Classification					Total (acres)
	Waters of the U.S.	Waters of the State	PUB (acres)	PAB (acres)	PEM (acres)	PSS (acres)	PFO (acres)	
S5W011		x			0.01			0.01
S5W014b	x	x	7.27					7.27
S5W021	x	x			0.13			0.13
S5W062	x	x					0.11	0.11
S5W063	x	x			0.58		0.18	0.76
S5W065	x	x					0.18	0.18
S5W066	x	x			0.08			0.08
S5W068	x	x			0.08			0.08
S5W069	x	x			0.30	0.08		0.38
S5W070	x	x					0.48	0.48
S5W088	x	x	2.13					2.13
S5W091	x	x				0.88		0.88
S5W095	x	x					0.01	0.01
S5W097		x	0.05					0.05
S5W109	x	x				0.15		0.15
S5W119	x	x			0.05			0.05
S5W120	x	x			0.06			0.06
S5W121	x	x			0.04			0.04
S5W122	x	x			0.01			0.01
S5W125	x	x			0.62		0.09	0.71
S5W127	x	x					0.16	0.16
S5W128	x	x					0.21	0.21
S5W145	x	x			0.01			0.01
S5W146	x	x					0.11	0.11
S5W147	x	x					0.11	0.11
S5W148	x	x			0.08			0.08
S5W149	x	x			0.38			0.38
Waters of the US Wetland Impacts								5.17
Waters of the US Pond Impacts								9.40
Waters of the US Total Impacts								14.57
Waters of the State Wetland Impacts								5.18
Waters of the State Pond Impacts								9.45
Waters of the State Total Impacts								14.63



4.4.5 Potential Impacts for Alternative 8

Alternative 8 would result in impacts to 24 wetland complexes (excluding PUB ponds) totaling 9.96 acres. Of this 9.95 acres are Waters of the U.S. under USACE jurisdiction, with the remaining 0.01 acre solely under IDEM jurisdiction. Alternative 8 would impact 2 ponds totaling 2.50 acres. Both of these ponds are Waters of the U.S. **Table 7** provides a summary of wetlands and ponds potentially impacted by the construction limits for Alternative 8.

Table 7: Wetlands and Ponds Identified for Alternative 8								
Wetland ID	Jurisdiction		Cowardin et al. (1979) Classification					Total (acres)
	Waters of the U.S.	Waters of the State	PUB (acres)	PAB (acres)	PEM (acres)	PSS (acres)	PFO (acres)	
S5W011		x			0.01			0.01
S5W021	x	x			0.13			0.13
S5W062	x	x		0.08			0.19	0.27
S5W063	x	x			1.17		0.60	1.77
S5W065	x	x					0.71	0.71
S5W066	x	x			0.15			0.15
S5W068	x	x			0.01			0.01
S5W069	x	x		0.06	0.29	0.07		0.42
S5W070	x	x			0.39		2.79	3.18
S5W072	x	x	0.37					0.37
S5W088	x	x	2.13					2.13
S5W091	x	x				0.88		0.88
S5W109	x	x				0.12		0.12
S5W119	x	x			0.05			0.05
S5W120	x	x			0.04			0.04
S5W121	x	x			0.04			0.04
S5W122	x	x			0.01			0.01
S5W123	x	x			0.01			0.01
S5W125	x	x			0.68		0.21	0.89
S5W127	x	x					0.35	0.35
S5W128	x	x					0.21	0.21
S5W145	x	x			0.06			0.06
S5W146	x	x					0.14	0.14
S5W147	x	x					0.07	0.07
S5W148	x	x			0.08			0.08
S5W149	x	x			0.36			0.36



Table 7: Wetlands and Ponds Identified for Alternative 8

Wetland ID	Jurisdiction		Cowardin et al. (1979) Classification					Total (acres)
	Waters of the U.S.	Waters of the State	PUB (acres)	PAB (acres)	PEM (acres)	PSS (acres)	PFO (acres)	
Waters of the US Wetland Impacts								9.95
Waters of the US Pond Impacts								2.50
Waters of the US Total Impacts								12.45
Waters of the State Wetland Impacts								9.96
Waters of the State Pond Impacts								2.50
Waters of the State Total Impacts								12.46

4.4.6 Potential Impacts for Refined Preferred Alternative 8

Refined Alternative 8 would result in impacts to 21 wetland complexes (excluding PUB ponds) totaling 3.43 acres. Of this 3.42 acres are Waters of the U.S. under USACE jurisdiction, with the remaining 0.01 acre solely under IDEM jurisdiction. Refined Preferred Alternative 8 would impact 1 pond totaling 7.27 acres. This pond is a Waters of the U.S. **Table 8** provides a summary of wetlands and ponds potentially impacted by the construction limits for Refined Preferred Alternative 8.

Table 8: Wetlands and Ponds Identified for Refined Preferred Alternative 8

Wetland ID	Jurisdiction		Cowardin et al. (1979) Classification					Total (acres)
	Waters of the U.S.	Waters of the State	PUB (acres)	PAB (acres)	PEM (acres)	PSS (acres)	PFO (acres)	
S5W011		x			0.01			0.01
S5W014	x	x	7.27					7.27
S5W021	x	x			0.13			0.13
S5W062	x	x		0.02			0.13	0.15
S5W066	x	x			0.12			0.12
S5W068	x	x			0.01			0.01
S5W069	x	x			0.29	0.04		0.33
S5W070	x	x			0.14		0.02	0.16
S5W091	x	x				0.88		0.88
S5W109	x	x				0.12		0.12
S5W119	x	x			0.05			0.05
S5W120	x	x			0.06			0.06
S5W121	x	x			0.04			0.04
S5W122	x	x			0.01			0.01



Table 8: Wetlands and Ponds Identified for Refined Preferred Alternative 8								
Wetland ID	Jurisdiction		Cowardin et al. (1979) Classification					Total (acres)
	Waters of the U.S.	Waters of the State	PUB (acres)	PAB (acres)	PEM (acres)	PSS (acres)	PFO (acres)	
S5W125	x	x			0.43		0.05	0.48
S5W127	x	x					0.10	0.10
S5W128	x	x					0.21	0.21
S5W145	x	x			0.06			0.06
S5W146	x	x					0.01	0.01
S5W147	x	x					0.07	0.07
S5W148	x	x			0.08			0.08
S5W149	x	x			0.35			0.35
Waters of the US Wetland Impacts								3.42
Water of the US Pond Impacts								7.27
Waters of the US Total Impacts								10.69
Waters of the State Wetland Impacts								3.43
Waters of the State Pond Impacts								7.27
Waters of the State Total Impacts								10.70

4.5 Wetland Avoidance and Minimization Measures

Surface water avoidance and minimization measures were implemented during the I-69 Tier 1 study, which culminated in the selection of the Preferred Alternative 3C Corridor. The Preferred Alternative 3C Corridor is centered on the existing SR 37 alignment between Bloomington and Indianapolis, which includes the entire Section 5 Study Corridor. The Study Corridor is located within an area that has already been impacted by a transportation facility (SR 37), and avoids high quality wetlands, including those within the Beanblossom Bottoms Nature Preserve (located west of the Study Corridor).

All of the alternatives include a six-lane urban and four-lane rural facility utilizing the existing SR 37 right-of-way and significant portions of the existing 4-lane SR 37 pavement, grade, and structures. The use of existing SR 37 and the presence of linear wetlands located both on and adjacent to existing INDOT right-of-way limits opportunities for avoidance of wetlands impacts in the Section 5 corridor. In order to evaluate proposed access to the proposed interstate highway, detailed traffic studies were used to determine the location and types of interchanges and frontage roads necessary to maintain local travel patterns. Wetland avoidance and minimization measures conducted in Tier 2 included using the wetland determinations and quality evaluations to assist in determining the locations of minor mainline shifts, types of travel lane upgrades, and locations and types of interchanges and frontage roads.



In general, the Alternatives Carried Forward for Detailed Analysis resulted in relatively small impacts on small and disjunct wetlands that are located in areas that could not be successfully farmed within the Beanblossom Creek, Bryant Creek, and Indian Creek floodplains.

The highest concentration of Study Corridor wetlands are located in the Beanblossom Creek floodplain, and include disjunct forested/emergent wetland complexes ranging from 2 to 30 acres in size. Due to existing and projected travel patterns, an overpass or interchange and frontage roads were proposed for the existing Walnut Street interchange location during the DEIS. In determining avoidance and minimization for wetland impacts, a partial interchange at Walnut Street was evaluated. FHWA approved an interchange justification for use of a partial interchange at Walnut Street. In doing so, the frontage roads and interchange were modified to reduce impacts to wetlands within the Beanblossom floodplain. Refined Preferred Alternative 8 was a result of this change. Where practicable, large forested wetland complexes were either avoided, or if avoidance was not possible, the interchange/frontage road configurations were designed to impact the edges rather than the centers of the wetland complexes.



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5.0 Summary

Thirty-three (33) wetland complexes (each comprised of one or more community type polygons) and 10 PUB features (i.e. ponds) were located within the construction limits of the Alternatives. Thirty-two (32) of the wetland complexes and eight (8) of the ponds were assessed as Waters of the U.S. subject to USACE jurisdiction. The remaining one (1) wetland and two (2) ponds were determined to be “isolated” and therefore considered to be Waters of the State under the jurisdiction of IDEM only.

No alternative impacts all 43 wetland complexes and open water features found within the construction limits. The number of wetland and open water features impacted by the alternatives vary ranging from 22 to 35. The total area of wetland and open water impacts range from approximately 10.70 acres to 20.24 acres (Refined Preferred Alternative 8 and Alternative 5, respectively). Total impacts for Refined Preferred Alternative 8 are 10.70 acres. The majority of the acreage impacts for the Refined Preferred Alternative 8 are to open water (PUB). Impacts to Waters of the U.S. for the alternatives range from 10.69 acres (Refined Preferred Alternative 8) to 19.52 acres (Alternative 5). Impacts to isolated waters range from 0.01 acre (Alternative 6, 7, 8 and Refined Preferred Alternative 8) to 0.72 acre (Alternatives 4 and 5).

For each Alternative, a summary of wetland impacts by resource type and jurisdiction is provided in **Table 9**. The Waters of the State column includes both Waters of the U.S. and 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 U.S. for each alternative and each wetland class, represents the acreage that is only under IDEM authority.

Table 9: Summary of Jurisdictional Wetlands and Pond Impacts Identified within the 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 4	0.69	1.40	0.20	0.20	3.60	3.61	1.33	1.33	6.56	6.56	12.38	13.10
Alternative 5	3.47	4.18	0.40	0.40	5.19	5.20	1.34	1.34	9.12	9.12	19.52	20.24
Alternative 6	5.38	5.38	0.17	0.17	3.93	3.94	1.09	1.09	5.76	5.76	16.33	16.34
Alternative 7	9.40	9.45	0	0	2.42	2.43	1.11	1.11	1.64	1.64	14.57	14.63
Alternative 8	2.50	2.50	0.14	0.14	3.47	3.48	1.07	1.07	5.27	5.27	12.45	12.46
Refined Preferred Alternative 8	7.27	7.27	0.02	0.02	1.77	1.78	1.04	1.04	0.59	0.59	10.69	10.70



6.0 REFERENCES

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7.0 APPENDICES

Appendix A – Wetland Site Forms

Appendix B – I-69 Wetland Quality Assessment Profile Sheets

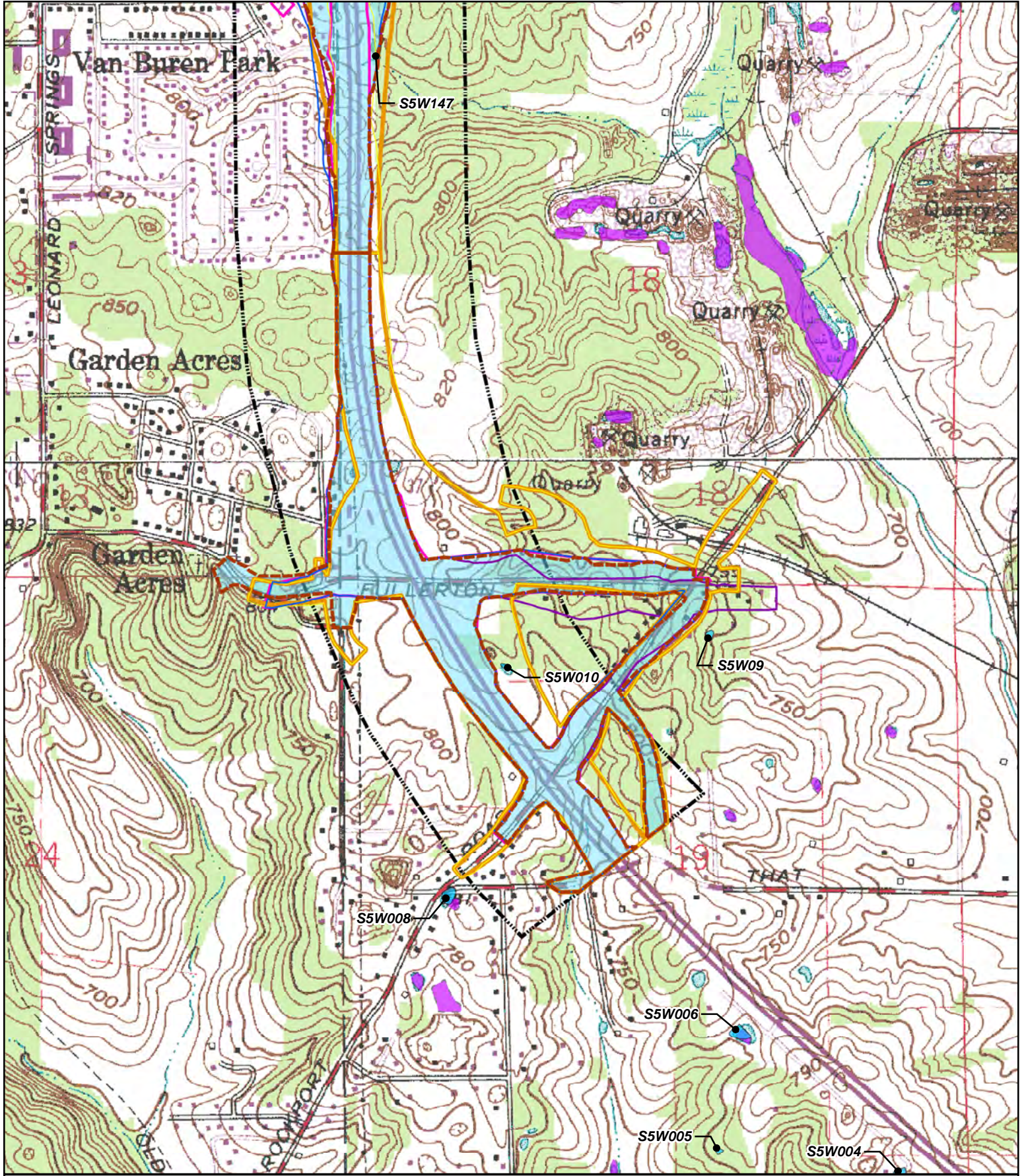
Appendix C – Wetland Matrix for I-69 Alternatives Carried Forward For Further Consideration

Appendix D – InWRAP Data Sheets

Appendix E - Wetland Determination Data Forms



FIGURES

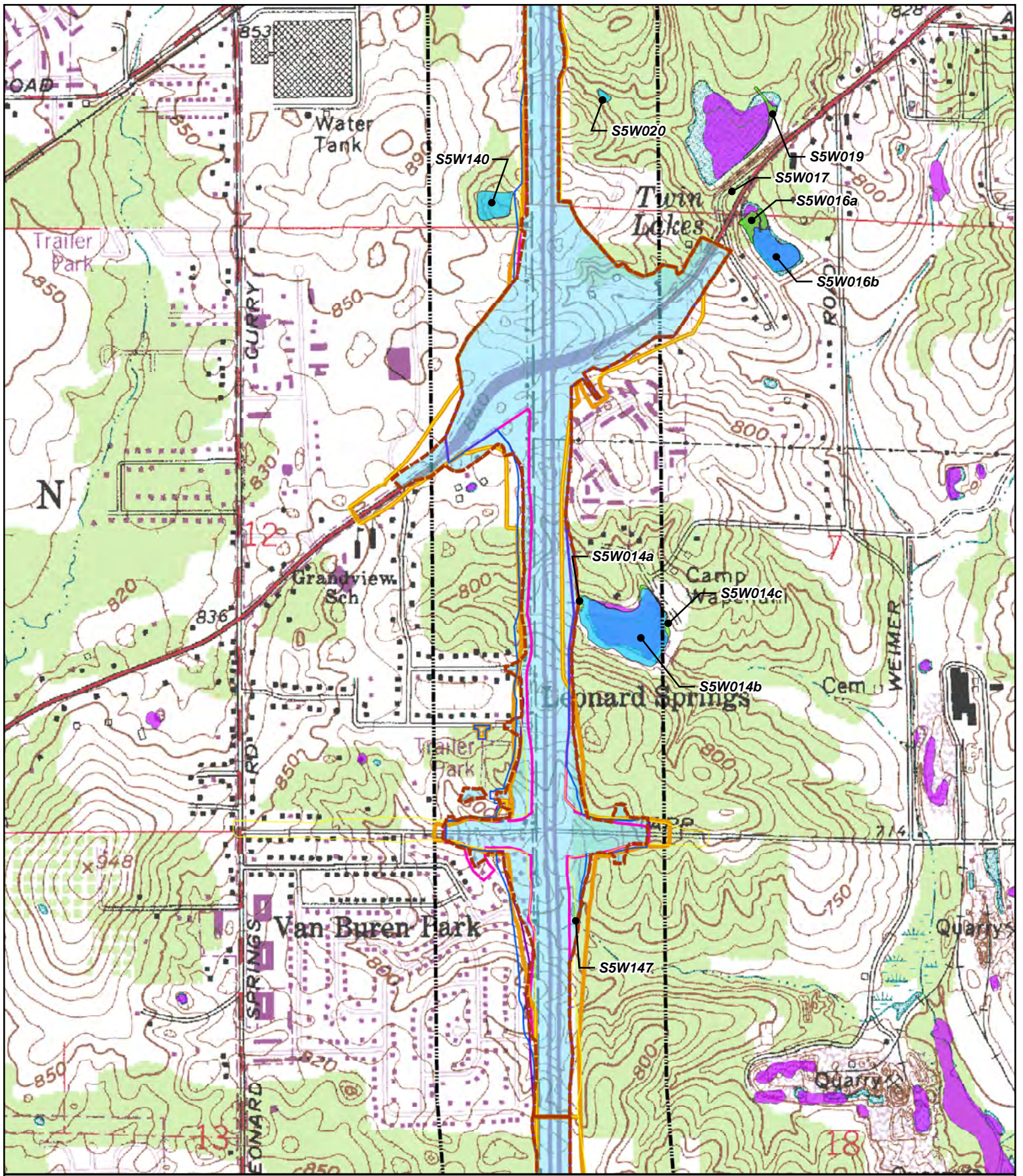


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| Alternative 6 | Forested |
| Alternative 7 | Scrub-Shrub |
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| Section 5 Corridor | |

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Figure 1
I-69 Evansville to Indianapolis
Tier 2 Studies - Section 5
Wetlands in Relation to the Alternatives on USGS Mapping
 (Sheet 1 of 14)



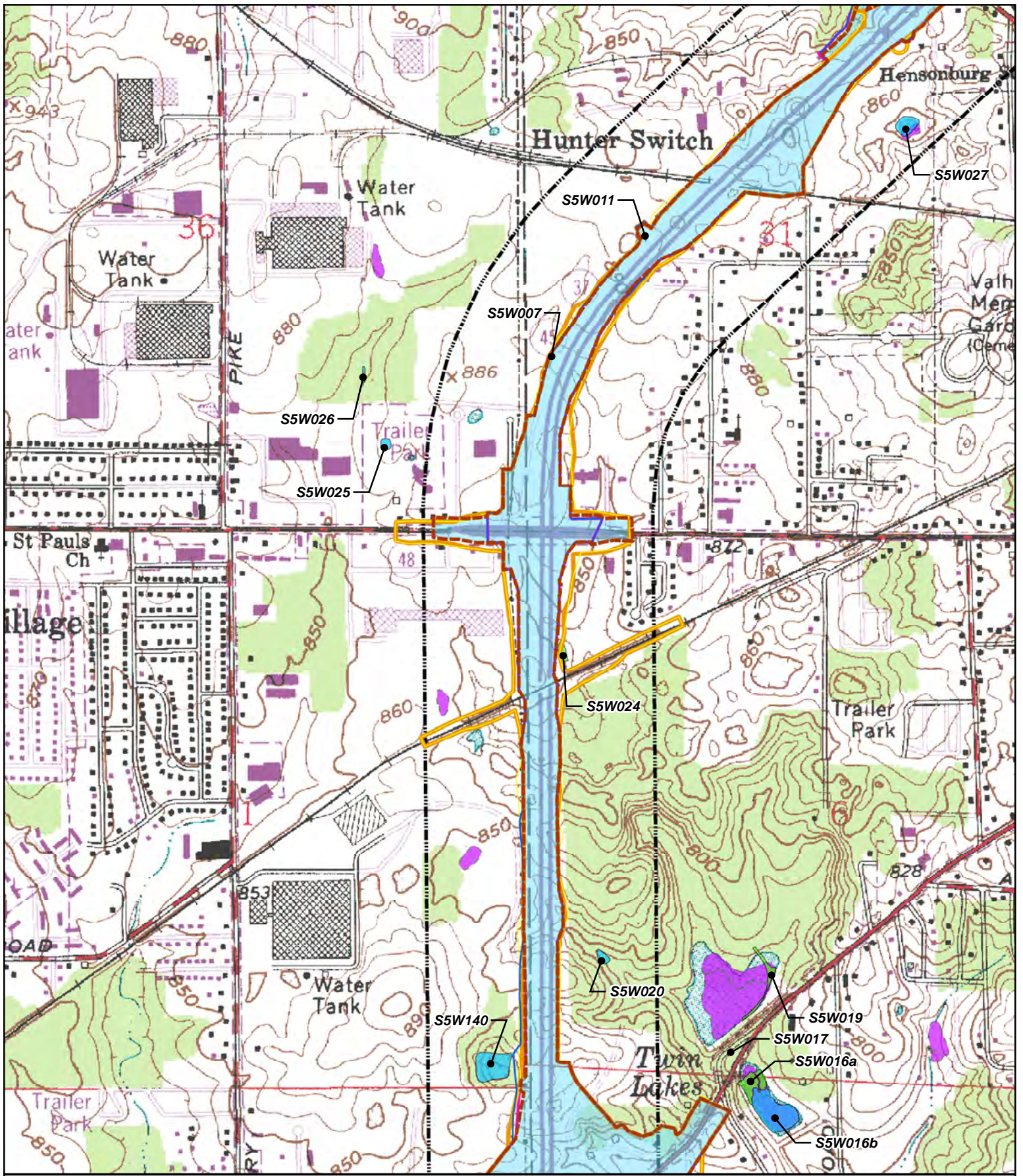


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Figure 1
I-69 Evansville to Indianapolis
Tier 2 Studies - Section 5
Wetlands in Relation to the Alternatives on USGS Mapping
 (Sheet 2 of 14)



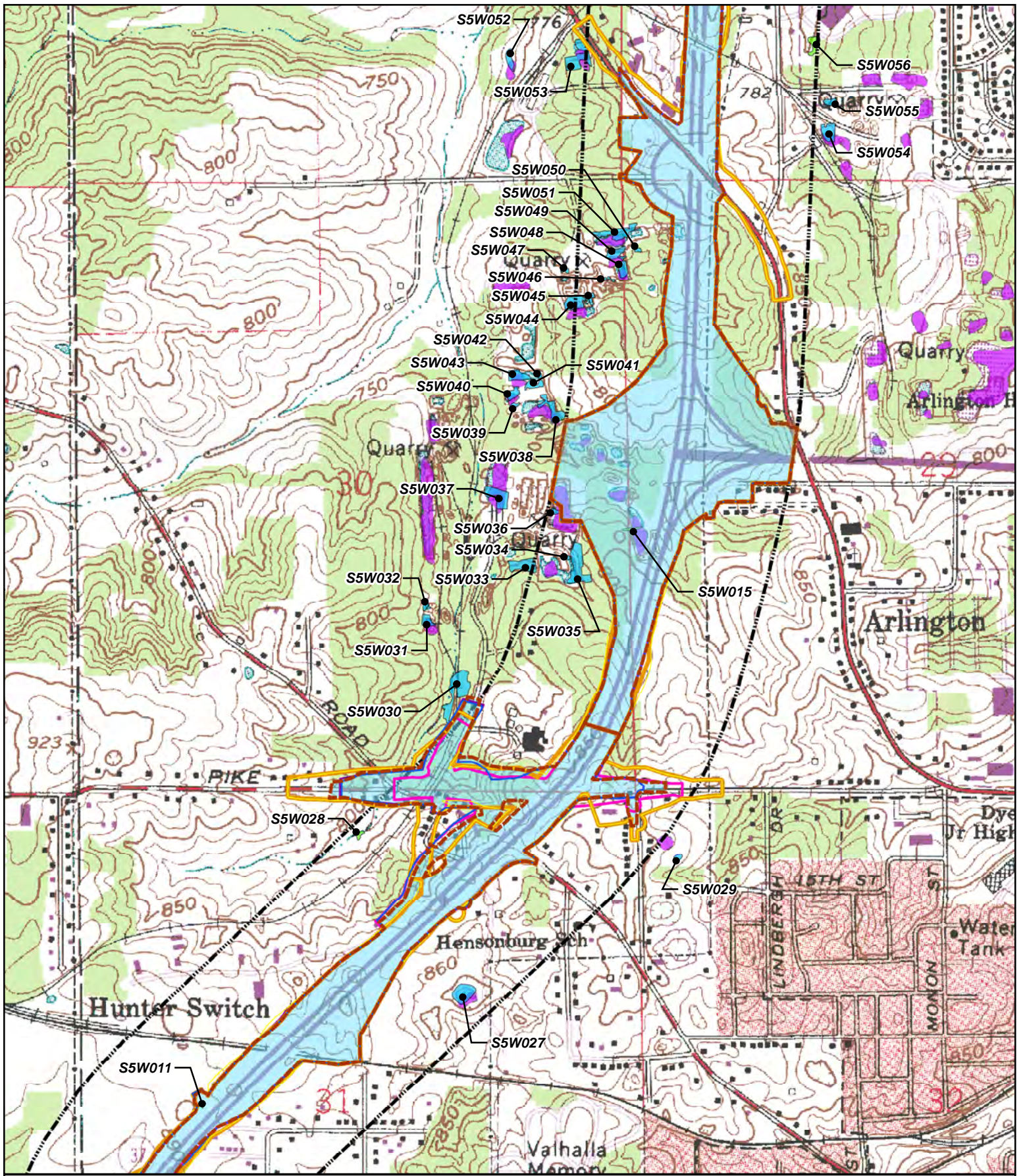


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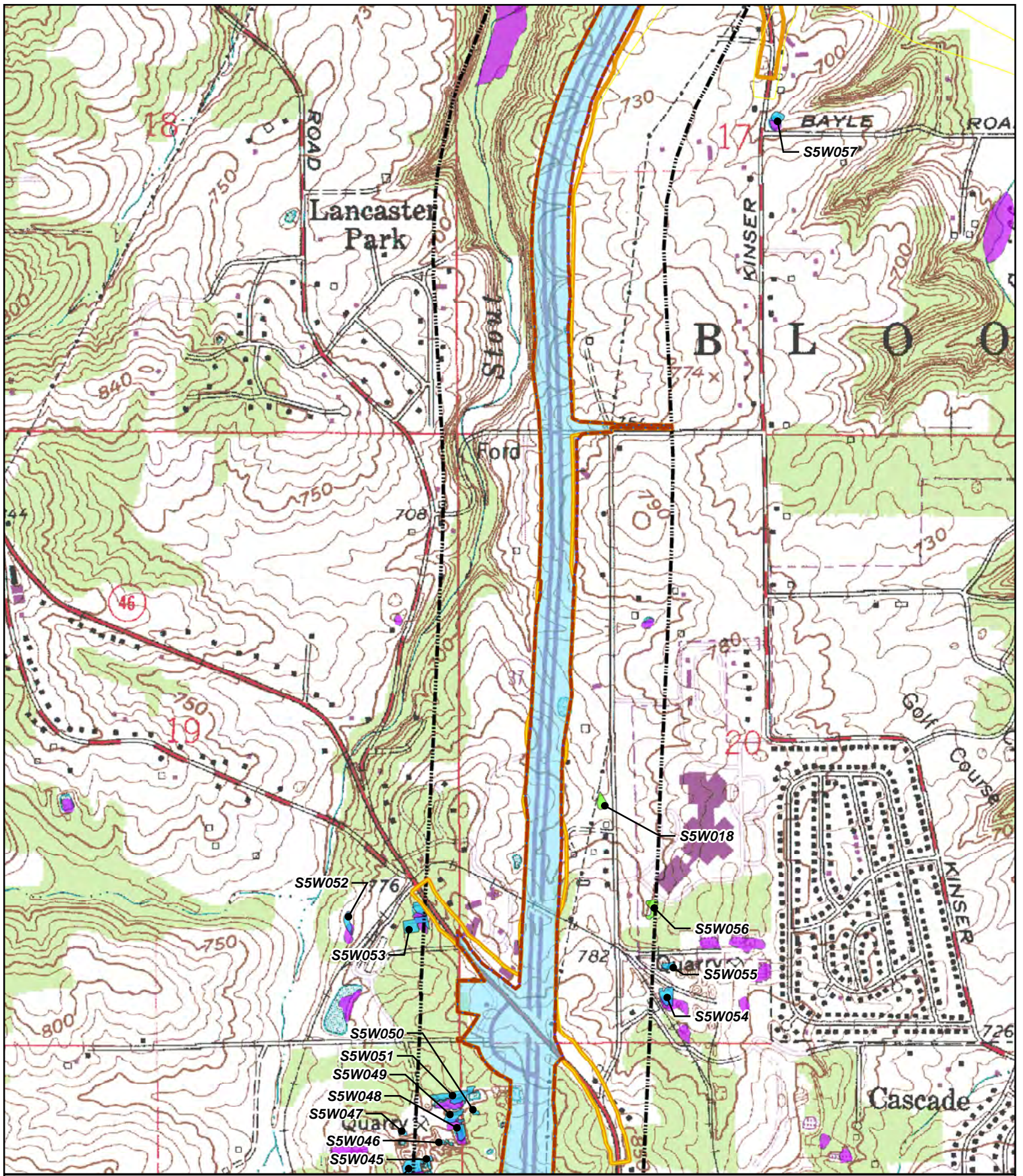
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Tier 2 Studies - Section 5
Wetlands in Relation to the Alternatives on USGS Mapping
 (Sheet 3 of 14)





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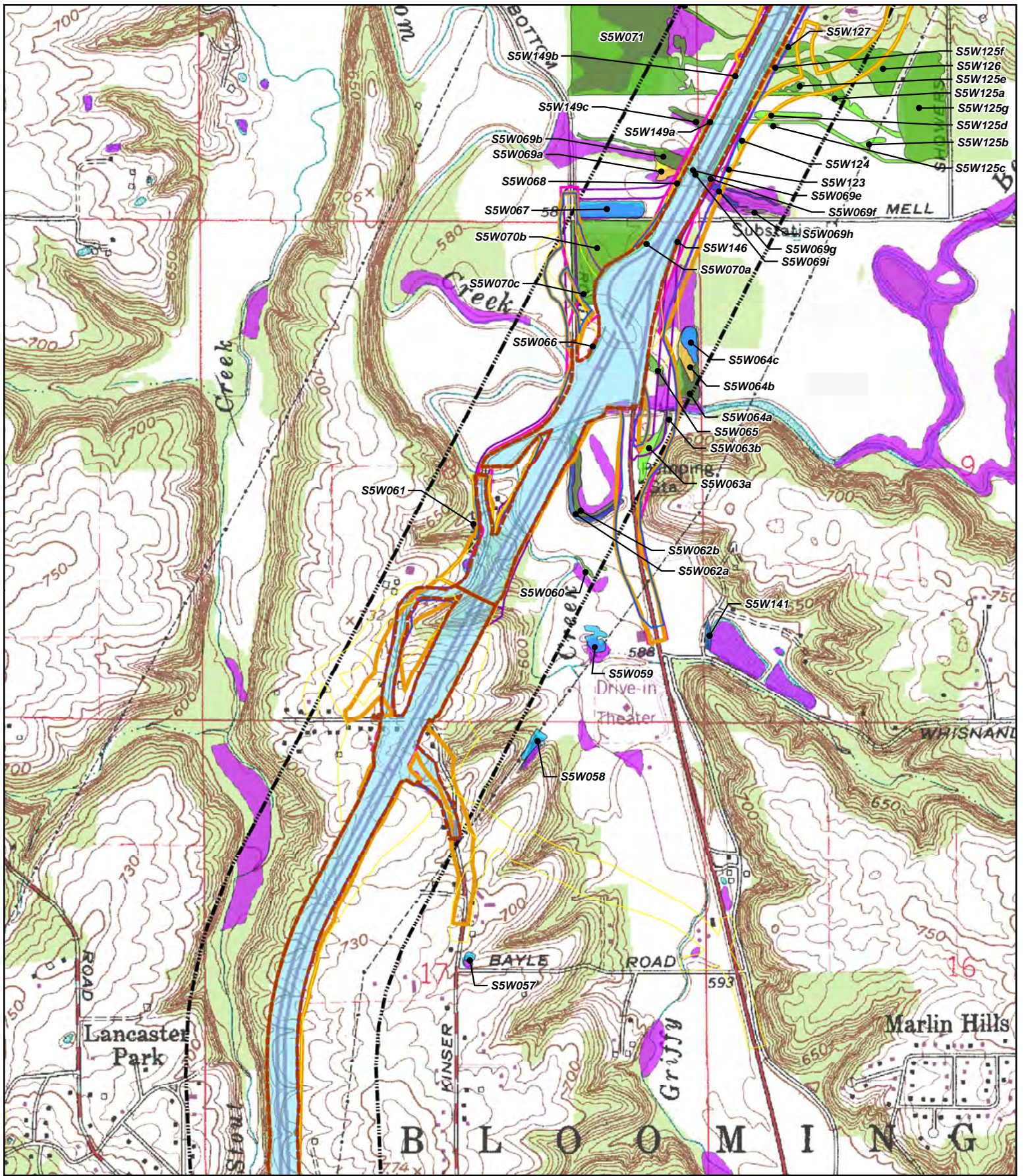
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Tier 2 Studies - Section 5
Wetlands in Relation to the Alternatives on USGS Mapping
 (Sheet 4 of 14)



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Tier 2 Studies - Section 5
Wetlands in Relation to the Alternatives on USGS Mapping
 (Sheet 5 of 14)





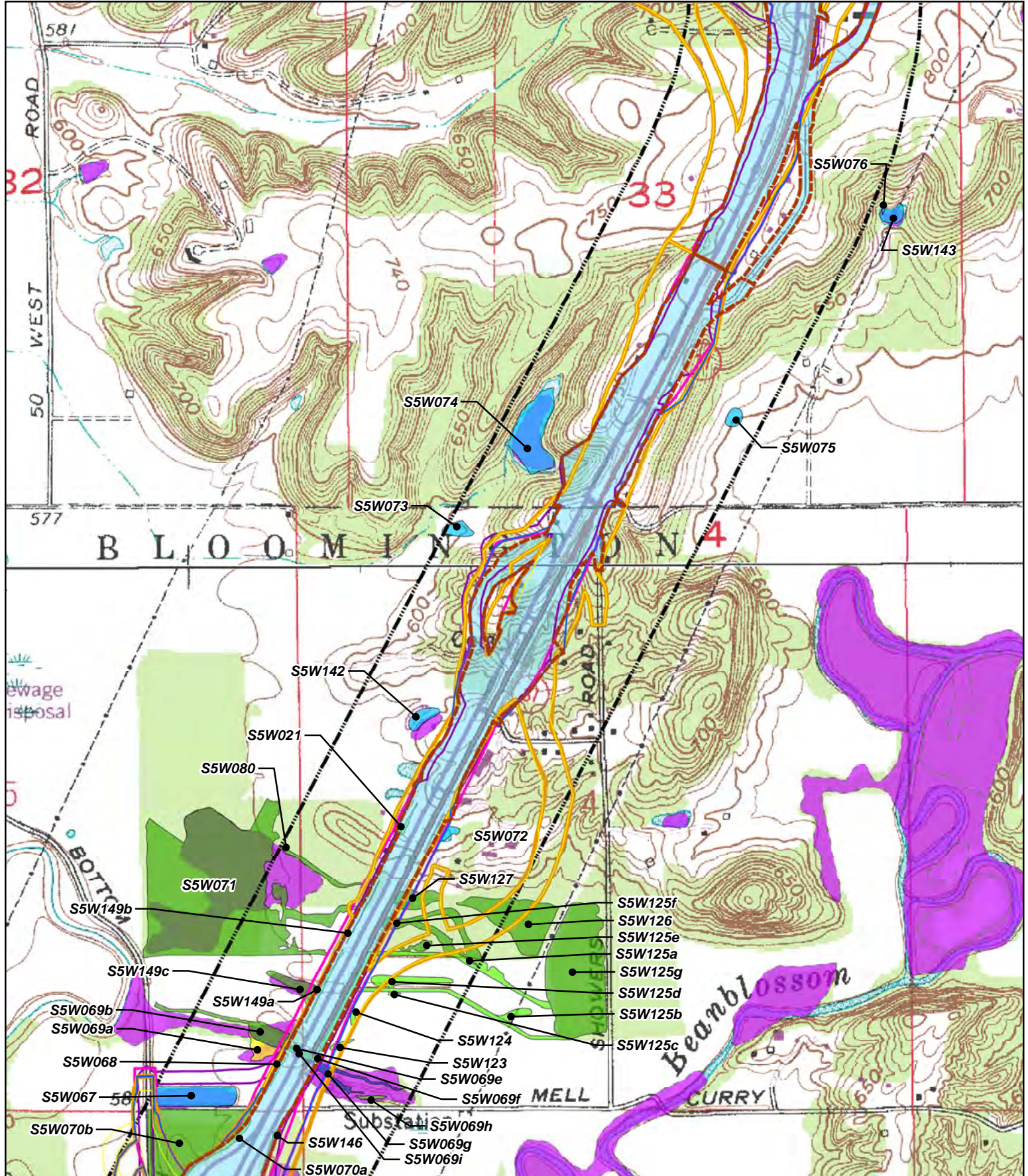
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Figure 1
I-69 Evansville to Indianapolis
Tier 2 Studies - Section 5

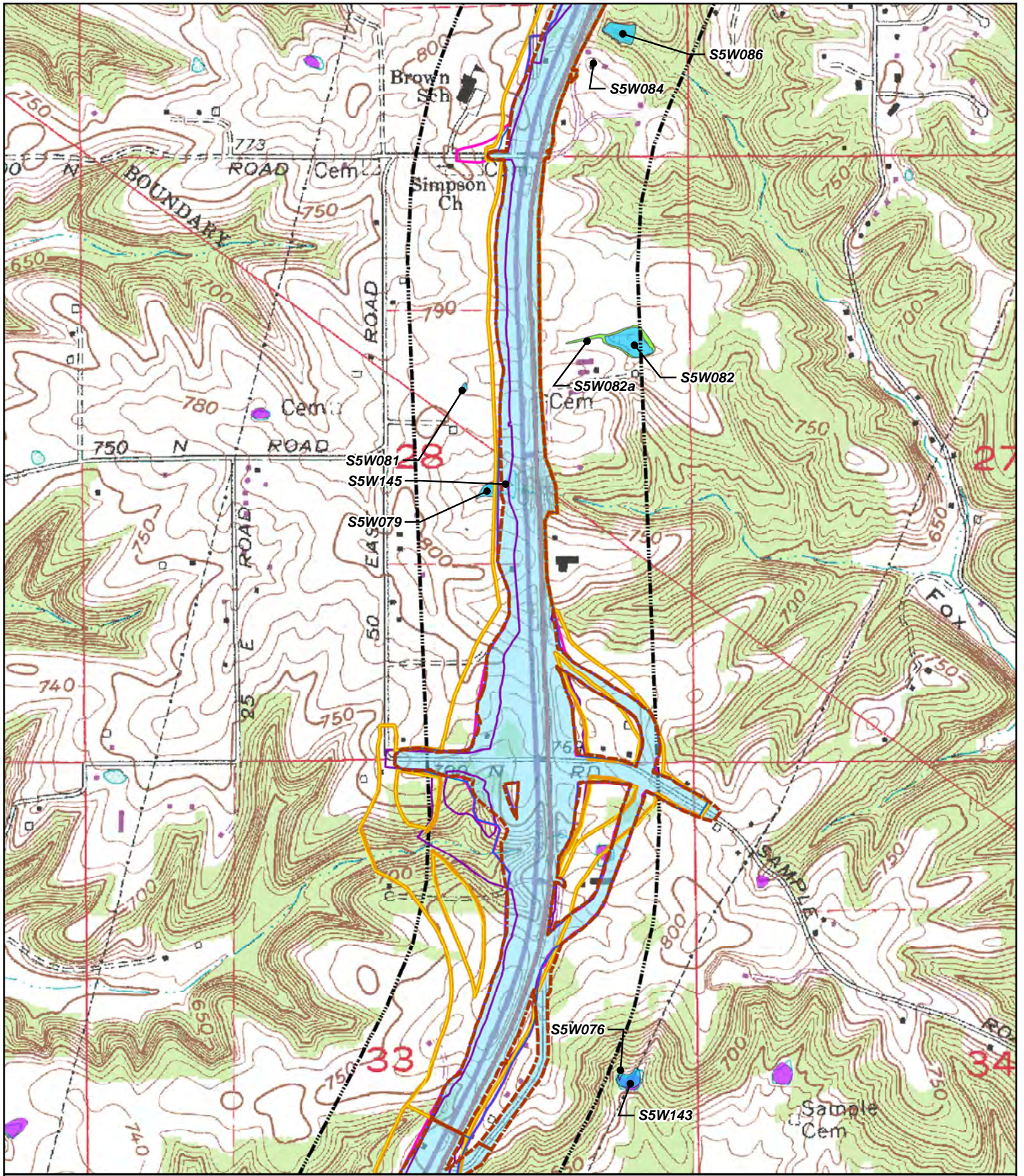
Wetlands in Relation to the Alternatives on USGS Mapping
 (Sheet 6 of 14)





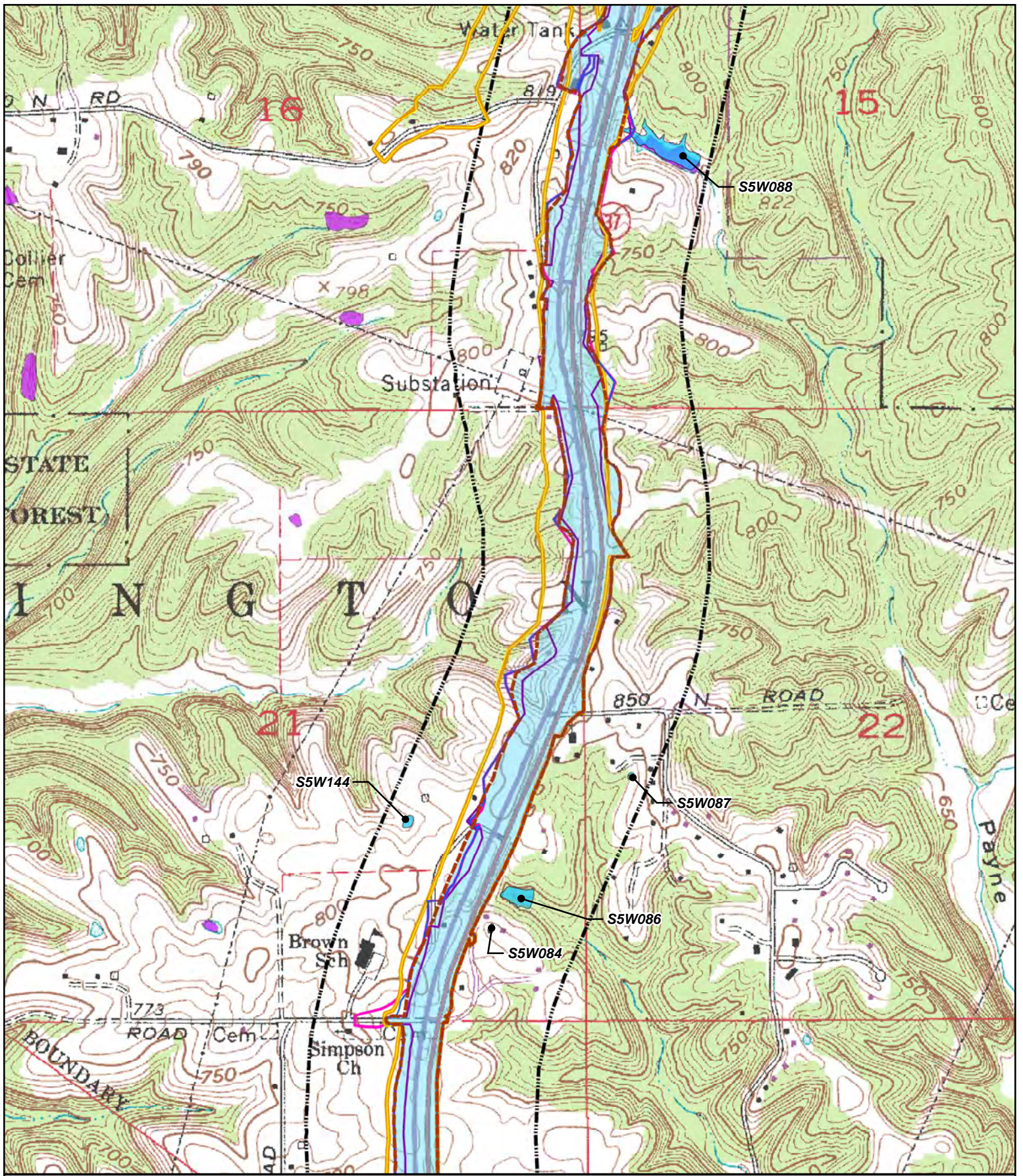
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Figure 1
I-69 Evansville to Indianapolis
Tier 2 Studies - Section 5
Wetlands in Relation to the Alternatives on USGS Mapping
 (Sheet 7 of 14)



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Figure 1
I-69 Evansville to Indianapolis
Tier 2 Studies - Section 5
Wetlands in Relation to the Alternatives on USGS Mapping
 (Sheet 8 of 14)

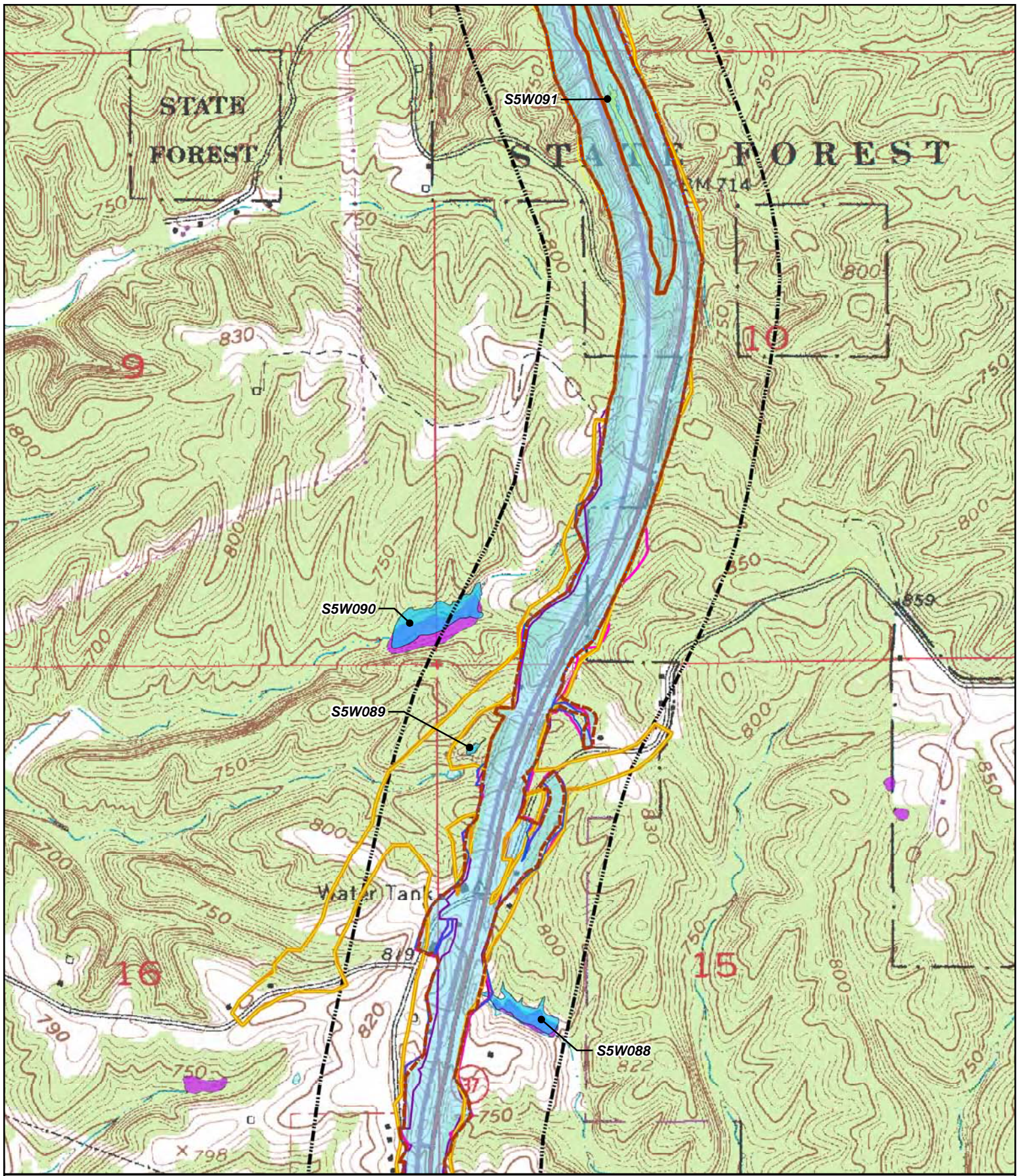


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Figure 1
I-69 Evansville to Indianapolis
Tier 2 Studies - Section 5
Wetlands in Relation to the Alternatives on USGS Mapping
 (Sheet 9 of 14)



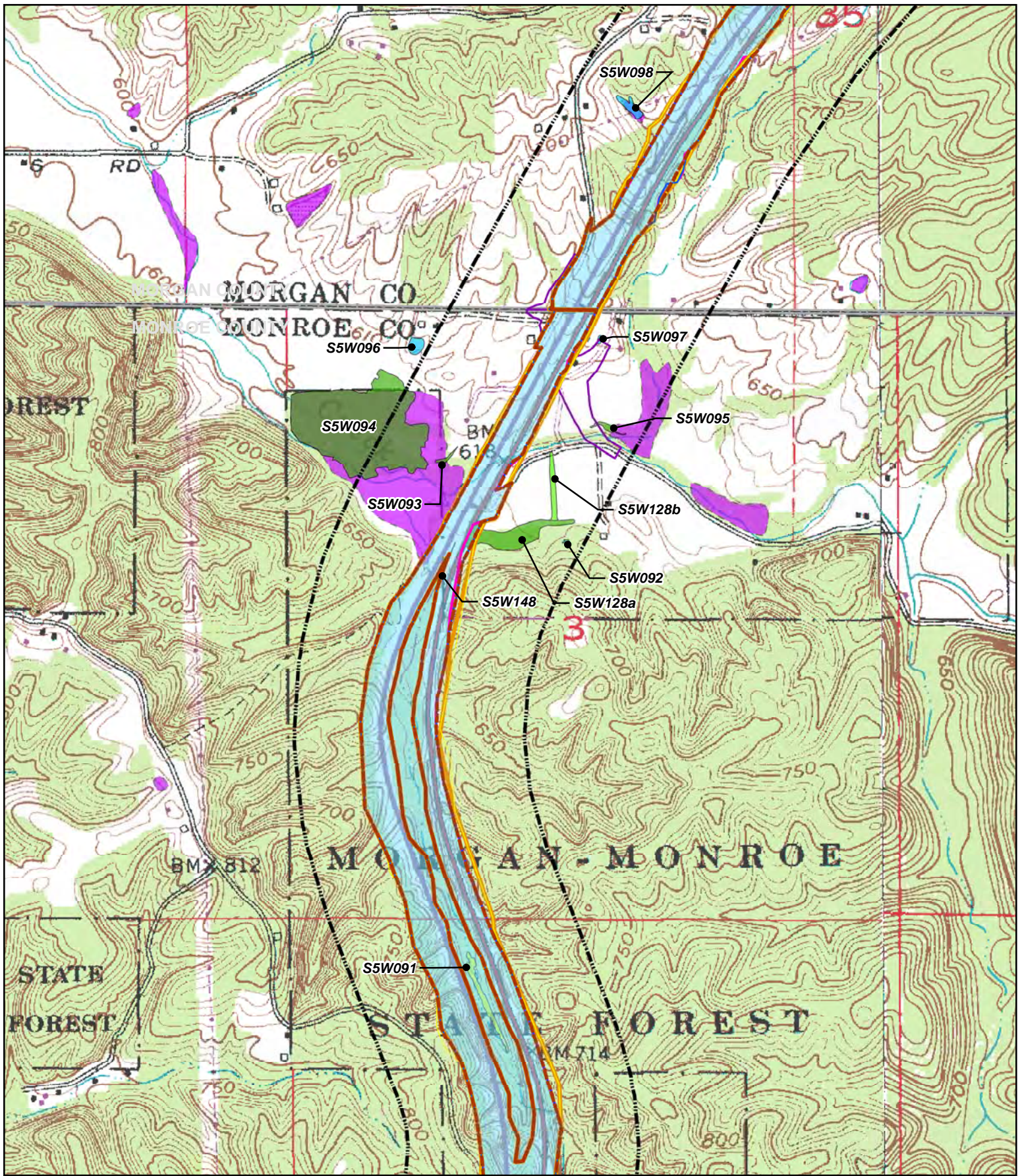


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Tier 2 Studies - Section 5
Wetlands in Relation to the Alternatives on USGS Mapping
 (Sheet 10 of 14)



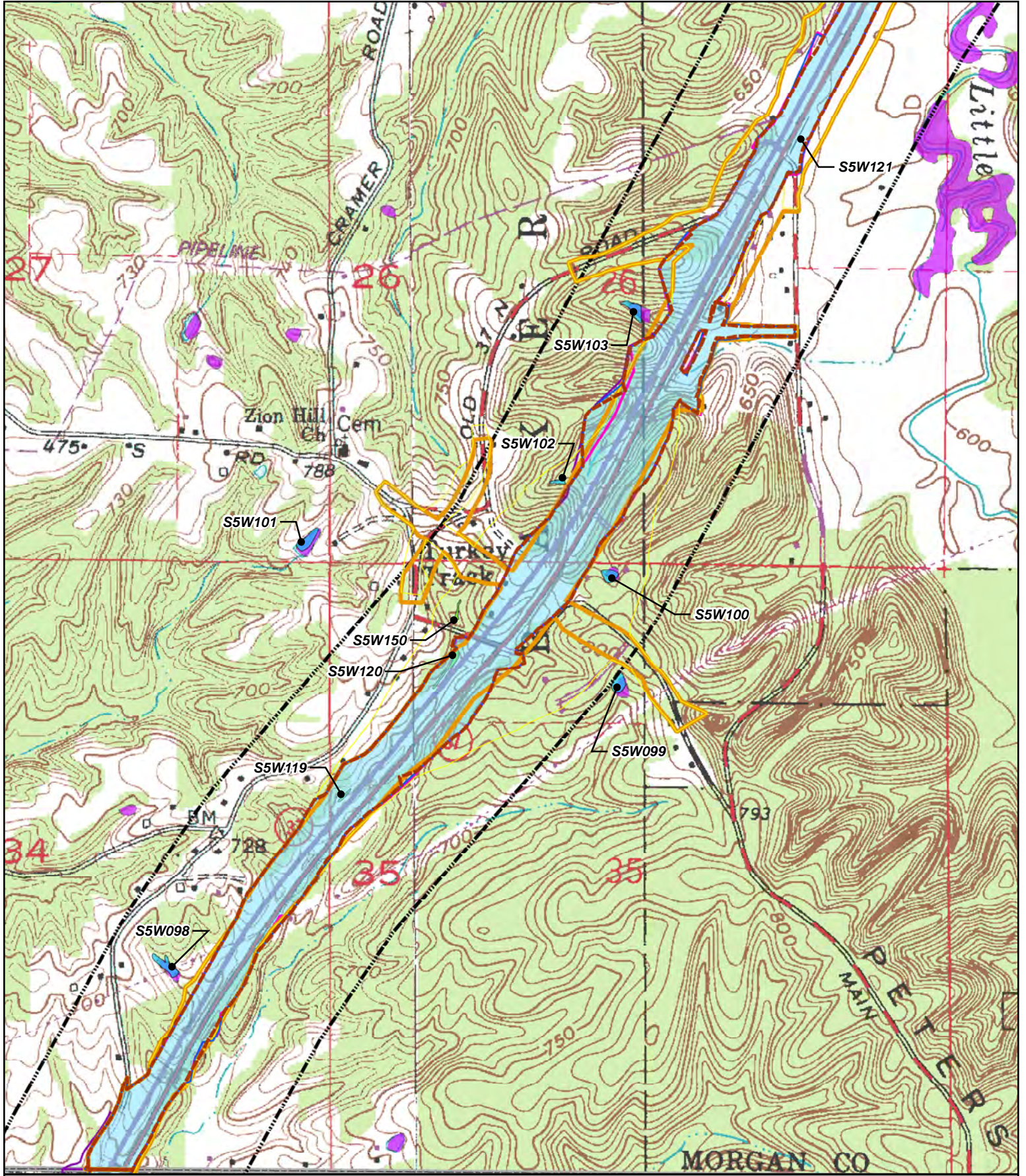


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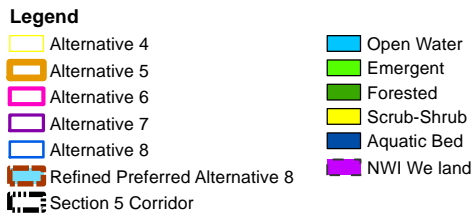
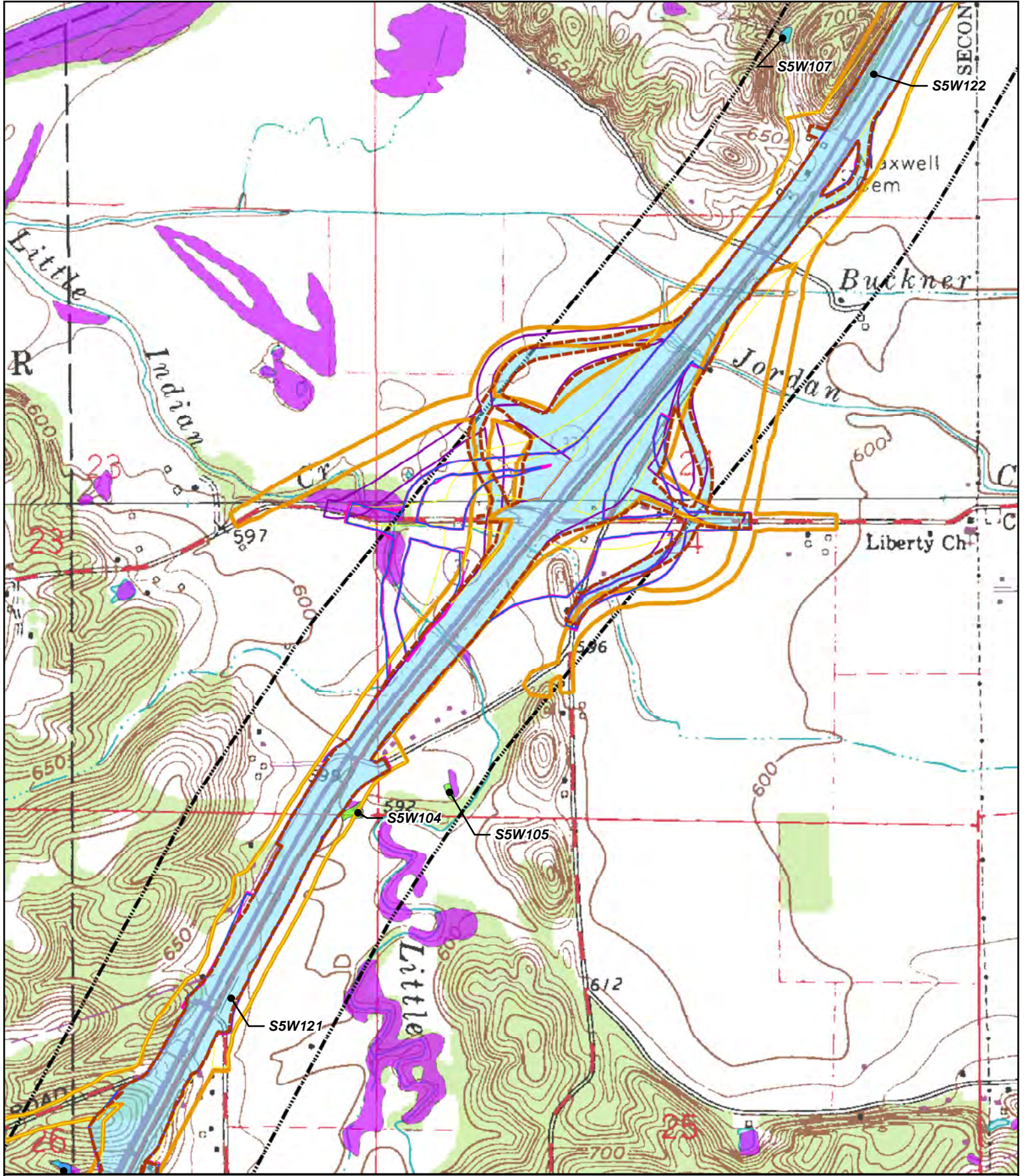
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 (Sheet 11 of 14)





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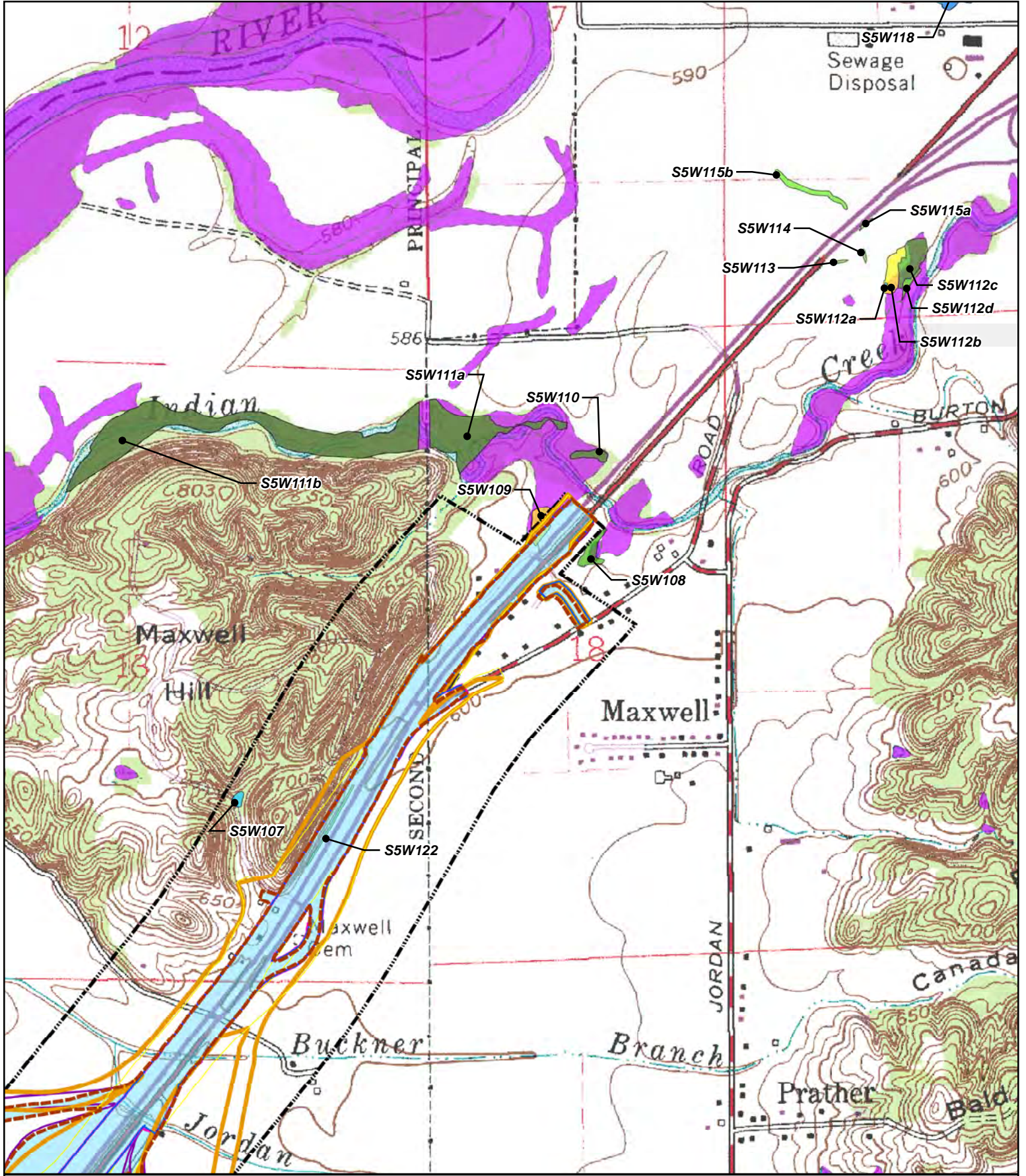
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Tier 2 Studies - Section 5
Wetlands in Relation to the Alternatives on USGS Mapping
 (Sheet 12 of 14)



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Tier 2 Studies - Section 5
Wetlands in Relation to the Alternatives on USGS Mapping
 (Sheet 13 of 14)



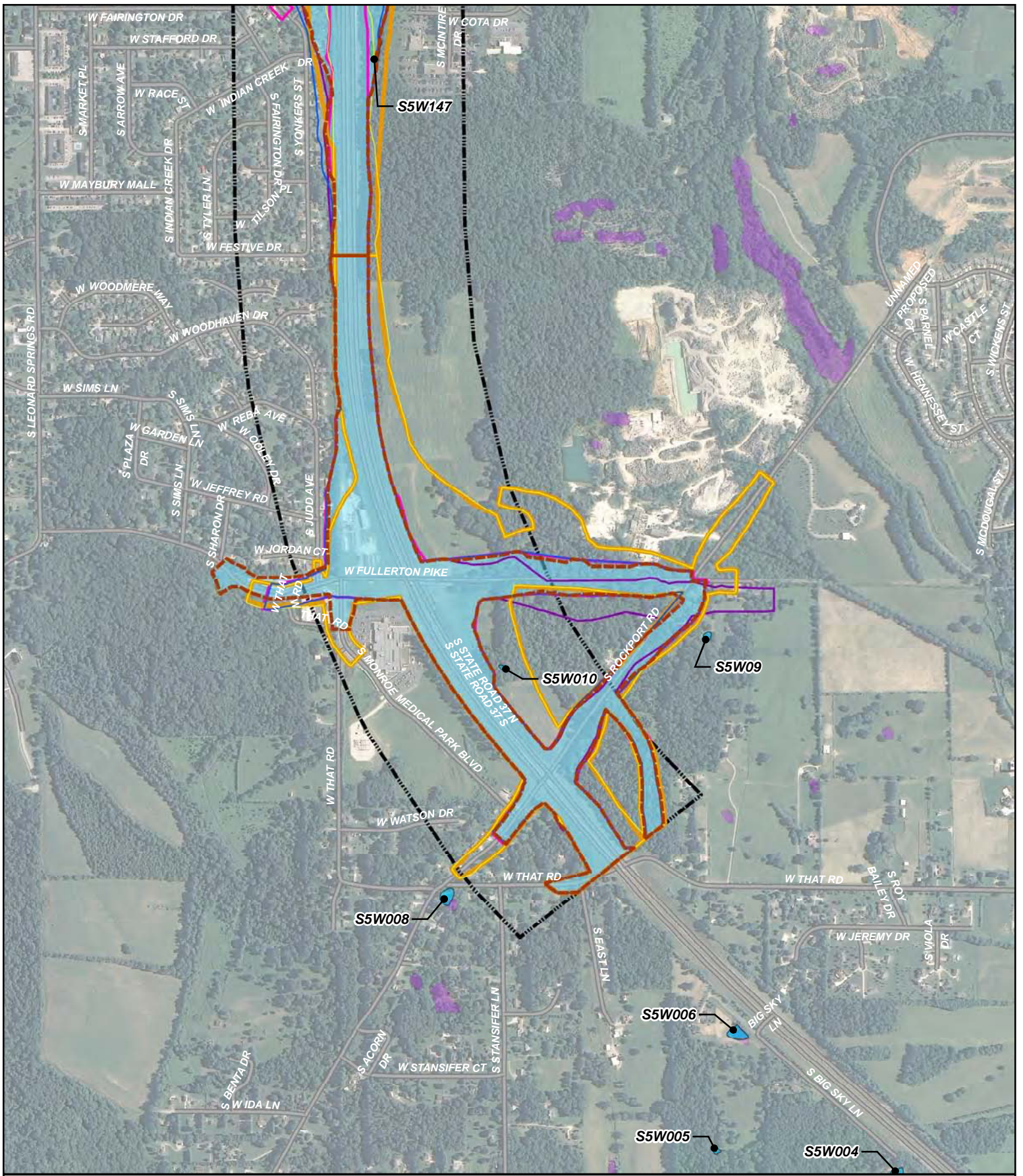


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Figure 1
I-69 Evansville to Indianapolis
Tier 2 Studies - Section 5
Wetlands in Relation to the Alternatives on USGS Mapping
 (Sheet 14 of 14)



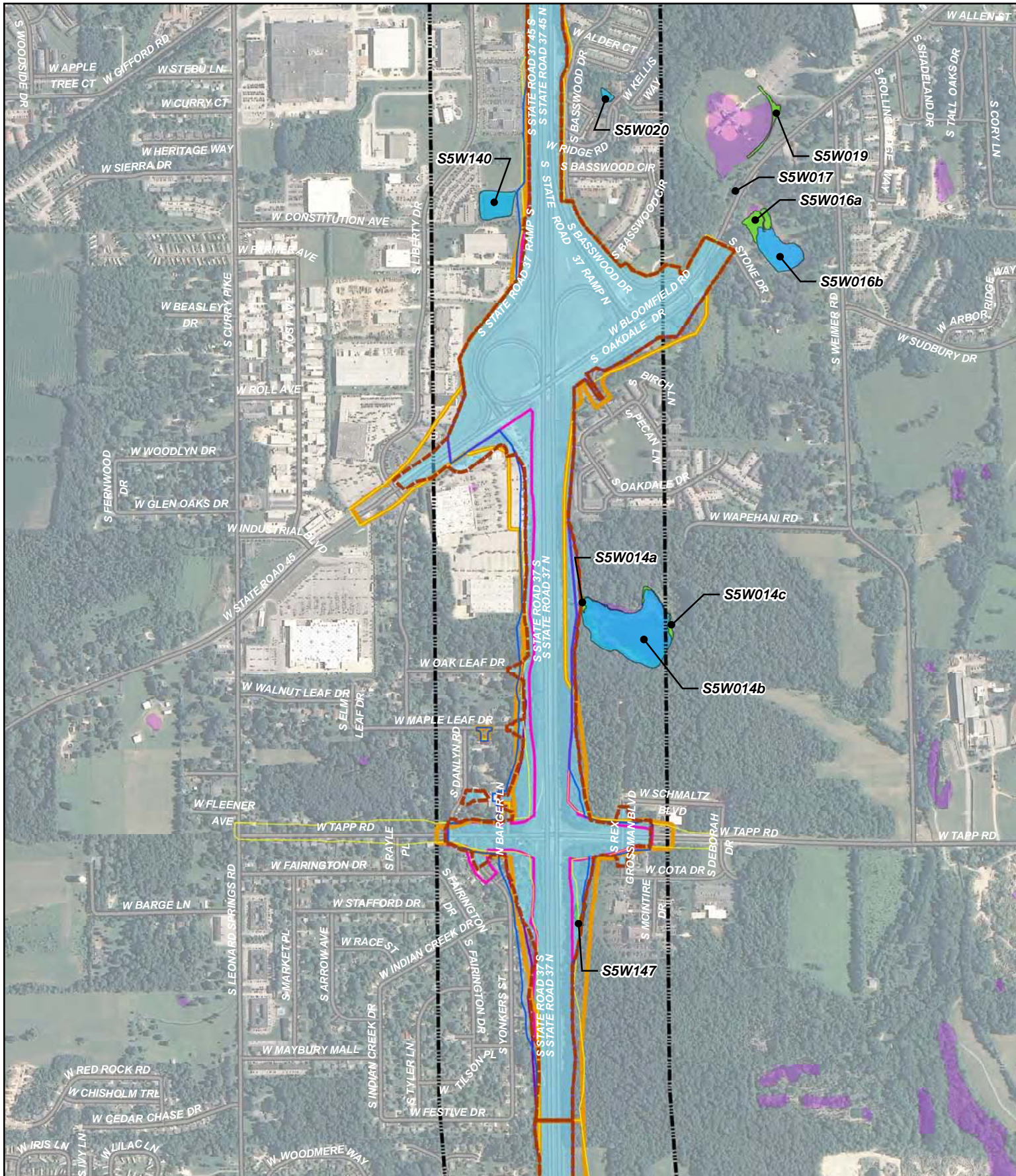


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Figure 2
I-69 Evansville to Indianapolis
Tier 2 Studies - Section 5
Wetlands in Relation to the Alternatives on 2010 Aerial Mapping
(Sheet 1 of 14)





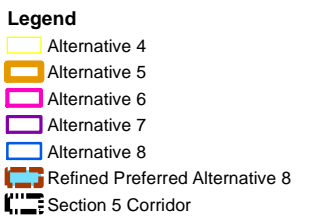
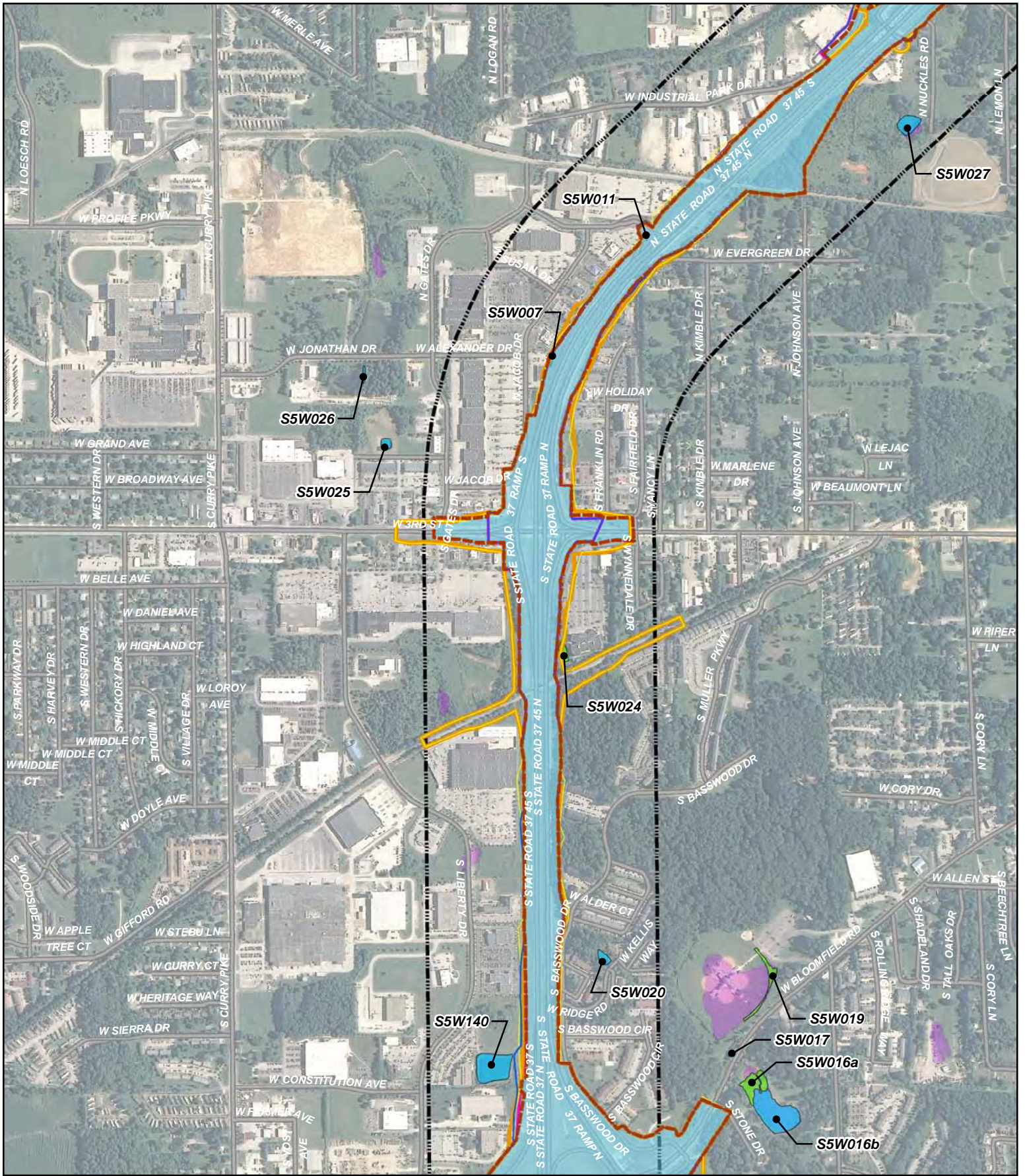
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Figure 2
I-69 Evansville to Indianapolis
Tier 2 Studies - Section 5

Wetlands in Relation to the Alternatives on 2010 Aerial Mapping
 (Sheet 2 of 14)



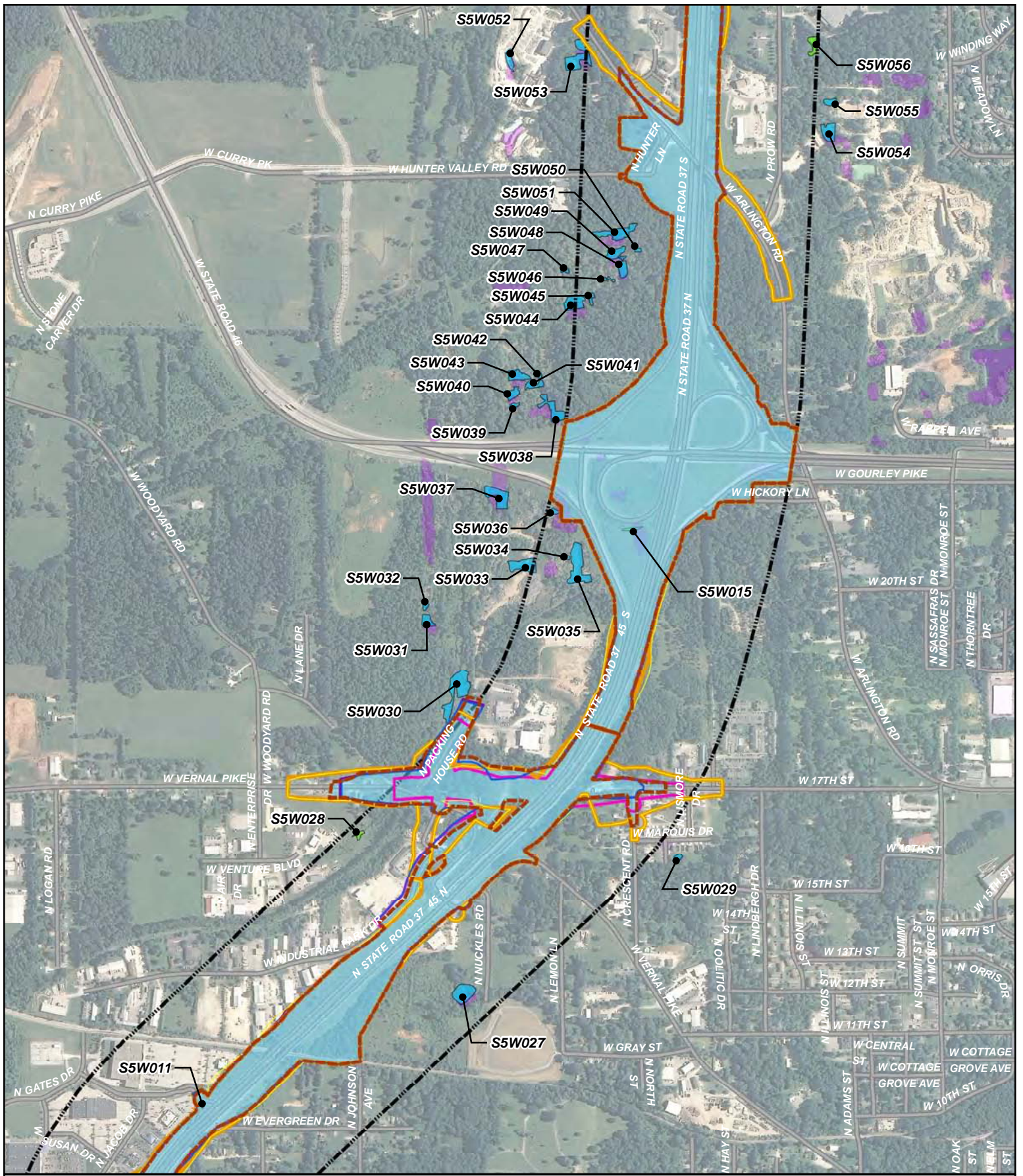


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Figure 2
I-69 Evansville to Indianapolis
Tier 2 Studies - Section 5

Wetlands in Relation to the Alternatives on 2010 Aerial Mapping
 (Sheet 3 of 14)





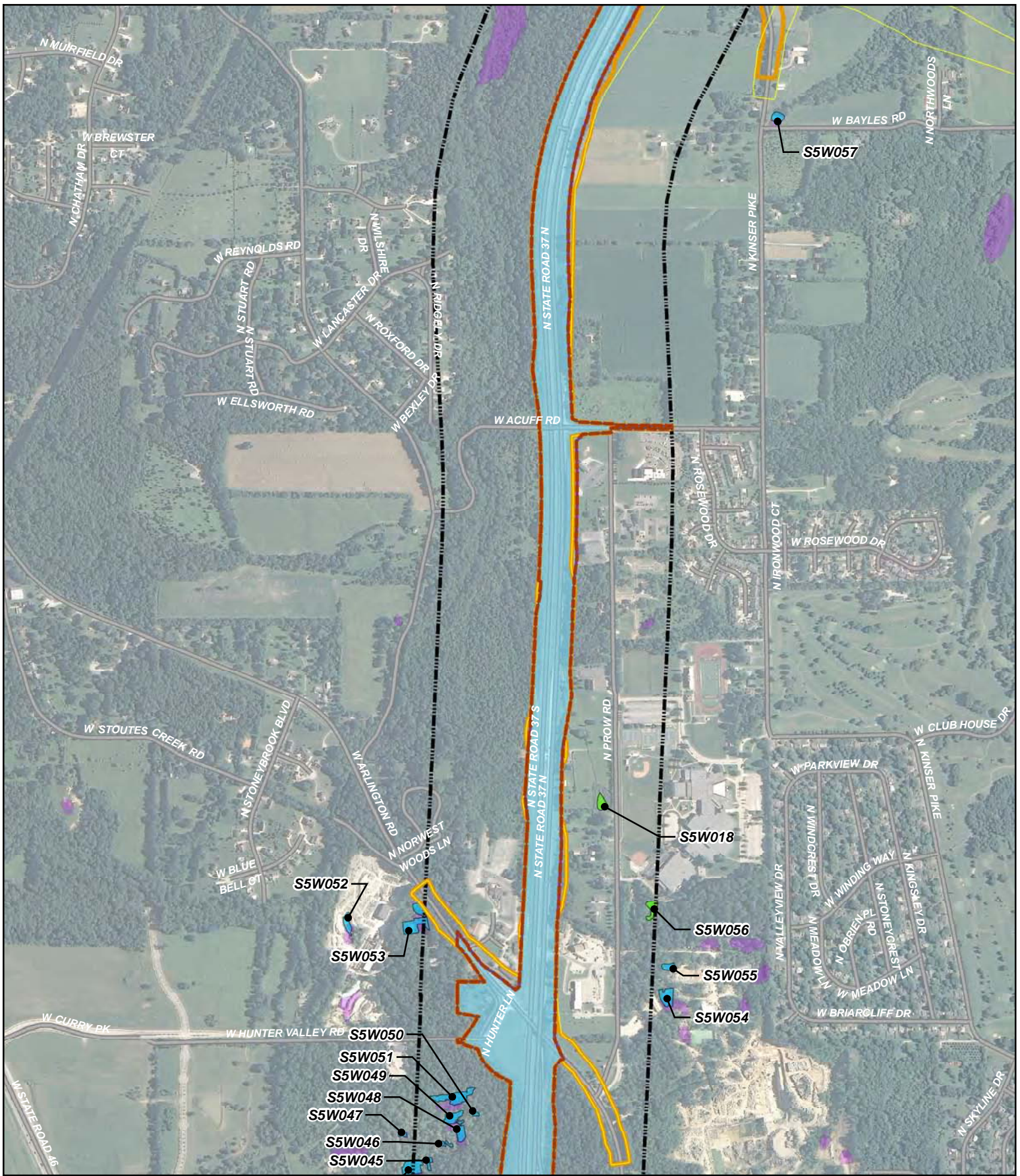
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Figure 2
I-69 Evansville to Indianapolis
Tier 2 Studies - Section 5

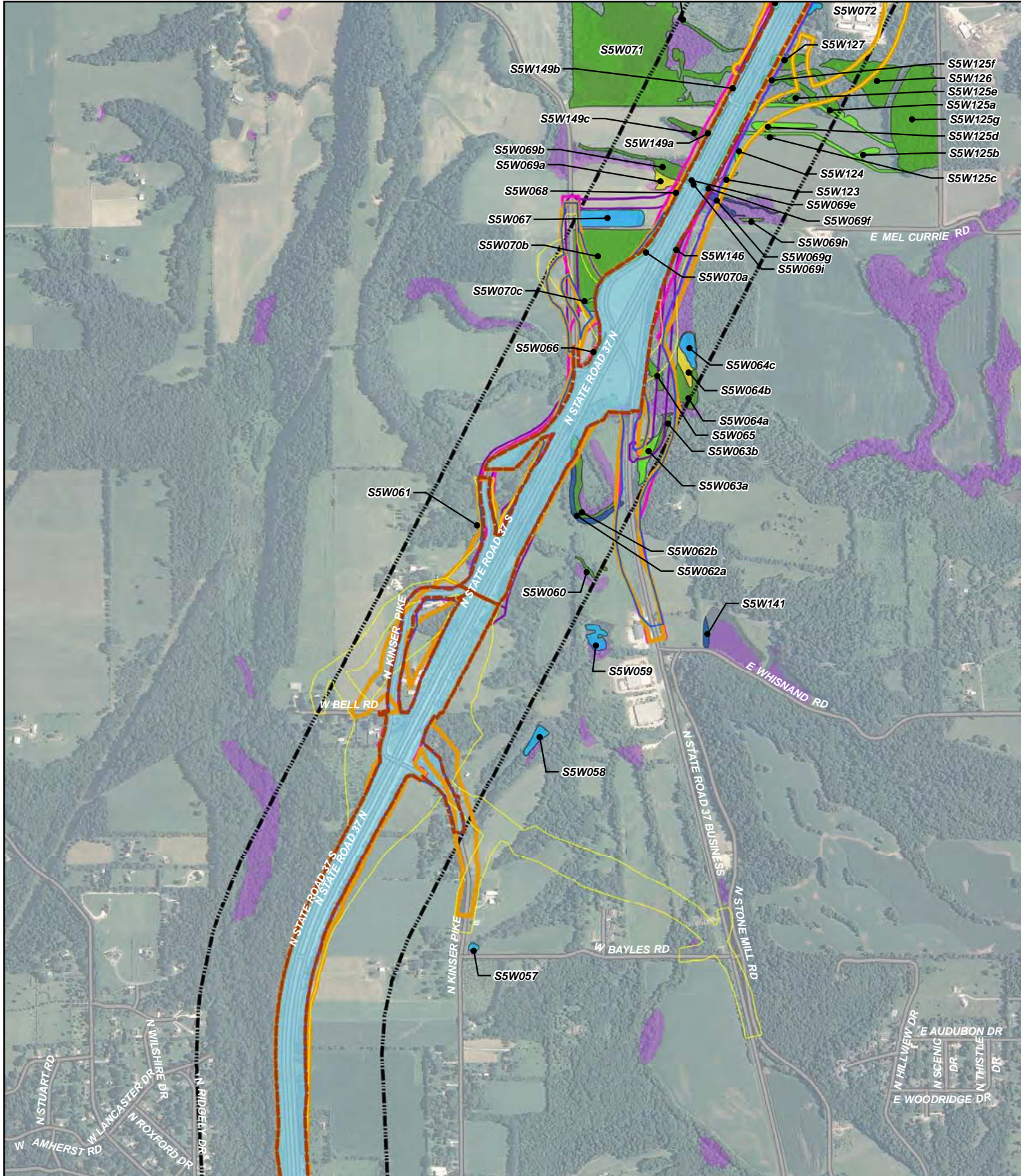
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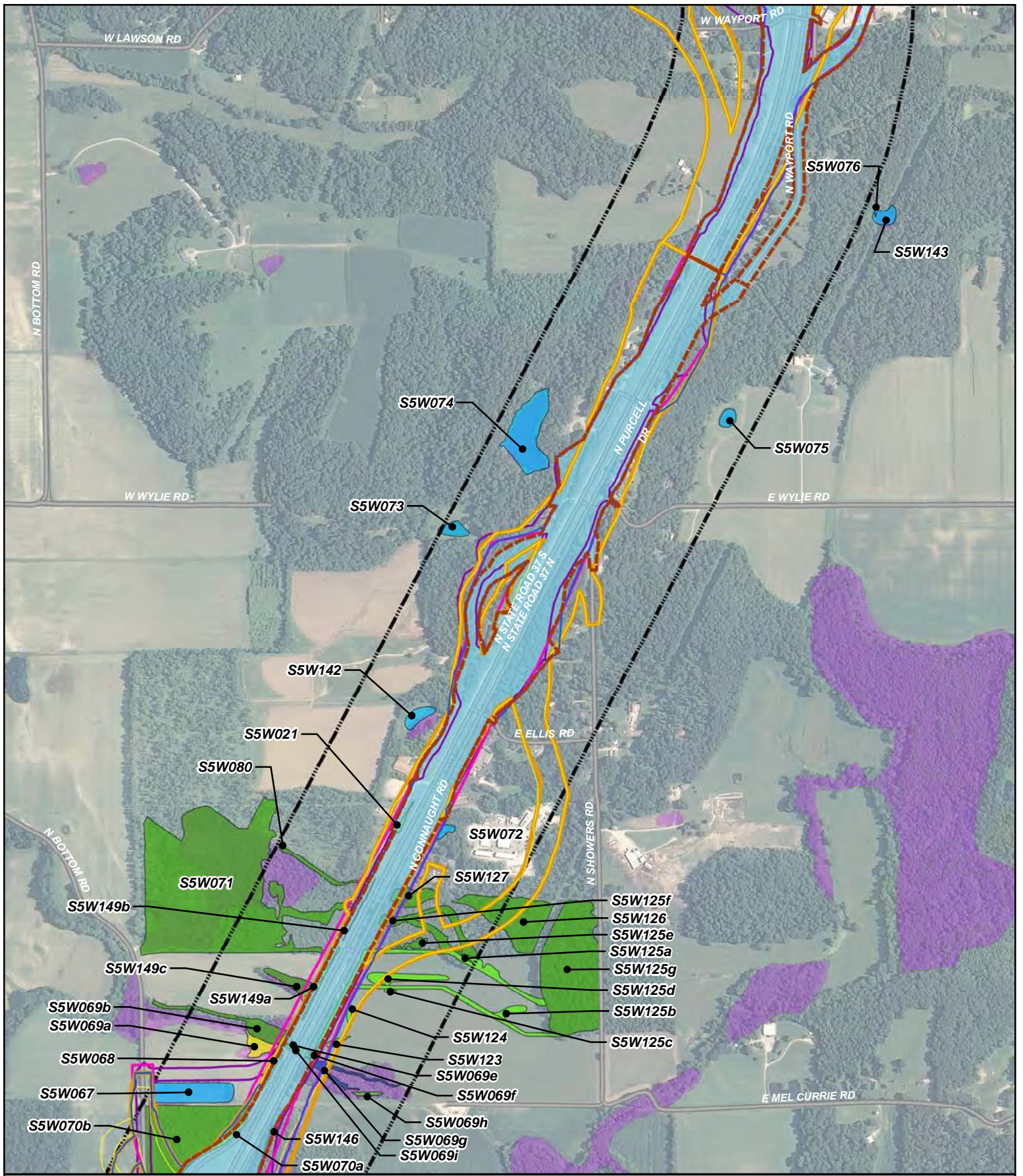
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Tier 2 Studies - Section 5
Wetlands in Relation to the Alternatives on 2010 Aerial Mapping
 (Sheet 5 of 14)



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Figure 2
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Tier 2 Studies - Section 5
Wetlands in Relation to the Alternatives on 2010 Aerial Mapping
 (Sheet 6 of 14)

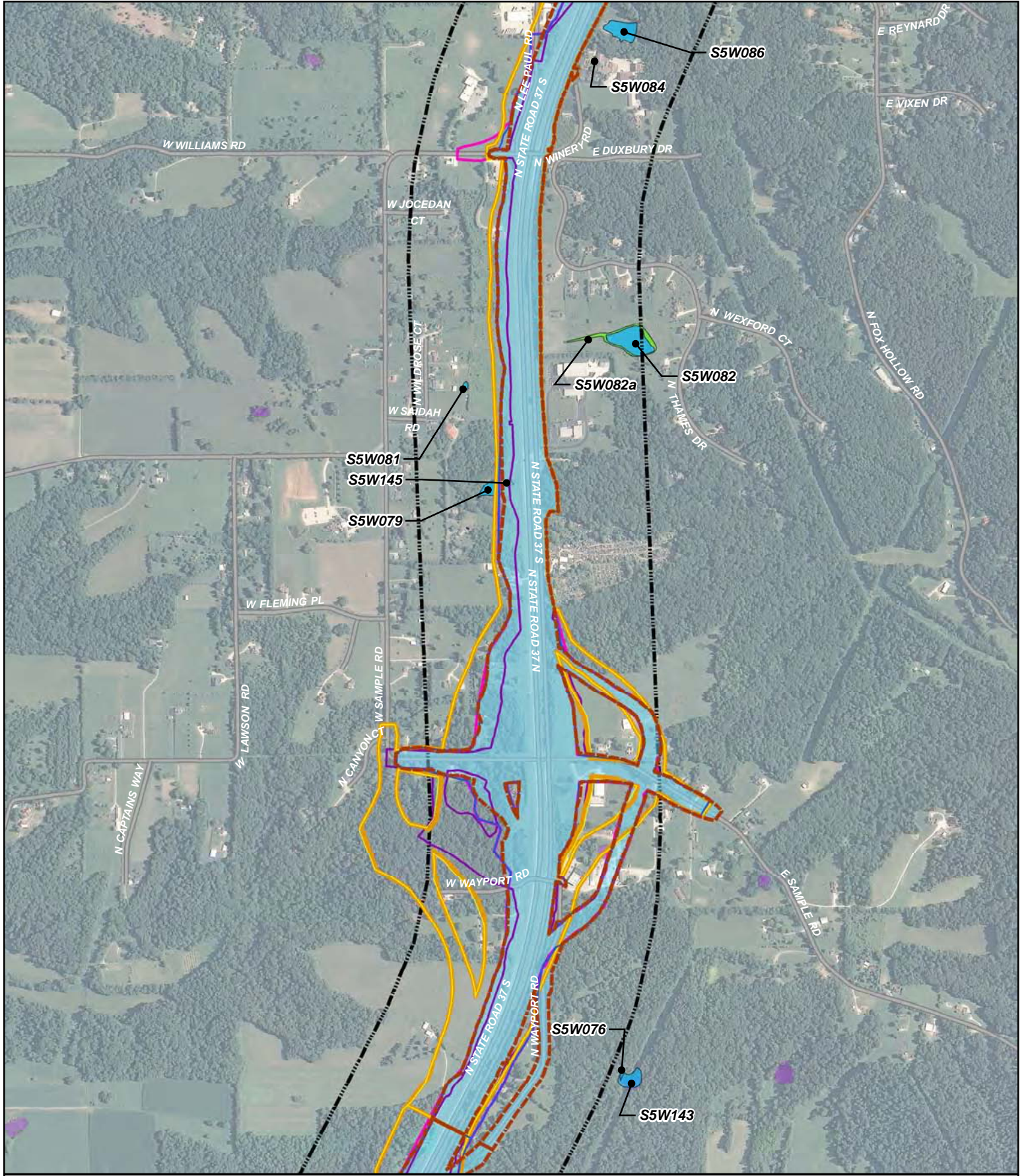


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Figure 2
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Tier 2 Studies - Section 5
Wetlands in Relation to the Alternatives on 2010 Aerial Mapping
 (Sheet 7 of 14)



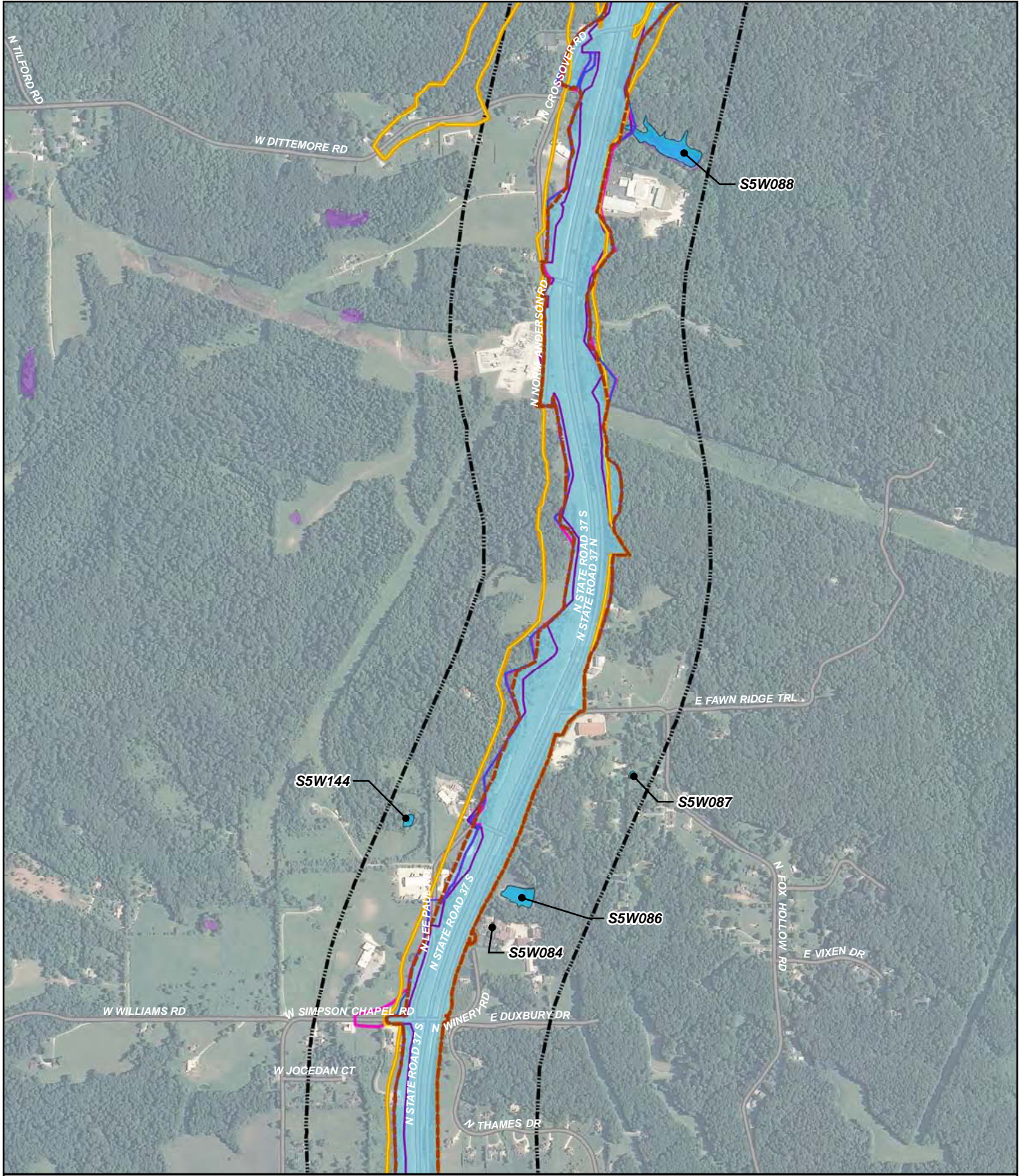


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Figure 2
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Tier 2 Studies - Section 5
Wetlands in Relation to the Alternatives on 2010 Aerial Mapping
 (Sheet 8 of 14)





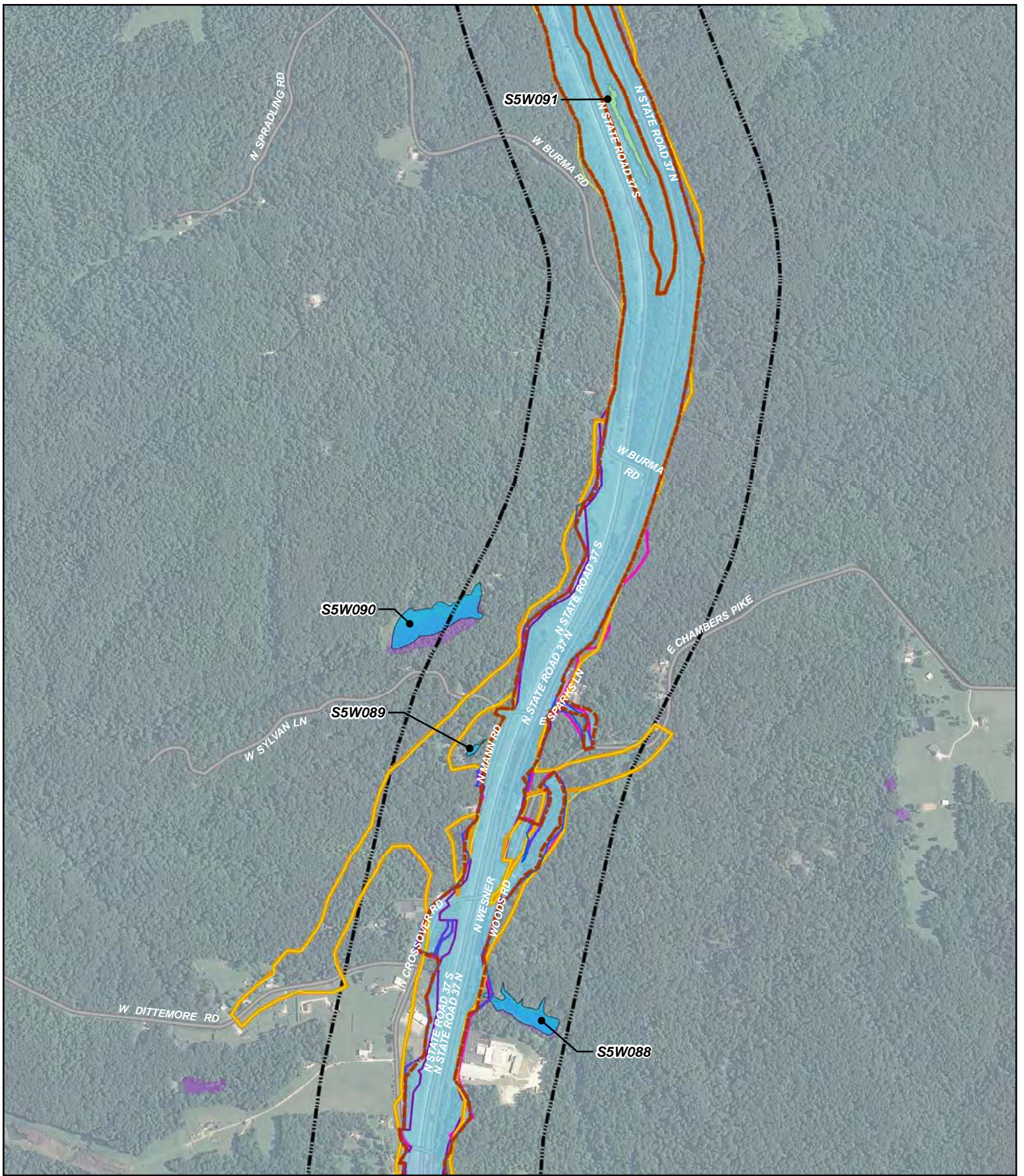
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Figure 2
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Tier 2 Studies - Section 5

Wetlands in Relation to the Alternatives on 2010 Aerial Mapping
 (Sheet 9 of 14)



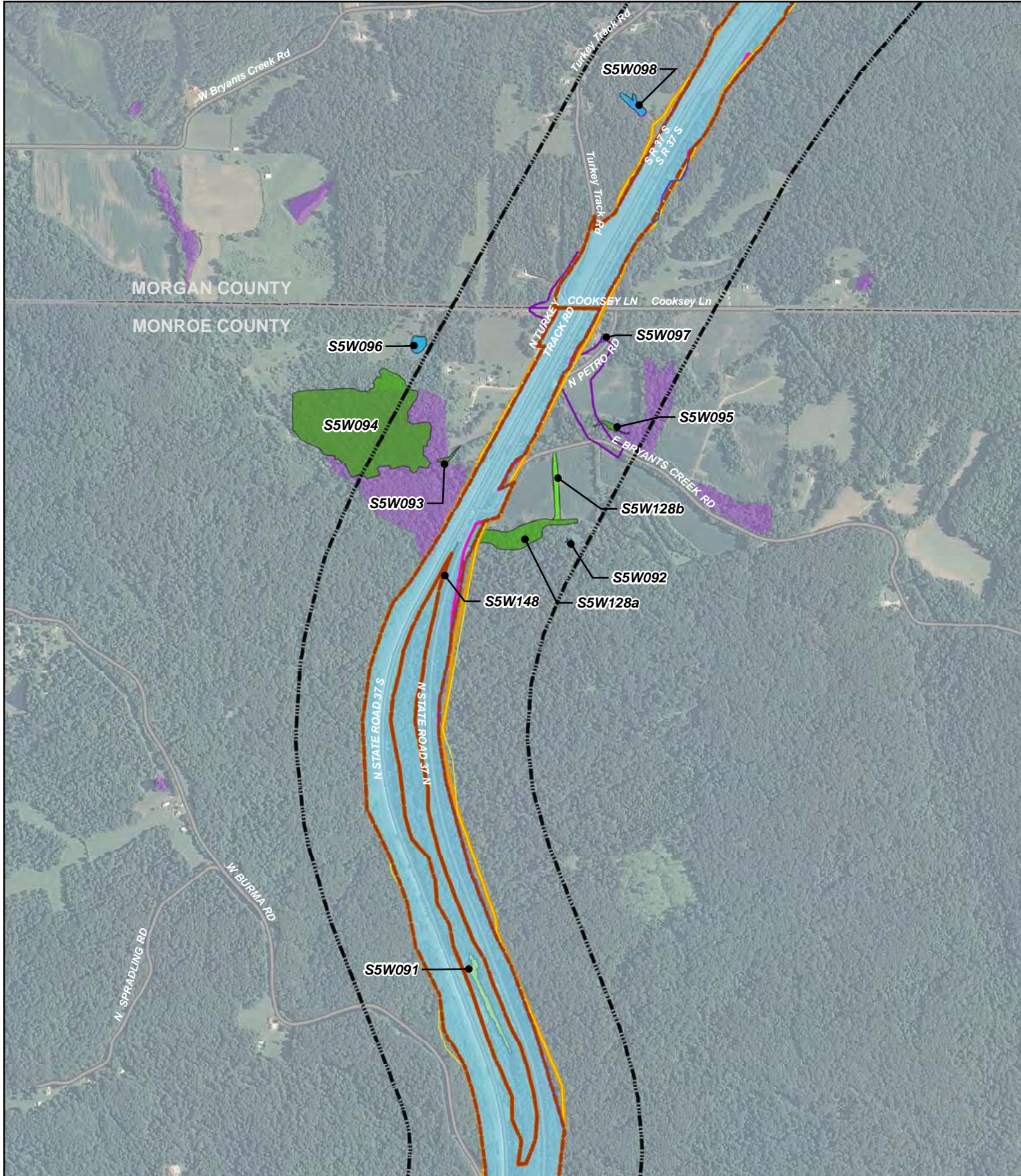


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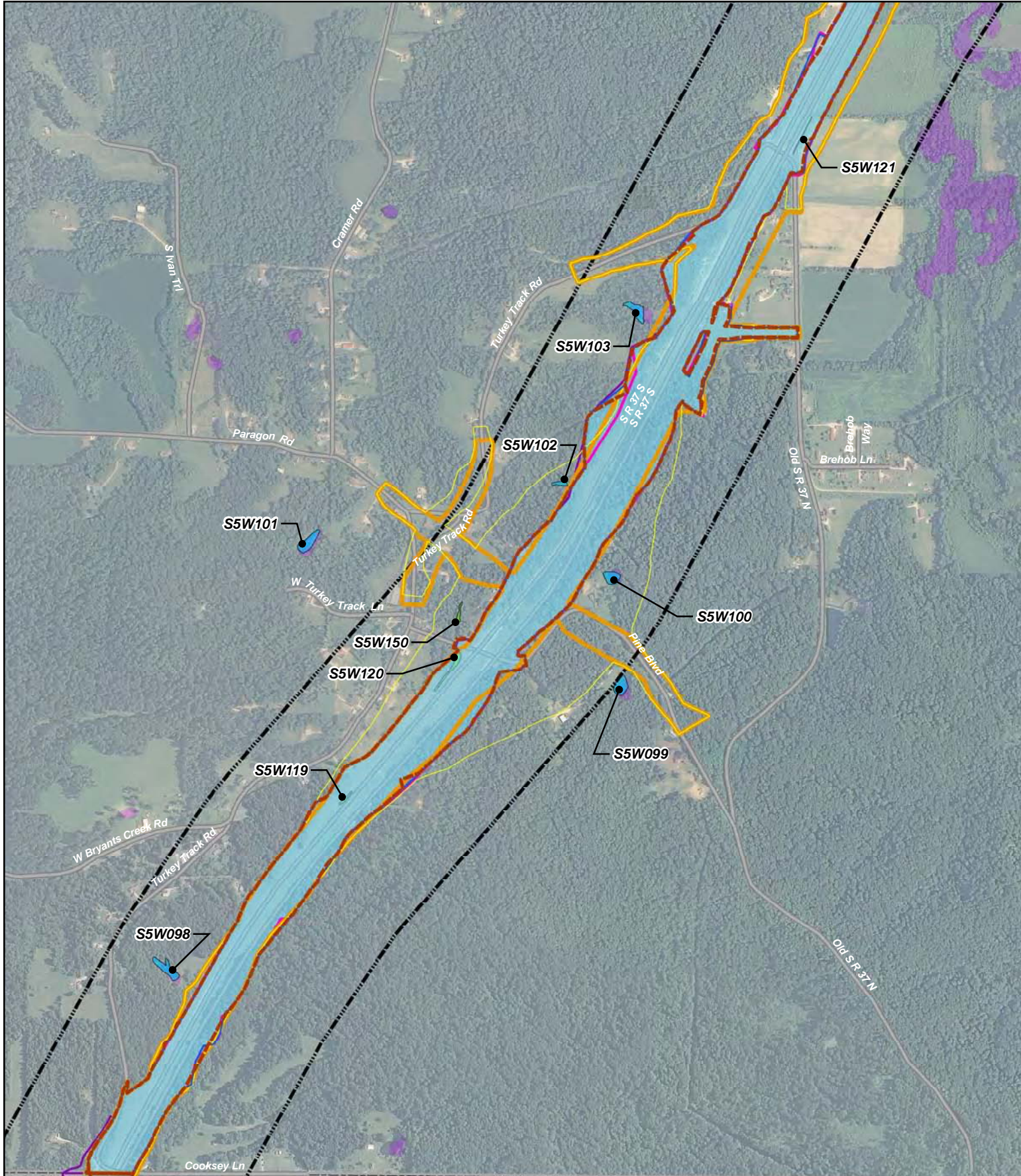


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Wetlands in Relation to the Alternatives on 2010 Aerial Mapping
 (Sheet 11 of 14)



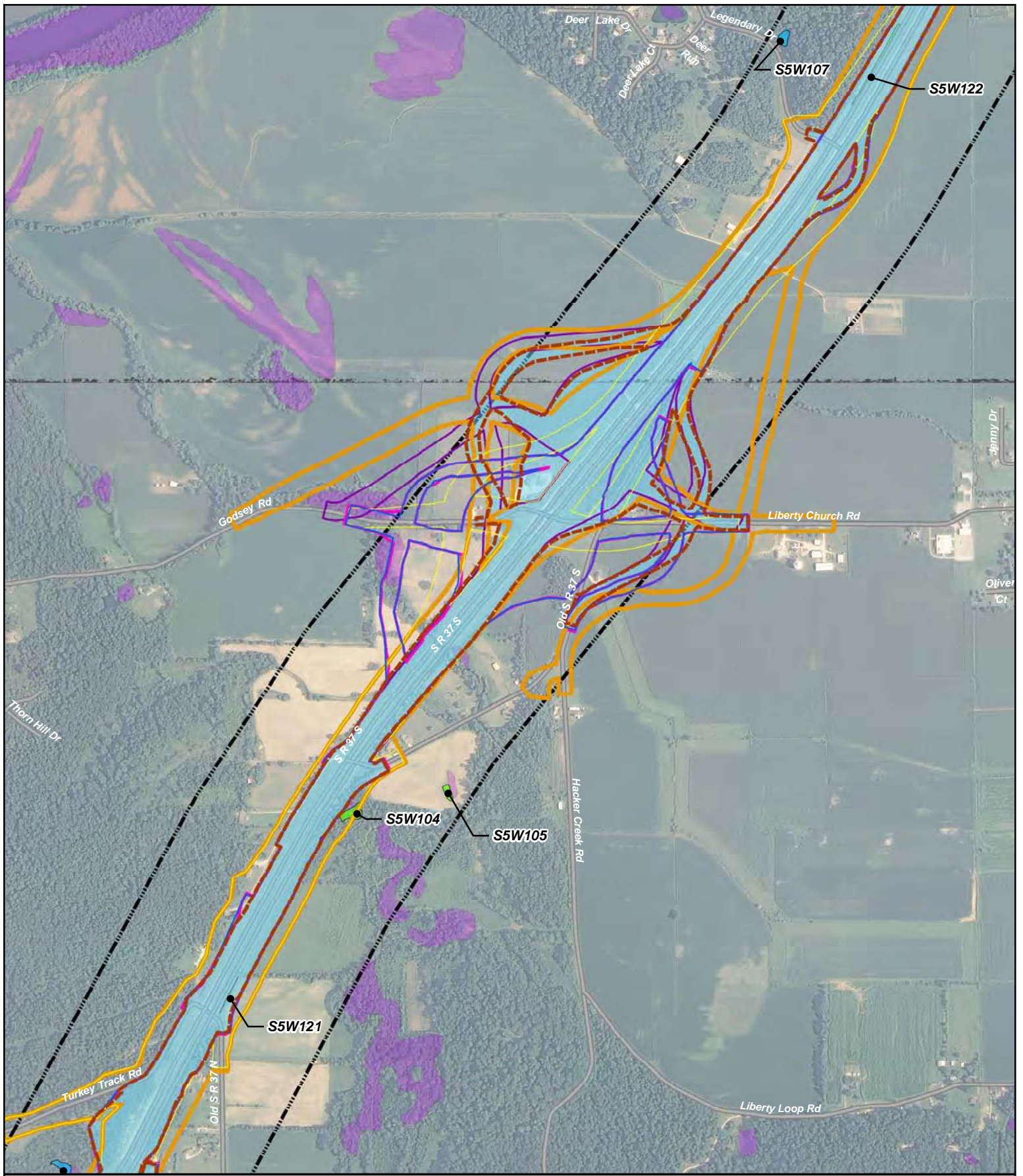


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 (Sheet 12 of 14)





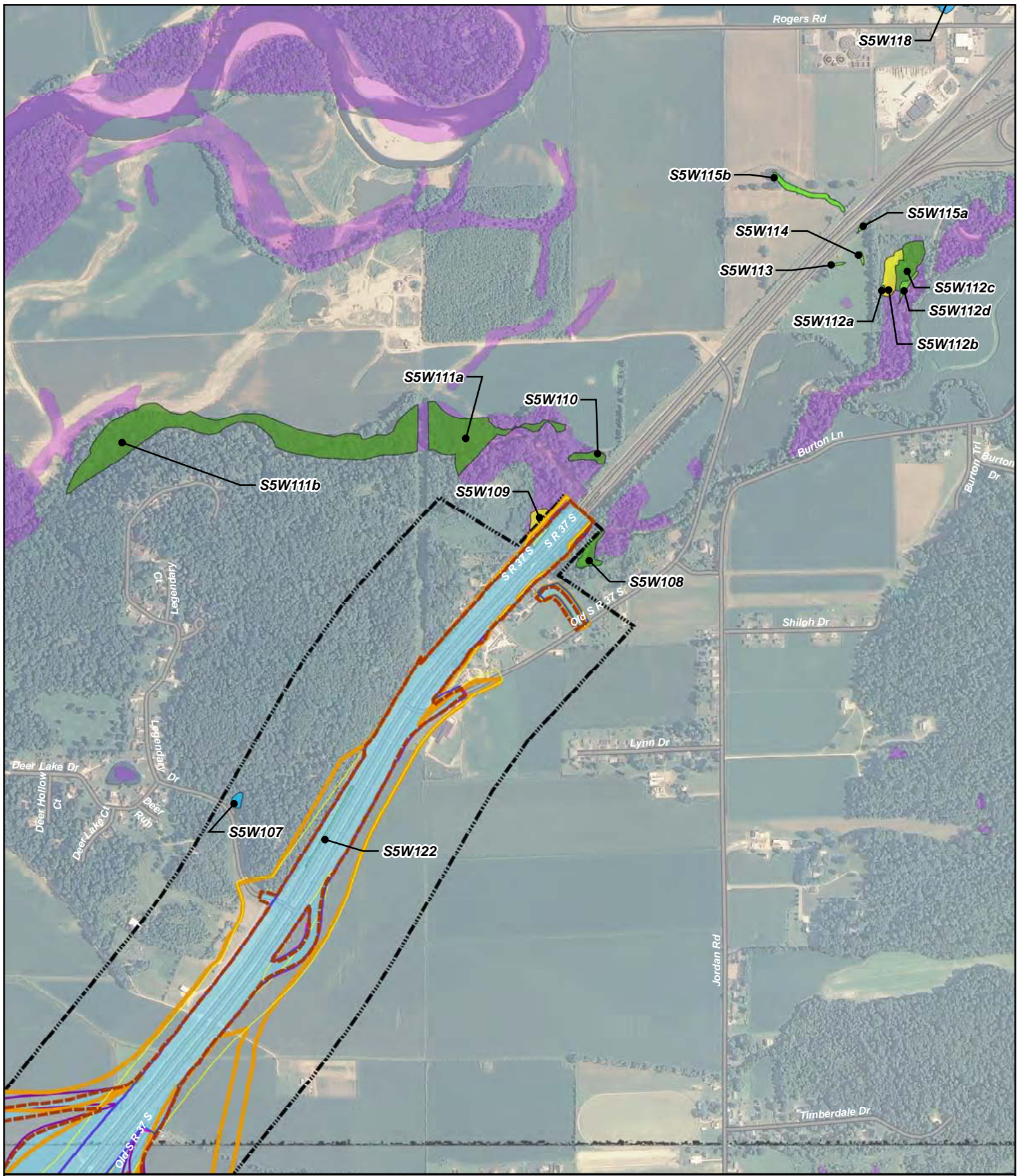
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I-69 Evansville to Indianapolis
Tier 2 Studies - Section 5

Wetlands in Relation to the Alternatives on 2010 Aerial Mapping
 (Sheet 13 of 14)



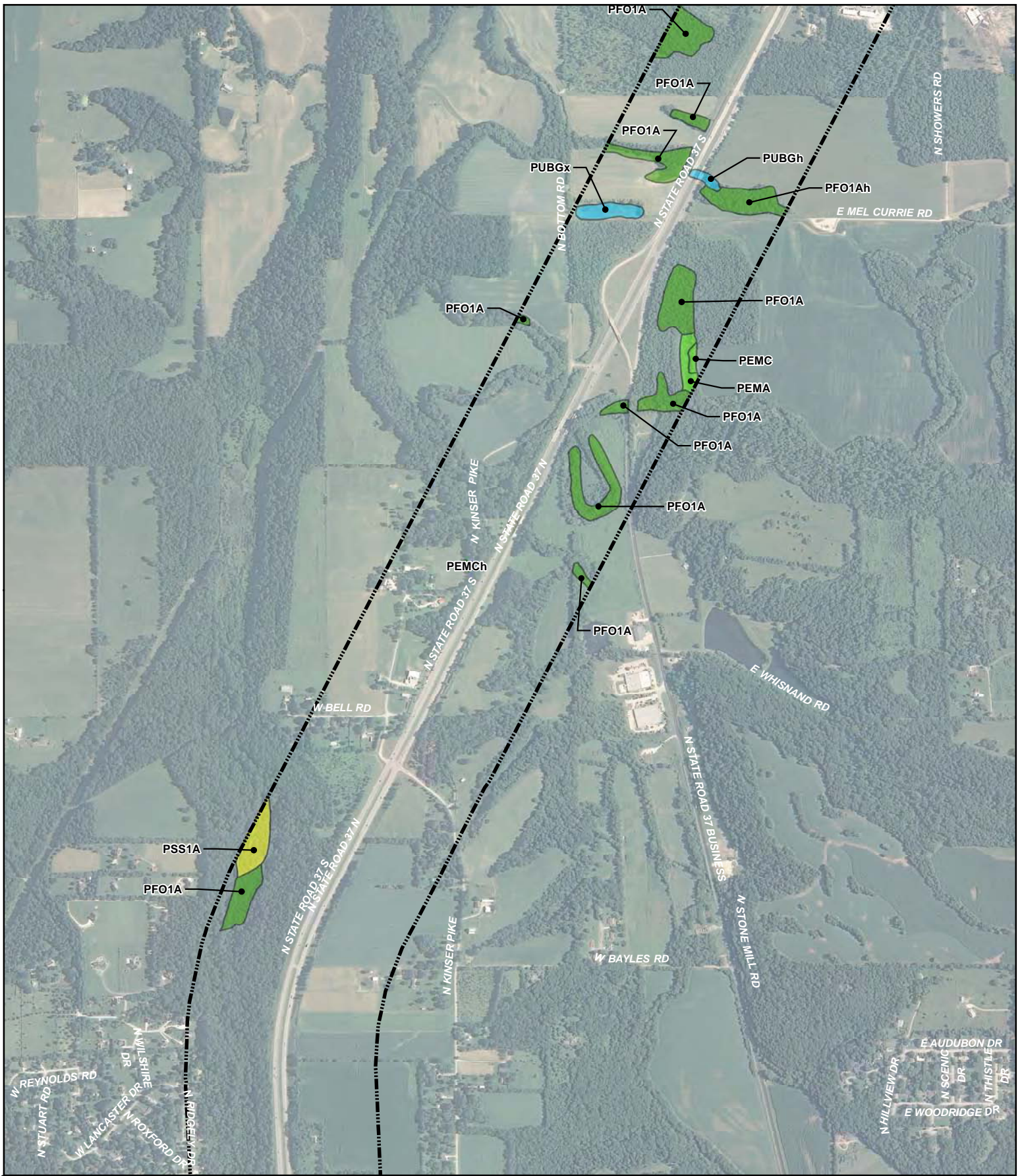








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Tier 2 Studies - Section 5
Wetlands in Relation to the Alternatives on 2010 Aerial Mapping
 (Sheet 14 of 14)



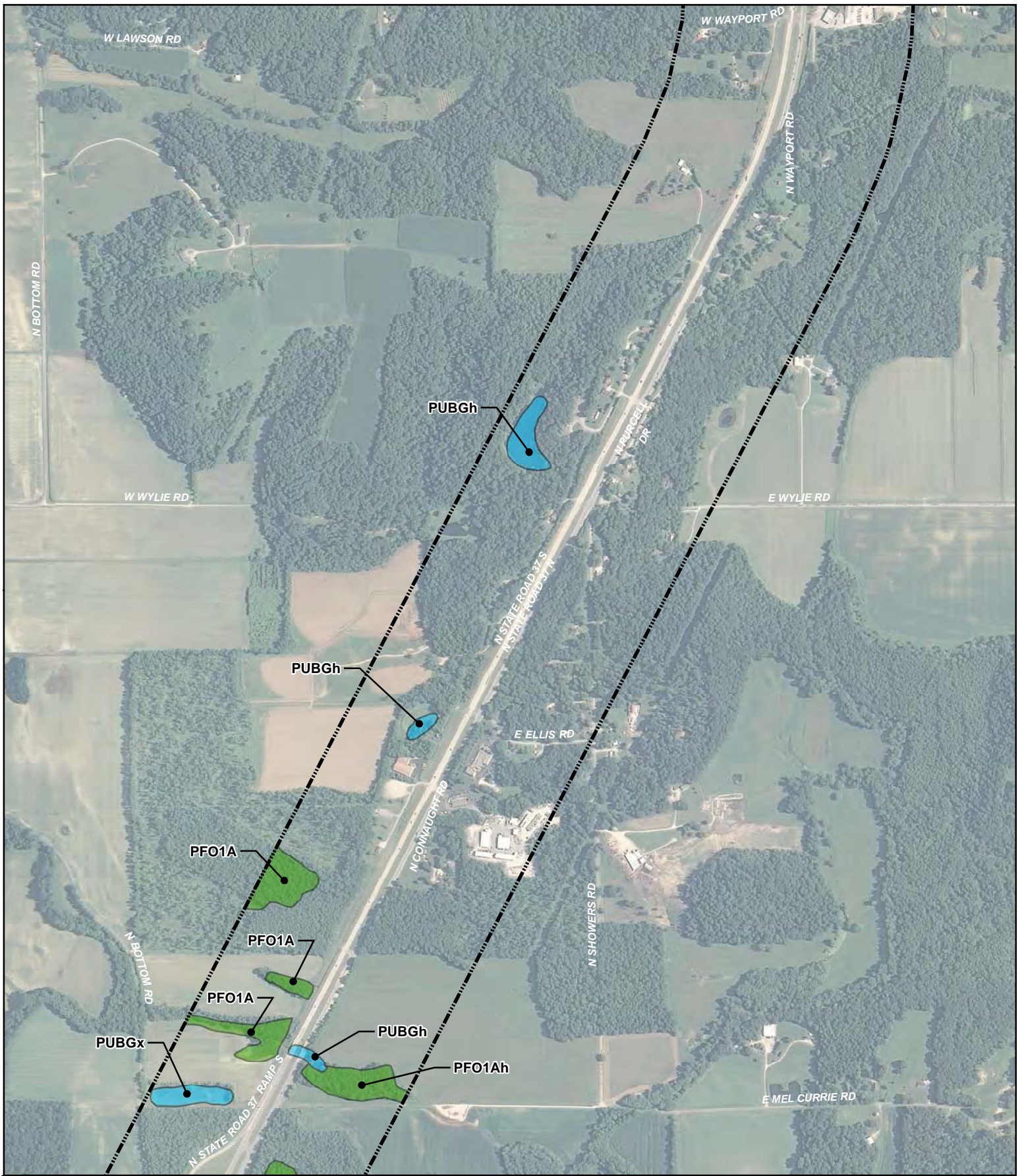



- Legend**
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 -  PAB, PUB
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Figure 3
I-69 Evansville to Indianapolis
Tier 2 Studies - Section 5
NWI Wetlands within Corridor
 (Sheet 6 of 14)





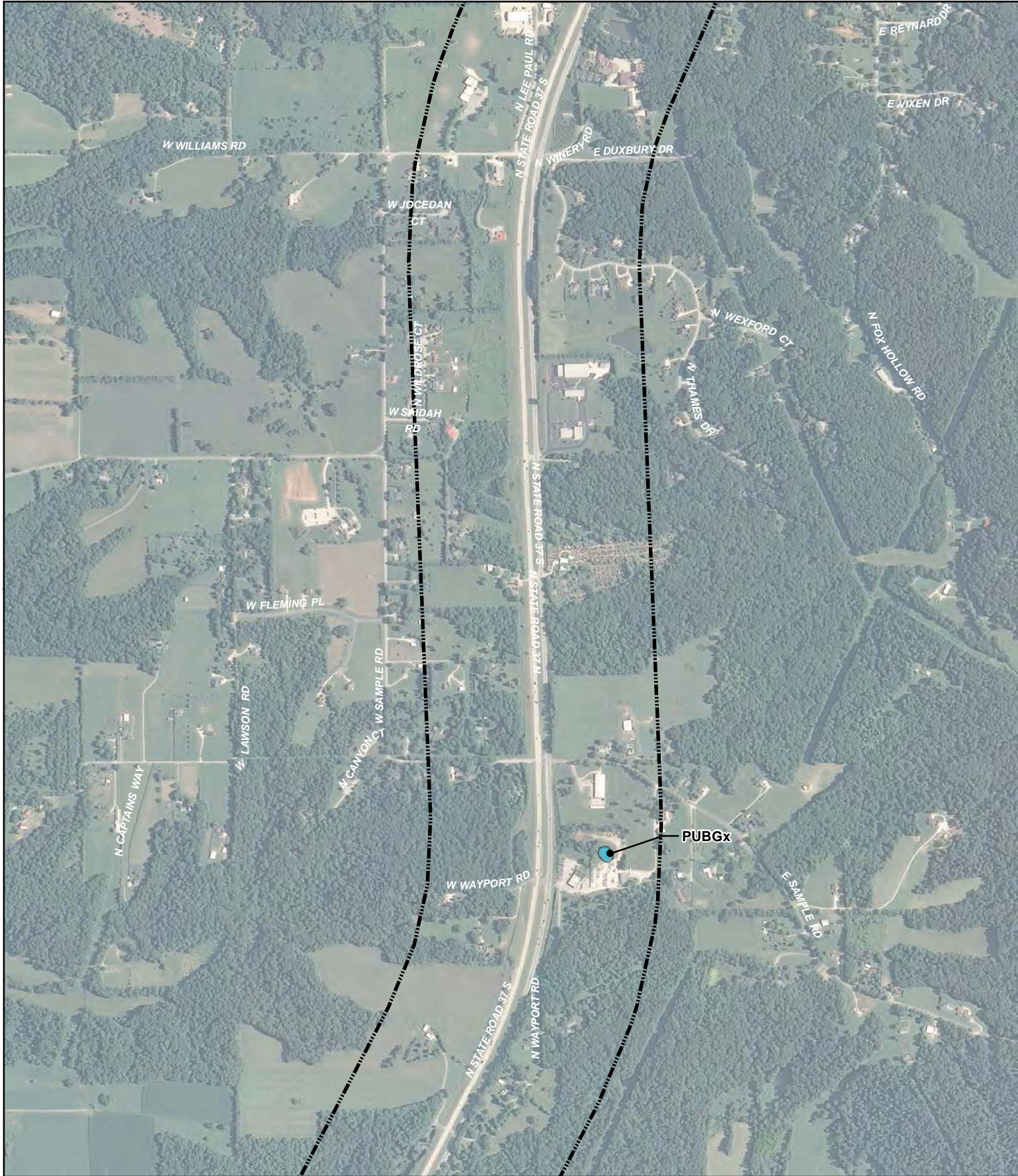
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Figure 3
I-69 Evansville to Indianapolis
Tier 2 Studies - Section 5
NWI Wetlands within Corridor
 (Sheet 7 of 14)





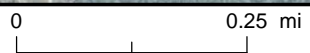
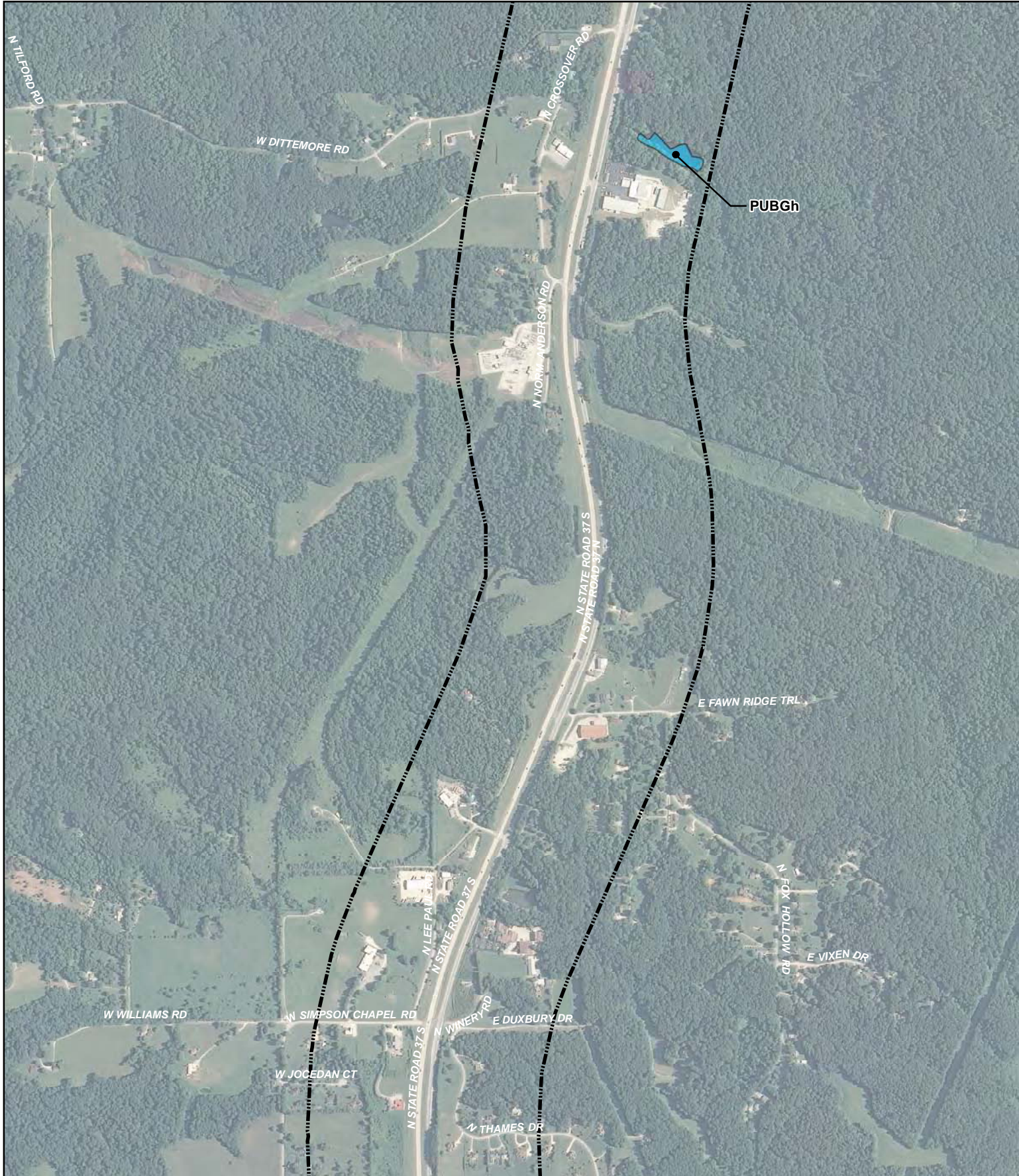
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Figure 3
I-69 Evansville to Indianapolis
Tier 2 Studies - Section 5
NWI Wetlands within Corridor
 (Sheet 8 of 14)










- Legend**
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 - NWI Wetlands**
 - PAB, PUB
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Figure 3
I-69 Evansville to Indianapolis
Tier 2 Studies - Section 5
NWI Wetlands within Corridor
 (Sheet 9 of 14)





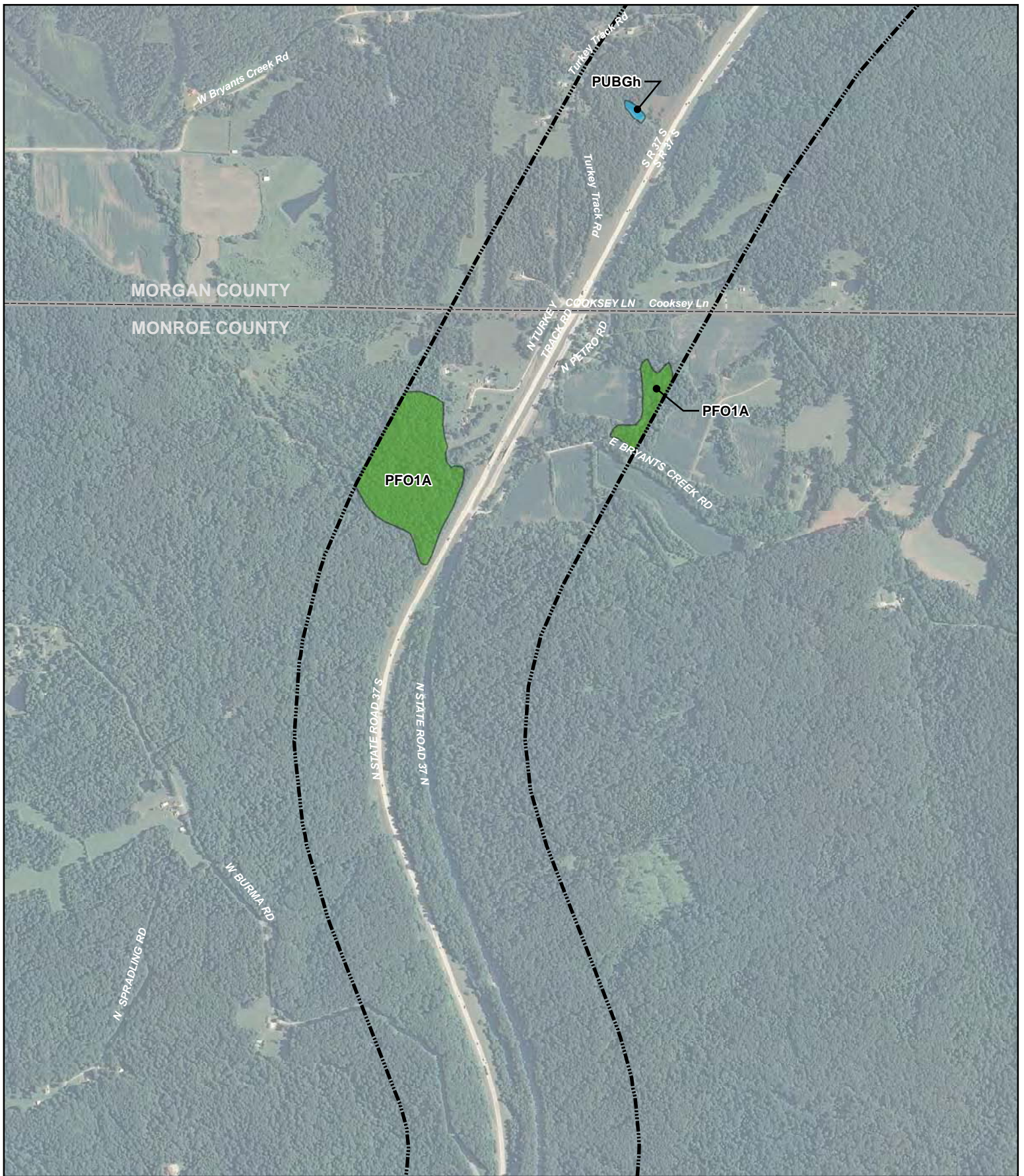
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 -  PEM
 -  PFO
 -  PSS





0 0.25 mi

Figure 3
I-69 Evansville to Indianapolis
Tier 2 Studies - Section 5
NWI Wetlands within Corridor
 (Sheet 10 of 14)





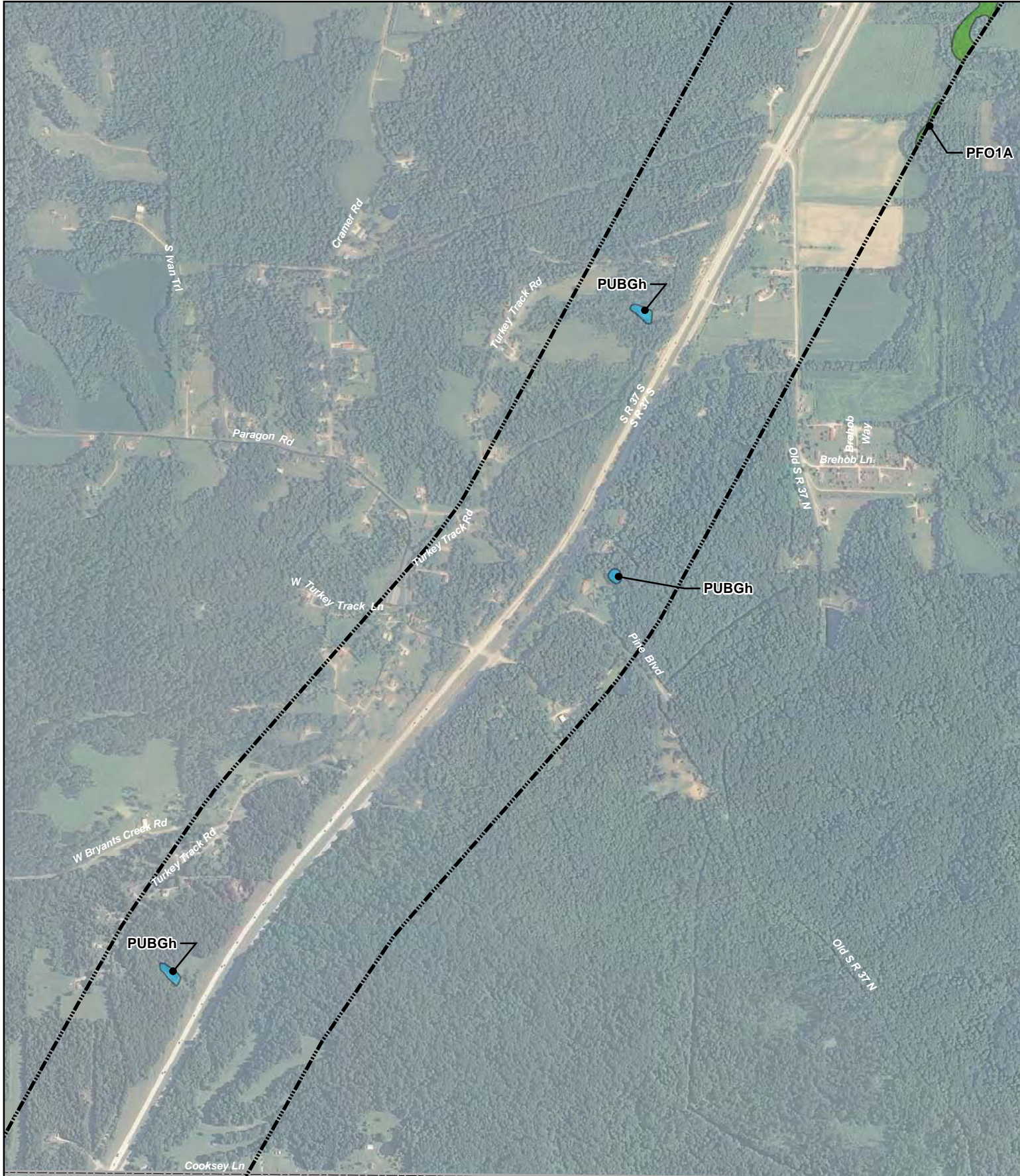
Legend
 Section 5 Corridor


- NWI Wetlands**
-  PAB,PUB
 -  PEM
 -  PFO
 -  PSS


0 0.25 mi

Figure 3
I-69 Evansville to Indianapolis
Tier 2 Studies - Section 5
NWI Wetlands within Corridor
 (Sheet 11 of 14)





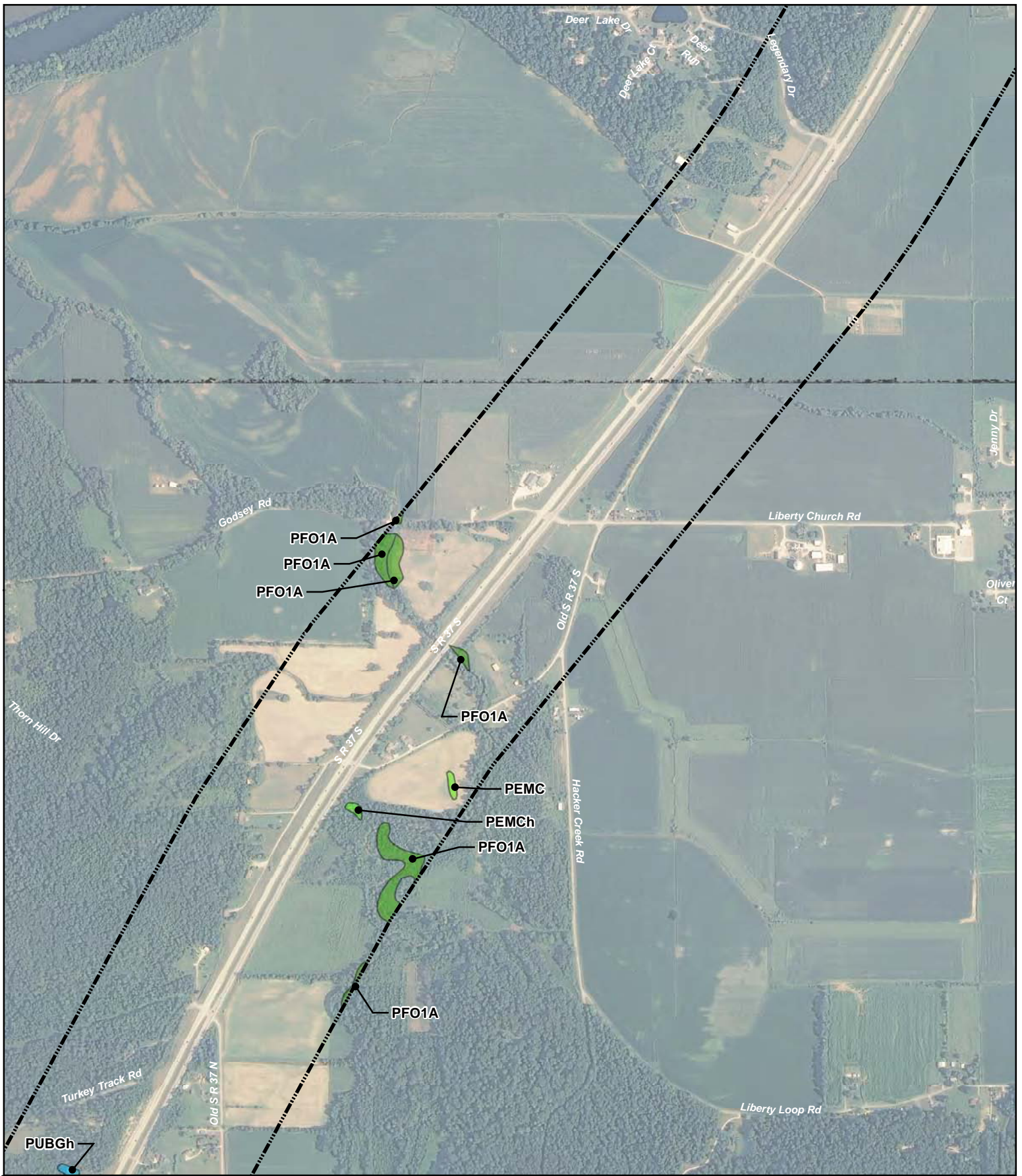
Legend
 Section 5 Corridor

- NWI Wetlands**
-  PAB, PUB
 -  PEM
 -  PFO
 -  PSS

0 0.25 mi

Figure 3
I-69 Evansville to Indianapolis
Tier 2 Studies - Section 5
NWI Wetlands within Corridor
 (Sheet 12 of 14)















- Legend**
-  Section 5 Corridor
 - NWI Wetlands**
 -  PAB, PUB
 -  PEM
 -  PFO
 -  PSS

Figure 3
I-69 Evansville to Indianapolis
Tier 2 Studies - Section 5
NWI Wetlands within Corridor
 (Sheet 13 of 14)





- Legend**
-  Section 5 Corridor
 - NWI Wetlands**
 -  PAB,PUB
 -  PEM
 -  PFO
 -  PSS

0 0.25 mi

Figure 3
I-69 Evansville to Indianapolis
Tier 2 Studies - Section 5
NWI Wetlands within Corridor
 (Sheet 14 of 14)



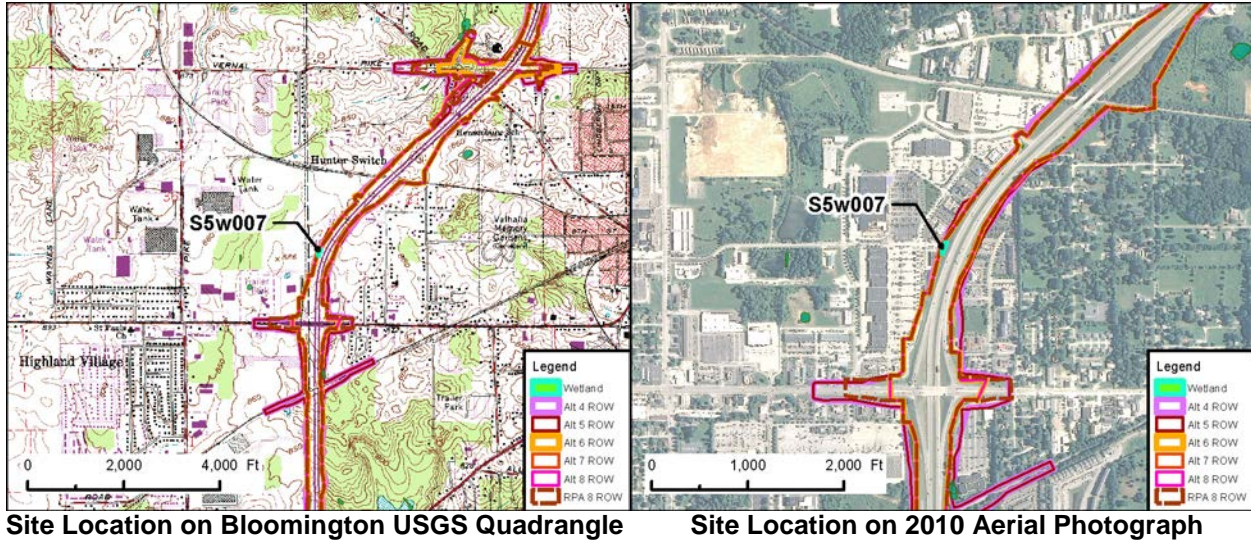


**APPENDIX F
FINAL WETLAND TECHNICAL REPORT**

TECHNICAL REPORT APPENDICES

APPENDIX A	Wetland Site Forms
APPENDIX B	I-69 Wetland Quality Assessment Profile Sheets
APPENDIX C	Wetland Matrix for I-69 Alternatives Carried Forward for Detailed Analysis
APPENDIX D	InWRAP Data Sheets
APPENDIX E	Wetland Determination Data Forms

Wetland S5W007



Aquatic Resource: Wetland
Type: Wet meadow
Quarter: SW
Range: 1W
Watershed: Clear Creek/Jackson Creek

USGS Quadrangle: Bloomington
Section: 31
Township: 9N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W007						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
7	Wet Meadow	0.00 acre	4	Poor	Poor	Fair
		0.03 acre	5			
		0.00 acre	6			
		0.00 acre	7			
		0.00 acre	8			
		0.00 acre	RPA 8			

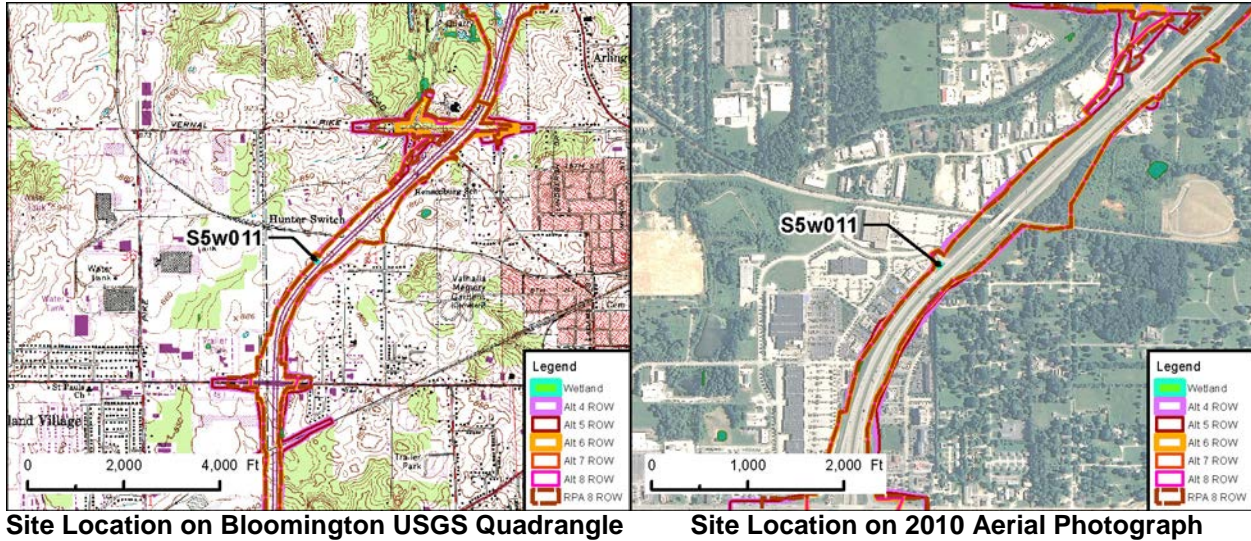
Description of Potential Impact: This site is classified as a wet meadow wetland, 0.03 acres in size. Alternatives 4, 6, 7, 8 and RPA 8 would avoid this wetland. Alternative 5 would impact 0.03 acres of this wetland. The area showed 75-100% vegetative cover. Cattail dominates the herbaceous species. Hydrology is likely due to roadway runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to its hydrologic connectivity to a tributary of Clear Creek.

Wetland S5W007



Photograph of Emergent Polygon 7

Wetland S5W011



Aquatic Resource: Wetland
Type: Wet Meadow
Quarter: SW
Range: 1W
Watershed: Bean Blossom Creek/Stout Creek

USGS Quadrangle: Bloomington
Section: 31
Township: 9N
USCOE Jurisdiction: No
IDEM Jurisdiction: Yes

Wetland S5W011						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
11	Wet Meadow	0.01 acre	4	Poor	Poor	Fair
		0.01 acre	5			
		0.01 acre	6			
		0.01 acre	7			
		0.01 acre	8			
		0.01 acre	RPA 8			

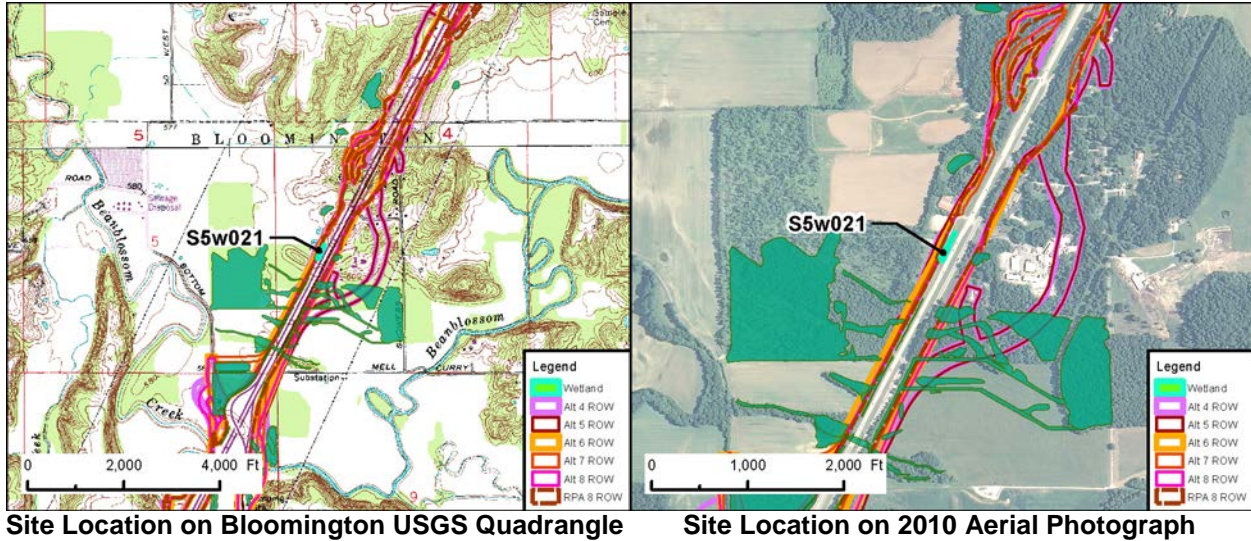
Description of Potential Impact: This site is classified as a wet meadow wetland, 0.01 acres in size. Alternatives 4, 5, 6, 7, 8 and RPA 8 would impact the entire 0.01 acre of this depressional wetland. The area showed 75-100% vegetative cover. Cattail and reed canary grass dominate the herbaceous species. Hydrology is likely due to roadway runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and fair respectively, based on InWRAP summaries for the site. This wetland is apparently isolated. This wetland therefore falls solely under the jurisdiction of IDEM.

Wetland S5W011



Photograph of Emergent Polygon 11

Wetland S5W021



Aquatic Resource: Wetland
Type: Seasonally Flooded Basin
Quarter: SW
Range: 1W
Watershed: Beanblossom Creek/Stout Creek

USGS Quadrangle: Bloomington
Section: 4
Township: 9N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W021						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
21	Seasonally Flooded Basin	0.13 acre	4	Poor	Poor	Fair
		0.13 acre	5			
		0.13 acre	6			
		0.13 acre	7			
		0.13 acre	8			
		0.13 acre	RPA 8			

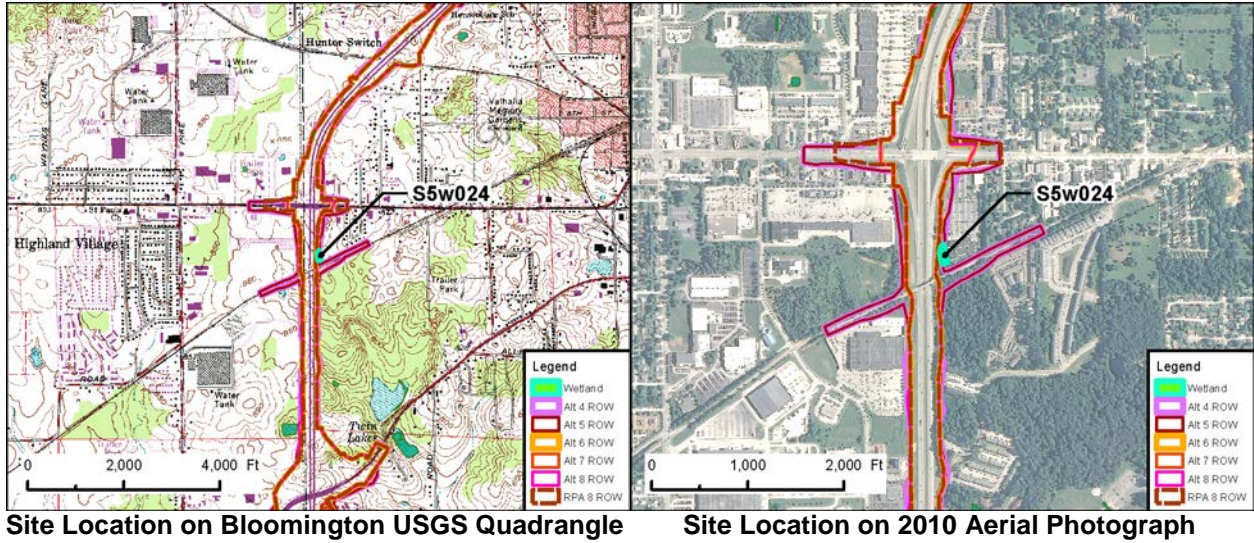
Description of Potential Impact: This site is classified as a seasonally flooded basin, 0.13 acres in size. Alternatives 4, 5, 6, 7, 8 and RPA 8 would impact the entire 0.013 acre of this depressional wetland. The area showed 75-100% vegetative cover. Cattail and reed canary grass dominate the herbaceous species. Hydrology is likely due to roadway runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

Wetland S5W021



Photograph of Emergent Polygon 21

Wetland S5W024



Aquatic Resource: Wetland
Type: Shallow Marsh
Quarter: NW
Range: 1W
Watershed: Clear Creek-Jackson Creek

USGS Quadrangle: Bloomington
Section: 6
Township: 8N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W024						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
24a	Shrub-Carr	0.01 acre	4	Poor	Poor	Fair
		0.01 acre	5			
		0.00 acre	6			
		0.00 acre	7			
		0.00 acre	8			
		0.00 acre	RPA 8			
24b	Shallow Marsh	0.02 acre	4	Poor	Poor	Fair
		0.02 acre	5			
		0.00 acre	6			
		0.00 acre	7			
		0.00 acre	8			
		0.00 acre	RPA 8			
24c	Shrub-Carr	0.00 acre	4	Poor	Poor	Fair
		0.00 acre	5			
		0.00 acre	6			
		0.00 acre	7			
		0.00 acre	8			
		0.00 acre	RPA 8			

Wetland S5W024

Description of Potential Impact: This wetland complex consists of three wetland polygons totaling 0.24 acres. Polygon 24a is classified as a shrub-carr wetland, 0.02 acres in size. Polygon 24b is classified as a shallow marsh, 0.14 acre in size. Polygon 24c is classified as a shrub-carr wetland 0.08 acre in size. Alternatives 4 and 5 impact approximately 0.01 acre of Polygon 24a and 0.02 acre of Polygon 24b. Alternatives 6, 7, 8 and RPA 8 would not impact any of the wetland polygons for this complex. The area showed 75-100% vegetative cover. Black willow and silky dogwood dominate the shrub-carr polygons 24a and 24c. Cattails dominate the herbaceous species in polygon 24b. Hydrology is likely due to its depressional nature, frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and fair respectively, for each of the polygons in the complex based on InWRAP summaries for the site. This wetland complex falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Clear Creek.



Photograph of Shrub-Carr Polygon 24a



Photograph of Emergent Polygon 24b

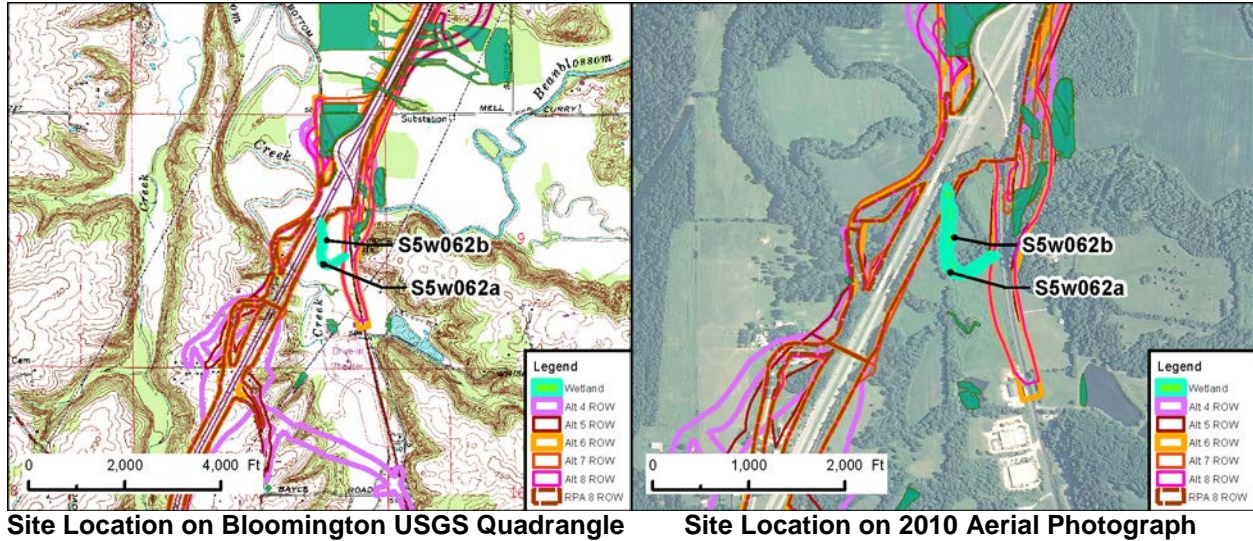
Wetland S5W024



Photograph of Shrub-carr Polygon 24c

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Wetland S5W062



Aquatic Resource: Wetland
Type: Deep Marsh/Floodplain Forest
Quarter: SE
Range: 1W
Watershed: Beanblossom /Buck Creek/Muddy Fork

USGS Quadrangle: Bloomington
Section: 8
Township: 9N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W062						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
62a	Deep Marsh	0.03 acre	4	Fair	Fair	Fair
		0.20 acre	5			
		0.06 acre	6			
		0.00 acre	7			
		0.08 acre	8			
		0.02 acre	RPA 8			
62b	Floodplain Forest	0.19 acre	4	Fair	Poor	Good
		0.33 acre	5			
		0.13 acre	6			
		0.11 acre	7			
		0.19 acre	8			
		0.13 acre	RPA 8			

Description of Potential Impact: This wetland complex consists of two wetland polygons totaling 3.25 acres. Polygon 62a is classified as a deep marsh, 1.47 acres in size. Polygon 62b is classified as a floodplain forest, 1.78 acres in size. Alternatives 4, 5, 6, 8 and RPA 8 would impact between 0.02 and 0.20 acres of the deep marsh polygon of this floodplain wetland complex. Alternative 7 would avoid impacts to the deep marsh polygon of this complex. Alternatives 4, 5, 6, 7, 8 and RPA 8 impacts

Wetland S5W062

would range from 0.11 acre to 0.33 acre of the floodplain forest polygon. Polygon 62a showed less than 25% herbaceous cover. Duckweed and moneywort dominate the deep marsh polygon herbaceous species. Polygon 62b showed between 75-100% herbaceous cover. Moneywort and Canadian woodnettle dominate the floodplain forest polygon herbaceous species. Box elder and American elm are the dominant shrub species in polygon 62b, with green ash and silver maple dominating the tree species within this polygon. Hydrology is likely due to Beanblossom Creek flooding, local runoff, and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are ranked as fair, fair and fair, respectively, based on InWRAP summaries for the deep marsh polygon and fair, poor and good for the floodplain forest polygon within this complex. This wetland falls under the jurisdiction of both the USACE and IDEM due to its hydrologic connectivity to a tributary of Beanblossom Creek.

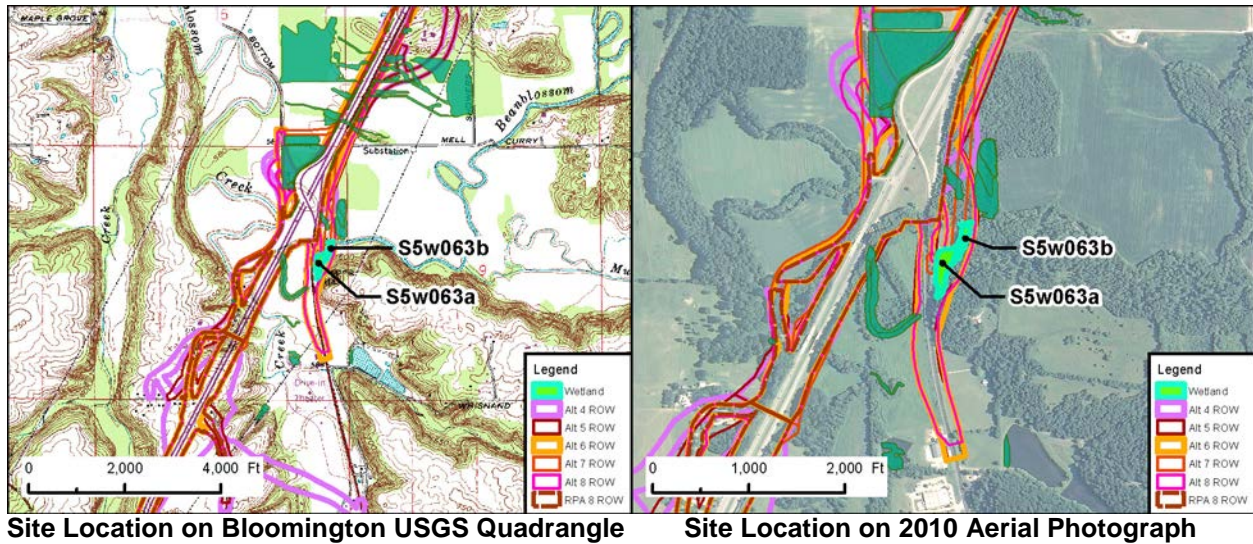


Photograph of Aquatic Bed Polygon 62a



Photograph of Forested Polygon 62b

Wetland S5W063



Aquatic Resource: Wetland
Type: Sedge Meadow/Floodplain Forest
Quarter: NE
Range: 1W
Watershed: Beanblossom/Buck Creek/Muddy Fork

USGS Quadrangle: Bloomington
Section: 8
Township: 9N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W063						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
63a	Sedge Meadow	0.00 acre	4	Fair	Poor	Good
		1.22 acre	5			
		1.22 acre	6			
		0.58 acre	7			
		1.17 acre	8			
		0.00 acre	RPA 8			
63b	Floodplain Forest	0.00 acre	4	Fair	Poor	Good
		0.60 acre	5			
		0.60 acre	6			
		0.18 acre	7			
		0.60 acre	8			
		0.00 acre	RPA 8			

Description of Potential Impact: This wetland complex consists of two wetland polygons totaling 2.04 acres. Polygon 63a is classified as a sedge meadow, 1.44 acres in size. Polygon 63b is classified as a floodplain forest, 0.60 acre in size. Alternatives 5, 6, 7 and 8 would impact from 0.58 acre to 1.22 acres of the sedge meadow polygon of this floodplain wetland complex. Alternatives 5, 6, 7, and 8 impacts would range from 0.18 acre to 0.60 acre of the floodplain forest polygon. Alternatives 4 and RPA 8

Wetland S5W063

would avoid impacts to both the sedge meadow and floodplain forest polygons of this complex. Polygon 63a showed between 75-100% herbaceous cover. Carex and cattail dominate the sedge meadow polygon herbaceous species. Polygon 63b showed between 50-75% woody plant cover. Green ash and silver maple are the dominant shrub and tree species in polygon 63b. Hydrology is likely due to Beanblossom Creek flooding, local runoff, and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are ranked as fair, poor and good, respectively, based on InWRAP summaries for the sedge meadow polygon, and fair, poor and good for the floodplain forest polygon within this complex. This wetland falls under the jurisdiction of both the USACE and IDEM due to its hydrologic connectivity to a tributary of Beanblossom Creek.

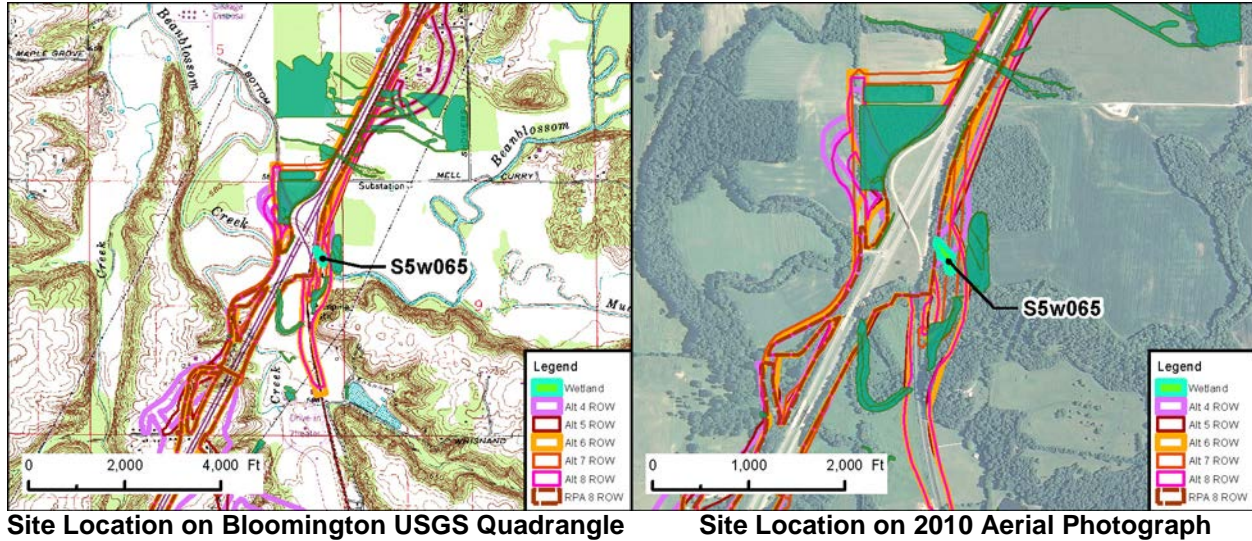


Photograph of Emergent Polygon 63a



Photograph of Forested Polygon 63b

Wetland S5W065



Aquatic Resource: Wetland
Type: Swamp Forested
Quarter: NE
Range: 1W
Watershed: Beanblossom/Buck Creek/Muddy Fork

USGS Quadrangle: Bloomington
Section: 8
Township: 9N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W065						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
65	Swamp Forest	0.36 acre	4	Good	Poor	Good
		0.71 acre	5			
		0.71 acre	6			
		0.18 acre	7			
		0.71 acre	8			
		0.00 acre	RPA 8			

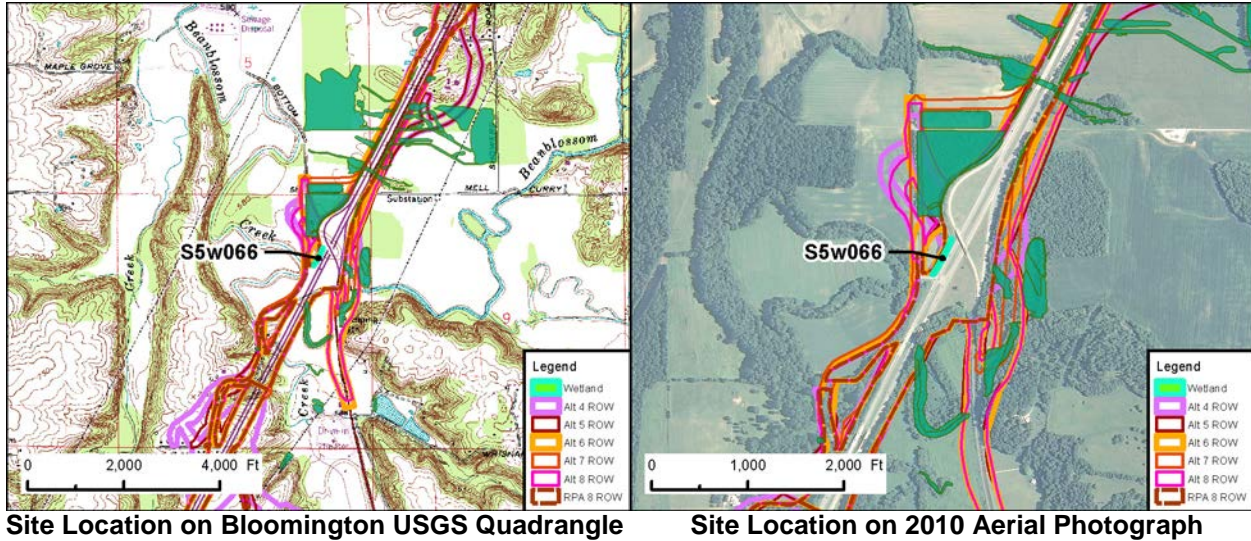
Description of Potential Impact: This site is classified as a swamp forest, 0.71 acres in size. Alternatives 4, 5, 6, 7, and 8 impacts would range from 0.18 acre to 0.71 acre of this floodplain wetland. RPA 8 would avoid impacting this wetland. The area showed 25-50% herbaceous cover and 50-75% woody plant cover. Sedges dominate the herbaceous species in this wetland and silver maple, spicebush, and black walnut dominate the shrub species in this wetland. Silver maple and sycamore are the dominant tree species in this wetland. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as good, poor and good respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

Wetland S5W065



Photograph of Swamp Forest Polygon 65

Wetland S5W066



Aquatic Resource: Wetland
Type: Seasonally Flooded Basin
Quarter: NE
Range: 1W
Watershed: Beanblossom Creek/Stout Creek

USGS Quadrangle: Bloomington
Section: 8
Township: 9N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W066						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
66	Seasonally Flooded Basin	0.15 acre	4	Fair	Poor	Good
		0.15 acre	5			
		0.12 acre	6			
		0.08 acre	7			
		0.15 acre	8			
		0.12 acre	RPA 8			

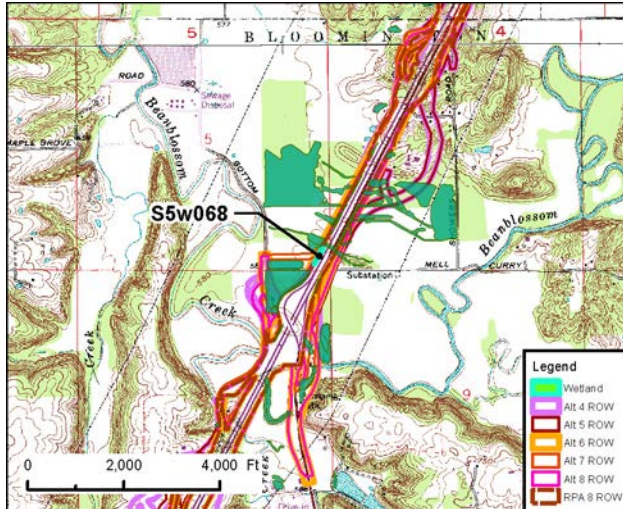
Description of Potential Impact: This site is classified as a seasonally flooded basin, 0.15 acres in size. Alternatives 4, 5, 6, 7, 8 and RPA 8 impacts would range from 0.08 acre to 0.15 acre of this floodplain wetland. The area showed 75-100% herbaceous cover. This wetland is dominated by softstem bullrush. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as fair, poor and good respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

Wetland S5W066

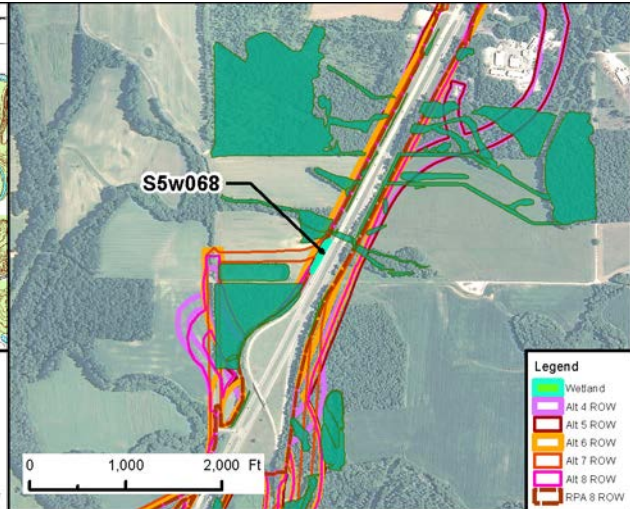


Photograph of Emergent Polygon 66

Wetland S5W068



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource: Wetland
Type: Wet Meadow
Quarter: SE
Range: 1W
Watershed: Beanblossom Creek/Stout Creek

USGS Quadrangle: Bloomington
Section: 5
Township: 9N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W068						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
68	Wet Meadow	0.16 acre	4	Poor	Poor	Good
		0.16 acre	5			
		0.16 acre	6			
		0.08 acre	7			
		0.01 acre	8			
		0.01 acre	RPA 8			

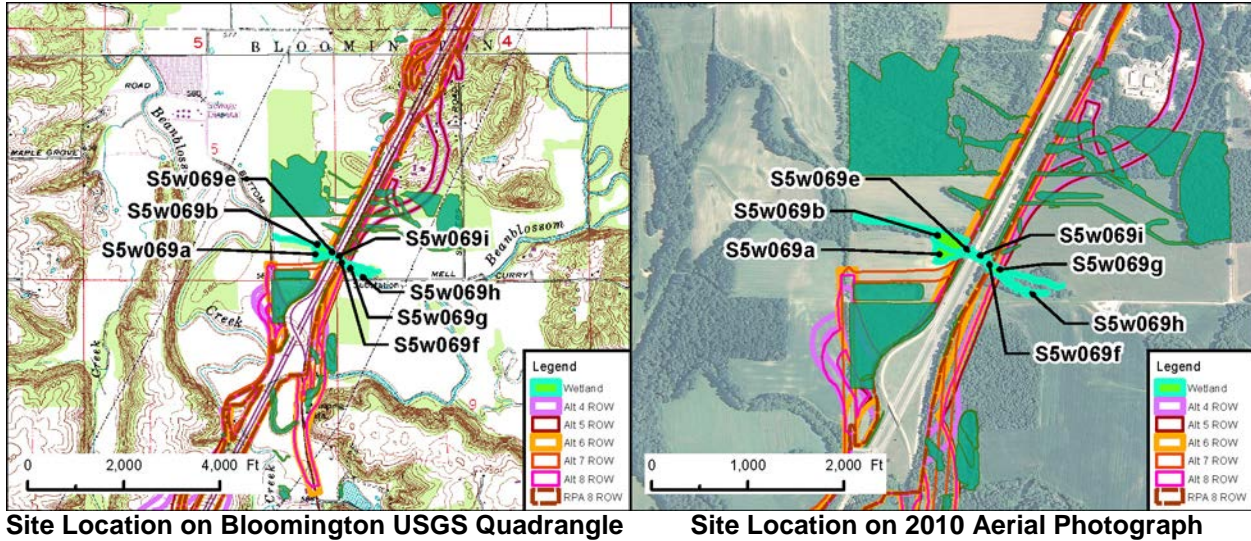
Description of Potential Impact: This site is classified as a wet meadow, 0.16 acres in size. Alternatives 4, 5, 6, 7, 8 and RPA 8 impacts would range from 0.01 acre to 0.16 acre of this floodplain wetland. The area showed 50-75% herbaceous cover. Dominant herbaceous species for this wetland include reed canarygrass, broadleaf cattail, common rush, Canada goldenrod, and Pennsylvania smartweed. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and good respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

Wetland S5W068



Photograph of Emergent Polygon 68

Wetland S5W069



Aquatic Resource: Wetland
Type: SFB/FF/SHM/SOW/DM
Quarter: SW, SE
Range: 1W
Watershed: Beanblossom Creek/Stout Creek

USGS Quadrangle: Bloomington
Section: 4 & 5
Township: 9N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W069						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
69a	Seasonally Flooded Basin	0.00 acre	4	Poor	Fair	Good
		0.00 acre	5			
		0.02 acre	6			
		0.01 acre	7			
		0.00 acre	8			
		0.00 acre	RPA 8			
69b	Floodplain Forest	0.00 acre	4	Good	Poor	Good
		0.00 acre	5			
		0.05 acre	6			
		0.00 acre	7			
		0.00 acre	8			
		0.00 acre	RPA 8			
69e	Shallow Marsh	0.02 acre	4	Fair	Poor	Fair
		0.02 acre	5			
		0.02 acre	6			
		0.02 acre	7			
		0.02 acre	8			
		0.02 acre	RPA 8			

Wetland S5W069

Wetland S5W069						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
69f	Shallow Marsh	0.07 acre	4	Fair	Fair	Good
		0.07 acre	5			
		0.07 acre	6			
		0.07 acre	7			
		0.07 acre	8			
		0.04 acre	RPA 8			
69g	Shallow Open Water	0.17 acre	4	Poor	Fair	Fair
		0.20 acre	5			
		0.11 acre	6			
		0.00 acre	7			
		0.06 acre	8			
		0.00 acre	RPA 8			
69i	Deep Marsh	0.27 acre	4	Poor	Fair	Fair
		0.27 acre	5			
		0.28 acre	6			
		0.28 acre	7			
		0.27 acre	8			
		0.27 acre	RPA 8			

Description of Potential Impact: This wetland complex consists of six wetland polygons totaling 3.52 acres. Polygon 69a is classified as a seasonally flooded basin 0.72 acre in size. Polygon 69b is classified as a floodplain forest, 1.67 acres in size. Polygons 69e and 69f are classified as shallow marshes, 0.02 acre and 0.07 acres respectively. Polygon 69g is classified as shallow open water, 0.76 acres in size; and, Polygon 69i is classified as a deep marsh, 0.28 acre in size. Alternatives 6 and 7 would impact from 0.01 acre to 0.02 acres of Polygon 69a. Alternatives 4, 5, 8 and RPA 8 would avoid impacts to Polygon 69a. Alternative 6 would impact 0.05 acre of the floodplain forest polygon (69b) of this complex. Alternatives 4, 5, 7, 8 and RPA 8 would avoid impacts to the floodplain forest polygon. The shallow marsh polygon 69e would be entirely impacted by all of the alternatives. The shallow marsh polygon 69f would be entirely impacted by alternatives 4, 5, 6, 7, and 8. Alternatives 4, 5, 6, 7, and 8 would each impact 0.07 acre of Polygon 69f. RPA 8 would impact 0.04 acre of polygon 69f. The shallow open water polygon (69g) impacts would range from 0.06 acre to 0.20 acres for Alternatives 4, 5, 6, and 8. Alternatives 7 and RPA 8 would avoid impacts to the shallow open water polygon. Alternatives 4, 5, 6, 7, 8 and RPA 8 would impact from 0.27 acre to 0.28 acre of the deep marsh polygon. Polygon 69a showed between 75-100% herbaceous cover with dominant species including bulrush and cattails. Polygon 69b showed between 25-50% woody plant cover, with green ash and red maple as the dominant tree species. Polygon 69e showed between 75-100% herbaceous cover with rice cutgrass and arrowleaf tearthumb as the dominant herbaceous species. Polygon 69f showed between 25-50% herbaceous cover with rice cutgrass and arrowleaf tearthumb as the dominant herbaceous species. Dominant shrub species for

Wetland S5W069

Polygon 69f included sandbar willow and buttonbush. Polygon 69g showed less than 25% herbaceous and woody plant cover, with duckweed as the dominant herbaceous species. Polygon 69i showed between 50-75% herbaceous cover and less than 25% woody plant cover. Dominant herbaceous species included rice cutgrass, reed canarygrass, and spikerush. Dominant woody species included green ash and black willow. Hydrology is likely due to Beanblossom Creek flooding, local runoff, and poorly drained soils. Botanical diversity is rated as poor for Polygons 69b and 69e, and fair for Polygons 69a, 69f, 69g, and 69i. Animal habitat is rated as poor for Polygons 69a, 69g, and 69i, fair for Polygons 69e and 69f, and good for Polygon 69b. Hydrologic function is rated as fair for Polygons 69e, 69g and 69i and good for Polygons 69a, 69b and 69f. This wetland falls under the jurisdiction of both the USACE and IDEM due to its hydrologic connectivity to a tributary of Beanblossom Creek.



Photograph of Scrub/Shrub Polygon 69a



Photograph of Forest Polygon 69b



Photograph of Scrub/Shrub Polygon 69e



Photograph of Scrub/Shrub Polygon 69f

Wetland S5W069

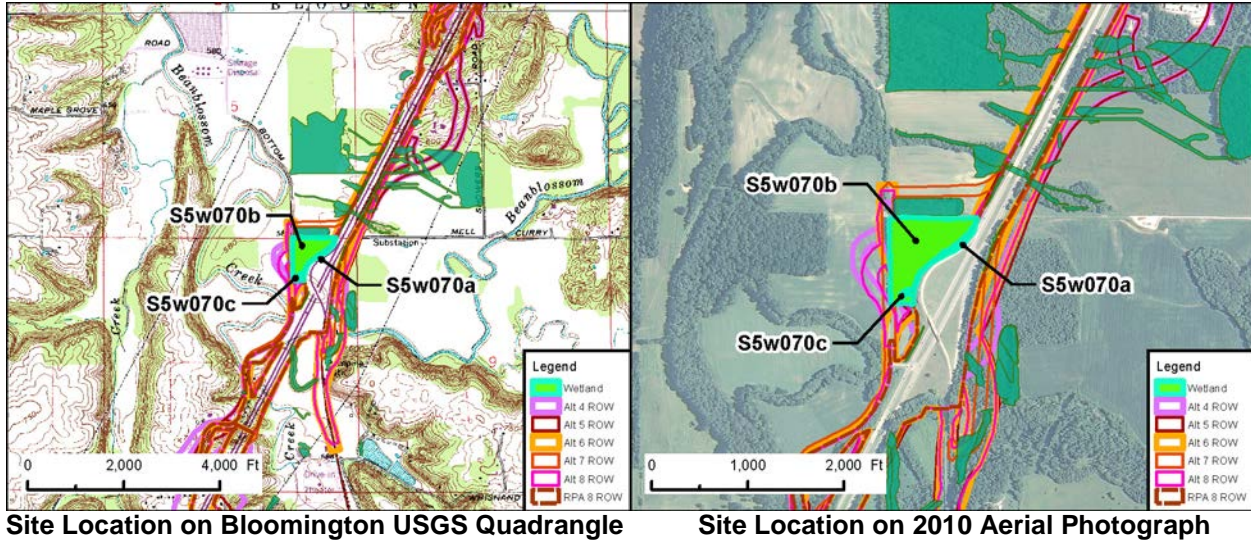


Photograph of Aquatic Bed Polygon 69g



Photograph of Deep Marsh polygon 69i

Wetland S5W070



Aquatic Resource: Wetland
Type: Shallow Marsh/Swamp Forest
Quarter: NE
Range: 1W
Watershed: Beanblossom Creek/Stout Creek

USGS Quadrangle: Bloomington
Section: 8
Township: 9N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W070						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
70a	Shallow Marsh	0.05 acre	4	Fair	Poor	Good
		0.40 acre	5			
		0.40 acre	6			
		0.00 acre	7			
		0.31 acre	8			
		0.14 acre	RPA 8			
70b	Swamp Forest	2.44 acre	4	Good	Poor	Good
		3.76 acre	5			
		3.63 acre	6			
		0.48 acre	7			
		2.79 acre	8			
		0.02 acre	RPA 8			
70c	Shallow Marsh	0.09 acre	4	Fair	Poor	Good
		0.09 acre	5			
		0.09 acre	6			
		0.00 acre	7			
		0.08 acre	8			
		0.00 acre	RPA 8			

Wetland S5W070

Description of Potential Impact: This wetland complex consists of three wetland polygons totaling 10.92 acres. Polygon 70a is classified as a shallow marsh, 0.54 acre in size; Polygon 70b is classified as a swamp forest, 10.29 acres in size; and, Polygon 70c is classified as a shallow marsh 0.09 acres in size. Alternatives 4, 5, 6, 8 and RPA 8 would impact between 0.05 and 0.40 acres of Polygon 70a. Alternatives 4, 5, 6, and 8 would impact between 0.08 and 0.09 acre of Polygon 70c. Alternative 7 would avoid impacts to the two shallow marsh polygons (70a and 70b). RPA 8 would avoid impacts to polygon 70c. Alternatives 4, 5, 6, 7, 8 and RPA 8 impacts to the swamp forest polygon would range from 0.02 acre to 3.76 acres. Polygons 70a and 70c showed between 75-100% herbaceous cover. Cattails, soft rush, rice cutgrass, and sedges were the dominant herbaceous species for both of these polygons. Polygon 70b showed between 50-75% woody plant cover. Spicebush and sweet gum were the dominant shrub species for 70b, with red maple and pin oak as dominant tree species. Hydrology is likely due to its floodplain nature of the wetland, local runoff, and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are ranked as fair, poor and good, respectively, based on InWRAP summaries for the shallow marsh polygons and good, poor and good for the swamp forest polygon within this complex. This wetland falls under the jurisdiction of both the USACE and IDEM due to its hydrologic connectivity to a tributary of Beanblossom Creek.



Photograph of shallow marsh Polygon 70a

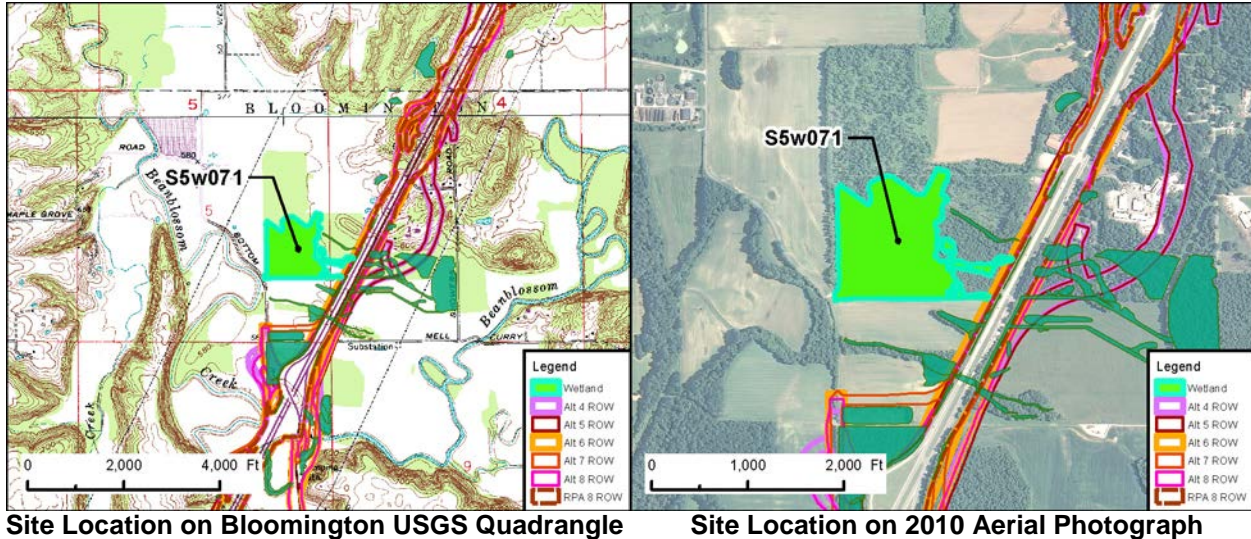


Photograph of swamp forest Polygon 70b



Photograph of shallow marsh Polygon 70c

Wetland S5W071



Aquatic Resource: Wetland
Type: Floodplain Forest
Quarter: SE
Range: 1W
Watershed: Beanblossom Creek/Stout Creek

USGS Quadrangle: Bloomington
Section: 5
Township: 9N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W071						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
71	Floodplain Forest	0.05 acre	4	Good	Fair	Fair
		0.05 acre	5			
		0.02 acre	6			
		0.00 acre	7			
		0.00 acre	8			
		0.00 acre	RPA 8			

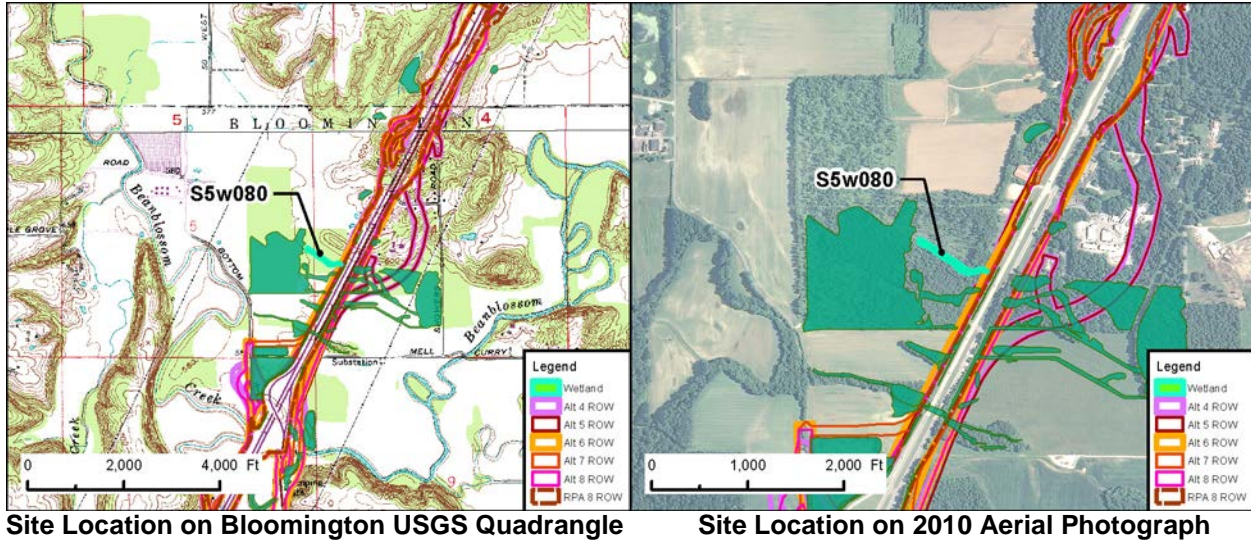
Description of Potential Impact: This site is classified as a floodplain forest, 31.75 acres in size. Alternatives 4, 5, and 6 impacts would range from 0.02 acre to 0.05 acre of this floodplain wetland. Alternative 7, 8 and RPA 8 would avoid this wetland. The area showed 25-50% herbaceous cover and 50-75% woody plant cover. Dominant herbaceous species for this wetland include moneywort, goldenrod, and snakeroot. Dominant woody species included boxelder and spicebush for shrub species, and green ash, silver maple, and sycamore for tree species. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as good, fair and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

Wetland S5W071



Photograph of Floodplain Forest Polygon 71

Wetland S5W080



Aquatic Resource: Wetland
Type: Floodplain Forest
Quarter: SW
Range: 1W
Watershed: Beanblossom Creek/Stout Creek

USGS Quadrangle: Bloomington
Section: 4
Township: 9N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W080						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
80	Floodplain Forest	0.00 acre	4	Good	Fair	Fair
		0.00 acre	5			
		0.01 acre	6			
		0.00 acre	7			
		0.00 acre	8			
		0.00 acre	RPA 8			

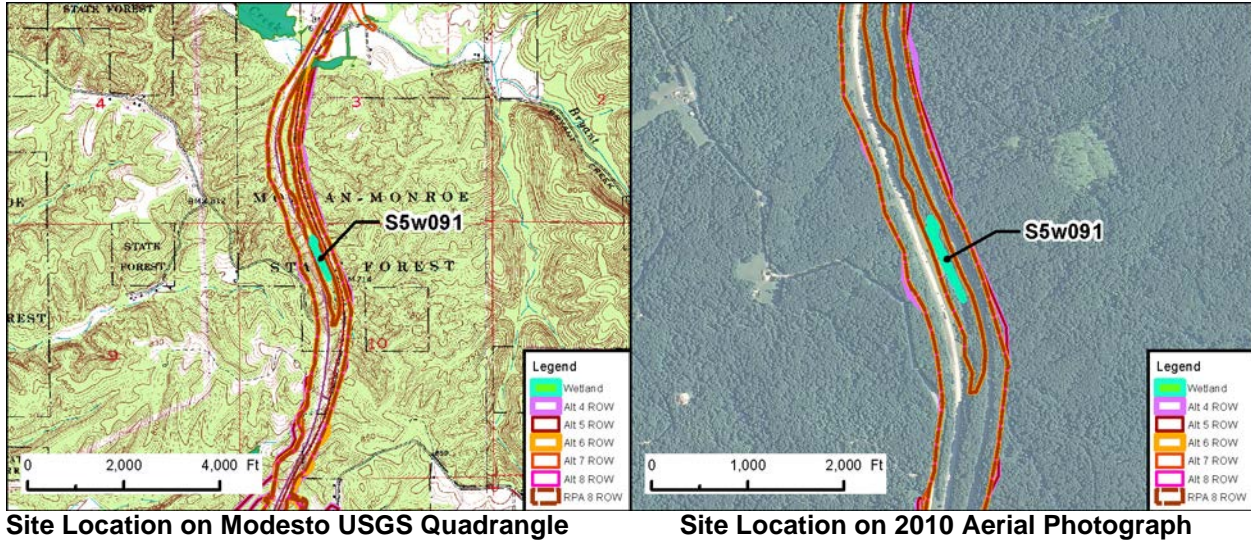
Description of Potential Impact: This site is classified as a floodplain forest, 0.56 acres in size. Alternatives 4, 5, 7, 8 and RPA 8 would avoid impacting this wetland. Alternative 6 would impact 0.01 acre of this wetland. The area showed 50-75% herbaceous cover and 25-50% woody plant cover. Dominant herbaceous species for this wetland include moneywort. Dominant woody species included boxelder and spicebush for shrub species, and green ash, sycamore, and silver maple for tree species. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as good, fair and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

Wetland S5W080



Photograph of floodplain forest Polygon 80

Wetland S5W091



Aquatic Resource: Wetland
Type: Seasonally Flooded Basin
Quarter: NW
Range: 1W
Watershed: Bryant Creek

USGS Quadrangle: Modesto
Section: 10
Township: 10N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W091						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
91	Seasonally Flooded Basin	0.88 acre	4	Fair	Poor	Fair
		0.88 acre	5			
		0.88 acre	6			
		0.88 acre	7			
		0.88 acre	8			
		0.88 acre	RPA 8			

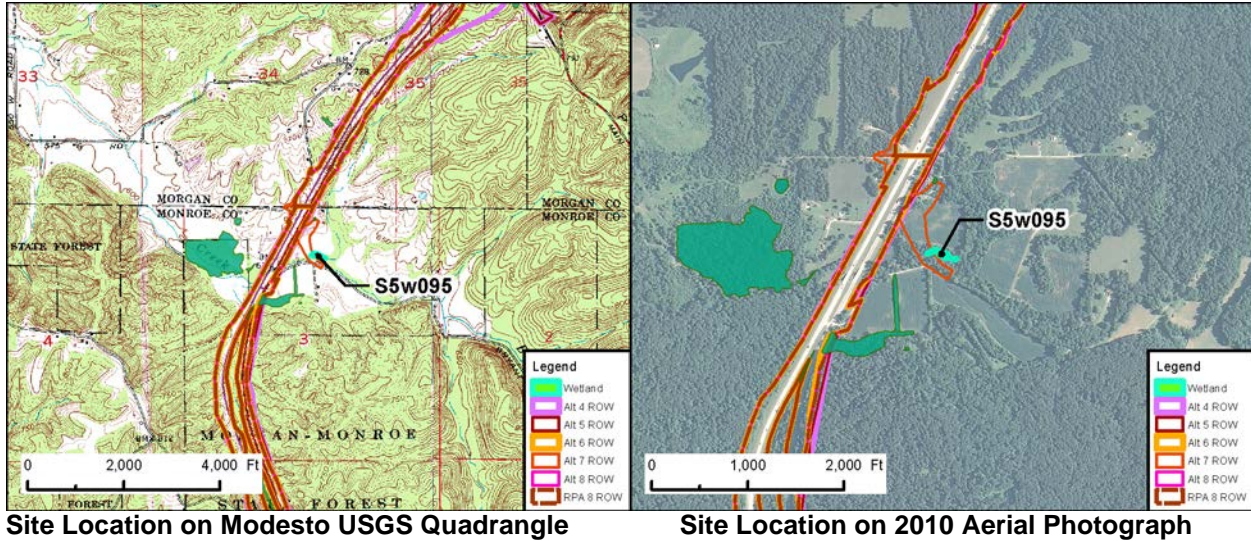
Description of Potential Impact: This site is classified as a seasonally flooded basin, 0.88 acres in size. All six alternatives would impact this entire wetland. This wetland showed 75-100% herbaceous cover and less than 25% woody plant cover. Dominant herbaceous species for this wetland include reed canarygrass, goldenrod, sedges, and cattail. Dominant woody species included black willow, sycamore and cottonwood. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as fair, poor and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Bryant Creek.

Wetland S5W091



Photograph of Polygon 91

Wetland S5W095



Aquatic Resource: Wetland
Type: Floodplain Forest
Quarter: NE
Range: 1W
Watershed: Bryant Creek

USGS Quadrangle: Modesto
Section: 3
Township: 10N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W095						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
95	Floodplain Forest	0.00 acre	4	Fair	Poor	Good
		0.00 acre	5			
		0.00 acre	6			
		0.01 acre	7			
		0.00 acre	8			
		0.00 acre	RPA 8			

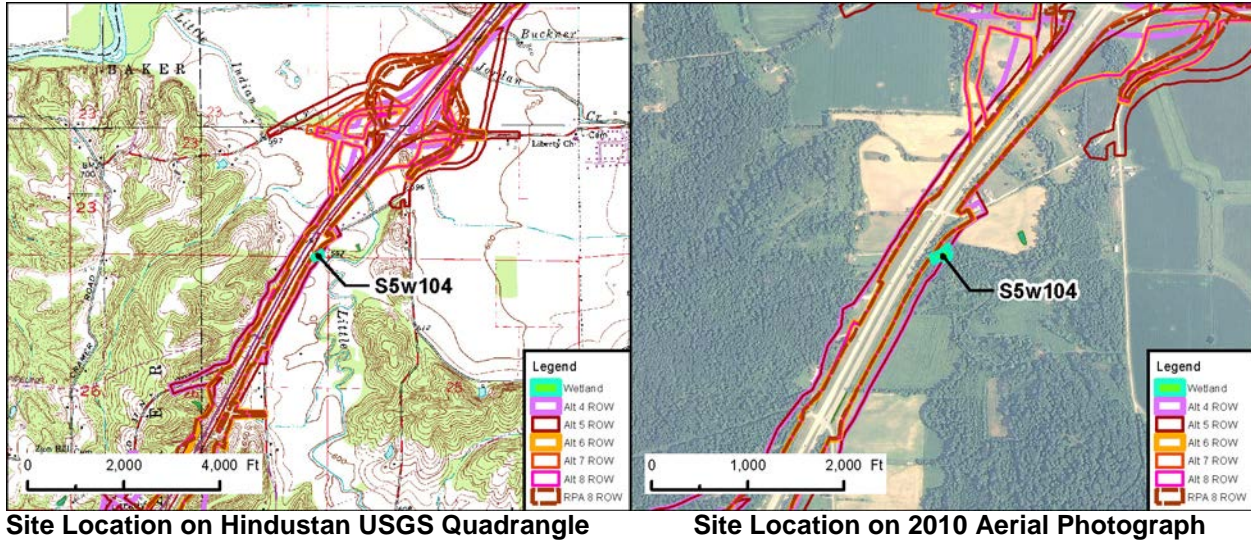
Description of Potential Impact: This site is classified as a floodplain forest, 0.19 acres in size. Alternative 7 would impact 0.01 acre of this floodplain forest. Alternatives 4, 5, 6, 8 and RPA 8 would avoid impacting this wetland. This wetland showed less than 25% herbaceous cover and between 50-75% woody plant cover. Dominant herbaceous species for this wetland include jewelweed and wingstem. Dominant woody species included sycamore. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as fair, poor and good respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Bryant Creek.

Wetland S5W095



Photograph of forested Polygon 95

Wetland S5W104



Aquatic Resource: Wetland
Type: Sedge Meadow
Quarter: SE
Range: 1W
Watershed: Little Indian Creek/Jordan Creek

USGS Quadrangle: Hindustan
Section: 23
Township: 11N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W104						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
104	Sedge Meadow	0.25 acre	4	Poor	Fair	Good
		0.25 acre	5			
		0.00 acre	6			
		0.00 acre	7			
		0.00 acre	8			
		0.00 acre	RPA 8			

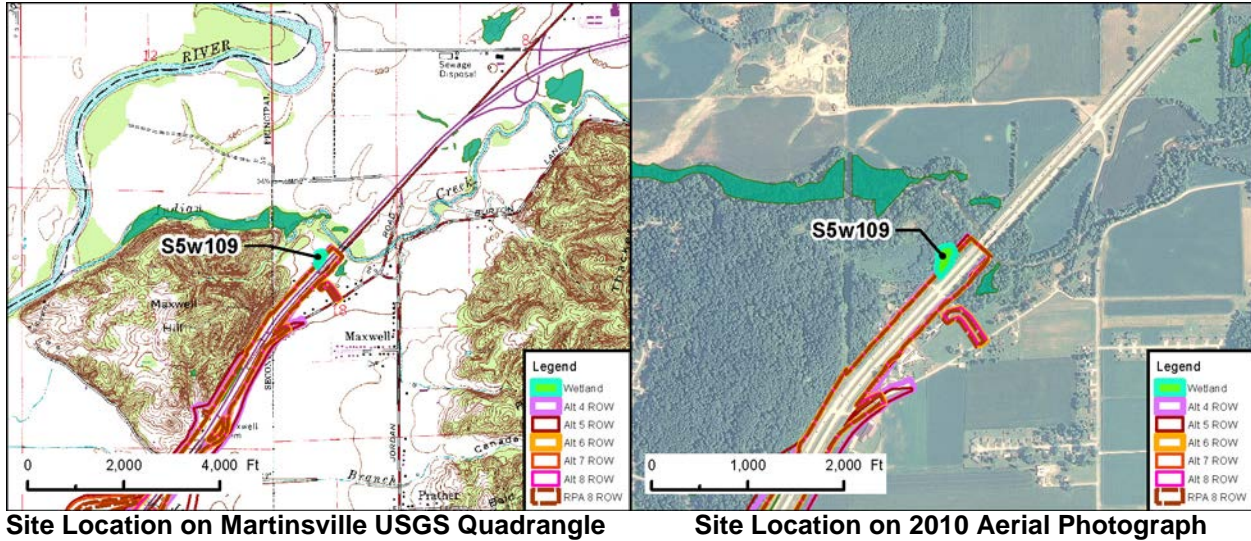
Description of Potential Impact: This site is classified as a sedge meadow, 0.40 acres in size. Alternatives 4 and 5 would impact 0.25 acre of this depressional wetland. Alternatives 6, 7, 8, and RPA 8 would avoid impacting this wetland. This wetland showed between 75-100% herbaceous cover. Dominant herbaceous species for this wetland include knotweed, reed canarygrass, sedges, and woolgrass. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, fair and good respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Little Indian Creek.

Wetland S5W104



Photograph of Sedge Meadow Polygon 104

Wetland S5W109



Aquatic Resource: Wetland
Type: Scrub Carr
Quarter: NW
Range: 1E
Watershed: Indian Creek/Sand Creek

USGS Quadrangle: Martinsville
Section: 18
Township: 11N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W109						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
109	Scrub Carr	0.37 acre	4	Poor	Poor	Fair
		0.38 acre	5			
		0.12 acre	6			
		0.15 acre	7			
		0.12 acre	8			
		0.12 acre	RPA 8			

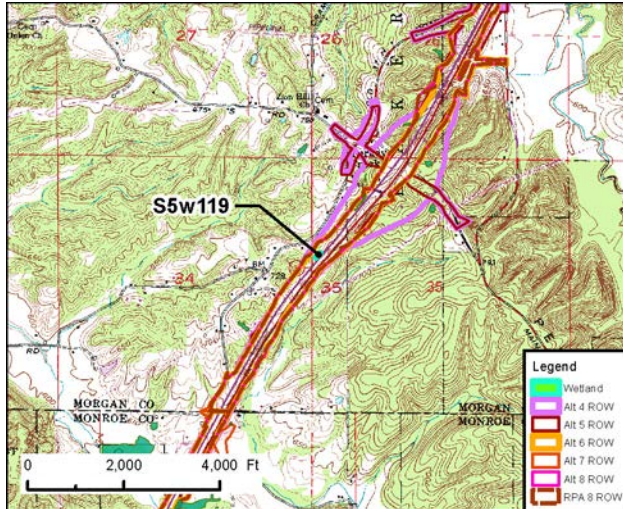
Description of Potential Impact: This site is classified as a shrub-carr, 1.01 acres in size. Alternatives 4, 5, 6, 7, 8 and RPA 8 impacts range from 0.12 acre to 0.38 acre of this floodplain wetland. The area showed 75-100% herbaceous cover and 25-50% woody plant cover. Dominant herbaceous species for this wetland include reed canarygrass and knotweed. Dominant woody species included black willow and sycamore. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Indian Creek.

Wetland S5W109

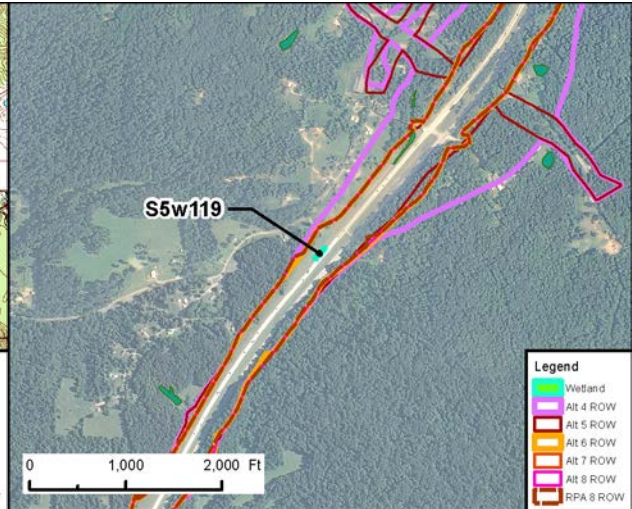


Photograph of Scrub Carr Polygon 109

Wetland S5W119



Site Location on Modesto USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource: Wetland
Type: Seasonally Flooded Basin
Quarter: NW
Range: 1W
Watershed: Bryant Creek

USGS Quadrangle: Modesto
Section: 35
Township: 11N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W119						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
119	Seasonally Flooded Basin	0.05 acre	4	Poor	Poor	Poor
		0.05 acre	5			
		0.05 acre	6			
		0.05 acre	7			
		0.05 acre	8			
		0.05 acre	RPA 8			

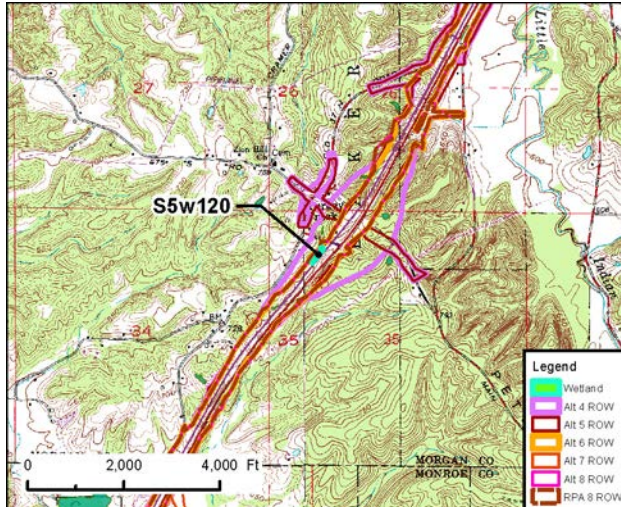
Description of Potential Impact: This site is classified as a seasonally flooded basin, 0.05 acres in size. All six alternatives would impact this entire wetland. This wetland showed 75-100% herbaceous cover and less than 25% woody plant cover. Dominant herbaceous species for this wetland include cattail, sedges, bulrush, and ladysthumb. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and poor respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Bryant Creek.

Wetland S5W119

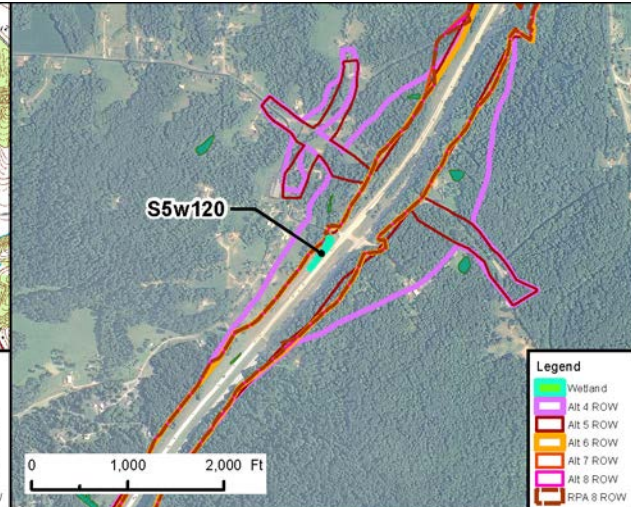


Photograph of emergent Polygon 119

Wetland S5W120



Site Location on Hindustan USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource: Wetland
Type: Seasonally Flooded Basin
Quarter: NW
Range: 1W
Watershed: Bryant Creek

USGS Quadrangle: Hindustan
Section: 35
Township: 11N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W120						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
120	Seasonally Flooded Basin	0.02 acre	4	Poor	Poor	Fair
		0.02 acre	5			
		0.06 acre	6			
		0.06 acre	7			
		0.04 acre	8			
		0.06 acre	RPA 8			

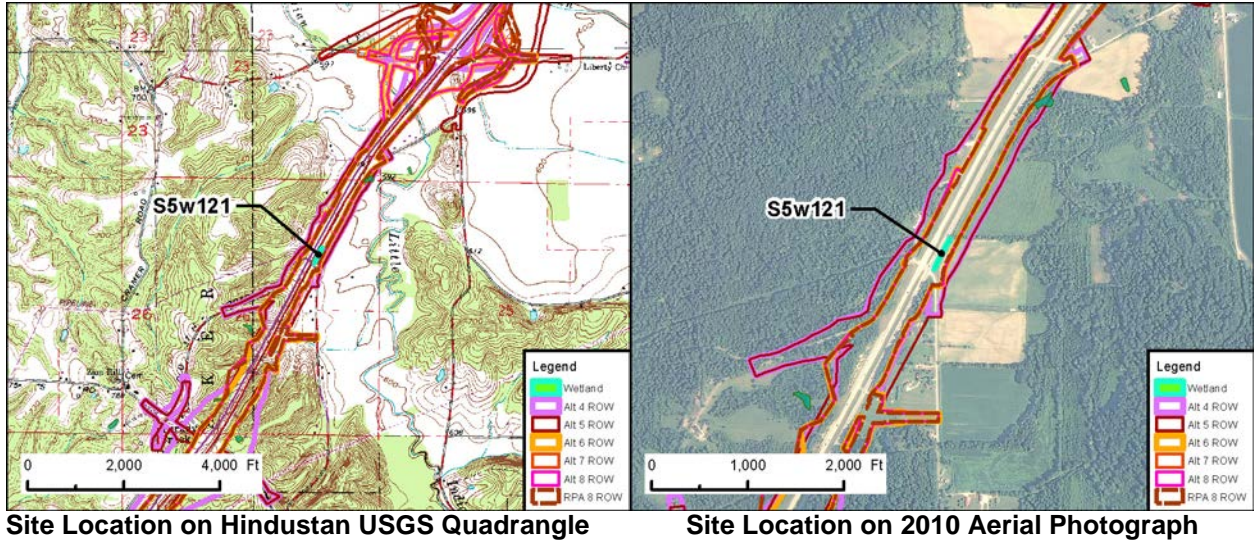
Description of Potential Impact: This site is classified as a seasonally flooded basin, 0.20 acres in size. All six alternatives would impact from 0.02 acre to 0.06 acre of this emergent wetland. This wetland showed 75-100% herbaceous cover and less than 25% woody plant cover. Dominant herbaceous species for this wetland include cattail and joe pye weed. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Bryant Creek.

Wetland S5W120



Photograph of Polygon 120

Wetland S5W121



Aquatic Resource: Wetland
Type: Seasonally Flooded Basin
Quarter: NE
Range: 1W
Watershed: Little Indian Creek/Jordan Creek

USGS Quadrangle: Hindustan
Section: 26
Township: 11N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W121						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
121	Seasonally Flooded Basin	0.04 acre	4	Poor	Poor	Fair
		0.04 acre	5			
		0.04 acre	6			
		0.04 acre	7			
		0.04 acre	8			
		0.04 acre	RPA 8			

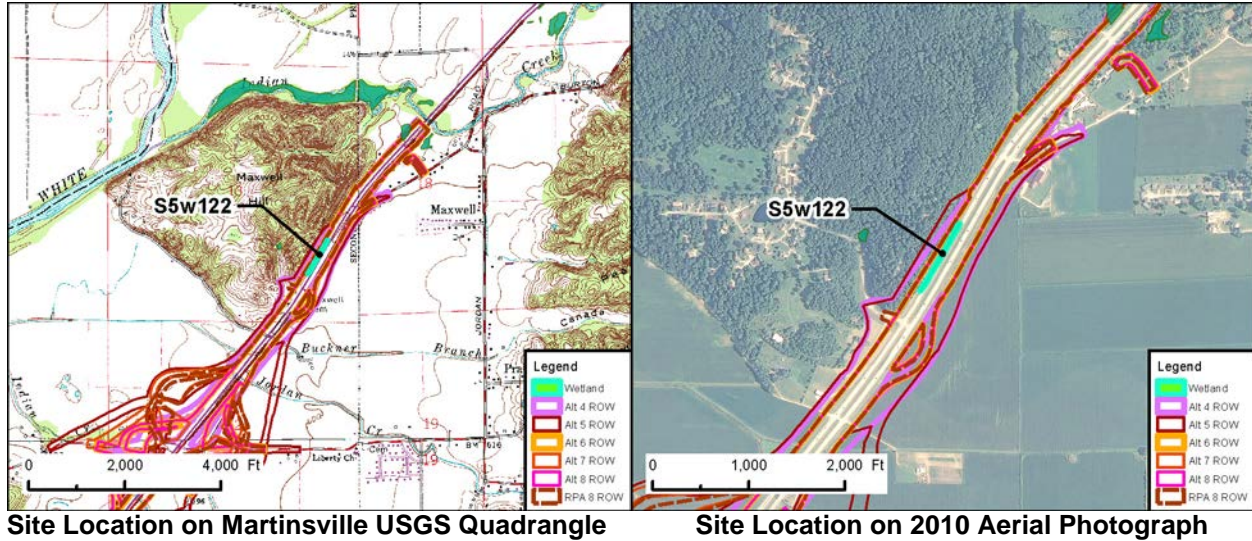
Description of Potential Impact: This site is classified as a seasonally flooded basin, 0.04 acres in size. All six alternatives would impact this entire wetland. This wetland showed 75-100% herbaceous cover and less than 25% woody plant cover. Dominant herbaceous species for this wetland include rushes, beggarticks and asters. Hydrology is likely due to local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Little Indian Creek.

Wetland S5W121



Photograph of Emergent Polygon 121

Wetland S5W122



Aquatic Resource:	Wetland	USGS Quadrangle:	Martinsville
Type:	Wet Meadow	Section:	13
Quarter:	SE	Township:	11N
Range:	1W	USCOE Jurisdiction:	Yes
Watershed:	Little Indian Creek/Jordan Creek	IDEM Jurisdiction:	Yes

Wetland S5W122						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
122	Wet Meadow	0.28 acre	4	Poor	Poor	Fair
		0.28 acre	5			
		0.01 acre	6			
		0.01 acre	7			
		0.01 acre	8			
		0.01 acre	RPA 8			

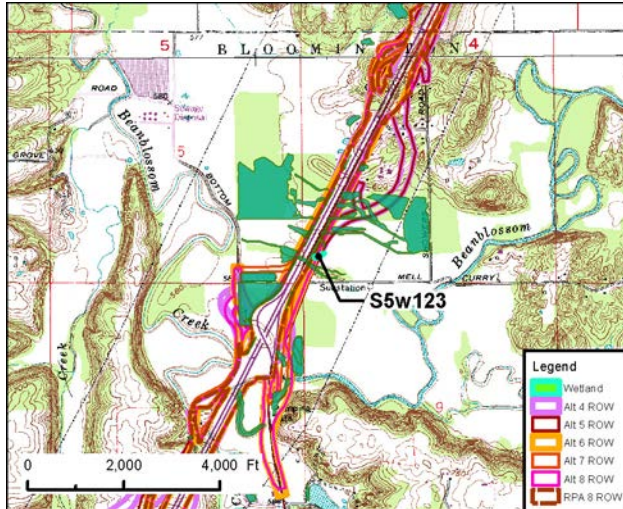
Description of Potential Impact: This site is classified as a wet meadow, 0.28 acres in size. Alternatives 4 and 5 would impact this entire depressional wetland. Alternatives 6, 7, 8, and RPA 8 would impact 0.01 acre of this emergent wetland. This wetland showed between 75-100% herbaceous cover. Dominant herbaceous species for this wetland include reed canarygrass, beggarticks, nutsedge and knotweed. Hydrology is likely due to local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Indian Creek.

Wetland S5W122

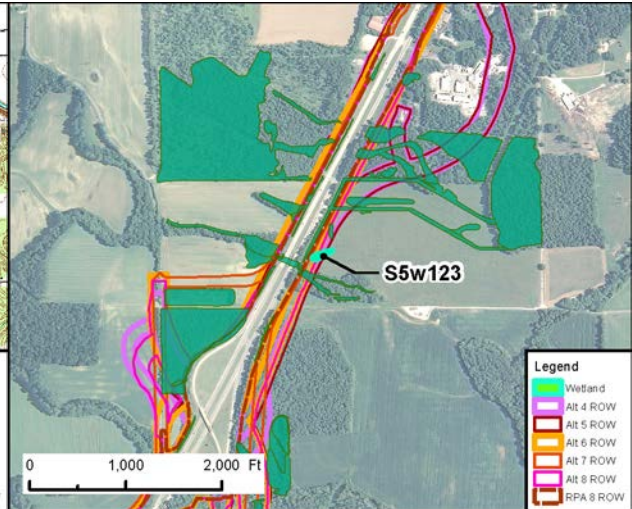


Photograph of Wet Meadow Polygon 122

Wetland S5W123



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource: Wetland
Type: Wet Meadow
Quarter: SW
Range: 1W
Watershed: Beanblossom Creek/Stout Creek

USGS Quadrangle: Bloomington
Section: 4
Township: 9N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W123						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
123	Wet Meadow	0.10 acre	4	Poor	Poor	Good
		0.12 acre	5			
		0.02 acre	6			
		0.00 acre	7			
		0.01 acre	8			
		0.00 acre	RPA 8			

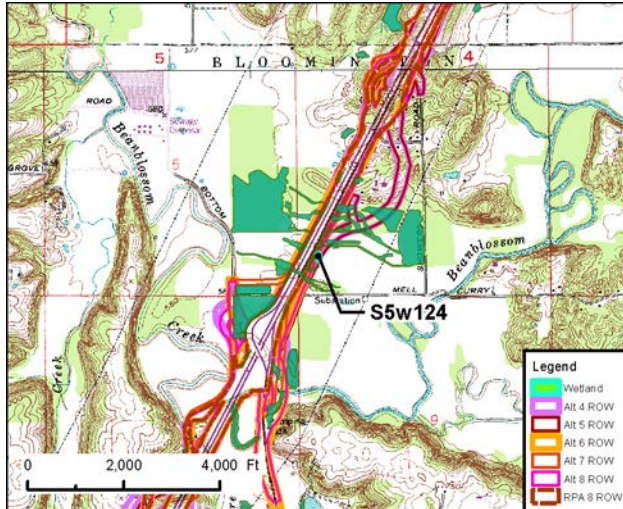
Description of Potential Impact: This site is classified as a wet meadow, 0.18 acres in size. Alternatives 4, 5, 6, and 8 impacts would range from 0.01 acre to 0.12 acre of this floodplain wetland. Alternatives 7 and RPA 8 would avoid impacting this wetland. The area showed 75-100% herbaceous cover. Dominant herbaceous species include sedges, and moneywort. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and good respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

Wetland S5W123

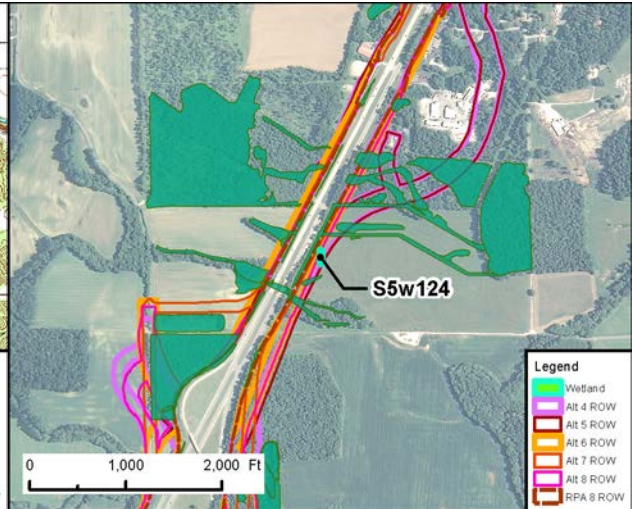


Photograph of Emergent Polygon 123

Wetland S5W124



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource: Wetland
Type: Wet Meadow
Quarter: SW
Range: 1W
Watershed: Beanblossom Creek/Stout Creek

USGS Quadrangle: Bloomington
Section: 4
Township: 9N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W124						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
124	Wet Meadow	0.11 acre	4	Poor	Poor	Good
		0.13 acre	5			
		0.00 acre	6			
		0.00 acre	7			
		0.00 acre	8			
		0.00 acre	RPA 8			

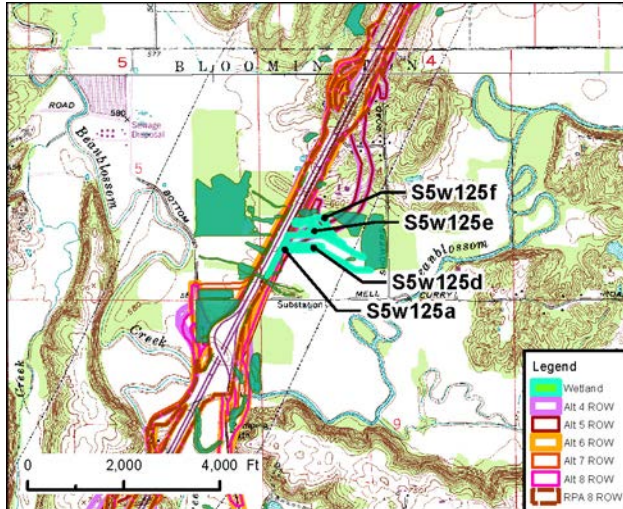
Description of Potential Impact: This site is classified as a wet meadow, 0.14 acres in size. Alternatives 4 and 5 impacts would range from 0.11 acre to 0.13 acre of this floodplain wetland. Alternatives 6, 7, 8 and RPA 8 would avoid impacting this wetland. The area showed 75-100% herbaceous cover. Dominant herbaceous species include soft rush, sedges, and moneywort. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and good respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

Wetland S5W124

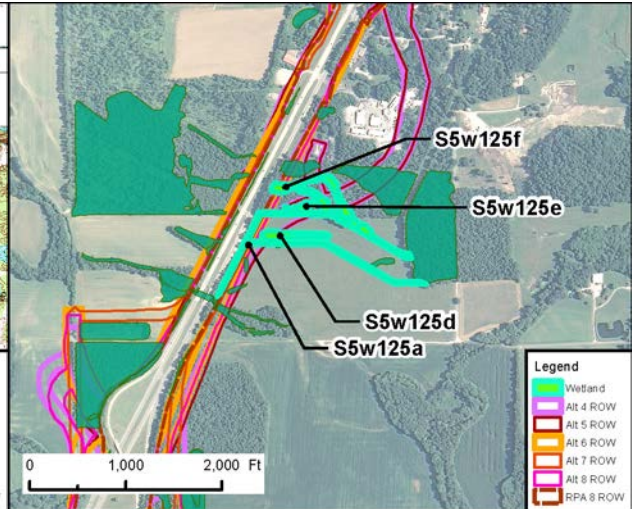


Photograph of Emergent Polygon 124

Wetland S5W125



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource: Wetland
Type: Wet Meadow/Floodplain Forest
Quarter: SW
Range: 1W
Watershed: Beanblossom Creek/Stout Creek

USGS Quadrangle: Bloomington
Section: 4
Township: 9N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W125						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
125a	Wet Meadow	1.07 acre	4	Poor	Poor	Fair
		1.07 acre	5			
		0.69 acre	6			
		0.62 acre	7			
		0.68 acre	8			
		0.43 acre	RPA 8			
125d	Wet Meadow	0.21 acre	4	Poor	Poor	Good
		0.23 acre	5			
		0.00 acre	6			
		0.00 acre	7			
		0.00 acre	8			
		0.00 acre	RPA 8			
125e	Floodplain Forest	0.32 acre	4	Good	Fair	Good
		0.31 acre	5			
		0.00 acre	6			
		0.00 acre	7			
		0.00 acre	8			
		0.00 acre	RPA 8			

Wetland S5W125

Wetland S5W125						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
125f	Floodplain Forest	0.87 acre	4	Good	Fair	Good
		0.86 acre	5			
		0.21 acre	6			
		0.09 acre	7			
		0.21 acre	8			
		0.05 acre	RPA 8			

Description of Potential Impact: This wetland complex consists of four wetland polygons totaling 7.40 acres. Polygon 125a is classified as a wet meadow, 3.75 acres in size; Polygon 125d is classified as a wet meadow, 1.03 acres in size; Polygon 125e is classified as a floodplain forest, 0.33 acres in size, and Polygon 125f is classified as a floodplain forest 2.29 acres in size. Alternatives 4, 5, 6, 7, 8 and RPA 8 would impact from 0.43 acre to 1.07 acres of Polygon 125a. Alternatives 6, 7, 8 and RPA 8 would avoid impacts to Polygons 125d and 125e. Alternatives 4 and 5 impacts to Polygon 125d would range from 0.21 to 0.23 acres. Alternatives 4 and 5 impacts to Polygon 125e would range from 0.31 to 0.32 acre. Alternatives 4, 5, 6, 7, 8, and RPA 8 would impact from 0.05 to 0.87 acres of Polygon 125f. Polygons 125a showed between 75-100% herbaceous cover and Polygon 125d showed between 50-75% herbaceous cover. Soft rush, sedges, asters, and knotweed were the dominant herbaceous species for both of these polygons. Polygon 125e showed between 25-50% cover for both the herbaceous and woody species. Dominant herbaceous species for Polygon 125e include sensitive fern. Spicebush and swamp rose are the dominant shrub species, and green ash and sweet gum are the dominant tree species for Polygon 125e. Polygon 125f showed between 25-50% woody cover and less than 25% herbaceous cover. Sedges are the dominant herbaceous species and spicebush and swamp rose are the dominant shrub species for Polygon 125f. Dominant tree species for Polygon 125f include green ash, red maple, and sweet gum. Hydrology is likely due to frequent flooding, local runoff, and poorly drained soils. Animal habitat is ranked as poor for the wet meadow polygons and good for the floodplain forest polygons. Botanical diversity is ranked as poor for the wet meadow polygons and fair for the floodplain forest polygons. Hydraulic functions are ranked as fair for polygon 125a and good for the remaining polygons. These values are based on the InWRAP summaries for each of the polygons within this complex. This wetland falls under the jurisdiction of both the USACE and IDEM due to its hydrologic connectivity to a tributary of Beanblossom Creek.

Wetland S5W125



Photograph of Emergent Polygon 125a



Photograph of Forested Polygon 125f



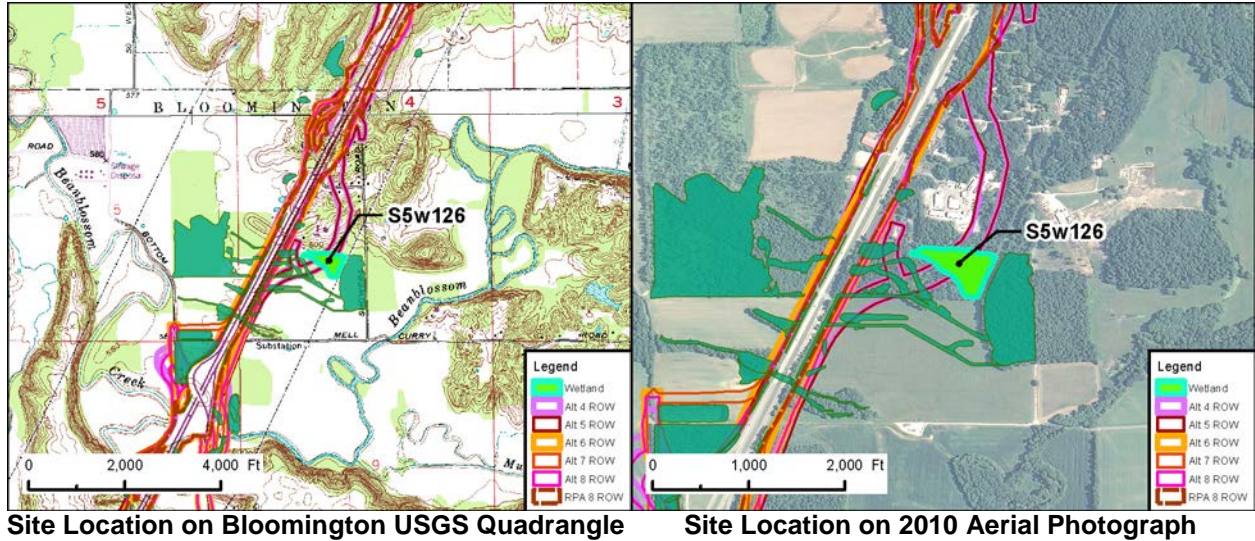
Photograph of Emergent Polygon 125d



Photograph of Forested Polygon 125e

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Wetland S5W126



Aquatic Resource: Wetland
Type: Floodplain Forest
Quarter: SW
Range: 1W
Watershed: Beanblossom Creek/Stout Creek

USGS Quadrangle: Bloomington
Section: 4
Township: 9N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W126						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
126	Floodplain Forest	1.37 acres	4	Good	Fair	Good
		1.37 acres	5			
		0.00 acres	6			
		0.00 acres	7			
		0.00 acres	8			
		0.00 acres	RPA 8			

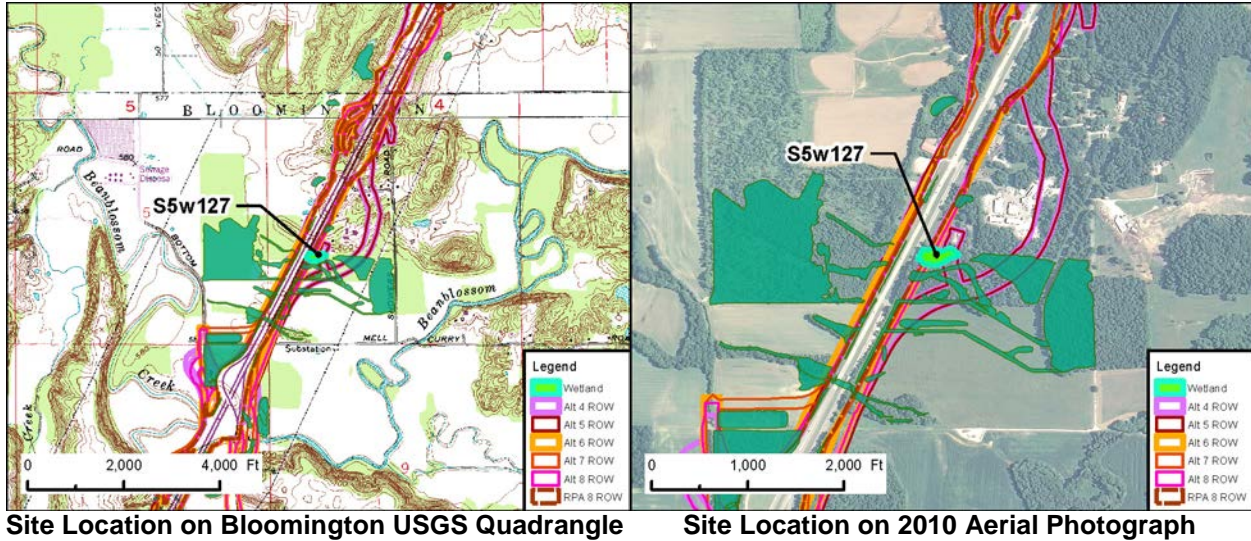
Description of Potential Impact: This site is classified as a floodplain forest, 5.00 acres in size. Alternatives 4 and 5 would impact 1.37 acres of this floodplain wetland. Alternatives 6, 7, 8 and RPA 8 would avoid impacting this wetland. This wetland showed 75-100% herbaceous cover and 25-50% woody plant cover. Dominant herbaceous species for this wetland include sedges. Dominant woody plant species include sweetgum, swamp rose, and green ash. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as good, fair and good respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

Wetland S5W126



Photograph of Forested Polygon 126

Wetland S5W127



Aquatic Resource: Wetland
Type: Floodplain Forest
Quarter: SW
Range: 1W
Watershed: Beanblossom Creek/Stout Creek

USGS Quadrangle: Bloomington
Section: 4
Township: 9N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W127						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
127	Floodplain Forest	0.44 acre	4	Good	Fair	Good
		0.44 acre	5			
		0.35 acre	6			
		0.16 acre	7			
		0.35 acre	8			
		0.10 acre	RPA 8			

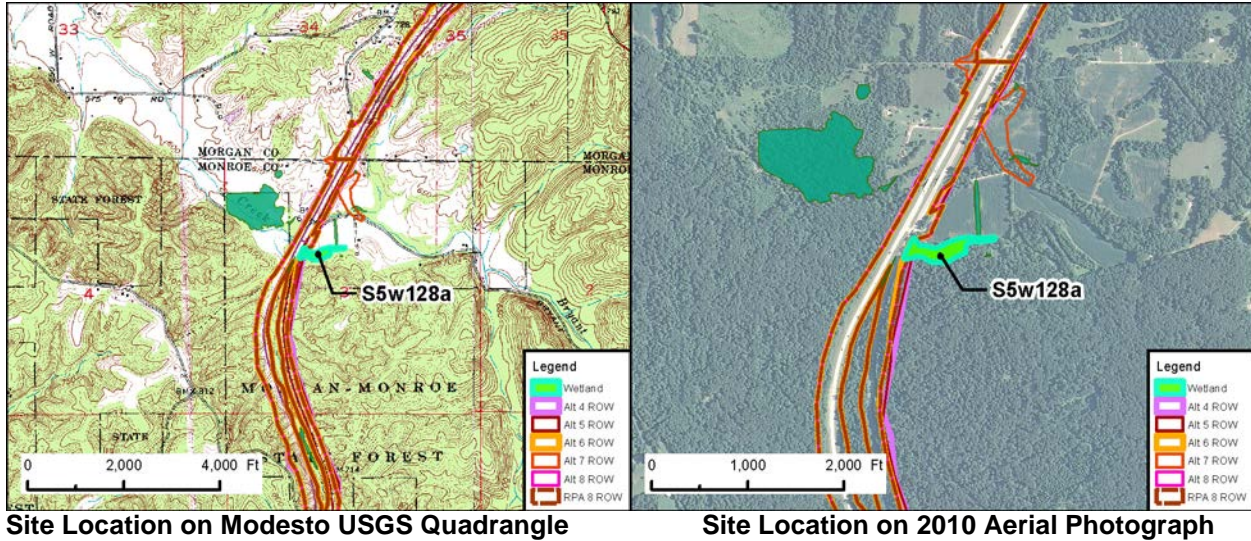
Description of Potential Impact: This site is classified as a floodplain forest, 1.16 acres in size. Alternatives 4 and 5 would impact 0.44 acres of this floodplain wetland. Alternatives 6 and 8 would impact 0.35 acre of this wetland, Alternative 7 would impact 0.16 acre; and RPA 8 would impact 0.10 acre. This wetland showed 75-100% herbaceous cover and 25-50% woody plant cover. Dominant herbaceous species for this wetland include sedges and moneywort. Dominant woody plant species include swamp rose, spicebush, red maple and pin oak. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as good, fair and good respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

Wetland S5W127



Photograph of Forested Polygon 127

Wetland S5W128



Aquatic Resource: Wetland
Type: Floodplain Forest
Quarter: NW
Range: 1W
Watershed: Bryant Creek

USGS Quadrangle: Modesto
Section: 3
Township: 10N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W128						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
128a	Floodplain Forest	0.32 acre	4	Good	Poor	Good
		0.32 acre	5			
		0.00 acre	6			
		0.21 acre	7			
		0.21 acre	8			
		0.21 acre	RPA 8			

Description of Potential Impact: This site is classified as a floodplain forest, 2.65 acres in size. Alternative 6 would avoid impacting this wetland. Alternatives 4 and 5 would impact 0.32 acres if this floodplain forest. Alternatives 7, 8, and RPA 8 would impact 0.21 acres of this forested wetland. This wetland showed less than 25% herbaceous cover and between 50-75% woody plant cover. Dominant herbaceous species for this wetland include moneywort. Dominant woody species included box elder, green ash, and sycamore. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as good, poor and good respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Bryant Creek.

Wetland S5W128

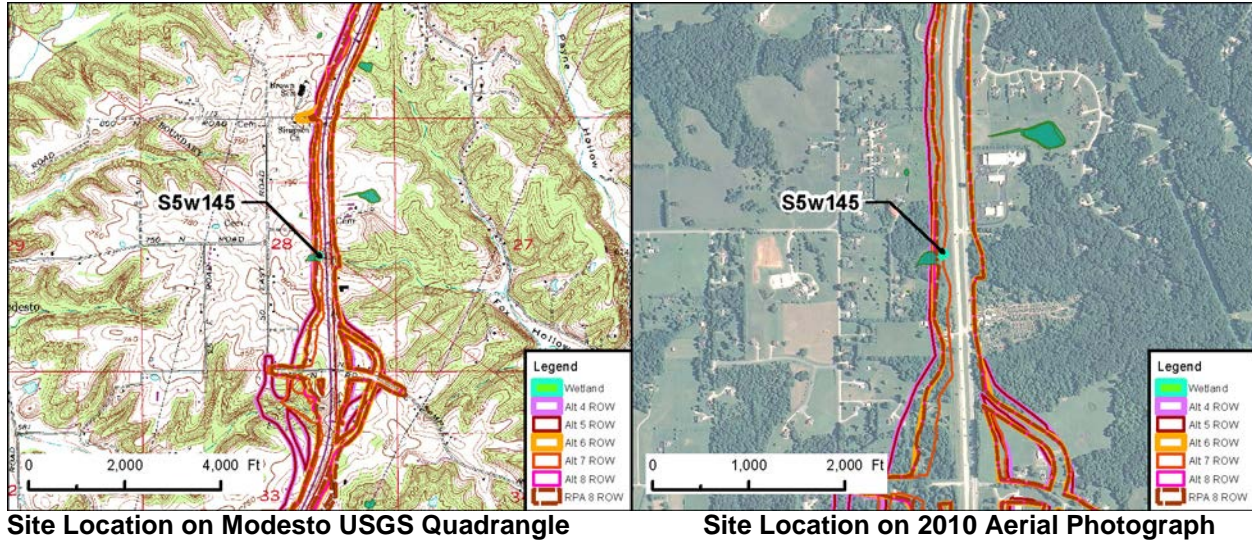


Photograph of Forested Polygon 128a



Photograph of Forested Polygon 128a

Wetland S5W145



Aquatic Resource:	Wetland	USGS Quadrangle:	Modesto
Type:	Wet Meadow	Section:	28
Quarter:	SE	Township:	10N
Range:	1W	USCOE Jurisdiction:	Yes
Watershed:	Beanblossom/Buck Creek/Muddy Fork	IDEM Jurisdiction:	Yes

Wetland S5W145						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
145	Wet Meadow	0.06 acre	4	Fair	Poor	Fair
		0.06 acre	5			
		0.06 acre	6			
		0.01 acre	7			
		0.06 acre	8			
		0.06 acre	RPA 8			

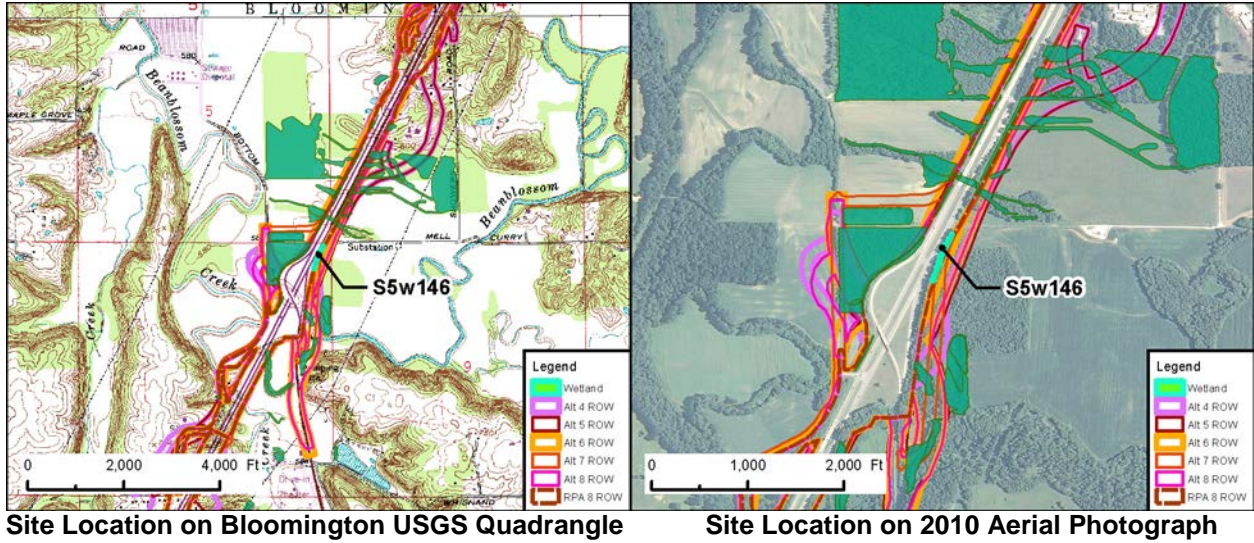
Description of Potential Impact: This site is classified as a wet meadow, 0.06 acres in size. Alternatives 4, 5, 6, 8, and RPA 8 would impact this entire wetland. Alternative 7 would impact 0.01 acre of this emergent wetland. This wetland showed between 75-100% herbaceous cover and less than 25% woody plant cover. Dominant herbaceous species for this wetland include sedges, smartweeds, lady's thumb, and touch-me-nots. Dominant woody species included silky willow. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as fair, poor and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Fox Hollow.

Wetland S5W145



Photograph of emergent Polygon 145

Wetland S5W146



Aquatic Resource: Wetland
Type: Floodplain Forest
Quarter: SE
Range: 1W
Watershed: Beanblossom Creek/Stout Creek

USGS Quadrangle: Bloomington
Section: 28
Township: 10N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W146						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
146	Floodplain Forest	0.14 acre	4	Fair	Poor	Fair
		0.14 acre	5			
		0.01 acre	6			
		0.11 acre	7			
		0.14 acre	8			
		0.01 acre	RPA 8			

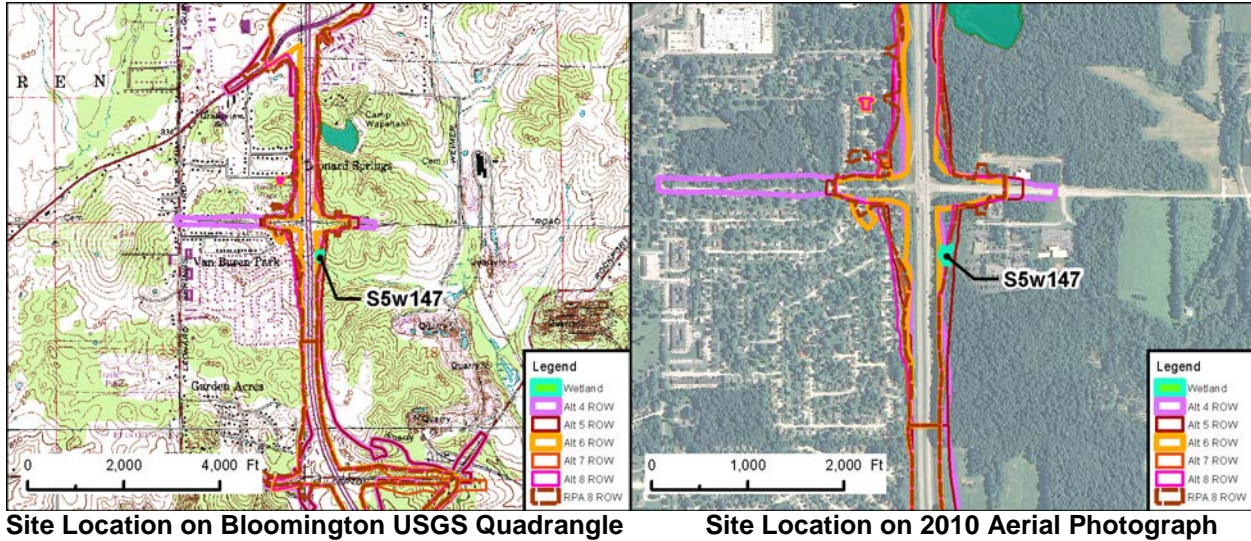
Description of Potential Impact: This site is classified as a floodplain forest, 0.14 acres in size. Alternatives 4, 5, and 8 would impact this entire wetland. Alternatives 6 and RPA 8 would impact 0.01 acre of this emergent wetland and Alternative 7 would impact 0.11 acre of this wetland. This wetland showed between 25-50% herbaceous cover and between 50-75% woody plant cover. Dominant herbaceous species for this wetland include reed canarygrass. Dominant woody species include green ash, American elm, red maple and swamp white oak. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are each rated as fair, poor and fair based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Beanblossom Creek.

Wetland S5W146



Photograph of forested Polygon 146

Wetland S5W147



Aquatic Resource:	Wetland	USGS Quadrangle:	Bloomington
Type:	Floodplain Forest	Section:	18
Quarter:	NW	Township:	8N
Range:	1W	USCOE Jurisdiction:	Yes
Watershed:	Clear Creek/Jackson Creek	IDEM Jurisdiction:	Yes

Wetland S5W147						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
147	Floodplain Forest	0.06 acre	4	Good	Fair	Good
		0.23 acre	5			
		0.00 acre	6			
		0.11 acre	7			
		0.07 acre	8			
		0.07 acre	RPA 8			

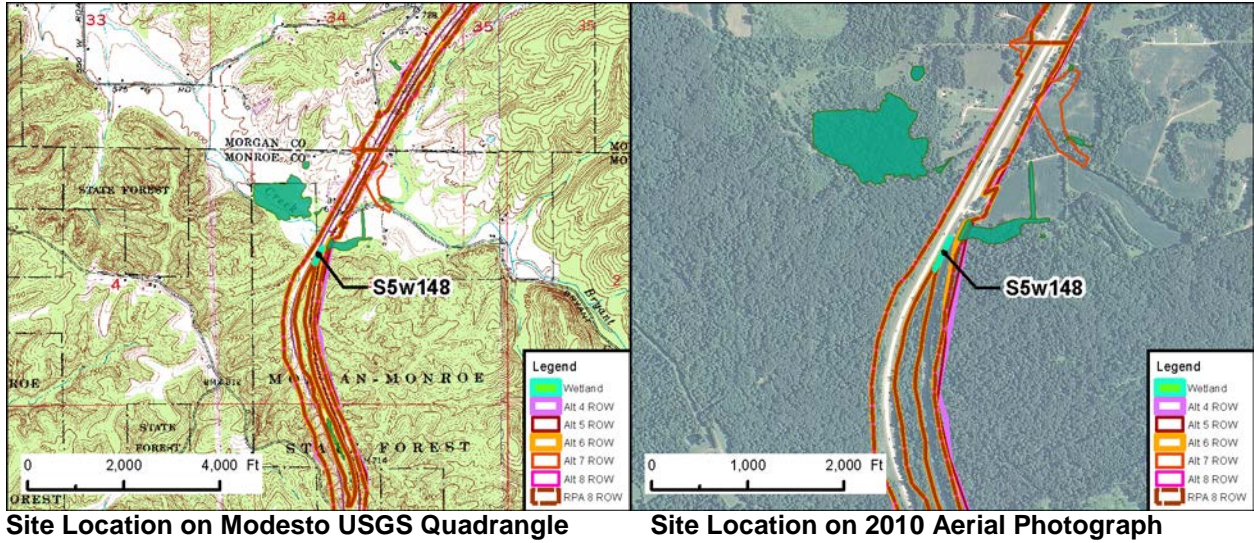
Description of Potential Impact: This site is classified as a floodplain forest, 0.23 acres in size. Alternatives 6 would avoid impacting this depressional wetland; while alternatives 4, 5, 7, 8 and RPA 8 would impact from 0.06 acre to 0.23 acres. This wetland showed between 25-50% herbaceous cover and between 50-75% woody plant cover. Dominant herbaceous species for this wetland include needle spikerush. Dominant woody species included black willow, silky dogwood, green ash, and American elm. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as good, fair and good based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Clear Creek.

Wetland S5W147



Photograph of forested Polygon 147

Wetland S5W148



<p>Aquatic Resource: Wetland Type: Sedge meadow Quarter: NW Range: 1W Watershed: Bryant Creek</p>	<p>USGS Quadrangle: Modesto Section: 3 Township: 10N USCOE Jurisdiction: Yes IDEM Jurisdiction: Yes</p>
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Wetland S5W148						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
148	Sedge meadow	0.08 acre	4	Poor	Poor	Fair
		0.08 acre	5			
		0.08 acre	6			
		0.08 acre	7			
		0.08 acre	8			
		0.08 acre	RPA 8			

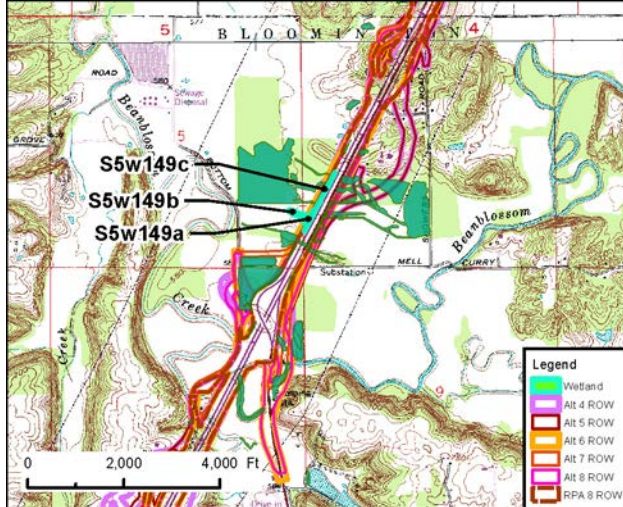
Description of Potential Impact: This site is classified as a sedge meadow, 0.09 acres in size. All of the alternatives would impact 0.08 acres of this wetland. This wetland showed between 50-75% herbaceous cover and less than 25% woody plant cover. Dominant herbaceous species for this wetland include cattails and reed canarygrass. Hydrology is likely due to local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, poor and fair, respectively based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Clear Creek.

Wetland S5W148

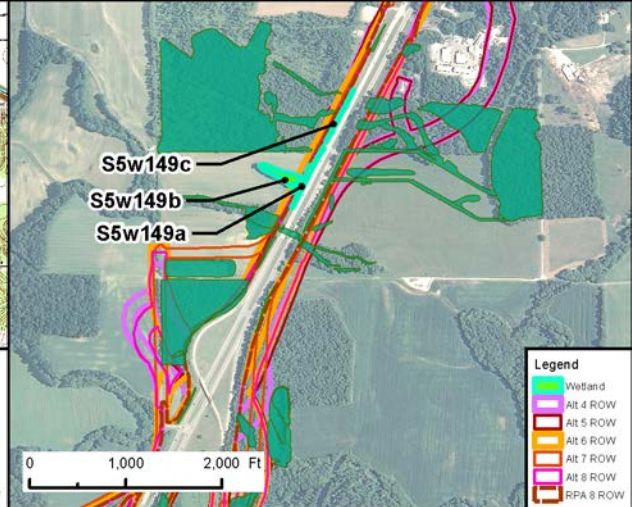


Photograph of emergent Polygon 148

Wetland S5W149



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource: Wetland
Type: Sedge Meadow/Swamp Forest
Quarter: SW, SE
Range: 1W
Watershed: Beanblossom Creek/Stout Creek

USGS Quadrangle: Bloomington
Section: 4 & 5
Township: 9N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W149						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
149a	Sedge Meadow	0.26 acre	4	Poor	Fair	Good
		0.26 acre	5			
		0.39 acre	6			
		0.27 acre	7			
		0.25 acre	8			
		0.24 acre	RPA 8			
149b	Sedge Meadow	0.11 acre	4	Poor	Fair	Good
		0.11 acre	5			
		0.11 acre	6			
		0.11 acre	7			
		0.11 acre	8			
		0.11 acre	RPA 8			
149c	Swamp Forest	0.00 acre	4	Good	Poor	Fair
		0.00 acre	5			
		0.04 acre	6			
		0.00 acre	7			
		0.00 acre	8			
		0.00 acre	RPA 8			

Wetland S5W149

Description of Potential Impact: This wetland complex consists of three wetland polygons totaling 1.27 acres. Polygon 149a and 149b are classified as sedge meadows 0.40 acre and 0.11 acre in size, respectively. Polygon 149c is classified as a swamp forest, 0.76 acre in size. Impacts to polygon 149a range from 0.25 acre to 0.39 acre for alternatives 4, 5, 6, 7, 8 and RPA 8. All six alternatives would impact the entire 0.11 acre of Polygon 149b. Alternative 4, 5, 7, 8 and RPA 8 would avoid impacting Polygon 149c, while Alternative 6 would impact 0.04 acre of this polygon. Polygon 149a and 149b showed between 75-100% herbaceous cover with dominant species including sedges and knotweed. Polygon 149c showed between 25-50% woody plant cover, with green ash, red maple, and silver maple as the dominant tree species. Hydrology is likely due to frequent flooding, local runoff, and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as poor, fair and good for Polygon 149a and 149b, and good, poor and fair for Polygon 149c, based on InWRAP summaries for the site This wetland falls under the jurisdiction of both the USACE and IDEM due to its hydrologic connectivity to a tributary of Beanblossom Creek.



Photograph of emergent Polygon 149a

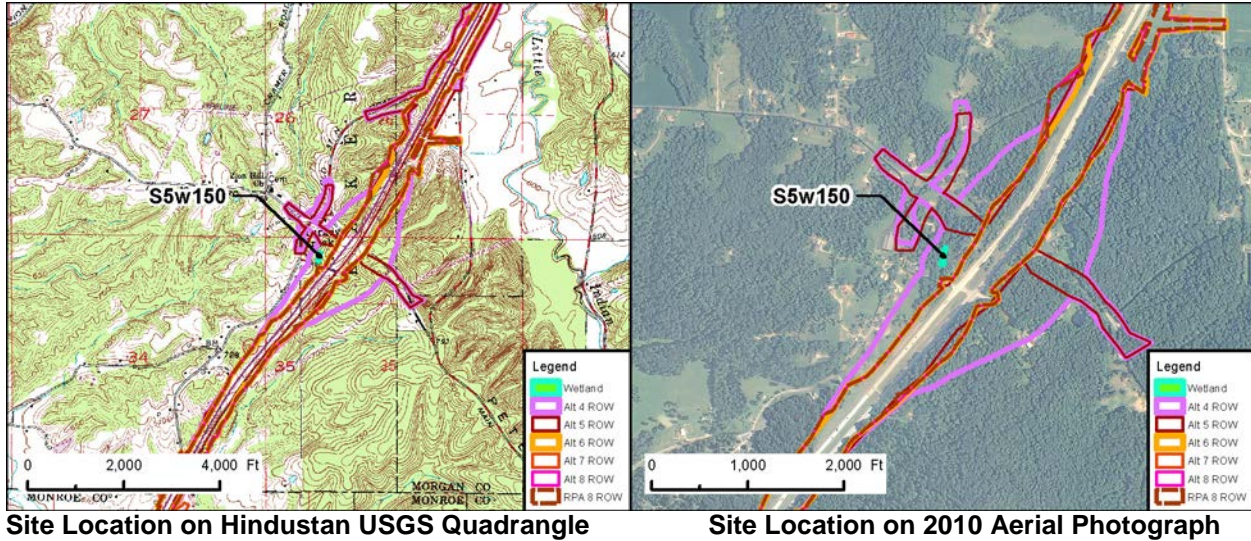


Photograph of emergent Polygon 149b



Photograph of forested Polygon 149c

Wetland S5W150



Aquatic Resource: Wetland
Type: Wet Meadow
Quarter: NW
Range: 1W
Watershed: Bryant Creek

USGS Quadrangle: Hindustan
Section: 35
Township: 11N
USCOE Jurisdiction: Yes
IDEM Jurisdiction: Yes

Wetland S5W150						
Polygon ID	Wetland Type	Area Impacted	Alternative	Animal Habitat Measure	Botanical Measure	Hydrology Measure
150	Wet Meadow	0.07 acre	4	Fair	Poor	Fair
		0.00 acre	5			
		0.00 acre	6			
		0.00 acre	7			
		0.00 acre	8			
		0.00 acre	RPA 8			

Description of Potential Impact: This site is classified as a wet meadow, 0.07 acres in size. Alternative 4 would impact this entire wetland. Alternatives 5, 6, 7, 8 and RPA 8 would avoid impacting this wetland. This wetland showed 75-100% herbaceous cover and less than 25% woody plant cover. Dominant herbaceous species for this wetland include ricecut grass, touch-me-nots, sedges and false nettle. Hydrology is likely due to frequent flooding, local runoff and poorly drained soils. Animal habitat, botanical diversity and hydrologic function are rated as fair, poor and fair respectively, based on InWRAP summaries for the site. This wetland falls under the jurisdiction of the USACE and IDEM due to hydrologic connectivity to a tributary of Bryant Creek.

Wetland S5W150



Photograph of Wet Meadow Polygon 150



**APPENDIX F
FINAL WETLAND TECHNICAL REPORT**

TECHNICAL REPORT APPENDICES

APPENDIX A	Wetland Site Forms
APPENDIX B	I-69 Wetland Quality Assessment Profile Sheets
APPENDIX C	Wetland Matrix for I-69 Alternatives Carried Forward for Detailed Analysis
APPENDIX D	InWRAP Data Sheets
APPENDIX E	Wetland Determination Data Forms

I-69 Wetland Quality Assessment Profile

Date Report Generated 3/14/2013
Data reference # S5W007
Wetland Site S5W007
Date of site visit 10/11/11
Total wetland area 0.03 acres

Polygon Information	
Polygon ID	7
Polygon Size (acres)	0.03
Wetland Community Type	WM
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	1
Zonation and interspersion	1
Stratification	1
Tree canopy	1
Mature trees	1
Animal Habitat Measure Score (min = 8, max = 24)	8
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)	2
Site/Hydrology Score (min = 11, max = 33)	19
Site/Hydrology Rating	fair

I-69 Wetland Quality Assessment Profile

Date Report Generated 3/14/2013
Data reference # S5W011
Wetland Site S5W011
Date of site visit 10/11/12
Total wetland area 0.01 acres

Polygon Information	
Polygon ID	11
Polygon Size (acres)	0.01
Wetland Community Type	WM
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	1
Zonation and interspersation	1
Stratification	1
Tree canopy	1
Mature trees	1
Animal Habitat Measure Score (min = 8, max = 24)	8
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)	3
Flood and storm water storage (= no. of yes answers)	3
Site/Hydrology Score (min = 11, max = 33)	23
Site/Hydrology Rating	fair

I-69 Wetland Quality Assessment Profile

Date Report Generated 3/14/2013
 Data reference # S5W021
 Wetland Site **S5W021**
 Date of site visit 10/15/11
 Total wetland area 0.13 acres

Polygon Information	
Polygon ID	21
Polygon Size (acres)	0.13
Wetland Community Type	SFB
Red Flag (Special) Indicators	
Special Hydrologic Conditions	N
Special Community Type	N
Rare-Threatened-Endangered Species	N
Animal Habitat Measures	
Wetland size and connectivity	1
Surrounding land use	1
Standing water	2
Dead woody material	1
Zonation and interspersions	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	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 3/28/2013
 Data reference # S5W024
 Wetland Site **S5W024**
 Date of site visit 04/27/12
 Total wetland area 0.24 acres

Polygon Information			
Polygon ID	24a	24b	24c
Polygon Size (acres)	0.02	0.14	0.08
Wetland Community Type	SC	SHM	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	2	2	2
Dead woody material	1	1	1
Zonation and interspersion	1	1	1
Stratification	1	1	1
Tree canopy	3	1	3
Mature trees	1	1	1
Animal Habitat Measure Score (min = 8, max = 24)	11	9	11
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	2
Total hydrophytic taxa observed	1	1	1
Number of indicator taxa	1	1	1
Exotic species rating	3	2	3
Botanical Measure Score (min = 5, max = 15)	8	6	8
Botanical Measure Rating	poor	poor	poor
Hydrology Measures			
Water quality protection (= no. of yes answers)	2	2	2
Flood and storm water storage (= no. of yes answers)	2	2	2
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 3/14/2013
 Data reference # S5W062
 Wetland Site **S5W062**
 Date of site visit 10/12/11
 Total wetland area 3.25 acres

Polygon Information		
Polygon ID	62a	62b
Polygon Size (acres)	1.47	1.78
Wetland Community Type	DM	FF
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	3	2
Dead woody material	2	1
Zonation and interspersion	1	3
Stratification	1	3
Tree canopy	3	3
Mature trees	1	1
Animal Habitat Measure Score (min = 8, max = 24)	15	17
Animal Habitat Measure Rating	fair	fair
Botanical Measures (all except exotics dependent upon community type)		
Number of dominant plant taxa observed	1	2
Conservatism rating	1	1
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)	2	5
Flood and storm water storage (= no. of yes answers)	5	4
Site/Hydrology Score (min = 11, max = 33)	25	29
Site/Hydrology Rating	fair	good

I-69 Wetland Quality Assessment Profile

Date Report Generated 3/14/2013
 Data reference # S5W063
 Wetland Site **S5W063**
 Date of site visit 10/12/11
 Total wetland area 2.04 acres

Polygon Information		
Polygon ID	63a	63b
Polygon Size (acres)	1.44	0.60
Wetland Community Type	SM	FF
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	2
Dead woody material	1	1
Zonation and interspersion	3	1
Stratification	1	3
Tree canopy	1	3
Mature trees	1	3
Animal Habitat Measure Score (min = 8, max = 24)	14	18
Animal Habitat Measure Rating	fair	fair
Botanical Measures (all except exotics dependent upon community type)		
Number of dominant plant taxa observed	2	2
Conservatism rating	2	1
Total hydrophytic taxa observed	1	1
Number of indicator taxa	1	1
Exotic species rating	2	3
Botanical Measure Score (min = 5, max = 15)	8	8
Botanical Measure Rating	poor	poor
Hydrology Measures		
Water quality protection (= no. of yes answers)	5	5
Flood and storm water storage (= no. of yes answers)	5	4
Site/Hydrology Score (min = 11, max = 33)	31	29
Site/Hydrology Rating	good	good

I-69 Wetland Quality Assessment Profile

Date Report Generated 3/14/2013
 Data reference # S5W065
 Wetland Site **S5W065**
 Date of site visit 10/13/11
 Total wetland area 0.71 acres

Polygon Information	
Polygon ID	65
Polygon Size (acres)	0.71
Wetland Community Type	SF
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	1
Dead woody material	1
Zonation and interspersation	3
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	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)	5
Site/Hydrology Score (min = 11, max = 33)	31
Site/Hydrology Rating	good

I-69 Wetland Quality Assessment Profile

Date Report Generated 3/14/2013
Data reference # S5W066
Wetland Site S5W066
Date of site visit 10/14/11
Total wetland area 0.15 acres

Polygon Information	
Polygon ID	66
Polygon Size (acres)	0.15
Wetland Community Type	SFB
Red Flag (Special) Indicators	
Special Hydrologic Conditions	N
Special Community Type	N
Rare-Threatened-Endangered Species	N
Animal Habitat Measures	
Wetland size and connectivity	3
Surrounding land use	2
Standing water	2
Dead woody material	1
Zonation and interspersions	3
Stratification	1
Tree canopy	1
Mature trees	1
Animal Habitat Measure Score (min = 8, max = 24)	14
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)	5
Site/Hydrology Score (min = 11, max = 33)	27
Site/Hydrology Rating	good

I-69 Wetland Quality Assessment Profile

Date Report Generated 3/14/2013
Data reference # S5W068
Wetland Site S5W068
Date of site visit 10/14/11
Total wetland area 0.16 acres

Polygon Information	
Polygon ID	68
Polygon Size (acres)	0.16
Wetland Community Type	WM
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 interspersation	3
Stratification	1
Tree canopy	1
Mature trees	1
Animal Habitat Measure Score (min = 8, max = 24)	12
Animal Habitat Measure Rating	poor
Botanical Measures (all except exotics dependent upon community type)	
Number of dominant plant taxa observed	2
Conservatism rating	1
Total hydrophytic taxa observed	1
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)	5
Site/Hydrology Score (min = 11, max = 33)	27
Site/Hydrology Rating	good

I-69 Wetland Quality Assessment Profile

Date Report Generated 3/14/2013
 Data reference # S5W069
 Wetland Site **S5W069**
 Date of site visit 10/13/11
 Total wetland area 3.52 acres

Polygon Information						
Polygon ID	69a	69b	69e	69f	69g	69i
Polygon Size (acres)	0.72	1.67	0.02	0.07	0.76	0.28
Wetland Community Type	SFB	FF	SHM	SHM	SOW	DM
Red Flag (Special) Indicators						
Special Hydrologic Conditions	N	N	N	N	N	N
Special Community Type	N	N	N	N	N	N
Rare-Threatened-Endangered Species	N	N	N	N	N	N
Animal Habitat Measures						
Wetland size and connectivity	3	3	3	3	3	3
Surrounding land use	1	1	1	1	1	1
Standing water	1	2	3	2	3	2
Dead woody material	1	3	1	1	1	1
Zonation and interspersion	2	3	3	3	1	3
Stratification	1	3	1	3	1	1
Tree canopy	1	3	1	3	1	1
Mature trees	1	1	1	1	1	1
Animal Habitat Measure Score (min = 8, max = 24)	11	19	14	17	12	13
Animal Habitat Measure Rating	poor	good	fair	fair	poor	poor
Botanical Measures (all except exotics dependent upon community type)						
Number of dominant plant taxa observed	2	1	1	1	1	3
Conservatism rating	1	2	2	2	2	1
Total hydrophytic taxa observed	2	1	1	2	2	3
Number of indicator taxa	1	1	1	1	1	2
Exotic species rating	3	3	3	3	3	1
Botanical Measure Score (min = 5, max = 15)	9	8	8	9	9	10
Botanical Measure Rating	fair	poor	poor	fair	fair	fair
Hydrology Measures						
Water quality protection (= no. of yes answers)	4	4	3	4	3	3
Flood and storm water storage (= no. of yes answers)	5	5	3	4	4	3
Site/Hydrology Score (min = 11, max = 33)	29	29	23	27	25	23
Site/Hydrology Rating	good	good	fair	good	fair	fair

I-69 Wetland Quality Assessment Profile

Date Report Generated 3/14/2013
Data reference # S5W070
Wetland Site S5W070
Date of site visit 10/13/11
Total wetland area 10.92 acres

Polygon Information			
Polygon ID	70a	70b	70c
Polygon Size (acres)	0.54	10.29	0.09
Wetland Community Type	SHM	SF	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	3	3	3
Surrounding land use	2	2	2
Standing water	2	2	2
Dead woody material	1	2	1
Zonation and interspersion	3	3	3
Stratification	1	3	1
Tree canopy	1	3	1
Mature trees	1	3	1
Animal Habitat Measure Score (min = 8, max = 24)	14	21	14
Animal Habitat Measure Rating	fair	good	fair
Botanical Measures (all except exotics dependent upon community type)			
Number of dominant plant taxa observed	1	1	1
Conservatism rating	2	2	2
Total hydrophytic taxa observed	1	1	1
Number of indicator taxa	1	1	1
Exotic species rating	3	3	3
Botanical Measure Score (min = 5, max = 15)	8	8	8
Botanical Measure Rating	poor	poor	poor
Hydrology Measures			
Water quality protection (= no. of yes answers)	4	5	4
Flood and storm water storage (= no. of yes answers)	5	5	5
Site/Hydrology Score (min = 11, max = 33)	29	31	29
Site/Hydrology Rating	good	good	good

I-69 Wetland Quality Assessment Profile

Date Report Generated 3/14/2013
Data reference # S5W071
Wetland Site S5W071
Date of site visit 04/26/12
Total wetland area 31.75 acres

Polygon Information	
Polygon ID	71
Polygon Size (acres)	31.75
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 interspersions	3
Stratification	1
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	3
Conservatism rating	1
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)	3
Site/Hydrology Score (min = 11, max = 33)	25
Site/Hydrology Rating	fair

I-69 Wetland Quality Assessment Profile

Date Report Generated 3/14/2013
 Data reference # S5W080
 Wetland Site **S5W080**
 Date of site visit 04/26/12
 Total wetland area 0.56 acres

Polygon Information	
Polygon ID	80
Polygon Size (acres)	0.56
Wetland Community Type	FF
Red Flag (Special) Indicators	
Special Hydrologic Conditions	N
Special Community Type	N
Rare-Threatened-Endangered Species	N
Animal Habitat Measures	
Wetland size and connectivity	3
Surrounding land use	3
Standing water	2
Dead woody material	2
Zonation and interspersions	3
Stratification	1
Tree canopy	3
Mature trees	3
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	2
Conservatism rating	1
Total hydrophytic taxa observed	2
Number of indicator taxa	1
Exotic species rating	3
Botanical Measure Score (min = 5, max = 15)	9
Botanical Measure Rating	fair
Hydrology Measures	
Water quality protection (= no. of yes answers)	4
Flood and storm water storage (= no. of yes answers)	3
Site/Hydrology Score (min = 11, max = 33)	25
Site/Hydrology Rating	fair

I-69 Wetland Quality Assessment Profile

Date Report Generated 3/14/2013
 Data reference # S5W091
 Wetland Site **S5W091**
 Date of site visit 10/15/11
 Total wetland area 0.88 acres

Polygon Information	
Polygon ID	91
Polygon Size (acres)	0.88
Wetland Community Type	SFB
Red Flag (Special) Indicators	
Special Hydrologic Conditions	N
Special Community Type	N
Rare-Threatened-Endangered Species	N
Animal Habitat Measures	
Wetland size and connectivity	2
Surrounding land use	1
Standing water	2
Dead woody material	1
Zonation and interspersions	3
Stratification	3
Tree canopy	1
Mature trees	2
Animal Habitat Measure Score (min = 8, max = 24)	15
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	2
Number of indicator taxa	1
Exotic species rating	1
Botanical Measure Score (min = 5, max = 15)	7
Botanical Measure Rating	poor
Hydrology Measures	
Water quality protection (= no. of yes answers)	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 3/14/2013
 Data reference # S5W095
 Wetland Site **S5W095**
 Date of site visit 04/26/12
 Total wetland area 0.19 acres

Polygon Information	
Polygon ID	95
Polygon Size (acres)	0.19
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	1
Dead woody material	2
Zonation and interspersions	3
Stratification	1
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	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)	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 3/14/2013
 Data reference # S5W104
 Wetland Site **S5W104**
 Date of site visit 10/14/11
 Total wetland area 0.4 acres

Polygon Information	
Polygon ID	104
Polygon Size (acres)	0.40
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 interspersions	3
Stratification	1
Tree canopy	1
Mature trees	1
Animal Habitat Measure Score (min = 8, max = 24)	12
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)	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 3/14/2013
Data reference # S5W109
Wetland Site S5W109
Date of site visit 10/14/11
Total wetland area 1.01 acres

Polygon Information	
Polygon ID	109
Polygon Size (acres)	1.01
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	2
Standing water	1
Dead woody material	1
Zonation and interspersions	3
Stratification	1
Tree canopy	1
Mature trees	1
Animal Habitat Measure Score (min = 8, max = 24)	12
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)	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 3/14/2013
 Data reference # S5W119
 Wetland Site **S5W119**
 Date of site visit 10/15/11
 Total wetland area 0.05 acres

Polygon Information	
Polygon ID	119
Polygon Size (acres)	0.05
Wetland Community Type	SFB
Red Flag (Special) Indicators	
Special Hydrologic Conditions	N
Special Community Type	N
Rare-Threatened-Endangered Species	N
Animal Habitat Measures	
Wetland size and connectivity	2
Surrounding land use	2
Standing water	1
Dead woody material	1
Zonation and interspersions	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	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)	1
Flood and storm water storage (= no. of yes answers)	1
Site/Hydrology Score (min = 11, max = 33)	15
Site/Hydrology Rating	poor

I-69 Wetland Quality Assessment Profile

Date Report Generated 3/14/2013
 Data reference # S5W120
 Wetland Site **S5W120**
 Date of site visit 10/15/11
 Total wetland area 0.2 acres

Polygon Information	
Polygon ID	120
Polygon Size (acres)	0.20
Wetland Community Type	SFB
Red Flag (Special) Indicators	
Special Hydrologic Conditions	N
Special Community Type	N
Rare-Threatened-Endangered Species	N
Animal Habitat Measures	
Wetland size and connectivity	2
Surrounding land use	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)	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	1
Botanical Measure Score (min = 5, max = 15)	5
Botanical Measure Rating	poor
Hydrology Measures	
Water quality protection (= no. of yes answers)	3
Flood and storm water storage (= no. of yes answers)	3
Site/Hydrology Score (min = 11, max = 33)	23
Site/Hydrology Rating	fair

I-69 Wetland Quality Assessment Profile

Date Report Generated 3/14/2013
Data reference # S5W121
Wetland Site S5W121
Date of site visit 10/14/11
Total wetland area 0.04 acres

Polygon Information	
Polygon ID	121
Polygon Size (acres)	0.04
Wetland Community Type	SFB
Red Flag (Special) Indicators	
Special Hydrologic Conditions	N
Special Community Type	N
Rare-Threatened-Endangered Species	N
Animal Habitat Measures	
Wetland size and connectivity	2
Surrounding land use	1
Standing water	1
Dead woody material	1
Zonation and interspersions	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	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)	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 3/14/2013
 Data reference # S5W122
 Wetland Site **S5W122**
 Date of site visit 10/14/11
 Total wetland area 0.28 acres

Polygon Information	
Polygon ID	122
Polygon Size (acres)	0.28
Wetland Community Type	WM
Red Flag (Special) Indicators	
Special Hydrologic Conditions	N
Special Community Type	N
Rare-Threatened-Endangered Species	N
Animal Habitat Measures	
Wetland size and connectivity	2
Surrounding land use	2
Standing water	2
Dead woody material	1
Zonation and interspersation	1
Stratification	1
Tree canopy	1
Mature trees	1
Animal Habitat Measure Score (min = 8, max = 24)	11
Animal Habitat Measure Rating	poor
Botanical Measures (all except exotics dependent upon community type)	
Number of dominant plant taxa observed	1
Conservatism rating	1
Total hydrophytic taxa observed	1
Number of indicator taxa	1
Exotic species rating	2
Botanical Measure Score (min = 5, max = 15)	6
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 3/14/2013
 Data reference # S5W123
 Wetland Site **S5W123**
 Date of site visit 10/14/11
 Total wetland area 0.18 acres

Polygon Information	
Polygon ID	123
Polygon Size (acres)	0.18
Wetland Community Type	WM
Red Flag (Special) Indicators	
Special Hydrologic Conditions	N
Special Community Type	N
Rare-Threatened-Endangered Species	N
Animal Habitat Measures	
Wetland size and connectivity	3
Surrounding land use	1
Standing water	1
Dead woody material	1
Zonation and interspersion	3
Stratification	1
Tree canopy	1
Mature trees	1
Animal Habitat Measure Score (min = 8, max = 24)	12
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	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)	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 3/14/2013
 Data reference # S5W124
 Wetland Site **S5W124**
 Date of site visit 10/14/11
 Total wetland area 0.14 acres

Polygon Information	
Polygon ID	124
Polygon Size (acres)	0.14
Wetland Community Type	WM
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 interspersions	3
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	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)	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 3/14/2013
 Data reference # S5W125
 Wetland Site **S5W125**
 Date of site visit 10/14/11
 Total wetland area 7.4 acres

Polygon Information				
Polygon ID	125a	125d	125e	125f
Polygon Size (acres)	3.75	1.03	0.33	2.29
Wetland Community Type	WM	WM	FF	FF
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	1
Dead woody material	1	1	2	2
Zonation and interspersions	3	3	3	3
Stratification	1	1	3	3
Tree canopy	1	1	3	3
Mature trees	1	1	3	3
Animal Habitat Measure Score (min = 8, max = 24)	13	13	20	19
Animal Habitat Measure Rating	poor	poor	good	good
Botanical Measures (all except exotics dependent upon community type)				
Number of dominant plant taxa observed	1	1	2	2
Conservatism rating	2	2	2	2
Total hydrophytic taxa observed	1	1	3	3
Number of indicator taxa	1	1	1	1
Exotic species rating	3	3	3	3
Botanical Measure Score (min = 5, max = 15)	8	8	11	11
Botanical Measure Rating	poor	poor	fair	fair
Hydrology Measures				
Water quality protection (= no. of yes answers)	3	4	5	4
Flood and storm water storage (= no. of yes answers)	3	4	4	4
Site/Hydrology Score (min = 11, max = 33)	23	27	29	27
Site/Hydrology Rating	fair	good	good	good

I-69 Wetland Quality Assessment Profile

Date Report Generated 3/14/2013
 Data reference # S5W126
 Wetland Site **S5W126**
 Date of site visit 10/14/11
 Total wetland area 5 acres

Polygon Information	
Polygon ID	126
Polygon Size (acres)	5.00
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	3
Standing water	2
Dead woody material	2
Zonation and interspersation	3
Stratification	3
Tree canopy	3
Mature trees	3
Animal Habitat Measure Score (min = 8, max = 24)	22
Animal Habitat Measure Rating	good
Botanical Measures (all except exotics dependent upon community type)	
Number of dominant plant taxa observed	1
Conservatism rating	2
Total hydrophytic taxa observed	3
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)	6
Flood and storm water storage (= no. of yes answers)	5
Site/Hydrology Score (min = 11, max = 33)	33
Site/Hydrology Rating	good

I-69 Wetland Quality Assessment Profile

Date Report Generated 3/14/2013
 Data reference # S5W127
 Wetland Site **S5W127**
 Date of site visit 10/14/11
 Total wetland area 1.16 acres

Polygon Information	
Polygon ID	127
Polygon Size (acres)	1.16
Wetland Community Type	FF
Red Flag (Special) Indicators	
Special Hydrologic Conditions	N
Special Community Type	N
Rare-Threatened-Endangered Species	N
Animal Habitat Measures	
Wetland size and connectivity	3
Surrounding land use	3
Standing water	2
Dead woody material	2
Zonation and interspersation	3
Stratification	3
Tree canopy	3
Mature trees	3
Animal Habitat Measure Score (min = 8, max = 24)	22
Animal Habitat Measure Rating	good
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 3/14/2013
 Data reference # S5W128
 Wetland Site **S5W128**
 Date of site visit 04/27/12
 Total wetland area 2.65 acres

Polygon Information	
Polygon ID	128a
Polygon Size (acres)	2.65
Wetland Community Type	FF
Red Flag (Special) Indicators	
Special Hydrologic Conditions	N
Special Community Type	N
Rare-Threatened-Endangered Species	N
Animal Habitat Measures	
Wetland size and connectivity	2
Surrounding land use	2
Standing water	2
Dead woody material	3
Zonation and interspersion	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	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 3/14/2013
 Data reference # S5W145
 Wetland Site **S5W145**
 Date of site visit 04/26/12
 Total wetland area 0.06 acres

Polygon Information	
Polygon ID	145
Polygon Size (acres)	0.06
Wetland Community Type	WM
Red Flag (Special) Indicators	
Special Hydrologic Conditions	N
Special Community Type	N
Rare-Threatened-Endangered Species	N
Animal Habitat Measures	
Wetland size and connectivity	2
Surrounding land use	2
Standing water	2
Dead woody material	1
Zonation and interspersions	3
Stratification	3
Tree canopy	1
Mature trees	1
Animal Habitat Measure Score (min = 8, max = 24)	15
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	1
Number of indicator taxa	1
Exotic species rating	2
Botanical Measure Score (min = 5, max = 15)	8
Botanical Measure Rating	poor
Hydrology Measures	
Water quality protection (= no. of yes answers)	3
Flood and storm water storage (= no. of yes answers)	3
Site/Hydrology Score (min = 11, max = 33)	23
Site/Hydrology Rating	fair

I-69 Wetland Quality Assessment Profile

Date Report Generated 3/14/2013
Data reference # S5W146
Wetland Site S5W146
Date of site visit 04/26/12
Total wetland area 0.14 acres

Polygon Information	
Polygon ID	146
Polygon Size (acres)	0.14
Wetland Community Type	FF
Red Flag (Special) Indicators	
Special Hydrologic Conditions	N
Special Community Type	N
Rare-Threatened-Endangered Species	N
Animal Habitat Measures	
Wetland size and connectivity	2
Surrounding land use	2
Standing water	2
Dead woody material	1
Zonation and interspersions	3
Stratification	1
Tree canopy	3
Mature trees	3
Animal Habitat Measure Score (min = 8, max = 24)	17
Animal Habitat Measure Rating	fair
Botanical Measures (all except exotics dependent upon community type)	
Number of dominant plant taxa observed	2
Conservatism rating	2
Total hydrophytic taxa observed	1
Number of indicator taxa	1
Exotic species rating	2
Botanical Measure Score (min = 5, max = 15)	8
Botanical Measure Rating	poor
Hydrology Measures	
Water quality protection (= no. of yes answers)	3
Flood and storm water storage (= no. of yes answers)	3
Site/Hydrology Score (min = 11, max = 33)	23
Site/Hydrology Rating	fair

I-69 Wetland Quality Assessment Profile

Date Report Generated 3/14/2013
 Data reference # S5W147
 Wetland Site **S5W147**
 Date of site visit 04/27/12
 Total wetland area 0.23 acres

Polygon Information	
Polygon ID	147
Polygon Size (acres)	0.23
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	1
Zonation and interspersions	3
Stratification	3
Tree canopy	3
Mature trees	3
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	2
Conservatism rating	2
Total hydrophytic taxa observed	1
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)	5
Flood and storm water storage (= no. of yes answers)	3
Site/Hydrology Score (min = 11, max = 33)	27
Site/Hydrology Rating	good

I-69 Wetland Quality Assessment Profile

Date Report Generated 3/14/2013
Data reference # S5W148
Wetland Site S5W148
Date of site visit 04/27/12
Total wetland area 0.09 acres

Polygon Information	
Polygon ID	148
Polygon Size (acres)	0.09
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 interspersation	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	1
Botanical Measure Score (min = 5, max = 15)	5
Botanical Measure Rating	poor
Hydrology Measures	
Water quality protection (= no. of yes answers)	2
Flood and storm water storage (= no. of yes answers)	2
Site/Hydrology Score (min = 11, max = 33)	19
Site/Hydrology Rating	fair

I-69 Wetland Quality Assessment Profile

Date Report Generated 3/14/2013
 Data reference # S5W149
 Wetland Site **S5W149**
 Date of site visit 10/13/11
 Total wetland area 1.27 acres

Polygon Information			
Polygon ID	149a	149b	149c
Polygon Size (acres)	0.40	0.11	0.76
Wetland Community Type	SM	SM	SF
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	2	2	2
Dead woody material	1	1	2
Zonation and interspersion	1	1	3
Stratification	1	1	3
Tree canopy	1	1	3
Mature trees	1	1	3
Animal Habitat Measure Score (min = 8, max = 24)	10	10	19
Animal Habitat Measure Rating	poor	poor	good
Botanical Measures (all except exotics dependent upon community type)			
Number of dominant plant taxa observed	1	1	1
Conservatism rating	3	3	1
Total hydrophytic taxa observed	1	1	2
Number of indicator taxa	1	1	1
Exotic species rating	3	3	3
Botanical Measure Score (min = 5, max = 15)	9	9	8
Botanical Measure Rating	fair	fair	poor
Hydrology Measures			
Water quality protection (= no. of yes answers)	4	4	3
Flood and storm water storage (= no. of yes answers)	5	5	4
Site/Hydrology Score (min = 11, max = 33)	29	29	25
Site/Hydrology Rating	good	good	fair

I-69 Wetland Quality Assessment Profile

Date Report Generated 3/14/2013
 Data reference # S5W150
 Wetland Site **S5W150**
 Date of site visit 10/15/11
 Total wetland area 0.07 acres

Polygon Information	
Polygon ID	150
Polygon Size (acres)	0.07
Wetland Community Type	WM
Red Flag (Special) Indicators	
Special Hydrologic Conditions	N
Special Community Type	N
Rare-Threatened-Endangered Species	N
Animal Habitat Measures	
Wetland size and connectivity	2
Surrounding land use	3
Standing water	1
Dead woody material	1
Zonation and interspersation	1
Stratification	1
Tree canopy	3
Mature trees	3
Animal Habitat Measure Score (min = 8, max = 24)	15
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)	3
Site/Hydrology Score (min = 11, max = 33)	23
Site/Hydrology Rating	fair



**APPENDIX F
FINAL WETLAND TECHNICAL REPORT**

TECHNICAL REPORT APPENDICES

APPENDIX A	Wetland Site Forms
APPENDIX B	I-69 Wetland Quality Assessment Profile Sheets
APPENDIX C	Wetland Matrix for I-69 Alternatives Carried Forward for Detailed Analysis
APPENDIX D	InWRAP Data Sheets
APPENDIX E	Wetland Determination Data Forms

Wetland Matrix for I-69 Alternatives To Be Carried Forward For Further Consideration: Section 5 Construction Limits
 Gray shaded cells indicate wetland polygons that are entirely or partially within the construction limits of the respective alternative

Wetland ID	DATA	Alternative 4			Alternative 5			Alternative 6			Alternative 7			Alternative 8			Refined Preferred Alternative 8		
S5W007	USACE Jurisdiction: Yes	Cowardin et al. Classification																	
		Indiana Community Type																	
		Size (acres)																	
		Impact (acres)																	
		Animal Habitat																	
		Botanical																	
		Hydrology																	
S5W011	USACE Jurisdiction: No	Cowardin et al. Classification	PEM			PEM				PEM				PEM				PEM	
		Indiana Community Type	WM			WM				WM				WM				WM	
		Size (acres)	0.01			0.01				0.01				0.01				0.01	
		Impact (acres)	0.01			0.01				0.01				0.01				0.01	
		Animal Habitat	poor			poor				poor				poor				poor	
		Botanical	poor			poor				poor				poor				poor	
		Hydrology	fair			fair				fair				fair				fair	
S5W021	USACE Jurisdiction: Yes	Cowardin et al. Classification	PEM			PEM				PEM				PEM				PEM	
		Indiana Community Type	SFB			SFB				SFB				SFB				SFB	
		Size (acres)	0.13			0.13				0.13				0.13				0.13	
		Impact (acres)	0.13			0.13				0.13				0.13				0.13	
		Animal Habitat	poor			poor				poor				poor				poor	
		Botanical	poor			poor				poor				poor				poor	
		Hydrology	fair			fair				fair				fair				fair	
S5W024	USACE Jurisdiction: Yes	Cowardin et al. Classification	PSS	PEM	PSS	PSS	PEM	PSS											
		Indiana Community Type	SC	SHM	SC	SC	SHM	SC											
		Size (acres)	0.02	0.14	0.08	0.02	0.14	0.08											
		Impact (acres)	0.01	0.02	0.00	0.01	0.02	0.00											
		Animal Habitat	poor	poor	poor	poor	poor	poor											
		Botanical	poor	poor	poor	poor	poor	poor											
		Hydrology	fair	fair	fair	fair	fair	fair											
S5W062	USACE Jurisdiction: Yes	Cowardin et al. Classification	PAB	PFO		PAB	PFO			PAB	PFO			PAB	PFO			PAB	
		Indiana Community Type	DM	FF		DM	FF			DM	FF			DM	FF			DM	
		Size (acres)	1.47	1.78		1.47	1.78			1.47	1.78			1.47	1.78			1.47	
		Impact (acres)	0.03	0.19		0.20	0.33			0.06	0.13			0.00	0.11			0.08	
		Animal Habitat	fair	fair		fair	fair			fair	fair			fair	fair			fair	
		Botanical	fair	poor		fair	poor			fair	poor			fair	poor			fair	
		Hydrology	fair	good		fair	good			fair	good			fair	good			fair	
S5W063	USACE Jurisdiction: Yes	Cowardin et al. Classification				PEM	PFO			PEM	PFO			PEM	PFO			PEM	
		Indiana Community Type				SM	FF			SM	FF			SM	FF			SM	
		Size (acres)				1.44	0.60			1.44	0.60			1.44	0.60			1.44	
		Impact (acres)				1.22	0.60			1.22	0.60			1.44	0.60			1.44	
		Animal Habitat				fair	fair			fair	fair			fair	fair			fair	
		Botanical				poor	poor			poor	poor			poor	poor			poor	
		Hydrology				good	good			good	good			good	good			good	
S5W065	USACE Jurisdiction: Yes	Cowardin et al. Classification				PFO				PFO				PFO				PFO	
		Indiana Community Type				SF				SF				SF				SF	
		Size (acres)				0.71				0.71				0.71				0.71	
		Impact (acres)				0.36				0.71				0.18				0.71	
		Animal Habitat				good				good				good				good	
		Botanical				poor				poor				poor				poor	
		Hydrology				good				good				good				good	
S5W066	USACE Jurisdiction: Yes	Cowardin et al. Classification				PEM				PEM				PEM				PEM	
		Indiana Community Type				SFB				SFB				SFB				SFB	
		Size (acres)				0.15				0.15				0.15				0.15	
		Impact (acres)				0.15				0.12				0.08				0.12	
		Animal Habitat				fair				fair				fair				fair	
		Botanical				poor				poor				poor				poor	
		Hydrology				good				good				good				good	
S5W068	USACE Jurisdiction: Yes	Cowardin et al. Classification				PEM				PEM				PEM				PEM	
		Indiana Community Type				WM				WM				WM				WM	
		Size (acres)				0.16				0.16				0.16				0.16	
		Impact (acres)				0.16				0.16				0.08				0.01	
		Animal Habitat				poor				poor				poor				poor	
		Botanical				poor				poor				poor				poor	
		Hydrology				good				good				good				good	

Wetland Matrix for I-69 Alternatives To Be Carried Forward For Further Consideration: Section 5 Construction Limits
 Gray shaded cells indicate wetland polygons that are entirely or partially within the construction limits of the respective alternative

Wetland ID	DATA	Alternative 4						Alternative 5						Alternative 6						Alternative 7						Alternative 8						Refined Preferred Alternative 8											
		PSS	PFO	PEM	PSS	PAB	PEM	PSS	PFO	PEM	PSS	PAB	PEM	PSS	PFO	PEM	PSS	PAB	PEM	PSS	PFO	PEM	PSS	PAB	PEM	PSS	PFO	PEM	PSS	PAB	PEM	PSS	PFO	PEM	PSS	PAB	PEM						
S5W069	USACE Jurisdiction: Yes																																										
	Cowardin et al. Classification	SFB	FF	SHM	SHM	SOW	DM	SFB	FF	SHM	SHM	SOW	DM	SFB	FF	SHM	SHM	SOW	DM	SFB	FF	SHM	SHM	SOW	DM	SFB	FF	SHM	SHM	SOW	DM	SFB	FF	SHM	SHM	SOW	DM	SFB	FF	SHM	SHM	SOW	DM
	Indiana Community Type																																										
	Size (acres)	0.72	1.67	0.02	0.07	0.76	0.28	0.72	1.67	0.02	0.07	0.76	0.28	0.72	1.67	0.02	0.07	0.76	0.28	0.72	1.67	0.02	0.07	0.76	0.28	0.72	1.67	0.02	0.07	0.76	0.28	0.72	1.67	0.02	0.07	0.76	0.28	0.72	1.67	0.02	0.07	0.76	0.28
	Impact (acres)	0.00	0.00	0.02	0.07	0.17	0.27	0.00	0.00	0.02	0.07	0.20	0.27	0.02	0.05	0.02	0.07	0.11	0.28	0.01	0.00	0.02	0.07	0.00	0.28	0.00	0.00	0.02	0.07	0.06	0.27	0.00	0.00	0.02	0.07	0.04	0.27	0.00	0.00	0.02	0.07	0.04	0.27
	Animal Habitat	poor	good	fair	fair	poor	poor	poor	good	fair	fair	poor	poor	poor	good	fair	fair	poor	poor	poor	good	fair	fair	poor	poor	poor	good	fair	fair	poor	poor	poor	good	fair	fair	poor	poor	poor	good	fair	fair	poor	poor
	Botanical	fair	poor	poor	fair	fair	fair	fair	poor	poor	fair	fair	fair	fair	poor	poor	fair	fair	fair	fair	poor	poor	fair	fair	fair	fair	poor	poor	fair	fair	fair	fair	poor	poor	fair	fair	fair	fair	poor	poor	fair	fair	fair
	Hydrology	good	good	fair	good	fair	fair	good	good	fair	good	fair	fair	good	good	fair	good	fair	fair	good	good	fair	good	fair	fair	good	good	fair	good	fair	fair	good	good	fair	good	fair	fair	good	good	fair	good	fair	fair
Red Flags	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
S5W070	USACE Jurisdiction: Yes																																										
	Cowardin et al. Classification	SHM	SF	SHM				SHM	SF	SHM				SHM	SF	SHM				SHM	SF	SHM				SHM	SF	SHM				SHM	SF	SHM				SHM	SF	SHM			
	Indiana Community Type																																										
	Size (acres)	0.54	10.29	0.09				0.54	10.29	0.09				0.54	10.29	0.09				0.54	10.29	0.09				0.54	10.29	0.09				0.54	10.29	0.09				0.54	10.29	0.09			
	Impact (acres)	0.05	2.44	0.09				0.40	3.76	0.09				0.40	3.63	0.09				0.00	0.48	0.00				0.31	2.79	0.08				0.14	0.02	0.00				0.14	0.02	0.00			
	Animal Habitat	poor	poor	poor				poor	poor	poor				poor	poor	poor				poor	poor	poor				poor	poor	poor				poor	poor	poor				poor	poor	poor			
	Botanical	good	good	good				good	good	good				good	good	good				good	good	good				good	good	good				good	good	good				good	good	good			
	Hydrology	N	N	N				N	N	N				N	N	N				N	N	N				N	N	N				N	N	N				N	N	N			
Red Flags																																											
S5W071	USACE Jurisdiction: Yes																																										
	Cowardin et al. Classification																																										
	Indiana Community Type																																										
	Size (acres)	31.75						31.75						31.75						31.75						31.75						31.75						31.75					
	Impact (acres)	0.05						0.05						0.02						0.02						0.02						0.02						0.02					
	Animal Habitat	good						good						good						good						good						good						good					
	Botanical	fair						fair						fair						fair						fair						fair						fair					
	Hydrology	fair						fair						fair						fair						fair						fair						fair					
Red Flags	N						N						N						N						N						N						N						
S5W080	USACE Jurisdiction: Yes																																										
	Cowardin et al. Classification																																										
	Indiana Community Type																																										
	Size (acres)																																										
	Impact (acres)																																										
	Animal Habitat																																										
	Botanical																																										
	Hydrology																																										
Red Flags																																											
S5W091	USACE Jurisdiction: Yes																																										
	Cowardin et al. Classification																																										
	Indiana Community Type																																										
	Size (acres)																																										
	Impact (acres)																																										
	Animal Habitat																																										
	Botanical																																										
	Hydrology																																										
Red Flags																																											
S5W095	USACE Jurisdiction: Yes																																										
	Cowardin et al. Classification																																										
	Indiana Community Type																																										
	Size (acres)																																										
	Impact (acres)																																										
	Animal Habitat																																										
	Botanical																																										
	Hydrology																																										
Red Flags																																											
S5W104	USACE Jurisdiction: Yes																																										
	Cowardin et al. Classification																																										
	Indiana Community Type																																										
	Size (acres)																																										
	Impact (acres)																																										
	Animal Habitat																																										
	Botanical																																										

Wetland Matrix for I-69 Alternatives To Be Carried Forward For Further Consideration: Section 5 Construction Limits
 Gray shaded cells indicate wetland polygons that are entirely or partially within the construction limits of the respective alternative

Wetland ID	DATA	Alternative 4				Alternative 5				Alternative 6				Alternative 7				Alternative 8				Refined Preferred Alternative 8				
S5W120	USACE Jurisdiction: Yes	Cowardin et al. Classification	PEM				PEM					PEM					PEM					PEM				
		Indiana Community Type	SFB				SFB					SFB					SFB					SFB				
		Size (acres)	0.20				0.20					0.20					0.20					0.20				
		Impact (acres)	0.02				0.02					0.06					0.04					0.06				
		Animal Habitat	poor				poor					poor					poor					poor				
		Botanical	poor				poor					poor					poor					poor				
		Hydrology	fair				fair					fair					fair					fair				
	Red Flags	N				N					N					N					N					
S5W121	USACE Jurisdiction: Yes	Cowardin et al. Classification	PEM				PEM					PEM					PEM					PEM				
		Indiana Community Type	SFB				SFB					SFB					SFB					SFB				
		Size (acres)	0.04				0.04					0.04					0.04					0.04				
		Impact (acres)	0.04				0.04					0.04					0.04					0.04				
		Animal Habitat	poor				poor					poor					poor					poor				
		Botanical	poor				poor					poor					poor					poor				
		Hydrology	fair				fair					fair					fair					fair				
	Red Flags	N				N					N					N					N					
S5W122	USACE Jurisdiction: Yes	Cowardin et al. Classification	PEM				PEM					PEM					PEM					PEM				
		Indiana Community Type	WM				WM					WM					WM					WM				
		Size (acres)	0.28				0.28					0.28					0.28					0.28				
		Impact (acres)	0.28				0.28					0.01					0.01					0.01				
		Animal Habitat	poor				poor					poor					poor					poor				
		Botanical	poor				poor					poor					poor					poor				
		Hydrology	fair				fair					fair					fair					fair				
	Red Flags	N				N					N					N					N					
S5W123	USACE Jurisdiction: Yes	Cowardin et al. Classification	PEM				PEM					PEM					PEM					PEM				
		Indiana Community Type	WM				WM					WM					WM					WM				
		Size (acres)	0.18				0.18					0.18					0.18					0.18				
		Impact (acres)	0.10				0.12					0.02					0.01					0.01				
		Animal Habitat	poor				poor					poor					poor					poor				
		Botanical	poor				poor					poor					poor					poor				
		Hydrology	good				good					good					good					good				
	Red Flags	N				N					N					N					N					
S5W124	USACE Jurisdiction: Yes	Cowardin et al. Classification	PEM				PEM					PEM					PEM					PEM				
		Indiana Community Type	WM				WM					WM					WM					WM				
		Size (acres)	0.140				0.140					0.140					0.140					0.140				
		Impact (acres)	0.110				0.130					0.110					0.110					0.110				
		Animal Habitat	poor				poor					poor					poor					poor				
		Botanical	poor				poor					poor					poor					poor				
		Hydrology	good				good					good					good					good				
	Red Flags	N				N					N					N					N					
S5W125	USACE Jurisdiction: Yes	Cowardin et al. Classification	PEM	PEM	PFO	PFO	PEM	PEM	PFO	PFO	PEM	PEM	PFO	PFO	PEM	PEM	PFO	PFO	PEM	PEM	PFO	PFO	PEM	PEM	PFO	PFO
		Indiana Community Type	WM	WM	FF	FF	WM	WM	FF	FF	WM	WM	FF	FF	WM	WM	FF	FF	WM	WM	FF	FF	WM	WM	FF	FF
		Size (acres)	3.75	1.03	0.33	2.29	3.75	1.03	0.33	2.29	3.75	1.03	0.33	2.29	3.75	1.03	0.33	2.29	3.75	1.03	0.33	2.29	3.75	1.03	0.33	2.29
		Impact (acres)	1.07	0.21	0.32	0.87	1.07	0.23	0.31	0.86	0.69	0.00	0.00	0.21	0.62	0.00	0.00	0.09	0.43	0.00	0.00	0.21	0.43	0.00	0.00	0.05
		Animal Habitat	poor	poor	good	good	poor	poor	good	good	poor	poor	good	good	poor	poor	good	good	poor	poor	good	good	poor	poor	good	good
		Botanical	poor	poor	fair	fair	poor	poor	fair	fair	poor	poor	fair	fair	poor	poor	fair	fair	poor	poor	fair	fair	poor	poor	fair	fair
		Hydrology	fair	good	good	good	fair	good	good	good	fair	good	good	good	fair	good	good	good	fair	good	good	good	fair	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	N	N	N	N	
S5W126	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO				PFO					PFO					PFO					PFO				
		Indiana Community Type	FF				FF					FF					FF					FF				
		Size (acres)	5.00				5.00					5.00					5.00					5.00				
		Impact (acres)	1.37				1.37					1.37					1.37					1.37				
		Animal Habitat	good				good					good					good					good				
		Botanical	fair				fair					fair					fair					fair				
		Hydrology	good				good					good					good					good				
	Red Flags	N				N					N					N					N					
S5W127	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO				PFO					PFO					PFO					PFO				
		Indiana Community Type	FF				FF					FF					FF					FF				
		Size (acres)	1.16				1.16					1.16					1.16					1.16				
		Impact (acres)	0.44				0.44					0.35					0.16					0.35				
		Animal Habitat	good				good					good					good					good				
		Botanical	fair				fair					fair					fair					fair				
		Hydrology	good				good					good					good					good				
	Red Flags	N				N					N					N					N					
S5W128	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO				PFO					PFO					PFO					PFO				
		Indiana Community Type	FF				FF					FF					FF					FF				
		Size (acres)	2.65				2.65					2.65					2.65					2.65				
		Impact (acres)	0.32				0.32					0.21					0.21					0.21				
		Animal Habitat	good				good					good					good					good				
		Botanical	poor				poor					poor					poor					poor				
		Hydrology	good				good					good					good					good				
	Red Flags	N				N					N					N					N					

Wetland Matrix for I-69 Alternatives To Be Carried Forward For Further Consideration: Section 5 Construction Limits
 Gray shaded cells indicate wetland polygons that are entirely or partially within the construction limits of the respective alternative

Wetland ID	DATA	Alternative 4			Alternative 5			Alternative 6			Alternative 7			Alternative 8			Refined Preferred Alternative 8						
S5W145	USACE Jurisdiction: Yes	Cowardin et al. Classification	PEM					PEM						PEM					PEM				
		Indiana Community Type	WM					WM						WM					WM				
		Size (acres)	0.06					0.06						0.06					0.06				
		Impact (acres)	0.06					0.06						0.01					0.06				
		Animal Habitat	fair					fair						fair					fair				
		Botanical	poor					poor						poor					poor				
		Hydrology	fair					fair						fair					fair				
	Red Flags	N					N						N					N					
S5W146	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO					PFO					PFO					PFO					
		Indiana Community Type	FF					FF					FF					FF					
		Size (acres)	0.14					0.14					0.14					0.14					
		Impact (acres)	0.14					0.14					0.11					0.14					
		Animal Habitat	fair					fair					fair					fair					
		Botanical	poor					poor					poor					poor					
		Hydrology	fair					fair					fair					fair					
	Red Flags	N					N					N					N						
S5W147	USACE Jurisdiction: Yes	Cowardin et al. Classification	PFO					PFO					PFO					PFO					
		Indiana Community Type	FF					FF					FF					FF					
		Size (acres)	0.23					0.23					0.23					0.23					
		Impact (acres)	0.06					0.23					0.11					0.07					
		Animal Habitat	good					good					good					good					
		Botanical	fair					fair					fair					fair					
		Hydrology	good					good					good					good					
	Red Flags	N					N					N					N						
S5W148	USACE Jurisdiction: Yes	Cowardin et al. Classification	PEM					PEM					PEM					PEM					
		Indiana Community Type	SM					SM					SM					SM					
		Size (acres)	0.09					0.09					0.09					0.09					
		Impact (acres)	0.08					0.08					0.08					0.08					
		Animal Habitat	poor					poor					poor					poor					
		Botanical	poor					poor					poor					poor					
		Hydrology	fair					fair					fair					fair					
	Red Flags	N					N					N					N						
S5W149	USACE Jurisdiction: Yes	Cowardin et al. Classification	PEM	PEM	PFO			PEM	PEM	PFO			PEM	PEM	PFO			PEM	PEM	PFO			
		Indiana Community Type	SM	SM	SF			SM	SM	SF			SM	SM	SF			SM	SM	SF			
		Size (acres)	0.40	0.11	0.76			0.40	0.11	0.76			0.40	0.11	0.76			0.40	0.11	0.76			
		Impact (acres)	0.26	0.11	0.00			0.26	0.11	0.00			0.39	0.11	0.04			0.27	0.11	0.00			
		Animal Habitat	poor	poor	good			poor	poor	good			poor	poor	good			poor	poor	good			
		Botanical	fair	fair	poor			fair	fair	poor			fair	fair	poor			fair	fair	poor			
		Hydrology	good	good	fair			good	good	fair			good	good	fair			good	good	fair			
	Red Flags	N	N	N			N	N	N			N	N	N			N	N	N				
S5W150	USACE Jurisdiction: Yes	Cowardin et al. Classification	PEM																				
		Indiana Community Type	WM																				
		Size (acres)	0.07																				
		Impact (acres)	0.07																				
		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 correspondence on jurisdictional verification will be completed during permitting

Gray shaded cells indicate wetland polygons that are entirely or partially within the construction limits of the respective alternative



APPENDIX F FINAL WETLAND TECHNICAL REPORT

TECHNICAL REPORT APPENDICES

APPENDIX A	Wetland Site Forms
APPENDIX B	I-69 Wetland Quality Assessment Profile Sheets
APPENDIX C	Wetland Matrix for I-69 Alternatives Carried Forward for Detailed Analysis
APPENDIX D	InWRAP Data Sheets
APPENDIX E	Wetland Determination Data Forms

IN-WRAP Summary Sheet

Date Report Generated: 10/18/2011

Wetland site name: S5W007

Data Reference #: 7

Date of Site Visit: 10/11/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Bloomington

TIER 1 SUMMARY:

- a. Total wetland area (hectares): **0.010 (0.03 acre)**
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.15
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 7

- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 1 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 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: 3 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: S5W007

Ownership (if known): _____

USGS Topographic Quadrangle(s): Bloomington

USGS Watershed map 14-Digit HUC: Clear Creek-Jackson Creek 05120208090010

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

NWI Polygon ID Number	7				
Cowardin Classification	PEMC				
Polygon Size (hectares)	0.01 (0.03 acre)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 10/11/2011 Time assessed: 10:30 am

Weather conditions: 75°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: 0.01 hectare (0.03 acre)

Size of total wetland complex (all continuous wetland polygons): 0.01 hectare (0.03 acre)

1.4 Site Setting:

Degree of isolation from other wetlands or wetland complexes:

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

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

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

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, seasonal
• If standing water is present, is the water greater than 2 meters in depth? No
Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Wet meadow

2.6 Disturbances of Hydrology (check all that apply):

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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): Cattail (Typha angustifolia)

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

Concrete channels drain to wetland from both directions

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 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% covers)

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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

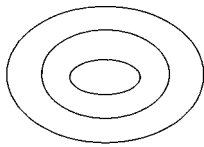
1b. If only one vegetation zone is evident, which best describes the site?

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

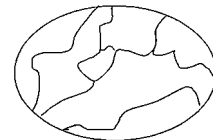
X Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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)

(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 <u>Typha angustifolia*</u> | d <u> </u> |
| b <u> </u> | e <u> </u> |
| c <u> </u> | f <u> </u> |

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

- | | |
|---|---|
| a <u>None</u> | c <u> </u> |
| b <u> </u> | d <u> </u> |

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

- | | |
|---|---|
| a <u>None</u> | c <u> </u> |
| b <u> </u> | d <u> </u> |

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

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

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

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

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
 _____ 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 pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, paniced-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- 1 _____ *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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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, shell bark (*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: 10/12/2011

Wetland site name: S5W011

Data Reference #: 11

Date of Site Visit: 10/11/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Bloomington

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 0.003 (0.01 acre)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 11

- 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 Description: 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: 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: 2 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: S5W011

Ownership (if known): _____

USGS Topographic Quadrangle(s): Bloomington

USGS Watershed map 14-Digit HUC: Bean Blossom Creek-Stout Creek 05120202010080

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

NWI Polygon ID Number	11				
Cowardin Classification	PEMB				
Polygon Size (hectares)	0.003 (0.01 acre)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 10/11/2011 Time assessed: 9:30 am

Weather conditions: 75°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: 0.003 hectare (0.01 acre)

Size of total wetland complex (all continuous wetland polygons): 0.003 hectare (0.01 acre)

1.4 Site Setting:

Degree of isolation from other wetlands or wetland complexes:

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

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

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

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? 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):

Wet meadow

2.6 Disturbances of Hydrology (check all that apply):

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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 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. Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. 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. 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. 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. 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. Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. 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. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
- 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. 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. 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

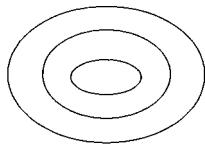
1b. If only one vegetation zone is evident, which best describes the site?

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

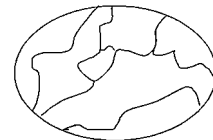
X Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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) _____
(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 <u>Typha angustifolia</u> | d _____ |
| b <u>Phalaris arundinacea</u> | e _____ |
| c _____ | f _____ |

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

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

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

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

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

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

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

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

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

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
- _____ 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
- _____ 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 pro cera*) 1
- _____ purple loosestrife (*Lythrum salicaria*) 0
- _____ *richweed (*Collinsonia canadensis*) 8
- _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, paniced-a) 3
- _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
- _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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, shell bark (*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: 10/16/2011

Wetland site name: S5W021

Data Reference #: 21

Date of Site Visit: 10/15/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Bloomington

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 0.05 (0.13 acre)
- 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. 21

- a. Indiana Wetland community type: Seasonally Flooded Basin
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Road/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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 2 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: 2 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: S5W021

Ownership (if known): _____

USGS Topographic Quadrangle(s): Bloomington

USGS Watershed map 14-Digit HUC: Bean Blossom Creek-Stout Creek 05120202010080

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

NWI Polygon ID Number	21				
Cowardin Classification	PEMH				
Polygon Size (hectares)	0.05 (0.13 acre)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 10/15/2011 Time assessed: 6:00 pm

Weather conditions: 60 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: 0.05 hectare (0.13 acre)

Size of total wetland complex (all continuous wetland polygons): 0.05 hectare (0.13 acre)

1.4 Site Setting:

Degree of isolation from other wetlands or wetland complexes:

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

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

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

Tier 2 Individual Polygon: Preliminary Assessment (to be completed on-site for each NWI polygon present in the wetland)

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

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

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes
• If standing water is present, is the water greater than 2 meters in depth? No
Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Seasonally Flooded Basin

2.6 Disturbances of Hydrology (check all that apply):

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

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

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 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. X Y N Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. Y X 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 X 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 X 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. X Y N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. Y X 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. X 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 X N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. X Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. Y X 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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

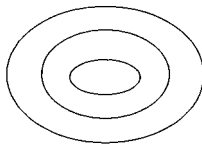
1b. If only one vegetation zone is evident, which best describes the site?

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

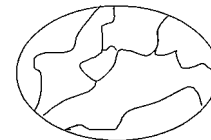
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 <u>Typha latifolia</u> | d _____ |
| b <u>Phalaris arundinacea</u> | e _____ |
| c _____ | f _____ |

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

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

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

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

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

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

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
- _____ 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
- _____ 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 pro cera*) 1
- _____ purple loosestrife (*Lythrum salicaria*) 0
- _____ *richweed (*Collinsonia canadensis*) 8
- _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, paniced-a) 3
- _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
- _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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, shell bark (*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: 04/29/2012 and 02/19/2013

Wetland site name: S5W024

Data Reference #: 24

Date of Site Visit: 4/27/2012 and 2/19/2013

NWI polygons in Site (quadrangle and NWI id. numbers: Bloomington

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 0.10 hectares (0.24 acres)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.15
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 24a

- a. Indiana Wetland community type: Shrub-carr
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Culvert
- d. Exotic species rating: Good Medium Poor
- e. Special Hydrologic Conditions Observed: None
- f. Special Community Type: None
- g. Rare-Threatened-Endangered Species: None
- h. Polygon Quality Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 3 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 4.67 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: 4 Rating: Good Medium Poor
- h. Number of indicator taxa 1 Rating: Good Medium Poor

TIER 2 SUMMARY:

NWI Polygon Id. 24b

- a. Indiana Wetland community type: Shallow marsh
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Culvert/used for stormwater detention
- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 2 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: 4 Rating: Good Medium Poor
- h. Number of indicator taxa 0 Rating: Good Medium Poor

TIER 2 SUMMARY:

NWI Polygon Id. 24c

- a. Indiana Wetland community type: Shrub-carr
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Culvert
- d. Exotic species rating: Good Medium Poor
- e. Special Hydrologic Conditions Observed: None
- f. Special Community Type: None
- g. Rare-Threatened-Endangered Species: None
- h. Polygon Quality Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 3 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 4.67 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: 4 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: S5W024
 Ownership (if known): _____
 USGS Topographic Quadrangle(s): Bloomington
 USGS Watershed map 14-Digit HUC: Clear Creek-Jackson Creek 05120208090010

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

NWI Polygon ID Number	024a	024b	024c		
Cowardin Classification	PSS	PEMC	PSS		
Polygon Size (hectares)	0.01 (0.02 acres)	0.06 (0.14 acres)	0.03 (0.08 acre)		

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White
 Agency: INDOT
 Date assessed: 10/14/2011 and 2/19/2013 Time assessed: 11:15 am and 10:30am
 Weather conditions: Overcast, Rain

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: 0.04 hectares (0.10acres)- PSS; 0.06 hectares (0.14 acres)- PEM
 Size of total wetland complex (all continuous wetland polygons): 0.10 hectares (0.24 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 within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

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

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 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 Hydrology (explain):
 Dams
 Road or Railroad Embankment

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

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

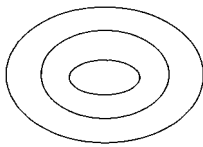
1b. If only one vegetation zone is evident, which best describes the site?

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

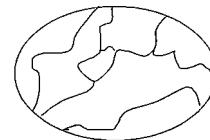
X Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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)
(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 <u>Juncus effusus</u> | d <u> </u> |
| b <u> </u> | e <u> </u> |
| c <u> </u> | f <u> </u> |

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

- | | |
|------------------------|---|
| a <u>Salix nigra</u> | c <u> </u> |
| b <u>Cornus amomum</u> | d <u> </u> |

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

- | | |
|---|---|
| a <u> </u> | c <u> </u> |
| b <u> </u> | d <u> </u> |

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

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

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

Was originally constructed as a stormwater detention facility.

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

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

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*] & banyard grass [*Echinochloa*]
- _____ needle sedge spp. (*Eleocharis*) sp.1 =2
*additional=8
- _____ nutsedge spp. (*Cyperus*) 2
- _____ *orchid spp.: species (if known) _____
- 1 _____ 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 pro cera*) 1
- _____ purple loosestrife (*Lythrum salicaria*) 0
- _____ *richweed (*Collinsonia canadensis*) 8
- _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, paniced-a) 3
- _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
- _____ cardinal flower (*Lobelia cardinalis*) 4

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- _____ button bush (*Cepha/anthus occidentalis*) 5
- _____ dogwood, red-osier (*Cornus stolonifera*) 4
- 1** _____ *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
- _____ *high bush 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, shell bark (*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
- 1** _____ willow spp. (*Salix*) sp.1=3; *additional=7

OTHER _____

NWI Polygon # 024b Data Reference # S5W024 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? Yes
• If standing water is present, is the water greater than 2 meters in depth? No
Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Shallow marsh

2.6 Disturbances of Hydrology (check all that apply):

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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 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. X Y N Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
- 2. Y X 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 X 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 X 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. X Y N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
- 6. Y X 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) 0 Approximate slope (percent) 1-2

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. X 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 X N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
- 3. Y X N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
- 4. Y X 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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

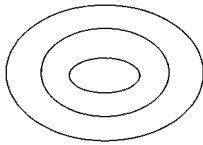
1b. If only one vegetation zone is evident, which best describes the site?

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

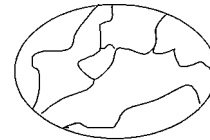
X Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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)

(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 Typha angustifolia b c d e f

Dominant Shrub Species listed in order of relative abundance.

- a Salix nigra b c d

Dominant Tree Species listed in order of relative abundance.

- a b c d

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

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

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

Was originally constructed as a stormwater detention facility.

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

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
 _____ **2** 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
 _____ 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
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 _____ *fen betony (*Pedicularis lanceolata*) 6
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 _____ 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 pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
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- _____ 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
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- _____ smartweed spp.: incl. jumpseed, pinkweed, tearthumb, water-pepper, water-sm. (*Polygonum*) 4 [Except *for *P. arifolium* 10]
- _____ sneezeweed (*Helenium autumnale*) 3
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- _____ *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
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- _____ 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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 pennsylvanica*) 3
- _____ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
- _____ boxelder (*Acer negundo*) 1
- _____ hickory, bitternut (*Carya cordiformis*) 5
- _____ *hickory, shell bark (*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
- _____ 1 willow spp. (*Salix*) sp.1=3; *additional=7

OTHER

NWI Polygon # 024c Data Reference # S5W024 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 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 Hydrology (explain):
 Dams
 Road or Railroad Embankment

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

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

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

Estimated herbaceous plant cover (percentage) in the polygon 100-75 75-50 50-25 X <25

Estimated woody plant foliar cover in the polygon 100-75 X 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. X Y N Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. Y X 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 X 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 X 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. X Y N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. Y X 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) 0 Approximate slope (percent) 1-2

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. X 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 X N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. Y X N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. Y X 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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

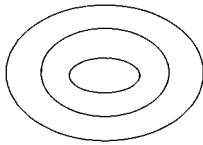
1b. If only one vegetation zone is evident, which best describes the site?

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

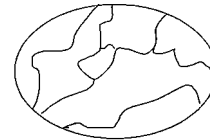
X _____ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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) _____

(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 Juncus effusus
b
c

- d
e
f

Dominant Shrub Species listed in order of relative abundance.

- a Salix nigra
b Cornus amomum

- c
d

Dominant Tree Species listed in order of relative abundance.

- a
b

- c
d

Tree & shrub canopy: _____ nil _____ separate, seldom touching _____ often touching X More or less closed

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

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

Was originally constructed as a stormwater detention facility.

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

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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) _____
 _____ **1** 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 pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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 (*Oxyopolis 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
- _____ button bush (*Cepha/anthus occidentalis*) 5
- _____ dogwood, red-osier (*Cornus stolonifera*) 4
- 1** _____ *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
- _____ *high bush 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, shell bark (*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
- 1** _____ willow spp. (*Salix*) sp.1=3; *additional=7

OTHER _____

IN-WRAP Summary Sheet

Date Report Generated: 10/13/2011

Wetland site name: S5W062

Data Reference #: 62

Date of Site Visit: 10/12/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Bloomington

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 1.31 (3.25 acres)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.5
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 62a

- a. Indiana Wetland community type: Deep Marsh
- 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 Description: 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): 5 Rating: Good Medium Poor

TIER 3B SUMMARY:

- a. Zonation and interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 2 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: 7 Rating: Good Medium Poor
- h. Number of indicator taxa 0 Rating: Good Medium Poor

TIER 2 SUMMARY:

NWI Polygon Id. 62b

- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 6 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 1.6 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

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: S5W062

Ownership (if known): _____

USGS Topographic Quadrangle(s): Bloomington

USGS Watershed map 14-Digit HUC: Bean Blossom Creek-Buck Creek/Muddy Fork 05120202010060

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

NWI Polygon ID Number	62a	62b			
Cowardin Classification	PABH	PFO1A			
Polygon Size (hectares)	0.59 (1.47 acres)	0.72 (1.78 acres)			

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder, & D. White

Agency: INDOT

Date assessed: 10/12/2011 Time assessed: 4:00pm

Weather conditions: 70's, partly cloudy

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

1.3 Wetland Size:

Size of site under assessment: 0.59 hectares (1.47 acres)-PAB; 0.72 hectares (1.78 acres)-PFO

Size of total wetland complex (all continuous wetland polygons): 1.31 hectares (3.25 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 within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

- | | |
|---|--|
| <input checked="" type="checkbox"/> 50 Native Vegetation - woodland | <input checked="" type="checkbox"/> 50 Road / highway / railroad bed / parking lot |
| <input type="checkbox"/> Native Vegetation - old field / scrub | <input type="checkbox"/> Industrial |
| <input type="checkbox"/> Agricultural- tilled | <input type="checkbox"/> Residential – single family |
| <input type="checkbox"/> Agricultural - pasture | <input type="checkbox"/> Commercial or multifamily residential |
| <input type="checkbox"/> Recreation - green space, mowed | |

Tier 2 Individual Polygon: Preliminary Assessment (to be completed on-site for each NWI polygon present in the wetland)

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

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

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes
• If standing water is present, is the water greater than 2 meters in depth? No
Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Deep Marsh

2.6 Disturbances of Hydrology (check all that apply):

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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon ___ 100-75 ___ 75-50 ___ 50-25 X <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:
 ___ nil (<5% cover) X scattered (5-15% cover) ___ Frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Y X N Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. Y X 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. X 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 X 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 X N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. X 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) 15-20 Approximate slope (percent) 1-2

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. X 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. X Y N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. X Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. X 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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

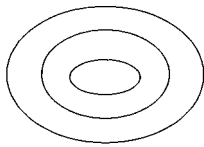
1b. If only one vegetation zone is evident, which best describes the site?

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

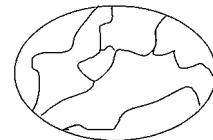
 1 Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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?

X 10 – 25% 25 – 50 % 50 – 75% 75 – 90% >90%

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

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

- | | |
|---|---|
| a <u> <i>Lemna minor</i> </u> | d <u> </u> |
| b <u> <i>Lysimachia nummularia</i> </u> | e <u> </u> |
| c <u> </u> | f <u> </u> |

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

- | | |
|---|---|
| a <u> </u> | c <u> </u> |
| b <u> </u> | d <u> </u> |

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

- | | |
|---|---|
| a <u> </u> | c <u> </u> |
| b <u> </u> | d <u> </u> |

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

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

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

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

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

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
- _____ b. most native perennial grass spp. 4: e.g.
- 1 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
- 2 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
- 1 moneywort (*Lysimachia nummularia*) 0
- _____ monkey flower spp. (*Mimulus*) 4
- _____ nettle (*Urtica pro cera*) 1
- _____ purple loosestrife (*Lythrum salicaria*) 0
- _____ *richweed (*Collinsonia canadensis*) 8
- _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-a) 3
- _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
- _____ cardinal flower (*Lobelia cardinalis*) 4

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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
- _____ **X** ash, green (*Fraxinus pennsylvanica*) 3
- _____ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
- _____ boxelder (*Acer negundo*) 1
- _____ hickory, bitternut (*Carya cordiformis*) 5
- _____ *hickory, shell bark (*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
- _____ **1** willow spp. (*Salix*) sp.1=3; *additional=7

OTHER

NWI Polygon # 62b Data Reference # S5W062 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 Artificially Flooded
 Seasonally Flooded
 Saturated (surface water seldom present) Artificially Drained

2.4 Soil Type:

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

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

Floodplain Forest

2.6 Disturbances of Hydrology (check all that apply):

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

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

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 100-75 75-50 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:
 X nil (<5% cover) scattered (5-15% cover) Frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. X Y N Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. X 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. X 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. X 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 X N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. X 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) 20 Approximate slope (percent) 1-2

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. X 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. X Y N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. X Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. Y X 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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

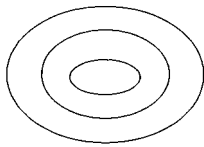
1b. If only one vegetation zone is evident, which best describes the site?

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

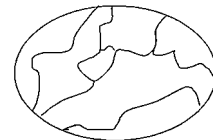
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 <u>Lysimachia nummularia</u> | d _____ |
| b <u>Laportea canadensis</u> | e _____ |
| c _____ | f _____ |

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

- | | |
|--------------------------|---------|
| a <u>Acer negundo</u> | c _____ |
| b <u>Ulmus americana</u> | d _____ |

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

- | | |
|---------------------------------|---------|
| a <u>Fraxinus pennsylvanica</u> | c _____ |
| b <u>Acer saccharinum</u> | 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.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservatism

Herbs: non-seed plants

- _____ horsetail, scouring rush spp. (*Equisetum*) 2
 _____ *ferns: marsh 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
 _____ 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
 _____ X 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
 _____ X moneywort (*Lysimachia nummularia*) 0
 _____ monkey flower spp. (*Mimulus*) 4
 _____ nettle (*Urtica pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 8
 _____ sunflower spp. (*Helianthus*) 4
 _____ *swamp loosestrife (*Decodon verticillatus*, N) 8
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 _____ 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.-, panicle-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 petio/ata*) 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
- X** _____ 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
- X** _____ 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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
- X** _____ ash, green (*Fraxinus pensylvanica*) 3
- _____ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
- X** _____ boxelder (*Acer negundo*) 1
- _____ hickory, bitternut (*Carya cordiformis*) 5
- _____ *hickory, shell bark (*Carya laciniosa*) 8
- _____ honey locust (*Gleditsia triacanthos*) 1
- _____ *poison sumac (*Rhus vernix*) 10

Trees - lvs. simple and opposite

- _____ red maple (*Acer rubrum*) 5
- X** _____ 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
- X** _____ 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: 10/13/2011

Wetland site name: S5W063

Data Reference #: 63

Date of Site Visit: 10/12/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Bloomington

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 0.82 (2.0 acres)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.45
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 63a

- 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 Description: 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): 5 Rating: Good Medium Poor

TIER 3B SUMMARY:

- a. Zonation and interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 6 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: 13 Rating: Good Medium Poor
- h. Number of indicator taxa 0 Rating: Good Medium Poor

TIER 2 SUMMARY:

NWI Polygon Id. 63b

- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 6 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: 9 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: S5W063

Ownership (if known): _____

USGS Topographic Quadrangle(s): Bloomington

USGS Watershed map 14-Digit HUC: Beanblossom Creek- Buck Creek/Muddy Fork 05120202010060

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

NWI Polygon ID Number	63a	63b			
Cowardin Classification	PEMC	PFO1A			
Polygon Size (hectares)	0.58 (1.4 acres)	0.24 (0.60 acre)			

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 10/12/2011 Time assessed: 5:45 pm

Weather conditions: Sunny 70°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: 0.58 hectares (1.4 acres)- PEMC, 0.24 hectares (0.60 acres)-PFO

Size of total wetland complex (all continuous wetland polygons): 0.82 hectares (2.0 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 within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

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

Tier 2 Individual Polygon: Preliminary Assessment (to be completed on-site for each NWI polygon present in the wetland)

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

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

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes
• If standing water is present, is the water greater than 2 meters in depth? No
Is standing water normally present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Sedge Meadow

2.6 Disturbances of Hydrology (check all that apply):

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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 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. Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. 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. 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. 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. 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. Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. 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) 30 Approximate slope (percent) 1-2

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
- 1a. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
- 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. 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. 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

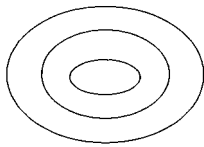
1b. If only one vegetation zone is evident, which best describes the site?

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

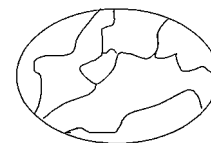
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 Typha latifolia
- b Cyperus esculentus
- c Carex sp.

- d Phalaris arundinacea
- e _____
- f _____

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

- a Salix sp.
- b Platanus occidentalis

- 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).

The wetland is likely an abandoned settling basin for an inactive sewage treatment facility.

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

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
 _____ 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
1 nutsedge spp. (*Cyperus*) 2
 _____ *orchid spp.: species (if known) _____
1 rush spp. (*Juncus*) 4
2 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 pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-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 petio/ata*) 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
- X button bush (*Cepha/anthus occidentalis*) 5
- _____ dogwood, red-osier (*Cornus stolonifera*) 4
- _____ *dogwood, blue-fruited or silky *Cornus obliqua*) 7
- _____ dogwood, gray (*C. racemosa*) 2
- X elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

- _____ *cranberry spp. (*Vaccinium*, N) 10
- _____ *dwarf birch (*Betula pumila*, N) 10
- _____ *high bush 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, shell bark (*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
- 1 sycamore, Amer. (*Platanus occidentalis*) 3
- 1 willow spp. (*Salix*) sp.1=3; *additional=7

OTHER

- _____ Tuliptree (*Liriodendron tulipifera*)

Tier 2 Individual Polygon: Preliminary Assessment (to be completed on-site for each NWI polygon present in the wetland)

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

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

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes
• If standing water is present, is the water greater than 2 meters in depth? No
Is standing water normally present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Floodplain 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

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

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 100-75 75-50 50-25 X <25
 Estimated woody plant foliar cover in the polygon 100-75 X 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. X Y N Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
- 2. X 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. X 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. X 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 X N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
- 6. X 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) 10-30 Approximate slope (percent) 1-2

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 X 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. X Y N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
- 3. X Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
- 4. X 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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

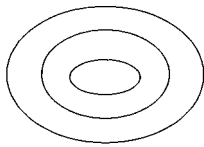
1b. If only one vegetation zone is evident, which best describes the site?

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

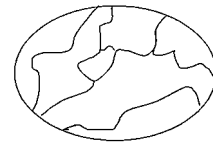
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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, herb cover sparse

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

- | | |
|--------------------------------------|---------|
| a <u><i>Agrimonia parviflora</i></u> | d _____ |
| b _____ | e _____ |
| c _____ | f _____ |

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

- | | |
|--|---------|
| a <u><i>Fraxinus pennsylvanica</i></u> | c _____ |
| b <u><i>Acer saccharinum</i></u> | d _____ |

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

- | | |
|--|---------------------------------------|
| a <u><i>Acer saccharinum</i></u> | c <u><i>Platanus occidentalis</i></u> |
| b <u><i>Fraxinus pennsylvanica</i></u> | 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.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
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
1 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 pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- X** _____ 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
- X** _____ poison ivy (vine) (*Rhus radicans*) 1
- _____ *queen-of-the-prairie (*Filipendula rubra*) 9
- _____ senna spp. (*Cassia*) 4
- 1** _____ 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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
- X** _____ ash, green (*Fraxinus pensylvanica*) 3
- _____ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
- _____ boxelder (*Acer negundo*) 1
- _____ hickory, bitternut (*Carya cordiformis*) 5
- _____ *hickory, shell bark (*Carya laciniosa*) 8
- _____ honey locust (*Gleditsia triacanthos*) 1
- _____ *poison sumac (*Rhus vernix*) 10

Trees - lvs. simple and opposite

- _____ red maple (*Acer rubrum*) 5
- X** _____ 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
- X** _____ sycamore, Amer. (*Platanus occidentalis*) 3
- _____ willow spp. (*Salix*) sp.1=3; *additional=7

OTHER

IN-WRAP Summary Sheet

Date Report Generated: 10/14/2011

Wetland site name: S5W065

Data Reference #: 65

Date of Site Visit: 10/13/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Bloomington

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 0.29 (0.71 acre)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.5
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 65

- 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 Description: 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): 5 Rating: Good Medium Poor

TIER 3B SUMMARY:

- a. Zonation and interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 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: 14 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: S5W065

Ownership (if known): _____

USGS Topographic Quadrangle(s): Bloomington

USGS Watershed map 14-Digit HUC: Bean Blossom Creek-Buck Creek/Muddy Fork 05120202010060

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

NWI Polygon ID Number	65				
Cowardin Classification	PFO1A				
Polygon Size (hectares)	0.29 (0.71 acre)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 10/13/2011 Time assessed: 9:45am

Weather conditions: Overcast, approx. 70F, light rain

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: 0.29 hectare (0.71 acre)

Size of total wetland complex (all continuous wetland polygons): 0.29 hectare (0.71 acre)

1.4 Site Setting:

Degree of isolation from other wetlands or wetland complexes:

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

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

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

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? No
Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

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

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

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 100-75 75-50 X 50-25 <25
 Estimated woody plant foliar cover in the polygon 100-75 X 75-50 50-25 <25
 Amount of dead woody material on the soil surface:
 X nil (<5% cover) scattered (5-15% cover) Frequent (>20% covers)

3a.2 Water Quality Protection Questions:

1. X Y N Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. X 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. X 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. X 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 X N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. X 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) 20 Approximate slope (percent) 1-2

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. X 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. X Y N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. X Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. X 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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

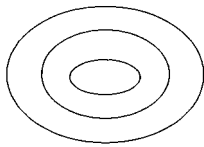
1b. If only one vegetation zone is evident, which best describes the site?

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

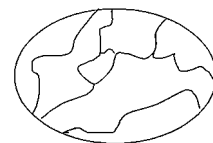
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 <u>Carex sp.</u> | d _____ |
| b _____ | e _____ |
| c _____ | f _____ |

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

- | | |
|---------------------------|------------------------|
| a <u>Acer saccharinum</u> | c <u>Juglans nigra</u> |
| b <u>Lindera benzoin</u> | d _____ |

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

- | | |
|--------------------------------|---------|
| a <u>Acer saccharinum</u> | c _____ |
| b <u>Platanus occidentalis</u> | 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.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
2 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
2 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

- X _____ *bedstraw spp. (*Galium*) 6
 _____ beggar's tick spp. (*Bidens*) 3
 _____ blue vervain (*Verbena hastata*) 3
 _____ boneset (*Eupatorium perfoliatum*) 4
 _____ bugleweed spp. (*Lycopus*) 5
X _____ 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
X _____ moneywort (*Lysimachia nummularia*) 0
 _____ monkey flower spp. (*Mimulus*) 4
 _____ nettle (*Urtica pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, paniced-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- X 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush blueberry (*V. corymbosum*, N) 9
- _____ *leatherleaf (*Chamaedaphne calycul.*, N) 10
- _____ meadowsweet & hardhack spp. (*Spiraea*) 4
- _____ *ninebark (*Physocarpus opulifolius*) 7
- _____ *shrubby cinquefoil (*Potentilla fruticosa*) 9
- X 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, shell bark (*Carya laciniosa*) 8
- _____ honey locust (*Gleditsia triacanthos*) 1
- _____ *poison sumac (*Rhus vernix*) 10

Trees - lvs. simple and opposite

- _____ red maple (*Acer rubrum*) 5
- X 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
- X sycamore, Amer. (*Platanus occidentalis*) 3
- X willow spp. (*Salix*) sp.1=3; *additional=7

OTHER *Juglans nigra* (shrub)

IN-WRAP Summary Sheet

Date Report Generated: 10/15/2011

Wetland site name: S5W066

Data Reference #: 66

Date of Site Visit: 10/14/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Bloomington

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 0.06 (0.15 acre)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.5
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 66

- a. Indiana Wetland community type: Seasonally Flooded Basin
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Road/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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 1 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: 5 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: S5W066

Ownership (if known): _____

USGS Topographic Quadrangle(s): Bloomington

USGS Watershed map 14-Digit HUC: Bean Blossom Creek-Stout Creek 05120202010080

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

NWI Polygon ID Number	66				
Cowardin Classification	PEMH				
Polygon Size (hectares)	0.06 (0.15 acre)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 10/14/2011 Time assessed: 10:30 am

Weather conditions: 60°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: 0.06 (0.15 acre)

Size of total wetland complex (all continuous wetland polygons): 0.06 (0.15 acre)

1.4 Site Setting:

Degree of isolation from other wetlands or wetland complexes:

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

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

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

Tier 2 Individual Polygon: Preliminary Assessment (to be completed on-site for each NWI polygon present in the wetland)

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

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

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes
• If standing water is present, is the water greater than 2 meters in depth? No
Is standing water normally present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Seasonally Flooded Basin

2.6 Disturbances of Hydrology (check all that apply):

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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 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. X 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) 1-5 Approximate slope (percent) 1-2

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. X 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. X Y N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. X Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. X 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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

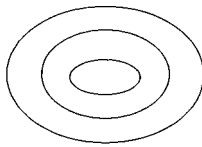
1b. If only one vegetation zone is evident, which best describes the site?

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

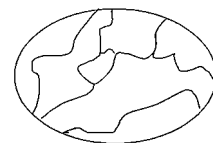
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 <u>*Scirpus validus</u> | d _____ |
| b _____ | e _____ |
| c _____ | f _____ |

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

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

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

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

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

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

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- _____ 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
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- _____ 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
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Grasses (family Gramineae) - indicate types & number of species

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- _____ b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other
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- _____ *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
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- _____ meadow beauty (*Rhexia virginica*) 5
- _____ mint spp.: e.g. hedge nettle, mtn. m., skullcap 5
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- _____ monkey flower spp. (*Mimulus*) 4
- _____ nettle (*Urtica pro cera*) 1
- _____ purple loosestrife (*Lythrum salicaria*) 0
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- _____ *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.-, panicle-a) 3
- _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
- _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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, shell bark (*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: 10/15/2011

Wetland site name: S5W068

Data Reference #: 68

Date of Site Visit: 10/14/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Bloomington

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 0.06 (0.16 acre)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.1
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 68

- a. Indiana Wetland community type: Wet meadow
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Road/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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 5 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 1.8 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: 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: S5W068

Ownership (if known): _____

USGS Topographic Quadrangle(s): Bloomington

USGS Watershed map 14-Digit HUC: Bean Blossom Creek-Stout Creek 05120202010080

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

NWI Polygon ID Number	68				
Cowardin Classification	PEMA				
Polygon Size (hectares)	0.06 (0.16 acre)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 10/14/2011 Time assessed: 9:30am

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.):

1.3 Wetland Size:

Size of site under assessment: 0.06 hectare (0.16 acre)

Size of total wetland complex (all continuous wetland polygons): 0.06 hectare (0.16 acre)

1.4 Site Setting:

Degree of isolation from other wetlands or wetland complexes:

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

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

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

Tier 2 Individual Polygon: Preliminary Assessment (to be completed on-site for each NWI polygon present in the wetland)

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

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

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes
• If standing water is present, is the water greater than 2 meters in depth? No
Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Wet Meadow

2.6 Disturbances of Hydrology (check all that apply):

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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 100-75 X 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% covers)

3a.2 Water Quality Protection Questions:

1. X Y N Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. Y X 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. X 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 X 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 X N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. X 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) 1-2 Approximate slope (percent) 1-5

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. X 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. X Y N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. X Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. X 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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

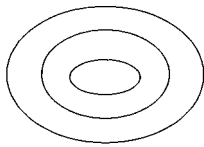
1b. If only one vegetation zone is evident, which best describes the site?

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

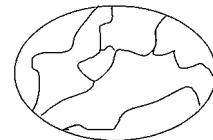
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 Phalaris arundinacea
- b Typha latifolia
- c Juncus effusus

- d Solidago canadensis
- e Polygonum pensylvanicum
- 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).

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

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
 _____ 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
 _____ **1** nutsedge spp. (*Cyperus*) 2
 _____ *orchid spp.: species (if known) _____
 _____ **1** rush spp. (*Juncus*) 4
 _____ **3** 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 pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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
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 _____ *flat-topped aster (*A. umbellatus*) 8
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 _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

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- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 0
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- _____ *Indian plantain (*Cacalia plantaginea*) 10
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- X** _____ 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
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- _____ *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

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- _____ *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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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, shell bark (*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: 7/25/2012

Wetland site name: S5W069

Data Reference #: 69

Date of Site Visit: 10/13/2011

NWI polygons in Site (quadrangle and NWI id. numbers): Bloomington

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 1.42 (3.51 acres)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.15
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 69a

- a. Indiana Wetland community type: Seasonally Flooded Basin
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: _____
- d. Exotic species rating: Good Medium Poor
- e. Special Hydrologic Conditions Observed: None
- f. Special Community Type: None
- g. Rare-Threatened-Endangered Species: None
- h. Polygon Quality Description: 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: 2.6 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 4 Rating: Good Medium Poor

TIER 2 SUMMARY:

NWI Polygon Id. 69b

- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 4 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: 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. 69e

- a. Indiana Wetland community type: Shallow Marsh
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Bridge Abutment
- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 2 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: 8 Rating: Good Medium Poor
- h. Number of indicator taxa 1 Rating: Good Medium Poor

TIER 2 SUMMARY:

NWI Polygon Id. 69f

- a. Indiana Wetland community type: Shallow marsh
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Bridge Abutment
- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 4 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

TIER 2 SUMMARY:

NWI Polygon Id. 69g

- a. Indiana Wetland community type: Shallow Open Water
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Dam and Livestock
- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 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: 3 Rating: Good Medium Poor
- h. Number of indicator taxa 1 Rating: Good Medium Poor

TIER 2 SUMMARY:

NWI Polygon Id. 69i

- a. Indiana Wetland community type: Deep Marsh
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Dam and Livestock
- d. Exotic species rating: Good Medium Poor
- e. Special Hydrologic Conditions Observed: None
- f. Special Community Type: None
- g. Rare-Threatened-Endangered Species: Not Present
- h. Polygon Quality Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 6 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 2.67 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 3 Rating: Good Medium Poor

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: S5W069
 Ownership (if known): _____
 USGS Topographic Quadrangle(s): Bloomington
 USGS Watershed map 14-Digit HUC: Bean Blossom Creek-Stout Creek 05120202010080

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

NWI Polygon ID Number	69a	69b	69e	69f	69g
Cowardin Classification	PSS1A	PFO1Af	PEMH	PSS1A	PAB
Polygon Size (hectares)	0.29 (0.72 ac.)	0.67 (1.67ac.)	0.01 (0.02ac.)	0.03 (0.06ac.)	0.31 (0.76ac.)

NWI Polygon ID Number	69i				
Cowardin Classification	PEM				
Polygon Size (hectares)	0.11 (0.28ac.)				

1.2 Site Visit:

Team Members: K.Schroeder & D. White
 Agency: INDOT
 Date assessed: 10/13/2011 Time assessed: 11:30 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.):

1.3 Wetland Size:

Size of site under assessment: 0.12 hectares-PEM; 0.32 hectares-PSS; 0.67 hectares-PFO; 0.31 hectares-PAB
 Size of total wetland complex (all continuous wetland polygons): 1.42 hectares (3.51 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 within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

<input type="checkbox"/> Native Vegetation - woodland	<u>50</u> Road / highway / railroad bed / parking lot
<input type="checkbox"/> Native Vegetation - old field / scrub	<input type="checkbox"/> Industrial
<u>25</u> Agricultural- tilled	<input type="checkbox"/> Residential – single family
<u>25</u> Agricultural - pasture	<input type="checkbox"/> Commercial or multifamily residential
<input type="checkbox"/> Recreation - green space, mowed	

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? No

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Seasonally Flooded Basin

2.6 Disturbances of Hydrology (check all that apply):

Ditching Culvert
 Tiles Other Human Disturbances to the Hydrology (explain):
 Dams Small portion of wetland vegetation has been cut in an attempt to
 Road or Railroad Embankment grow row crop.

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

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 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% covers)

3a.2 Water Quality Protection Questions:

1. x **Y** **N** Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. **Y** x **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. x **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. x **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** x **N** Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. x **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) 10-20 Approximate slope (percent) 1-2

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. x **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. x **Y** **N** Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. x **Y** **N** Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. x **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. x **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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

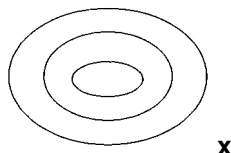
1b. If only one vegetation zone is evident, which best describes the site?

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.

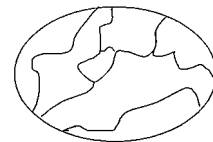
2. If more than one vegetation zone is present in the polygon, which interspersion diagram most closely represents the distribution of these zones?

Type One Interspersion



x

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 <u>Scirpus sp.</u> | d _____ |
| b <u>Juncus effusus</u> | e _____ |
| c <u>Typha latifolia</u> | f _____ |

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

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

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

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

Tree & 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 # 69a Data Reference # S5W069

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 | <u><i>Solidago canadensis</i></u> | d | _____ |
| b | _____ | e | _____ |
| c | _____ | f | _____ |

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

- | | | | |
|---|---------------------------|---|-------|
| a | <u><i>Salix nigra</i></u> | 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.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
 _____ **X** bulrush spp. (*Scirpus* / *Schoenoplectus*) 5
 _____ *bur reed spp. (*Sparganium*) 9
 _____ **X** 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*] & banyard grass [*Echinochloa*]
 _____ **X** needle sedge spp. (*Eleocharis*) sp.1 =2
 *additional=8
 _____ nutsedge spp. (*Cyperus*) 2
 _____ *orchid spp.: species (if known) _____
 _____ **2** rush spp. (*Juncus*) 4
 _____ **5** 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-leaved 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
 _____ **X** 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
 _____ **X** moneywort (*Lysimachia nummularia*) 0
 _____ monkey flower spp. (*Mimulus*) 4
 _____ nettle (*Urtica pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, paniced-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- X** 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
- X** button bush (*Cepha/anthus 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
- _____ *high bush 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
- X** ash, green (*Fraxinus pennsylvanica*) 3
- _____ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
- _____ boxelder (*Acer negundo*) 1
- _____ hickory, bitternut (*Carya cordiformis*) 5
- _____ *hickory, shell bark (*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
- X** 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
- X** sycamore, Amer. (*Platanus occidentalis*) 3
- X** willow spp. (*Salix*) sp.1=3; *additional=7

OTHER _____

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 Artificially Flooded
 Seasonally Flooded
 Saturated (surface water seldom present) Artificially Drained

2.4 Soil Type:

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

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

Floodplain Forest

2.6 Disturbances of Hydrology (check all that apply):

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

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

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

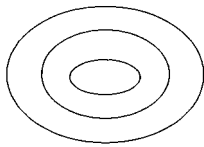
1b. If only one vegetation zone is evident, which best describes the site?

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

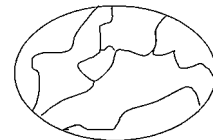
_____ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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% x >90%

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

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

- | | |
|----------------------------|---------|
| a <u>Solidago sp.</u> | d _____ |
| b <u>Elymus virginicus</u> | e _____ |
| c _____ | f _____ |

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

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

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

- | | |
|----------------------------------|---------|
| a <u>Acer rubrum</u> | c _____ |
| b <u>Fraxinus pennsylvanicus</u> | d _____ |

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

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

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

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

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
 _____ **X** 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
 _____ **X** moneywort (*Lysimachia nummularia*) 0
 _____ monkey flower spp. (*Mimulus*) 4
 _____ nettle (*Urtica pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandemum*) 8
 _____ sunflower spp. (*Helianthus*) 4
 _____ *swamp loosestrife (*Decodon verticillatus*, N) 8
 _____ swamp milkweed (*Asclepias incarnata*) 4
 _____ toothcup spp. (*Ammania* & *Rotala*) 2
 _____ **X** *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.-, panicle-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- X 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
- X 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush blueberry (*V. corymbosum*, N) 9
- _____ *leatherleaf (*Chamaedaphne calycul.*, N) 10
- _____ meadowsweet & hardhack spp. (*Spiraea*) 4
- _____ *ninebark (*Physocarpus opulifolius*) 7
- _____ *shrubby cinquefoil (*Potentilla fruticosa*) 9
- X 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
- X ash, green (*Fraxinus pensylvanica*) 3
- _____ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
- _____ boxelder (*Acer negundo*) 1
- _____ hickory, bitternut (*Carya cordiformis*) 5
- _____ *hickory, shell bark (*Carya laciniosa*) 8
- _____ honey locust (*Gleditsia triacanthos*) 1
- _____ *poison sumac (*Rhus vernix*) 10

Trees - lvs. simple and opposite

- X 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
- X 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
- X willow spp. (*Salix*) sp.1=3; *additional=7

OTHER *Polygonum virginiana*

NWI Polygon # 69e Data Reference # S5W069
(see table on page one)

Tier 2 Individual Polygon: Preliminary Assessment (to be completed on-site for each NWI polygon present in the wetland)

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

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

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes
• If standing water is present, is the water greater than 2 meters in depth? Yes
Is standing water normally present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Shallow Marsh

2.6 Disturbances of Hydrology (check all that apply):

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

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

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

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

Estimated herbaceous plant cover (percentage) in the polygon 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% covers)

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) 1-10 Approximate slope (percent) 2-4

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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

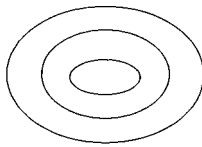
1b. If only one vegetation zone is evident, which best describes the site?

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

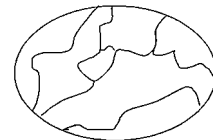
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 <u>Leersia oryzoides</u> | d _____ |
| b <u>Polygonum sagittatum</u> | e _____ |
| c _____ | f _____ |

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

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

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

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

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

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

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
X _____ 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*]
2 _____ needle sedge spp. (*Eleocharis*) sp.1 =2
 *additional=8
 _____ nutsedge spp. (*Cyperus*) 2
 _____ *orchid spp.: species (if known) _____
 _____ rush spp. (*Juncus*) 4
2 _____ 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
X _____ 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 pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-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 petio/ata*) 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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, shell bark (*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
- X willow spp. (*Salix*) sp.1=3; *additional=7

OTHER

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 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 Hydrology (explain):
 Dams Bridge abutment
 Road or Railroad Embankment

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

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife S Other (list): Multiflora rose

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

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

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

Estimated herbaceous plant cover (percentage) in the polygon 100-75 75-50 x 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% covers)

3a.2 Water Quality Protection Questions:

1. x Y N Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. Y x 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. x 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. x 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 x N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. x 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) 1-10 Approximate slope (percent) 1-4

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 x 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. x Y N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. x Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. x 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. x 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)?

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

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
X 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*]
X needle sedge spp. (*Eleocharis*) sp.1 =2
 *additional=8
 _____ nutsedge spp. (*Cyperus*) 2
 _____ *orchid spp.: species (if known) _____
X rush spp. (*Juncus*) 4
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
X 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
X moneywort (*Lysimachia nummularia*) 0
 _____ monkey flower spp. (*Mimulus*) 4
 _____ nettle (*Urtica pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-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 petio/ata*) 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
- X** 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
- X** 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
- X** button bush (*Cepha/anthus occidentalis*) 5
- _____ dogwood, red-osier (*Cornus stolonifera*) 4
- X** *dogwood, blue-fruited or silky *Cornus obliqua*) 7
- _____ dogwood, gray (*C. racemosa*) 2
- X** elderberry (*Sambucus*) 2

Shrubs - lvs. alternate

- _____ *cranberry spp. (*Vaccinium*, N) 10
- _____ *dwarf birch (*Betula pumila*, N) 10
- _____ *high bush 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, shell bark (*Carya laciniosa*) 8
- _____ honey locust (*Gleditsia triacanthos*) 1
- _____ *poison sumac (*Rhus vernix*) 10

Trees - lvs. simple and opposite

- _____ red maple (*Acer rubrum*) 5
- X** 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
- X** sycamore, Amer. (*Platanus occidentalis*) 3
- X** willow spp. (*Salix*) sp.1=3; *additional=7

OTHER Multiflora rose (*Rosa multiflora*)

NWI Polygon # 69g Data Reference # S5W069 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? Yes
• If standing water is present, is the water greater than 2 meters in depth? Yes
Is standing water normally present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Shallow Open Water

2.6 Disturbances of Hydrology (check all that apply):

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

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

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

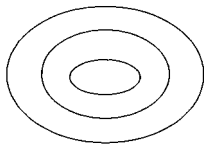
1b. If only one vegetation zone is evident, which best describes the site?

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

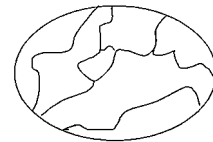
 x Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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)

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

What % of the polygon does this vegetative zone occupy?

 10 – 25% x 25 – 50 % 50 – 75% 75 – 90% >90%

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

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

- | | |
|---|---|
| a <u> <i>Lemna minor</i> </u> | d <u> </u> |
| b <u> </u> | e <u> </u> |
| c <u> </u> | f <u> </u> |

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

- | | |
|---|---|
| a <u> </u> | c <u> </u> |
| b <u> </u> | d <u> </u> |

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

- | | |
|---|---|
| a <u> </u> | c <u> </u> |
| b <u> </u> | d <u> </u> |

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

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

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

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

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
X _____ duckweed spp. (*Lemnaceae*) 3
X _____ *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
X _____ 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 pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-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 petio/ata*) 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
- X** _____ 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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, shell bark (*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

Tier 2 Individual Polygon: Preliminary Assessment (to be completed on-site for each NWI polygon present in the wetland)

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

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

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes
• If standing water is present, is the water greater than 2 meters in depth? No
Is standing water normally present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Deep marsh

2.6 Disturbances of Hydrology (check all that apply):

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

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

Garlic Mustard Glossy Buckthorn
 Phragmites C Reed canary grass
 Purple loosestrife S Other (list): Typha angustifolia

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

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

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

Estimated herbaceous plant cover (percentage) in the polygon 100-75 X 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% covers)

3a.2 Water Quality Protection Questions:

1. x Y N Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. x 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 x 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 x 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 x N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. x 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) 30 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. x 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 x N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. x Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. Y x 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. x 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

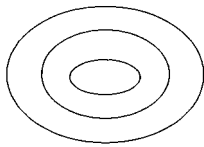
1b. If only one vegetation zone is evident, which best describes the site?

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

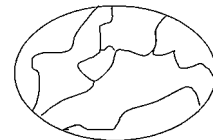
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 Leersia oryzoides
- b Phalaris arundinacea
- c Eleocharis acicularis

- d Aster atrovirens
- 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 Fraxinus pennsylvanica
- b Salix nigra

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

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
 _____ **X** 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
 _____ **X** b. most native perennial grass spp. 4: e.g. cut-grass, manna-g, Canada bluejoint, foxtail [*Alopecurus*]; other
 _____ **X** 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) _____
 _____ **1** 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
 _____ **X** 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
 _____ **X** water plantain (*Alisma plantago-aquat.*) 2

Herbs: dicots - lvs. opposite/whorled

- _____ *bedstraw spp. (*Galium*) 6
 _____ **X** 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
 _____ **X** false nettle (*Boehmeria cylindrica*) 3
 _____ *fen betony (*Pedicularis lanceolata*) 6
 _____ *gentian spp. (*Gentiana* & *Gentianopsis*) 8
 _____ giant ragweed (*Ambrosia trifida*) 0
 _____ **X** Indian hemp (*Apocynum cannabinum*) 2
 _____ Joe-pye weed spp. (*Eupatorium*) 5
 _____ *loosestrife spp. (*Lysimachia*) 6
 _____ meadow beauty (*Rhexia virginica*) 5
 _____ **X** mint spp.: e.g. hedge nettle, mtn. m., skullcap 5
 _____ **X** moneywort (*Lysimachia nummularia*) 0
 _____ monkey flower spp. (*Mimulus*) 4
 _____ **X** nettle (*Urtica pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 8
 _____ sunflower spp. (*Helianthus*) 4
 _____ *swamp loosestrife (*Decodon verticillatus*, N) 8
 _____ **X** 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
 _____ **X** *asters: bristly aster (*Aster puniceus*) 7
 _____ *flat-topped aster (*A. umbellatus*) 8
 _____ **X** other aster spp. (e.g. New Engl.-, panicle-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

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- _____ cress spp. (*Cardamine*) 4
- X _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- X _____ 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
- X _____ *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
- X _____ button bush (*Cepha/anthus 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
- _____ *high bush 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
- X _____ ash, green (*Fraxinus pensylvanica*) 3
- _____ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
- _____ boxelder (*Acer negundo*) 1
- _____ hickory, bitternut (*Carya cordiformis*) 5
- _____ *hickory, shell bark (*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: 10/15/2011

Wetland site name: S5W070

Data Reference #: 70

Date of Site Visit: 10/13 and 10/14/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Bloomington

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 4.42 hectares (10.92 acres)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.5
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. W70a

- a. Indiana Wetland community type: Shallow Marsh
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Road/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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 4 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 3.0 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: 14 Rating: Good Medium Poor
- h. Number of indicator taxa 0 Rating: Good Medium Poor

TIER 2 SUMMARY:

NWI Polygon Id. 70b

- 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 Description: 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): 5 Rating: Good Medium Poor

TIER 3B SUMMARY:

- a. Zonation and interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 6 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: 16 Rating: Good Medium Poor
- h. Number of indicator taxa 0 Rating: Good Medium Poor

TIER 2 SUMMARY:

NWI Polygon Id. 70c

- a. Indiana Wetland community type: Shallow marsh
- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 4 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 3.75 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

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: S5W070

Ownership (if known): _____

USGS Topographic Quadrangle(s): Bloomington

USGS Watershed map 14-Digit HUC: Bean Blossom Creek-Stout Creek 05120202010080

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

NWI Polygon ID Number	70a	70b	70c		
Cowardin Classification	PEMA	PFO1A	PEMA		
Polygon Size (hectares)	0.22 (0.54 acre)	4.16 (10.29 acres)	0.04 (0.09 acre)		

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 10/13-10/14/2011 Time assessed: 5:30 pm (70b) 9:30am (70a/c)

Weather conditions: Overcast

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: 0.26 hectare (0.63 acre)-PEM; 4.16 hectares (10.29 acres)-PFO

Size of total wetland complex (all continuous wetland polygons): 4.42 hectares (10.92 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 within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

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

Tier 2 Individual Polygon: Preliminary Assessment (to be completed on-site for each NWI polygon present in the wetland)

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

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

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes
• If standing water is present, is the water greater than 2 meters in depth? No
Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Shallow Marsh

2.6 Disturbances of Hydrology (check all that apply):

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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 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) 2-25 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

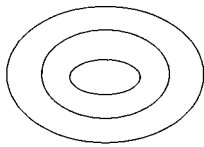
1b. If only one vegetation zone is evident, which best describes the site?

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

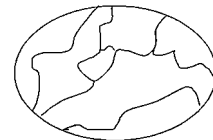
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 <u>Typha latifolia</u> | d _____ |
| b <u>Juncus effusus</u> | e _____ |
| c <u>Carex lupulina</u> | f _____ |

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

- | | |
|----------------------------------|---------|
| a <u>Liquidambar styraciflua</u> | 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.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
X _____ 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
 _____ 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) _____
2 _____ 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
X _____ moneywort (*Lysimachia nummularia*) 0
 _____ monkey flower spp. (*Mimulus*) 4
 _____ nettle (*Urtica pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 8
 _____ sunflower spp. (*Helianthus*) 4
 _____ *swamp loosestrife (*Decodon verticillatus*, N) 8
X _____ 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.-, paniced-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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, shell bark (*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
- X sweet gum (*Liquidambar styraciflua*) 4
- X sycamore, Amer. (*Platanus occidentalis*) 3
- 1 willow spp. (*Salix*) sp.1=3; *additional=7

OTHER _____

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 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 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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

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

Estimated herbaceous plant cover (percentage) in the polygon _____ 100-75 _____ 75-50 _____ 50-25 X <25

Estimated woody plant foliar cover in the polygon _____ 100-75 X 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. X Y N Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. Y X 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. X 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. X 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. X Y N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. X 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) 2-10 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. X 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. X Y N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. X Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. X 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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

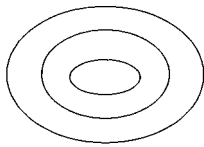
1b. If only one vegetation zone is evident, which best describes the site?

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

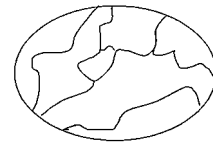
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 <u><i>Symphyotrichum lateriflorum</i></u> | d _____ |
| b _____ | e _____ |
| c _____ | f _____ |

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

- | | |
|---|---------|
| a <u><i>Liquidambar styraciflua</i></u> | c _____ |
| b <u><i>Lindera benzoin</i></u> | d _____ |

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

- | | |
|-----------------------------------|------------------------------|
| a <u><i>Acer rubrum</i></u> | c <u><i>Carya glabra</i></u> |
| b <u><i>Quercus palustris</i></u> | 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).

Few mature trees

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

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
2 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) _____
1 _____ 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 pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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
X _____ other aster spp. (e.g. New Engl.-, panicle-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- X 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
- X button bush (*Cepha/anthus 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
- _____ *high bush blueberry (*V. corymbosum*, N) 9
- _____ *leatherleaf (*Chamaedaphne calycul.*, N) 10
- _____ meadowsweet & hardhack spp. (*Spiraea*) 4
- _____ *ninebark (*Physocarpus opulifolius*) 7
- _____ *shrubby cinquefoil (*Potentilla fruticosa*) 9
- X spice bush (*Lindera benzoin*) 5
- _____ *swamp dewberry (*Rubus hispidus*) 6
- _____ *swamp holly & winterberry (*Ilex* spp.) 7
- X swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

- _____ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

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

Trees - lvs. simple and opposite

- X red maple (*Acer rubrum*) 5
- X 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
- X oak, pin or white (*Quercus*) 4
- _____ *oak, Shumard's, sw. chestnut, sw. white 7
- _____ *papaw (*Asimina triloba*) 6
- _____ *sugarberry (*Celtis laevigata*, S) 7
- X sweet gum (*Liquidambar styraciflua*) 4
- X sycamore, Amer. (*Platanus occidentalis*) 3
- _____ willow spp. (*Salix*) sp.1=3; *additional=7

OTHER _____

NWI Polygon # 70c Data Reference # S5W070 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? Yes
• If standing water is present, is the water greater than 2 meters in depth? No
Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Shallow Marsh

2.6 Disturbances of Hydrology (check all that apply):

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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 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. Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. 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. 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. 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. 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. Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. 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) 2-15 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. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
- 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. 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. 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

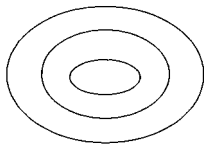
1b. If only one vegetation zone is evident, which best describes the site?

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

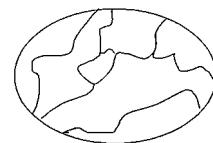
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 <u>Leersia oryzoides</u> | d _____ |
| b <u>Juncus effusus</u> | e _____ |
| c <u>Carex lupulina</u> | f _____ |

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

- | | |
|----------------------------------|---------|
| a <u>Liquidambar styraciflua</u> | 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.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservatism

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 _____ *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

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 _____ c. introduced grass spp. 0: reed canary grass [*Phalaris*], reed [*Phragmites*], annual grasses such as annual foxtail [*Setaria*] & barnyard grass [*Echinochloa*]
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 _____ *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

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 _____ *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
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 _____ cup plant (*Silphium perfoliatum*) 4
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 _____ *fen betony (*Pedicularis lanceolata*) 6
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 _____ giant ragweed (*Ambrosia trifida*) 0
 _____ Indian hemp (*Apocynum cannabinum*) 2
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 _____ *St. John's wort spp. (*Hypericum/Triandem*) 8
 _____ sunflower spp. (*Helianthus*) 4
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 _____ *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

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- _____ lizard's tail (*Saururus cernuus*) 4
- _____ lobelia spp. (*Lobelia*) 4
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- _____ *moonseed (vine) (*Menispermum canadense*) 6
- _____ primrose-willow spp. (*Epilobium & Ludwigia*) 3
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- _____ *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
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- _____ *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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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, shell bark (*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
- 1** willow spp. (*Salix*) sp.1=3; *additional=7

OTHER

IN-WRAP Summary Sheet

Date Report Generated: 4/28/2012

Wetland site name: S5W071

Data Reference #: 71

Date of Site Visit: 4/26/2012

NWI polygons in Site (quadrangle and NWI id. numbers: Bloomington

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 12.85 (31.75 acre)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.67
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 71

- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 8 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 2.75 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: 28 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: S5W071

Ownership (if known): _____

USGS Topographic Quadrangle(s): Bloomington

USGS Watershed map 14-Digit HUC: Bean Blossom Creek-Stout Creek 05120202010080

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

NWI Polygon ID Number	71				
Cowardin Classification	PFO				
Polygon Size (hectares)	12.85 (31.75 acre)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 4/26/2012 Time assessed: 3:30 pm

Weather conditions: 55°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: 12.85 hectare (31.75 acre)

Size of total wetland complex (all continuous wetland polygons): 12.85 hectare (31.75 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 within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

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

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? No
Is standing water normally present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Floodplain Forest

2.6 Disturbances of Hydrology (check all that apply):

Ditching Culvert
 Tiles Other Human 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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): Multiflora rose

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

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 100-75 75-50 X 50-25 <25
 Estimated woody plant foliar cover in the polygon 100-75 X 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. X Y N Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. X 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. X 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 X 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 X N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. X 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) 10 Approximate slope (percent) 1 -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 X 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. X Y N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. X Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. Y X 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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

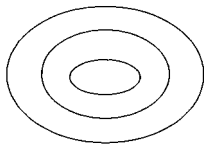
1b. If only one vegetation zone is evident, which best describes the site?

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

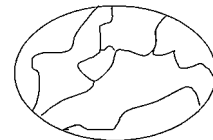
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 <u>Lysimachia nummularia</u> | d _____ |
| b <u>Solidago sp.</u> | e _____ |
| c <u>Sanicula trifoliata</u> | f _____ |

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

- | | |
|--------------------------|---------|
| a <u>Acer negundo</u> | c _____ |
| b <u>Lindera benzoin</u> | d _____ |

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

- | | |
|---------------------------------|---------------------------|
| a <u>Fraxinus pennsylvanica</u> | c <u>Acer saccharinum</u> |
| b <u>Platanus occidentalis</u> | 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.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
X _____ 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) _____
2 _____ rush spp. (*Juncus*) 4
5 _____ 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
X _____ 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
X _____ moneywort (*Lysimachia nummularia*) 0
 _____ monkey flower spp. (*Mimulus*) 4
 _____ nettle (*Urtica pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 8
 _____ sunflower spp. (*Helianthus*) 4
 _____ *swamp loosestrife (*Decodon verticillatus*, N) 8
 _____ swamp milkweed (*Asclepias incarnata*) 4
 _____ toothcup spp. (*Ammania* & *Rotala*) 2
X _____ *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.-, paniced-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- X button bush (*Cepha/anthus 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
- _____ *high bush blueberry (*V. corymbosum*, N) 9
- _____ *leatherleaf (*Chamaedaphne calycul.*, N) 10
- _____ meadowsweet & hardhack spp. (*Spiraea*) 4
- _____ *ninebark (*Physocarpus opulifolius*) 7
- _____ *shrubby cinquefoil (*Potentilla fruticosa*) 9
- X spice bush (*Lindera benzoin*) 5
- _____ *swamp dewberry (*Rubus hispidus*) 6
- _____ *swamp holly & winterberry (*Ilex* spp.) 7
- X swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

- _____ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

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

Trees - lvs. simple and opposite

- X red maple (*Acer rubrum*) 5
- X 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
- X oak, pin or white (*Quercus*) 4
- _____ *oak, Shumard's, sw. chestnut, sw. white 7
- _____ *papaw (*Asimina triloba*) 6
- _____ *sugarberry (*Celtis laevigata*, S) 7
- X sweet gum (*Liquidambar styraciflua*) 4
- X sycamore, Amer. (*Platanus occidentalis*) 3
- _____ willow spp. (*Salix*) sp.1=3; *additional=7

OTHER Sanicula trifoliata, Solidago sp.

IN-WRAP Summary Sheet

Date Report Generated: 4/28/2012

Wetland site name: S5W080

Data Reference #: 80

Date of Site Visit: 4/26/2012

NWI polygons in Site (quadrangle and NWI id. numbers: Bloomington

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 0.22 (0.56 acre)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 1
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 80

- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 6 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 2.17 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

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: S5W080

Ownership (if known): _____

USGS Topographic Quadrangle(s): Bloomington

USGS Watershed map 14-Digit HUC: Bean Blossom Creek-Stout Creek 05120202010080

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

NWI Polygon ID Number	80				
Cowardin Classification	PFO				
Polygon Size (hectares)	0.22 (0.56 acre)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 4/26/2012 Time assessed: 5:30 pm

Weather conditions: 55°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: 0.22 hectare (0.56 acre)

Size of total wetland complex (all continuous wetland polygons): 0.22 hectare (0.56 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 within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

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

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? No
Is standing water normally present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Floodplain Forest

2.6 Disturbances of Hydrology (check all that apply):

Ditching Culvert
 Tiles Other Human 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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 100-75 X 75-50 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. X Y N Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
- 2. X 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. X 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 X 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 X N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
- 6. X 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) 10 Approximate slope (percent) 1 -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 X 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. X Y N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
- 3. X Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
- 4. Y X 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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

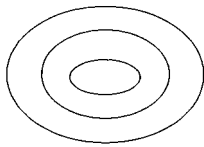
1b. If only one vegetation zone is evident, which best describes the site?

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

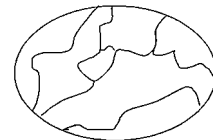
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 <u>Lysimachia nummularia</u> | d _____ |
| b _____ | e _____ |
| c _____ | f _____ |

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

- | | |
|--------------------------|---------|
| a <u>Acer negundo</u> | c _____ |
| b <u>Lindera benzoin</u> | d _____ |

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

- | | |
|---------------------------------|---------------------------|
| a <u>Fraxinus pennsylvanica</u> | c <u>Acer saccharinum</u> |
| b <u>Platanus occidentalis</u> | 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.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
X _____ 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) _____
2 _____ rush spp. (*Juncus*) 4
3 _____ 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
X _____ moneywort (*Lysimachia nummularia*) 0
 _____ monkey flower spp. (*Mimulus*) 4
 _____ nettle (*Urtica pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush blueberry (*V. corymbosum*, N) 9
- _____ *leatherleaf (*Chamaedaphne calycul.*, N) 10
- _____ meadowsweet & hardhack spp. (*Spiraea*) 4
- _____ *ninebark (*Physocarpus opulifolius*) 7
- _____ *shrubby cinquefoil (*Potentilla fruticosa*) 9
- X spice bush (*Lindera benzoin*) 5
- _____ *swamp dewberry (*Rubus hispidus*) 6
- _____ *swamp holly & winterberry (*Ilex* spp.) 7
- X swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

- _____ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

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

Trees - lvs. simple and opposite

- _____ red maple (*Acer rubrum*) 5
- X 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
- X 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
- X sycamore, Amer. (*Platanus occidentalis*) 3
- _____ willow spp. (*Salix*) sp.1=3; *additional=7

OTHER

IN-WRAP Summary Sheet

Date Report Generated: 10/16/2011

Wetland site name: S5W091

Data Reference #: 91

Date of Site Visit: 10/15/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Modesto

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 0.36 (0.88 acre)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.25
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 91

- a. Indiana Wetland community type: Seasonally Flooded Basin
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Road/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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 7 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 2.14 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: 20 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: S5W091

Ownership (if known): _____

USGS Topographic Quadrangle(s): Modesto

USGS Watershed map 14-Digit HUC: Bryant Creek (Morgan) 05120201180040

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

NWI Polygon ID Number	91				
Cowardin Classification	PSS1A				
Polygon Size (hectares)	0.36 (0.88 acre)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 10/15/2011 Time assessed: 12:05pm

Weather conditions: Overcast

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 hectare (0.88 acre)

Size of total wetland complex (all continuous wetland polygons): 0.36 hectare (0.88 acre)

1.4 Site Setting:

Degree of isolation from other wetlands or wetland complexes:

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

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

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

Tier 2 Individual Polygon: Preliminary Assessment (to be completed on-site for each NWI polygon present in the wetland)

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

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

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes
• If standing water is present, is the water greater than 2 meters in depth? No
Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Seasonally Flooded Basin

2.6 Disturbances of Hydrology (check all that apply):

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

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

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): Multiflora rose

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

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 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% covers)

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. X Y N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. Y X 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. X 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. X Y N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. X Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. Y X 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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

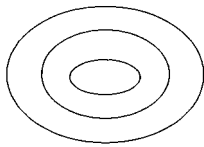
1b. If only one vegetation zone is evident, which best describes the site?

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

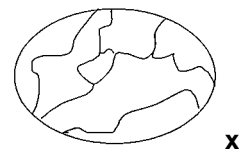
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 <u>Phalaris arundinacea</u> | d <u>Typha latifolia</u> |
| b <u>Solidago canadensis</u> | e _____ |
| c <u>Carex sp.</u> | f _____ |

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

- | | |
|----------------------|---------|
| a <u>Salix nigra</u> | c _____ |
| b _____ | d _____ |

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

- | | |
|--------------------------------|---------|
| a <u>Populus deltoides</u> | c _____ |
| b <u>Platanus occidentalis</u> | 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.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

Herbs: non-seed plants

- 1 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
2 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
2 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
3 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
X _____ 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 pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 8
 _____ sunflower spp. (*Helianthus*) 4
 _____ *swamp loosestrife (*Decodon verticillatus*, N) 8
X _____ 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.-, panicle-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- X** _____ garlic mustard (*Alliaria petio/ata*) 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
- X** _____ 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
- _____ button bush (*Cepha/anthus occidentalis*) 5
- X** _____ 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
- _____ *high bush 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, shell bark (*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
- X** _____ 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
- X** _____ sycamore, Amer. (*Platanus occidentalis*) 3
- 1X** _____ willow spp. (*Salix*) sp.1=3; *additional=7

OTHER Multiflora rose (*Rosa multiflora*)

IN-WRAP Summary Sheet

Date Report Generated: 4/28/2012

Wetland site name: S5W095

Data Reference #: 95

Date of Site Visit: 4/26/2012

NWI polygons in Site (quadrangle and NWI id. numbers: Modesto

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 0.08 (0.19 acre)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.9
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 95

- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 4 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: 4 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: S5W095

Ownership (if known): _____

USGS Topographic Quadrangle(s): Modesto

USGS Watershed map 14-Digit HUC: Bryant Creek (Morgan) 05120201180040

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

NWI Polygon ID Number	95				
Cowardin Classification	PFO1A				
Polygon Size (hectares)	0.08 (0.19 acre)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 4/26/2012 Time assessed: 2:30 pm

Weather conditions: 60 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: 0.08 hectare (0.19 acre)

Size of total wetland complex (all continuous wetland polygons): 0.08 hectare (0.19 acre)

1.4 Site Setting:

Degree of isolation from other wetlands or wetland complexes:

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

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

- 50 Native Vegetation - woodland
- 50 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

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? No
Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Floodplain forest

2.6 Disturbances of Hydrology (check all that apply):

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

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

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 100-75 75-50 50-25 X <25
 Estimated woody plant foliar cover in the polygon 100-75 X 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. X Y N Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. Y X 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. X 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. X 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 X N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. X 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) 10-15 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. X 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. X Y N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. X Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. Y X 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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

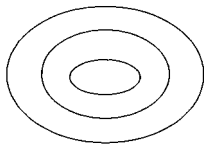
1b. If only one vegetation zone is evident, which best describes the site?

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

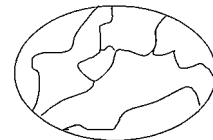
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 <u>Impatiens sp.</u> | d _____ |
| b <u>Verbesina alternifolia</u> | e _____ |
| c _____ | f _____ |

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

- | | |
|--------------------------------|---------|
| a <u>Platanus occidentalis</u> | c _____ |
| b _____ | d _____ |

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

- | | |
|--------------------------------|---------|
| a <u>Platanus occidentalis</u> | 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.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

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

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- _____ 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
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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
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- _____ *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

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- _____ 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
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- _____ *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 pro cera*) 1
- _____ purple loosestrife (*Lythrum salicaria*) 0
- _____ *richweed (*Collinsonia canadensis*) 8
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- _____ sunflower spp. (*Helianthus*) 4
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- _____ 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.-, paniced-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 petio/ata*) 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.: 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
- _____ 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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, shell bark (*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
- 1 sycamore, Amer. (*Platanus occidentalis*) 3
- 1 willow spp. (*Salix*) sp.1=3; *additional=7

OTHER

IN-WRAP Summary Sheet

Date Report Generated: 10/15/2011

Wetland site name: S5W104

Data Reference #: 104

Date of Site Visit: 10/14/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Hindustan

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 0.16 hectare (0.40 acre)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.25
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 104

- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 4 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 3.75 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

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: S5W104

Ownership (if known): _____

USGS Topographic Quadrangle(s): Hindustan

USGS Watershed map 14-Digit HUC: Little Indian Creek-Jordan Creek 05120201180010

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

NWI Polygon ID Number	104				
Cowardin Classification	PEMCh				
Polygon Size (hectares)	0.16 (0.40 acre)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 10/14/2011 Time assessed: 2:00pm

Weather conditions: Overcast, slight precipitation in the afternoon

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: 0.16 hectare (0.40 acre)

Size of total wetland complex (all continuous wetland polygons): 0.16 hectare (0.40 acre)

1.4 Site Setting:

Degree of isolation from other wetlands or wetland complexes:

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

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

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

Tier 2 Individual Polygon: Preliminary Assessment (to be completed on-site for each NWI polygon present in the wetland)

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

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

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes
• If standing water is present, is the water greater than 2 meters in depth? No
Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Sedge Meadow

2.6 Disturbances of Hydrology (check all that apply):

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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 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. Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. 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. 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. 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. 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. Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. 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) 20-25 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. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
- 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. 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. 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

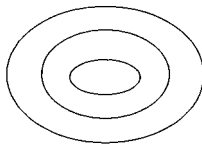
1b. If only one vegetation zone is evident, which best describes the site?

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

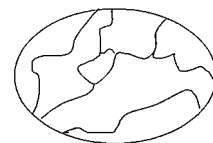
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 *Polygonum hydropiper*
- b *Phalaris arundinacea*
- c *Scirpus cyperinus*

- d *Carex sp.*
- 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).

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

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
X _____ 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
 _____ 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) _____
1 _____ rush spp. (*Juncus*) 4
5 _____ 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
X _____ moneywort (*Lysimachia nummularia*) 0
 _____ monkey flower spp. (*Mimulus*) 4
 _____ nettle (*Urtica pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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

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 _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

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- _____ garlic mustard (*Alliaria petio/ata*) 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
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- X** _____ 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
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- _____ 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

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- _____ *buttercup spp: e.g. cursed b., hooked b., swamp b. (*Ranunculus*) 6
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- _____ *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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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
- X** _____ ash, green (*Fraxinus pensylvanica*) 3
- _____ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
- _____ boxelder (*Acer negundo*) 1
- _____ hickory, bitternut (*Carya cordiformis*) 5
- _____ *hickory, shell bark (*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: 10/15/2011

Wetland site name: S5W109

Data Reference #: 109

Date of Site Visit: 10/14/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Martinsville

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 0.41 (1.01 acres)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.35
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 109

- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 4 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: 12 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: S5W109

Ownership (if known): _____

USGS Topographic Quadrangle(s): Martinsville

USGS Watershed map 14-Digit HUC: Indian Creek-Sand Creek 05120201170070

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

NWI Polygon ID Number	109				
Cowardin Classification	PSS1A				
Polygon Size (hectares)	0.41 (1.01 acres)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 10/14/2011 Time assessed: 1:30p.m.

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.):

1.3 Wetland Size:

Size of site under assessment: 0.41 hectare (1.01 acres)

Size of total wetland complex (all continuous wetland polygons): 0.41 hectare (1.01 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 within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

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

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? No

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Shrub-carr

2.6 Disturbances of Hydrology (check all that apply):

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

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

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon X 100-75 75-50 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:
 X nil (<5% cover) scattered (5-15% cover) Frequent (>20% cover)

3a.2 Water Quality Protection Questions:

1. Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. 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. 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. 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. 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. Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. 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) 1-20 Approximate slope (percent) 2-2.5

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
- 1a. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
- 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. 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. 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

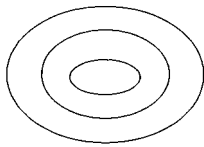
1b. If only one vegetation zone is evident, which best describes the site?

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

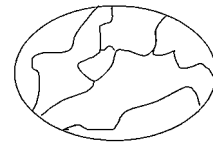
_____ Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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% X 75 – 90% >90%

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

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

- | | |
|-------------------------------|---------|
| a <u>Phalaris arundinacea</u> | d _____ |
| b <u>Polygonum hydropiper</u> | e _____ |
| c _____ | f _____ |

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

- | | |
|--------------------------------|---------|
| a <u>Salix nigra</u> | c _____ |
| b <u>Platanus occidentalis</u> | d _____ |

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

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

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

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

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

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

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
- _____ 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) _____
- 1 rush spp. (*Juncus*) 4
- 2 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
- X moneywort (*Lysimachia nummularia*) 0
- _____ monkey flower spp. (*Mimulus*) 4
- _____ nettle (*Urtica pro cera*) 1
- _____ purple loosestrife (*Lythrum salicaria*) 0
- _____ *richweed (*Collinsonia canadensis*) 8
- _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-a) 3
- _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
- _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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
- X ash, green (*Fraxinus pennsylvanica*) 3
- _____ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
- X boxelder (*Acer negundo*) 1
- _____ hickory, bitternut (*Carya cordiformis*) 5
- _____ *hickory, shell bark (*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
- X sweet gum (*Liquidambar styraciflua*) 4
- X sycamore, Amer. (*Platanus occidentalis*) 3
- 1 willow spp. (*Salix*) sp.1=3; *additional=7

OTHER _____

IN-WRAP Summary Sheet

Date Report Generated: 10/16/2011

Wetland site name: S5W119

Data Reference #: 119

Date of Site Visit: 10/15/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Modesto

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 0.02 (0.05 acres)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.42
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 119

- a. Indiana Wetland community type: Seasonally flooded basin
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Concrete gutter
- d. Exotic species rating: Good Medium Poor
- e. Special Hydrologic Conditions Observed: Concrete gutter routing water into site
- f. Special Community Type: None
- g. Rare-Threatened-Endangered Species: None
- h. Polygon Quality Description: 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): 1 Rating: Good Medium Poor

TIER 3B SUMMARY:

- a. Zonation and interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 4 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 4.25 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: 6 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: S5W119

Ownership (if known): _____

USGS Topographic Quadrangle(s): Modesto

USGS Watershed map 14-Digit HUC: Bryant Creek (Morgan) 05120201180040

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

NWI Polygon ID Number	119				
Cowardin Classification	PEMC				
Polygon Size (hectares)	0.02 (0.05 acre)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 10/15/2011 Time assessed: 10:00 am

Weather conditions: 60°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: 0.02 hectare (0.05 acre)

Size of total wetland complex (all continuous wetland polygons): 0.02 hectare (0.05 acre)

1.4 Site Setting:

Degree of isolation from other wetlands or wetland complexes:

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

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

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

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? No
Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Seasonally flooded basin

2.6 Disturbances of Hydrology (check all that apply):

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

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

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

Concrete gutter routing water into site

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Marl Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 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) _____

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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

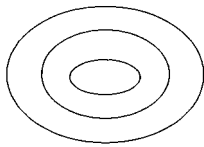
1b. If only one vegetation zone is evident, which best describes the site?

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

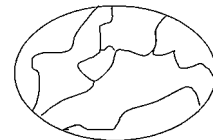
X Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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)

(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 Typha latifolia
- b Polygonum persicaria
- c Scirpus atrovirens

- d Carex sp.
- 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: X nil separate, seldom touching often touching More or less closed

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

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

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

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
 _____ 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
 _____ **3** 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 pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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, shell bark (*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: 10/15/2011

Wetland site name: S5W120

Data Reference #: 120

Date of Site Visit: 10/15/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Hindustan

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 0.08 hectares (0.20 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. 120

- a. Indiana Wetland community type: Seasonally Flooded Basin
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Ditch
- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 3 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: 5 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: S5W120

Ownership (if known): _____

USGS Topographic Quadrangle(s): Hindustan

USGS Watershed map 14-Digit HUC: Bryant Creek (Morgan) 05120201180040

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

NWI Polygon ID Number	120				
Cowardin Classification	PEMC				
Polygon Size (hectares)	0.08 (0.20 acre)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 10/15/2011 Time assessed: 4:15 pm

Weather conditions: 70°F sunny

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

1.3 Wetland Size:

Size of site under assessment: 0.08 hectare (0.20 acre)

Size of total wetland complex (all continuous wetland polygons): 0.08 hectare (0.20 acre)

1.4 Site Setting:

Degree of isolation from other wetlands or wetland complexes:

The site is connected upstream and downstream with other wetlands

The site is only connected upstream with other wetlands

The site is only connected downstream with other wetlands

Other wetlands are nearby (within 0.25 mile) but not connected

The wetland site is isolated

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

Native Vegetation - woodland 50 Road / highway / railroad bed / parking lot

50 Native Vegetation - old field / scrub Industrial

Agricultural- tilled Residential – single family

Agricultural - pasture Commercial or multifamily residential

Recreation - green space, mowed

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? No
Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Seasonally Flooded Basin

2.6 Disturbances of Hydrology (check all that apply):

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

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

Garlic Mustard Glossy Buckthorn
 Phragmites S Reed canary grass
 Purple loosestrife C Other (list): Typha

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

Roadway runoff

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 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% covers)

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. X 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) 5 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. X 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 X N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. X Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. Y X 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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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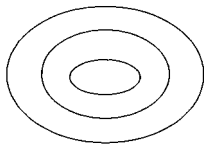
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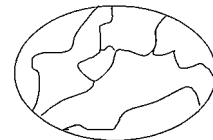
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2. If more than one vegetation zone is present in the polygon, which interspersion diagram most closely represents the distribution of these zones?

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% X 75 – 90% >90%

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

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

- | | |
|-------------------------------|---|
| a <u>Typha latifolia</u> | d <u> </u> |
| b <u>Typha angustifolia</u> | e <u> </u> |
| c <u>Eupatorium maculatum</u> | f <u> </u> |

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

- | | |
|---|---|
| a <u> </u> | c <u> </u> |
| b <u> </u> | d <u> </u> |

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

- | | |
|---|---|
| a <u> </u> | c <u> </u> |
| b <u> </u> | d <u> </u> |

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

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

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

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

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 _____ *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*)
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Herbs: insectivorous plants

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Herbs: linear-lvs. or leafless ± monocots

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 _____ *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-leaved monocots

- _____ *arrow arum (*Peltandra virginica*, N) 6
 _____ arrow-head spp. (*Sagittaria*) 4
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 _____ 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
X _____ 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 pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandemum*) 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.-, paniced-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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, shell bark (*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: 10/15/2011

Wetland site name: S5W121

Data Reference #: 121

Date of Site Visit: 10/14/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Hindustan

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 0.02 hectares (0.04 acres)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.1
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 121

- a. Indiana Wetland community type: Seasonally Flooded Basin
- 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 Description: 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: 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: 5 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: S5W121

Ownership (if known): _____

USGS Topographic Quadrangle(s): Hindustan

USGS Watershed map 14-Digit HUC: Little Indian Creek-Jordan Creek 05120201180010

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

NWI Polygon ID Number	121				
Cowardin Classification	PEMC				
Polygon Size (hectares)	0.02 (0.04 acre)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 10/14/2011 Time assessed: 8:00 am

Weather conditions: 60°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: 0.02 hectare (0.04 acre)

Size of total wetland complex (all continuous wetland polygons): 0.02 hectare (0.04 acre)

1.4 Site Setting:

Degree of isolation from other wetlands or wetland complexes:

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

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

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

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? No
Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Seasonally Flooded Basin

2.6 Disturbances of Hydrology (check all that apply):

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

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

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

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

Estimated herbaceous plant cover (percentage) in the polygon 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) _____

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. X Y N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. X Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. Y X 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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

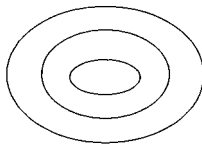
1b. If only one vegetation zone is evident, which best describes the site?

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

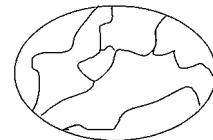
X Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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)

(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 <u>Juncus canadensis</u> | d <u> </u> |
| b <u>Bidens frondosa</u> | e <u> </u> |
| c <u>Aster ericoides</u> | f <u> </u> |

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

- | | |
|---|---|
| a <u> </u> | c <u> </u> |
| b <u> </u> | d <u> </u> |

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

- | | |
|---|---|
| a <u> </u> | c <u> </u> |
| b <u> </u> | d <u> </u> |

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

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

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

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

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
 _____ 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
 _____ **1** nutsedge spp. (*Cyperus*) 2
 _____ *orchid spp.: species (if known) _____
 _____ **1** 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
 _____ 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 pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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

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 _____ *asters: bristly aster (*Aster puniceus*) 7
 _____ *flat-topped aster (*A. umbellatus*) 8
 _____ **1** other aster spp. (e.g. New Engl.-, panicle-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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, shell bark (*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: 10/15/2011

Wetland site name: S5W122

Data Reference #: 122

Date of Site Visit: 10/14/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Martinsville

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 0.11 (0.28 acre)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.5
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 122

- a. Indiana Wetland community type: Wet Meadow
- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 4 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: 5 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: S5W122

Ownership (if known): _____

USGS Topographic Quadrangle(s): Martinsville

USGS Watershed map 14-Digit HUC: 05120201180010 Little Indian Creek-Jordan Creek

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

NWI Polygon ID Number	122				
Cowardin Classification	PEMC				
Polygon Size (hectares)	0.11 (0.28 acre)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 10/14/2011 Time assessed: 7:00 am

Weather conditions: _____

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

1.3 Wetland Size:

Size of site under assessment: 0.11 hectare (0.28 acre)

Size of total wetland complex (all continuous wetland polygons): 0.11 hectare (0.28 acre)

1.4 Site Setting:

Degree of isolation from other wetlands or wetland complexes:

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

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

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

Tier 2 Individual Polygon: Preliminary Assessment (to be completed on-site for **each** NWI polygon present in the wetland)

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

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

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes No
• If standing water is present, is the water greater than 2 meters in depth? Yes No
Is standing water normally present in an adjacent polygon? Yes 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):

Wet Meadow

2.6 Disturbances of Hydrology (check all that apply):

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):

Garlic Mustard Glossy Buckthorn
 Phragmites F Reed canary grass
 Purple loosestrife Other (list): _____

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

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

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

Estimated herbaceous plant cover (percentage) in the polygon 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) _____

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. X Y N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. X Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. Y X 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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

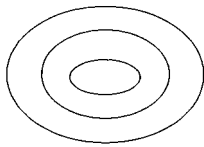
1b. If only one vegetation zone is evident, which best describes the site?

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

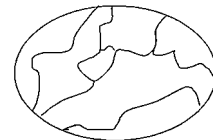
X Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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)

(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 Phalaris arundinacea
- b Bidens frondosa
- c Cyperus esculentus

- d Polygonum hydropiper
- 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: X nil separate, seldom touching often touching More or less closed

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

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

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

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
 _____ **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
 _____ **1** 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
 _____ 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 pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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, shell bark (*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: 10/15/2011

Wetland site name: S5W123

Data Reference #: 123

Date of Site Visit: 10/14/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Bloomington

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 0.07 (0.18 acre)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.3
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 123

- 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 Description: 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

+ 3B SUMMARY:

- a. Zonation and interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 3 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: 7 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: S5W123

Ownership (if known): _____

USGS Topographic Quadrangle(s): Bloomington

USGS Watershed map 14-Digit HUC: Bean Blossom Creek – Stout Creek 05120202010080

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

NWI Polygon ID Number	123				
Cowardin Classification	PEMC				
Polygon Size (hectares)	0.07 (0.18 acre)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 10/14/2011 Time assessed: 12:00 pm

Weather conditions: Rain, overcast, 50°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: 0.07 hectare (0.18 acre)

Size of total wetland complex (all continuous wetland polygons): 0.07 hectare (0.18 acre)

1.4 Site Setting:

Degree of isolation from other wetlands or wetland complexes:

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

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

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

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? 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):

Wet Meadow

2.6 Disturbances of Hydrology (check all that apply):

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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 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. Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. 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. 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. 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. 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. Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. 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) 20-25 Approximate slope (percent) 1-2

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
- 1a. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
- 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. 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. 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

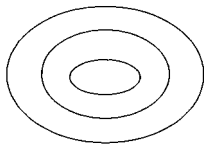
1b. If only one vegetation zone is evident, which best describes the site?

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

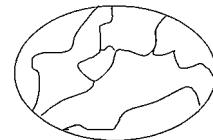
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 <u>Carex sp.</u> | d _____ |
| b <u>Cyperus esculentus</u> | e _____ |
| c <u>Lysimachia nummularia</u> | f _____ |

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

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

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

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

Tree & 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).

Depression in an agricultural field

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

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
 _____ **1** nutsedge spp. (*Cyperus*) 2
 _____ *orchid spp.: species (if known) _____
 _____ rush spp. (*Juncus*) 4
 _____ **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-leaved 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
 _____ **X** moneywort (*Lysimachia nummularia*) 0
 _____ monkey flower spp. (*Mimulus*) 4
 _____ nettle (*Urtica pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandemum*) 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.-, paniced-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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, shell bark (*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: 10/15/2011

Wetland site name: S5W124

Data Reference #: 124

Date of Site Visit: 10/14/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Bloomington

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 0.05 (0.14 acre)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.3
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 124

- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 4 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 3.75 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 1 Rating: Good Medium Poor

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: S5W124

Ownership (if known): _____

USGS Topographic Quadrangle(s): Bloomington

USGS Watershed map 14-Digit HUC: Bean Blossom Creek – Stout Creek 05120202010080

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

NWI Polygon ID Number	124				
Cowardin Classification	PEMC				
Polygon Size (hectares)	0.05 (0.14 acre)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 10/14/2011 Time assessed: 12:20 pm

Weather conditions: Rain, Overcast, 50°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: 0.05 hectare (0.14 acre)

Size of total wetland complex (all continuous wetland polygons): 0.05 hectare (0.14 acre)

1.4 Site Setting:

Degree of isolation from other wetlands or wetland complexes:

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

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

- 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

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 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):

Wet Meadow

2.6 Disturbances of Hydrology (check all that apply):

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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 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. Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. 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. 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?
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5. Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. 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) 20-25 Approximate slope (percent) 1-2

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
- 1a. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
- 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. 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. 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

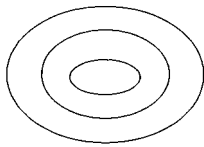
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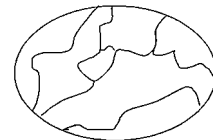
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 Juncus effusus
- b Carex sp.
- c Lysimachia nummularia

- d Polygonum pensylvanicum
- 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).

Depression in an agricultural field

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

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

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- _____ *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
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Herbs: linear-lvs. or leafless ± monocots

- _____ *beak rush spp. (*Rhynchospora*, N) 10
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- _____ *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) _____
- _____ **1** rush spp. (*Juncus*) 4
- _____ **5** 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
- _____ **X** moneywort (*Lysimachia nummularia*) 0
- _____ monkey flower spp. (*Mimulus*) 4
- _____ nettle (*Urtica pro cera*) 1
- _____ purple loosestrife (*Lythrum salicaria*) 0
- _____ *richweed (*Collinsonia canadensis*) 8
- _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, paniced-a) 3
- _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
- _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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, shell bark (*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: 10/15/2011

Wetland site name: S5W125

Data Reference #: 125

Date of Site Visit: 10/14/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Bloomington

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 3.0 hectares (7.40 acres)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.55
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 125a

- a. Indiana Wetland community type: Wet Meadow
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Ditching; Road/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 Description: 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: 4.5 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: 13 Rating: Good Medium Poor
- h. Number of indicator taxa 2 Rating: Good Medium Poor

TIER 2 SUMMARY:

NWI Polygon Id. 125d

- a. Indiana Wetland community type: Wet Meadow
- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 4 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 4.5 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 1 Rating: Good Medium Poor

TIER 2 SUMMARY:

NWI Polygon Id. 125e

- a. Indiana Wetland community type: Floodplain Forest
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Ditching; Road/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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 5 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 4.2 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: 23 Rating: Good Medium Poor
- h. Number of indicator taxa 2 Rating: Good Medium Poor

TIER 2 SUMMARY:

NWI Polygon Id. 125f

- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 6 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 4.8 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: 27 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: S5W125

Ownership (if known): _____

USGS Topographic Quadrangle(s): Bloomington

USGS Watershed map 14-Digit HUC: Bean Blossom Creek-Stout Creek 05120202010080

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

NWI Polygon ID Number	125a	125d	125e	125f	
Cowardin Classification	PEMA	PEMC	PFO1A	PFO1A	
Polygon Size (hectares)	1.52 (3.75 acres)	0.42 (1.03 acres)	0.13 (0.33 acre)	0.93 (2.29 acres)	

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 10/14/2011 Time assessed: 11:15 am

Weather conditions: Overcast, Rain

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: 1.94 hectares (4.78 acres)- PEM; 1.06 hectares (2.62 acres)- PFO

Size of total wetland complex (all continuous wetland polygons): 3.0 hectares (7.40 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 within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

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

Tier 2 Individual Polygon: Preliminary Assessment (to be completed on-site for each NWI polygon present in the wetland)

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

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

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes
• If standing water is present, is the water greater than 2 meters in depth? No
Is standing water normally present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Wet Meadow

2.6 Disturbances of Hydrology (check all that apply):

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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

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

Estimated herbaceous plant cover (percentage) in the polygon 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. X Y N Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. Y X 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. X 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 X 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 X N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. X 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) 20 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. X 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 X N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. X Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. Y X 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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

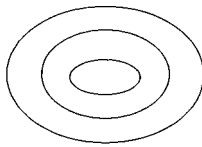
1b. If only one vegetation zone is evident, which best describes the site?

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

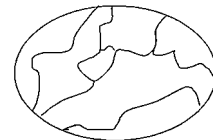
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 Juncus effusus
- b Polygonum pennsylvanum
- c Carex sp.

- d Aster simplex
- 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).

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

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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*] & banyard grass [*Echinochloa*]
1 needle sedge spp. (*Eleocharis*) sp.1 =2
 *additional=8
 _____ nutsedge spp. (*Cyperus*) 2
 _____ *orchid spp.: species (if known) _____
1 rush spp. (*Juncus*) 4
3 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
X 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
X moneywort (*Lysimachia nummularia*) 0
 _____ monkey flower spp. (*Mimulus*) 4
 _____ nettle (*Urtica pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 8
 _____ sunflower spp. (*Helianthus*) 4
 _____ *swamp loosestrife (*Decodon verticillatus*, N) 8
X 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.-, paniced-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

- X** cress spp. (*Cardamine*) 4
- dock spp.: swamp-, water-, pale- (*Rumex*) 4
- garlic mustard (*Alliaria petio/ata*) 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
- X** *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
- button bush (*Cepha/anthus 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
- *high bush 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, shell bark (*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 # 125d Data Reference # S5W125 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? No
Is standing water normally present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Wet Meadow

2.6 Disturbances of Hydrology (check all that apply):

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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

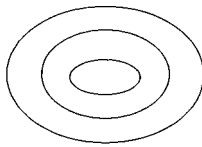
1b. If only one vegetation zone is evident, which best describes the site?

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

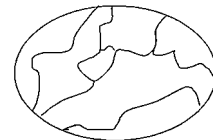
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 Juncus effusus
- b Polygonum pennsylvanum
- c Carex sp.

- d Aster simplex
- 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).

Wet area next to ditch within an agricultural field

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

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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) _____
1 rush spp. (*Juncus*) 4
3 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
1 moneywort (*Lysimachia nummularia*) 0
 _____ monkey flower spp. (*Mimulus*) 4
 _____ nettle (*Urtica pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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, shell bark (*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 _____

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? No
Is standing water normally present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Floodplain Forest

2.6 Disturbances of Hydrology (check all that apply):

Ditching Culvert
 Tiles Other Human 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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

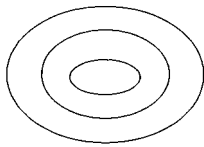
1b. If only one vegetation zone is evident, which best describes the site?

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

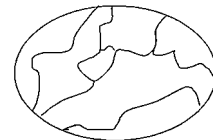
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 <u><i>Onoclea sensibilis</i></u> | d _____ |
| b _____ | e _____ |
| c _____ | f _____ |

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

- | | |
|---------------------------------|---------|
| a <u><i>Lindera benzoin</i></u> | c _____ |
| b <u><i>Rosa palustris</i></u> | d _____ |

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

- | | |
|---|---------|
| a <u><i>Fraxinus pennsylvanica</i></u> | c _____ |
| b <u><i>Liquidambar styraciflua</i></u> | 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.4 Species richness and indicator species.

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

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
 X 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
 3 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
 _____ 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
 X moneywort (*Lysimachia nummularia*) 0
 _____ monkey flower spp. (*Mimulus*) 4
 _____ nettle (*Urtica pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-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 petio/ata*) 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
- X jewelweed, touch-me-not spp. (*Impatiens*) 3
- X 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
- X stinging nettle (*Laportea canadensis*) 2
- _____ *swamp saxifrage (*Saxifraga pa.*) 10
- _____ *Virginia bluebells (*Mertensia virginica*) 6
- _____ waterhemp (*Amaranthus tuberculatus*) 1
- X 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
- X 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
- X button bush (*Cepha/anthus 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
- _____ *high bush blueberry (*V. corymbosum*, N) 9
- _____ *leatherleaf (*Chamaedaphne calycul.*, N) 10
- _____ meadowsweet & hardhack spp. (*Spiraea*) 4
- _____ *ninebark (*Physocarpus opulifolius*) 7
- _____ *shrubby cinquefoil (*Potentilla fruticosa*) 9
- X spice bush (*Lindera benzoin*) 5
- _____ *swamp dewberry (*Rubus hispidus*) 6
- _____ *swamp holly & winterberry (*Ilex* spp.) 7
- X swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

- _____ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

- _____ *ash, black (*Fraxinus nigra*) 7
- X ash, green (*Fraxinus pennsylvanica*) 3
- _____ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
- X boxelder (*Acer negundo*) 1
- _____ hickory, bitternut (*Carya cordiformis*) 5
- _____ *hickory, shell bark (*Carya laciniosa*) 8
- _____ honey locust (*Gleditsia triacanthos*) 1
- _____ *poison sumac (*Rhus vernix*) 10

Trees - lvs. simple and opposite

- X 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
- X 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
- X sweet gum (*Liquidambar styraciflua*) 4
- X sycamore, Amer. (*Platanus occidentalis*) 3
- 1 willow spp. (*Salix*) sp.1=3; *additional=7

OTHER _____

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? No

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Floodplain Forest

2.6 Disturbances of Hydrology (check all that apply):

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

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

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

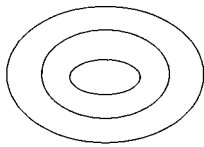
1b. If only one vegetation zone is evident, which best describes the site?

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

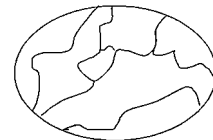
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 | <u>Carex sp.</u> | d | _____ |
| b | _____ | e | _____ |
| c | _____ | f | _____ |

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

- | | | | |
|---|------------------------|---|-------|
| a | <u>Lindera benzoin</u> | c | _____ |
| b | <u>Rosa palustris</u> | d | _____ |

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

- | | | | |
|---|-------------------------------|---|--------------------------------|
| a | <u>Fraxinus pennsylvanica</u> | c | <u>Liquidambar styraciflua</u> |
| b | <u>Acer rubrum</u> | 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.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
X _____ 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
5 _____ 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
X _____ water plantain (*Alisma plantago-aquat.*) 2

Herbs: dicots - lvs. opposite/whorled

- 2** _____ *bedstraw spp. (*Galium*) 6
 _____ beggar's tick spp. (*Bidens*) 3
 _____ blue vervain (*Verbena hastata*) 3
 _____ boneset (*Eupatorium perfoliatum*) 4
 _____ bugleweed spp. (*Lycopus*) 5
X _____ 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
X _____ moneywort (*Lysimachia nummularia*) 0
 _____ monkey flower spp. (*Mimulus*) 4
 _____ nettle (*Urtica pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-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 petio/ata*) 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
- X jewelweed, touch-me-not spp. (*Impatiens*) 3
- X 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
- X stinging nettle (*Laportea canadensis*) 2
- _____ *swamp saxifrage (*Saxifraga pa.*) 10
- _____ *Virginia bluebells (*Mertensia virginica*) 6
- _____ waterhemp (*Amaranthus tuberculatus*) 1
- X 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
- X 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
- X button bush (*Cepha/anthus 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
- _____ *high bush blueberry (*V. corymbosum*, N) 9
- _____ *leatherleaf (*Chamaedaphne calycul.*, N) 10
- _____ meadowsweet & hardhack spp. (*Spiraea*) 4
- _____ *ninebark (*Physocarpus opulifolius*) 7
- _____ *shrubby cinquefoil (*Potentilla fruticosa*) 9
- X spice bush (*Lindera benzoin*) 5
- _____ *swamp dewberry (*Rubus hispidus*) 6
- _____ *swamp holly & winterberry (*Ilex* spp.) 7
- X swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

- _____ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

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

Trees - lvs. simple and opposite

- X 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
- X 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
- X sweet gum (*Liquidambar styraciflua*) 4
- X sycamore, Amer. (*Platanus occidentalis*) 3
- 1 willow spp. (*Salix*) sp.1=3; *additional=7

OTHER _____

IN-WRAP Summary Sheet

Date Report Generated: 10/15/2011

Wetland site name: S5W126

Data Reference #: 126

Date of Site Visit: 10/14/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Bloomington

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 2.02 (5.00 acres)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 1
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 126

- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 4 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 4.75 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 2 Rating: Good Medium Poor

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: S5W126

Ownership (if known): _____

USGS Topographic Quadrangle(s): Bloomington

USGS Watershed map 14-Digit HUC: Bean Blossom Creek – Clear Creek 05120202010080

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

NWI Polygon ID Number	126				
Cowardin Classification	PFO1A				
Polygon Size (hectares)	2.02 (5.00 acres)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 10/14/2011 Time assessed: 2:45 pm

Weather conditions: 50°F, Rain, Overcast

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: 2.02 hectares (5.00 acres)

Size of total wetland complex (all continuous wetland polygons): 2.02 hectares (5.00 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 within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

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

Tier 2 Individual Polygon: Preliminary Assessment (to be completed on-site for each NWI polygon present in the wetland)

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

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

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes
• If standing water is present, is the water greater than 2 meters in depth? No
Is standing water normally present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Floodplain 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

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

Garlic Mustard Glossy Buckthorn
 Phragmites S Reed canary grass
 Purple loosestrife Other (list): _____

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

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon X 100-75 75-50 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. Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. 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. 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. 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. 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. Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. 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) 20-25 Approximate slope (percent) 1-2

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

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
- 1a. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
- 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. 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. 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

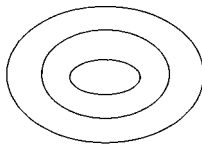
1b. If only one vegetation zone is evident, which best describes the site?

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

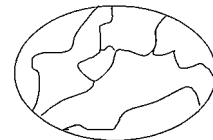
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 <u>Carex sp.</u> | d _____ |
| b _____ | e _____ |
| c _____ | f _____ |

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

- | | |
|----------------------------------|---------|
| a <u>Rosa palustris</u> | c _____ |
| b <u>Liquidambar styraciflua</u> | d _____ |

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

- | | |
|--------------------------------|---------|
| a <u>Fraxinus pensylvanica</u> | 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.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservatism

Herbs: non-seed plants

- _____ horsetail, scouring rush spp. (*Equisetum*) 2
 _____ *ferns: marsh 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
2 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-leaved 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
 _____ 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
X moneywort (*Lysimachia nummularia*) 0
 _____ monkey flower spp. (*Mimulus*) 4
 _____ nettle (*Urtica pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandemum*) 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.-, panicle-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- X jewelweed, touch-me-not spp. (*Impatiens*) 3
- X 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
- X stinging nettle (*Laportea canadensis*) 2
- _____ *swamp saxifrage (*Saxifraga pa.*) 10
- _____ *Virginia bluebells (*Mertensia virginica*) 6
- _____ waterhemp (*Amaranthus tuberculatus*) 1
- X 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
- X 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
- X button bush (*Cepha/anthus 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
- _____ *high bush blueberry (*V. corymbosum*, N) 9
- _____ *leatherleaf (*Chamaedaphne calycul.*, N) 10
- _____ meadowsweet & hardhack spp. (*Spiraea*) 4
- _____ *ninebark (*Physocarpus opulifolius*) 7
- _____ *shrubby cinquefoil (*Potentilla fruticosa*) 9
- X spice bush (*Lindera benzoin*) 5
- _____ *swamp dewberry (*Rubus hispidus*) 6
- _____ *swamp holly & winterberry (*Ilex* spp.) 7
- X swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

- _____ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

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

Trees - lvs. simple and opposite

- X 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
- X elm, Amer. (*Ulmus americana*) 3
- _____ hackberry (*Celtis occidentalis*) 3
- X 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
- X sweet gum (*Liquidambar styraciflua*) 4
- X sycamore, Amer. (*Platanus occidentalis*) 3
- _____ willow spp. (*Salix*) sp.1=3; *additional=7

OTHER

IN-WRAP Summary Sheet

Date Report Generated: 10/15/2011

Wetland site name: S5W127

Data Reference #: 127

Date of Site Visit: 10/14/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Bloomington

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 0.47 (1.16 acres)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.75
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 127

- a. Indiana Wetland community type: Floodplain Forest
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Ditch/Road
- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 6 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 4.0 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: 23 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: S5W127

Ownership (if known): _____

USGS Topographic Quadrangle(s): Bloomington

USGS Watershed map 14-Digit HUC: Bean Blossom Creek – Stout Creek 05120202010080

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

NWI Polygon ID Number	127				
Cowardin Classification	PFO1A				
Polygon Size (hectares)	0.47 (1.16 acres)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 10/14/2011 Time assessed: 1:30 pm

Weather conditions: 50°F, Rain, Overcast

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: 0.47 hectare (1.16 acres)

Size of total wetland complex (all continuous wetland polygons): 0.47 hectare (1.16 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 within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

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

Tier 2 Individual Polygon: Preliminary Assessment (to be completed on-site for **each** NWI polygon present in the wetland)

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

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

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes
• If standing water is present, is the water greater than 2 meters in depth? No
Is standing water normally present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Floodplain 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

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

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon X 100-75 ___ 75-50 ___ 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. X Y N Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. Y X 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. X 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 X 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. X Y X N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. X 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) 20 Approximate slope (percent) 1-2

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. X 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. X Y N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. X Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. Y X 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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

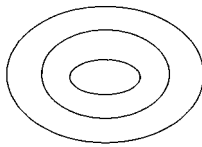
1b. If only one vegetation zone is evident, which best describes the site?

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

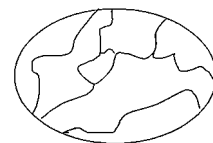
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 <u>Lysimachia nummularia</u> | d _____ |
| b <u>Carex sp.</u> | e _____ |
| c _____ | f _____ |

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

- | | |
|--------------------------|---------|
| a <u>Rosa palustris</u> | c _____ |
| b <u>Lindera benzoin</u> | d _____ |

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

- | | |
|----------------------------|---------|
| a <u>Acer rubrum</u> | c _____ |
| b <u>Quercus palustris</u> | 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.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

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

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
X _____ 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
2 _____ 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

- X** _____ *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
X _____ moneywort (*Lysimachia nummularia*) 0
 _____ monkey flower spp. (*Mimulus*) 4
 _____ nettle (*Urtica pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-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 petio/ata*) 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
- X jewelweed, touch-me-not spp. (*Impatiens*) 3
- X 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
- X stinging nettle (*Laportea canadensis*) 2
- _____ *swamp saxifrage (*Saxifraga pa.*) 10
- _____ *Virginia bluebells (*Mertensia virginica*) 6
- _____ waterhemp (*Amaranthus tuberculatus*) 1
- X 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
- X 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush blueberry (*V. corymbosum*, N) 9
- _____ *leatherleaf (*Chamaedaphne calycul.*, N) 10
- _____ meadowsweet & hardhack spp. (*Spiraea*) 4
- _____ *ninebark (*Physocarpus opulifolius*) 7
- _____ *shrubby cinquefoil (*Potentilla fruticosa*) 9
- X spice bush (*Lindera benzoin*) 5
- _____ *swamp dewberry (*Rubus hispidus*) 6
- _____ *swamp holly & winterberry (*Ilex* spp.) 7
- X swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

- _____ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

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

Trees - lvs. simple and opposite

- X 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
- X elm, Amer. (*Ulmus americana*) 3
- _____ hackberry (*Celtis occidentalis*) 3
- _____ ironwood (*Carpinus caroliniana*) 5
- X oak, pin or white (*Quercus*) 4
- _____ *oak, Shumard's, sw. chestnut, sw. white 7
- _____ *papaw (*Asimina triloba*) 6
- _____ *sugarberry (*Celtis laevigata*, S) 7
- X sweet gum (*Liquidambar styraciflua*) 4
- X sycamore, Amer. (*Platanus occidentalis*) 3
- 1 willow spp. (*Salix*) sp.1=3; *additional=7

OTHER Solidago sp.

IN-WRAP Summary Sheet

Date Report Generated: 4/30/2012

Wetland site name: S5W128

Data Reference #: 128a

Date of Site Visit: 4/27/2012

NWI polygons in Site (quadrangle and NWI id. numbers: Modesto

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 1.07 (2.65 acres) Total Area Potentially Impacted
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.50
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 128a

- a. Indiana Wetland community type: Floodplain Forest
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Road/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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 4 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 1.75 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 1 Rating: Good Medium Poor

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: S5W128

Ownership (if known): _____

USGS Topographic Quadrangle(s): Modesto

USGS Watershed map 14-Digit HUC: Bryant Creek (Morgan) 05120201180040

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

NWI Polygon ID Number	128a				
Cowardin Classification	PFO1A				
Polygon Size (hectares)	1.07 (2.65 acres)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 4/27/2012 Time assessed: 10:00 am

Weather conditions: 50 F, Partly Cloudy

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

1.3 Wetland Size:

Size of site under assessment: 1.07 hectares (2.65 acres)

Size of total wetland complex (all continuous wetland polygons): 1.07 hectares (2.65 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 within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

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

Tier 2 Individual Polygon: Preliminary Assessment (to be completed on-site for each NWI polygon present in the wetland)

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

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

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes
• If standing water is present, is the water greater than 2 meters in depth? No
Is standing water normally present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Floodplain 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

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

Garlic Mustard Glossy Buckthorn
 Phragmites S Reed canary grass
 Purple loosestrife Other (list): _____

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

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

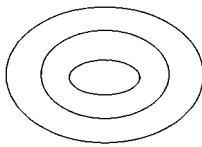
1b. If only one vegetation zone is evident, which best describes the site?

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

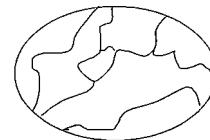
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 <u>Lysimachia nummularia</u> | d _____ |
| b _____ | e _____ |
| c _____ | f _____ |

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

- | | |
|-----------------------|---------|
| a <u>Acer negundo</u> | c _____ |
| b _____ | d _____ |

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

- | | |
|--------------------------------|---------|
| a <u>Fraxinus pensylvanica</u> | c _____ |
| b <u>Platanus occidentalis</u> | 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.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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 _____ *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*)
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 _____ water shield (*Brasenia schreberi*, N) 4
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Herbs: insectivorous plants

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Herbs: linear-lvs. or leafless ± monocots

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Herbs: wide-leafed monocots

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Herbs: dicots - lvs. opposite/whorled

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- _____ buckthorn spp. (*Rhamnus cathar. & frangula*) 0
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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
- X** _____ ash, green (*Fraxinus pensylvanica*) 3
- _____ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
- X** _____ boxelder (*Acer negundo*) 1
- _____ hickory, bitternut (*Carya cordiformis*) 5
- _____ *hickory, shell bark (*Carya laciniosa*) 8
- _____ honey locust (*Gleditsia triacanthos*) 1
- _____ *poison sumac (*Rhus vernix*) 10

Trees - lvs. simple and opposite

- X** _____ 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
- X** _____ sycamore, Amer. (*Platanus occidentalis*) 3
- 1** _____ willow spp. (*Salix*) sp.1=3; *additional=7

OTHER

IN-WRAP Summary Sheet

Date Report Generated: 4/28/2012

Wetland site name: S5W145

Data Reference #: 145

Date of Site Visit: 4/26/12

NWI polygons in Site (quadrangle and NWI id. numbers: Modesto

TIER 1 SUMMARY:

- a. Total wetland area (hectares): .02 (0.06 acres)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.6
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 145

- a. Indiana Wetland community type: Wet Meadow
- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 5 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 4.2 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: 9 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: S5W145

Ownership (if known): _____

USGS Topographic Quadrangle(s): Modesto

USGS Watershed map 14-Digit HUC: Buck Creek (51202010060)

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

NWI Polygon ID Number	145				
Cowardin Classification	PEM				
Polygon Size (hectares)	0.02 (0.06 acres)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 4/26/2012 Time assessed: 1:30 pm

Weather conditions: 70 F, Sunny

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

1.3 Wetland Size:

Size of site under assessment: 0.02 hectares (0.06 acres)

Size of total wetland complex (all continuous wetland polygons): 0.02 hectares (0.06 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 within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

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

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? No
Is standing water normally 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):

Wet meadow

2.6 Disturbances of Hydrology (check all that apply):

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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

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

Estimated herbaceous plant cover (percentage) in the polygon 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) 10-20 Approximate slope (percent) 1-2

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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

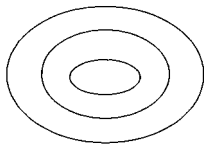
1b. If only one vegetation zone is evident, which best describes the site?

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

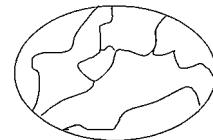
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 *Polygonum pensylvanicum*
- b *Carex sp.*
- c *Polygonum persicaria*

- d *Impatiens sp.*
- e _____
- f _____

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

- a *Salix sericea*
- 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).

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

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
 _____ **3** 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
 _____ **X** moneywort (*Lysimachia nummularia*) 0
 _____ monkey flower spp. (*Mimulus*) 4
 _____ nettle (*Urtica pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- X** _____ 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
- 2** _____ 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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, shell bark (*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
- 1** _____ willow spp. (*Salix*) sp.1=3; *additional=7

OTHER

IN-WRAP Summary Sheet

Date Report Generated: 4/28/2012

Wetland site name: S5W146

Data Reference #: 146

Date of Site Visit: 4/26/12

NWI polygons in Site (quadrangle and NWI id. numbers: Bloomington

TIER 1 SUMMARY:

- a. Total wetland area (hectares): .06 (0.14 acres)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.5
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 146

- a. Indiana Wetland community type: Floodplain 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 5 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: 8 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: S5W146

Ownership (if known): _____

USGS Topographic Quadrangle(s): Bloomington

USGS Watershed map 14-Digit HUC: Beanblossom Creek (5122022010060)

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

NWI Polygon ID Number	146				
Cowardin Classification	PFO				
Polygon Size (hectares)	0.06 (0.14 acres)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 4/26/2012 Time assessed: 3:30 pm

Weather conditions: 70 F, Sunny

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

1.3 Wetland Size:

Size of site under assessment: 0.06 hectares (0.14 acres)

Size of total wetland complex (all continuous wetland polygons): 0.06 hectares (0.14 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 within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

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

Tier 2 Individual Polygon: Preliminary Assessment (to be completed on-site for each NWI polygon present in the wetland)

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

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

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes
• If standing water is present, is the water greater than 2 meters in depth? No
Is standing water normally present in an adjacent polygon? N

2.3 Apparent Hydroperiod (check one):

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

2.4 Soil Type:

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

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

Floodplain forest

2.6 Disturbances of Hydrology (check all that apply):

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

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

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

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

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

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

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

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

Good Medium Poor

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

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

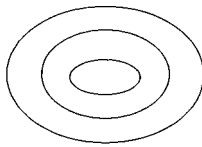
1b. If only one vegetation zone is evident, which best describes the site?

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

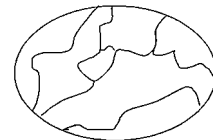
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 <u>Phalaris arundinacea</u> | d _____ |
| b _____ | e _____ |
| c _____ | f _____ |

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

- | | |
|---------------------------------|---------|
| a <u>Fraxinus pennsylvanica</u> | c _____ |
| b <u>Ulmus americana</u> | d _____ |

Dominant **Tree** Species listed in order of relative abundance.

- | | |
|--------------------------|---------|
| a <u>Acer rubrum</u> | c _____ |
| b <u>Quercus bicolor</u> | 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.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana SW = southwestern Indiana numbers = C-coefficients * = species with high conservationism)

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
- 3 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 pro cera*) 1
- _____ purple loosestrife (*Lythrum salicaria*) 0
- _____ *richweed (*Collinsonia canadensis*) 8
- _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-a) 3
- _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
- _____ cardinal flower (*Lobelia cardinalis*) 4

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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
- _____ **X** ash, green (*Fraxinus pennsylvanica*) 3
- _____ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
- _____ boxelder (*Acer negundo*) 1
- _____ hickory, bitternut (*Carya cordiformis*) 5
- _____ *hickory, shell bark (*Carya laciniosa*) 8
- _____ honey locust (*Gleditsia triacanthos*) 1
- _____ *poison sumac (*Rhus vernix*) 10

Trees - lvs. simple and opposite

- _____ **X** 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
- _____ **X** elm, Amer. (*Ulmus americana*) 3
- _____ hackberry (*Celtis occidentalis*) 3
- _____ ironwood (*Carpinus caroliniana*) 5
- _____ **X** 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: 4/30/2012

Wetland site name: S5W147

Data Reference #: 147

Date of Site Visit: 4/27/12

NWI polygons in Site (quadrangle and NWI id. numbers: Bloomington

TIER 1 SUMMARY:

- a. Total wetland area (hectares): .09 hectares (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): 0.75
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 147

- a. Indiana Wetland community type: Floodplain Forest
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Ditch/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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 5 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 3.6 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 2 Rating: Good Medium Poor

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: S5W147

Ownership (if known): _____

USGS Topographic Quadrangle(s): Bloomington

USGS Watershed map 14-Digit HUC: Clear Creek (5120208090010)

Identify each NWI Polygon within the Wetland Site (Polygon specific data)

NWI Polygon ID Number	147				
Cowardin Classification	PFO				
Polygon Size (hectares)	0.09 (0.23 acres)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 4/27/2012 Time assessed: 8:30 am

Weather conditions: 50 F, Sunny

Note any unusual weather events that may have influenced the current conditions within this wetland system (e.g. recent heavy rains, an unusually dry season, an especially early spring, etc.):

1.3 Wetland Size:

Size of site under assessment: 0.09 hectares (0.23 acres)

Size of total wetland complex (all continuous wetland polygons): 0.09 hectares (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
- The wetland site is isolated

(General assessment of adjacent land use / land cover in the area within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

- 75 Native Vegetation - woodland
- 25 Road / highway / railroad bed / parking lot
- Native Vegetation - old field / scrub
- Industrial
- Agricultural- tilled
- Residential – single family
- Agricultural - pasture
- Commercial or multifamily residential
- Recreation - green space, mowed

Tier 2 Individual Polygon: Preliminary Assessment (to be completed on-site for each NWI polygon present in the wetland)

2.1 Wetland Geomorphic Setting and Surface Water Flow (check one):

Depressional Slope Floodplain Lacustrine
 Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes No
• If standing water is present, is the water greater than 2 meters in depth? Yes No
Is standing water normally present in an adjacent polygon? Yes No

2.3 Apparent Hydroperiod (check one):

Permanently Flooded Artificially Flooded
 Seasonally Flooded
 Saturated (surface water seldom present) Artificially Drained

2.4 Soil Type:

Organic (i.e. peat, etc.) Mineral Both Mineral and Organic Present

2.5 Wetland Community Type for this NWI polygon (see Key to Wetland Communities of Indiana):

Floodplain forest

2.6 Disturbances of Hydrology (check all that apply):

Ditching Culvert
 Tiles Other Human Disturbances to the Hydrology (explain):
 Dams
 Road or Railroad Embankment

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

2.8 Presence of Special Hydrologic Conditions (i.e. seeps, wet slopes, floating mat):

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

2.10 Presence of Known Federal or Indiana Rare, Threatened or Endangered Species:

None observed or known to be present
 RTES Present (list) _____

2.11 Wetland Polygon Quality Descriptor (see: Wetland Quality Descriptions and check one):

Good Medium Poor

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

1. How many vegetation zones are evident in this wetland polygon? 1

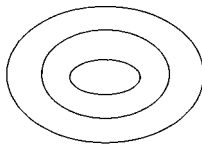
1b. If only one vegetation zone is evident, which best describes the site?

Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

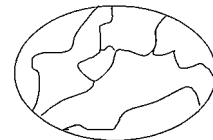
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 <u>Eleocharis acicularis</u> | d _____ |
| b _____ | e _____ |
| c _____ | f _____ |

Dominant **Shrub** Species listed in order of relative abundance.

- | | |
|------------------------|---------|
| a <u>Salix nigra</u> | c _____ |
| b <u>Cornus amomum</u> | d _____ |

Dominant **Tree** Species listed in order of relative abundance.

- | | |
|---------------------------------|---------|
| a <u>Fraxinus pennsylvanica</u> | c _____ |
| b <u>Ulmus americana</u> | 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.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

Herbs: non-seed plants

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 _____ *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
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 _____ 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*]
 _____ **X** needle sedge spp. (*Eleocharis*) sp.1 =2
 *additional=8
 _____ nutsedge spp. (*Cyperus*) 2
 _____ *orchid spp.: species (if known) _____
 _____ rush spp. (*Juncus*) 4
 _____ **2** 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
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Herbs: wide-leafed monocots

- _____ *arrow arum (*Peltandra virginica*, N) 6
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 _____ *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
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 _____ clearweed spp. (*Pilea*) 3
 _____ cup plant (*Silphium perfoliatum*) 4
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 _____ *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
 _____ **X** moneywort (*Lysimachia nummularia*) 0
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 _____ 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.-, panicle-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- X** _____ 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
- _____ button bush (*Cepha/anthus occidentalis*) 5
- _____ dogwood, red-osier (*Cornus stolonifera*) 4
- X** _____ *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
- _____ *high bush 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
- X** _____ swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

- _____ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

- _____ *ash, black (*Fraxinus nigra*) 7
- X** _____ ash, green (*Fraxinus pennsylvanica*) 3
- _____ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
- _____ boxelder (*Acer negundo*) 1
- _____ hickory, bitternut (*Carya cordiformis*) 5
- _____ *hickory, shell bark (*Carya laciniosa*) 8
- _____ honey locust (*Gleditsia triacanthos*) 1
- _____ *poison sumac (*Rhus vernix*) 10

Trees - lvs. simple and opposite

- X** _____ 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
- X** _____ elm, Amer. (*Ulmus americana*) 3
- _____ hackberry (*Celtis occidentalis*) 3
- _____ ironwood (*Carpinus caroliniana*) 5
- X** _____ 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

IN-WRAP Summary Sheet

Date Report Generated: 4/30/2012

Wetland site name: S5W148

Data Reference #: 148

Date of Site Visit: 4/27/12

NWI polygons in Site (quadrangle and NWI id. numbers: Modesto

TIER 1 SUMMARY:

- a. Total wetland area (hectares): .03 hectares (0.09 acres)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.0
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 148

- a. Indiana Wetland community type: Sedge meadow
- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 2 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: 4 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: S5W148

Ownership (if known): _____

USGS Topographic Quadrangle(s): Modesto

USGS Watershed map 14-Digit HUC: Bryant Creek (5120201180040)

Identify each NWI Polygon within the Wetland Site (Polygon specific data)

NWI Polygon ID Number	148				
Cowardin Classification	PEM				
Polygon Size (hectares)	0.03 (0.09 acres)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 4/27/2012 Time assessed: 10:30 am

Weather conditions: 50 F, Sunny

Note any unusual weather events that may have influenced the current conditions within this wetland system (e.g. recent heavy rains, an unusually dry season, an especially early spring, etc.):

1.3 Wetland Size:

Size of site under assessment: 0.03 hectares (0.09 acres)

Size of total wetland complex (all continuous wetland polygons): 0.03 hectares (0.09 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 within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

Native Vegetation - woodland 100 Road / highway / railroad bed / parking lot

Native Vegetation - old field / scrub Industrial

Agricultural- tilled Residential – single family

Agricultural - pasture Commercial or multifamily residential

Recreation - green space, mowed

Tier 2 Individual Polygon: Preliminary Assessment (to be completed on-site for each NWI polygon present in the wetland)

2.1 Wetland Geomorphic Setting and Surface Water Flow (check one):

Depressional Slope Floodplain Lacustrine
 Riverine (within the river/stream banks)

2.2 Presence of Standing Water:

Is standing water normally present in the polygon? Yes
• If standing water is present, is the water greater than 2 meters in depth? No
Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

Permanently Flooded Artificially Flooded
 Seasonally Flooded
 Saturated (surface water seldom present) Artificially Drained

2.4 Soil Type:

Organic (i.e. peat, etc.) Mineral Both Mineral and Organic Present

2.5 Wetland Community Type for this NWI polygon (see Key to Wetland Communities of Indiana):

Sedge meadow

2.6 Disturbances of Hydrology (check all that apply):

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):

Garlic Mustard Glossy Buckthorn
 Phragmites C Reed canary grass
 Purple loosestrife X Other (list): Typha

2.8 Presence of Special Hydrologic Conditions (i.e. seeps, wet slopes, floating mat):

None

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

2.10 Presence of Known Federal or Indiana Rare, Threatened or Endangered Species:

None observed or known to be present
 RTES Present (list) _____

2.11 Wetland Polygon Quality Descriptor (see: Wetland Quality Descriptions and check one):

Good Medium X Poor

3b.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana SW = southwestern Indiana numbers = C-coefficients * = species with high conservationism)

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
- _____ 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
- _____ 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 pro cera*) 1
- _____ purple loosestrife (*Lythrum salicaria*) 0
- _____ *richweed (*Collinsonia canadensis*) 8
- _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-a) 3
- _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
- _____ cardinal flower (*Lobelia cardinalis*) 4

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- X** _____ garlic mustard (*Alliaria petio/ata*) 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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, shell bark (*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: 7/18/2012

Wetland site name: S5W149

Data Reference #: 149

Date of Site Visit: 10/13/2011

NWI polygons in Site (quadrangle and NWI id. numbers): Bloomington

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 0.51 hectares (1.27 acres)
- b. Wetland size and connectivity – contribution to animal habitat:
 Valuable More Favorable Favorable Neutral
- c. Surrounding land use – numerical rank (max. = 1): 0.15
- d. Value surrounding area adds to animal habitat Valuable Favorable Low

TIER 2 SUMMARY:

NWI Polygon Id. 149a

- a. Indiana Wetland community type: Sedge meadow
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Road
- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 2 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 5.5 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 2 SUMMARY:

NWI Polygon Id. 149b

- a. Indiana Wetland community type: Sedge meadow
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Road
- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 2 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 5.5 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 2 SUMMARY:

NWI Polygon Id. 149c

- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 7 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 2.6 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 2 Rating: Good Medium Poor

Tier 1: Assessment Overview

1.1 Site Identification:

Wetland site name: S5W149

Ownership (if known): _____

USGS Topographic Quadrangle(s): Bloomington

USGS Watershed map 14-Digit HUC: Bean Blossom Creek-Stout Creek 05120202010080

Identify each NWI Polygon within the Wetland Site (Polygon specific data)

NWI Polygon ID Number	149a	149b	149c		
Cowardin Classification	PEMC	PEMC	PFO1A		
Polygon Size (hectares)	0.16 (0.4 acre)	0.04 (0.11 acre)	0.31 (0.76acre)		

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder, D. White

Agency: INDOT

Date assessed: 10/13/2011 Time assessed: 4:00 pm

Weather conditions: Overcast, rain, 70

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: 0.2 hectares-PEM; 0.31 hectares-PFO

Size of total wetland complex (all continuous wetland polygons): 0.51 hectares (1.27 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 within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

Native Vegetation - woodland 25 Road / highway / railroad bed / parking lot

Native Vegetation - old field / scrub Industrial

75 Agricultural- tilled Residential – single family

Agricultural - pasture Commercial or multifamily residential

Recreation - green space, mowed

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 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):

Sedge meadow

2.6 Disturbances of Hydrology (check all that apply):

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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

2.8 Presence of Special Hydrologic Conditions (i.e. seeps, wet slopes, floating mat):

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

2.10 Presence of Known Federal or Indiana Rare, Threatened or Endangered Species:

None observed or known to be present
 RTES Present (list) _____

2.11 Wetland Polygon Quality Descriptor (see: Wetland Quality Descriptions and check one):

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

3a.1 Notable Features that influence water quality and hydrology:

Estimated herbaceous plant cover (percentage) in the polygon 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% covers)

3a.2 Water Quality Protection Questions:

1. Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. 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. 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. 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. 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. Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. 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) 10-20 Approximate slope (percent) 1-2

3a.3 Flood and Stormwater Storage / Attenuation Questions:

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
- 1a. Around the wetland is there a buffer strip of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland?
- 1b. Is there a significant amount of microtopography or vegetative density within the wetland to reduce the velocity of the water leaving the wetland?
2. Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. 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. 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)?

3b.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana SW = southwestern Indiana numbers = C-coefficients * = species with high conservationism)

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*]
- X needle sedge spp. (*Eleocharis*) sp.1 =2
*additional=8
- nutsedge spp. (*Cyperus*) 2
- *orchid spp.: species (if known) _____
- 2 rush spp. (*Juncus*) 4
- 5 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
- X moneywort (*Lysimachia nummularia*) 0
- monkey flower spp. (*Mimulus*) 4
- nettle (*Urtica pro cera*) 1
- purple loosestrife (*Lythrum salicaria*) 0
- *richweed (*Collinsonia canadensis*) 8
- *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-a) 3
- *black-eyed Susan (*Rudbeckia fulgida*) 8
- cardinal flower (*Lobelia cardinalis*) 4

- _____ cress spp. (*Cardamine*) 4
 _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
 _____ garlic mustard (*Alliaria petio/ata*) 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
X _____ 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
 _____ button bush (*Cepha/anthus 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
 _____ *high bush 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 pennsylvanica*) 3
 _____ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
 _____ boxelder (*Acer negundo*) 1
 _____ hickory, bitternut (*Carya cordiformis*) 5
 _____ *hickory, shell bark (*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 # 149b Data Reference # S5W149 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 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):

Sedge meadow

2.6 Disturbances of Hydrology (check all that apply):

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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

2.8 Presence of Special Hydrologic Conditions (i.e. seeps, wet slopes, floating mat):

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

2.10 Presence of Known Federal or Indiana Rare, Threatened or Endangered Species:

None observed or known to be present
 RTES Present (list) _____

2.11 Wetland Polygon Quality Descriptor (see: Wetland Quality Descriptions and check one):

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

3a.1 Notable Features that influence water quality and hydrology:

Estimated herbaceous plant cover (percentage) in the polygon 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% covers)

3a.2 Water Quality Protection Questions:

1. X Y N Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. Y X 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. X 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. X 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 X N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. X 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) 10-20 Approximate slope (percent) 1-2

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. X 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. X Y N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. X Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. X 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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

1. How many vegetation zones are evident in this wetland polygon? 1

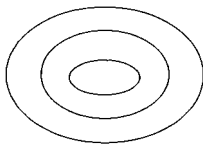
1b. If only one vegetation zone is evident, which best describes the site?

 Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

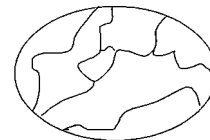
X Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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)

(Note: V-mark location on the NWI polygon)

What % of the polygon does this vegetative zone occupy?

 10 – 25% 25 – 50 % 50 – 75% X 75 – 90% >90%

Is there notable layering/stratification in this vegetation zone? No

Dominant **Herbaceous** Species (i.e. covering more than 10% of the area) listed in order of relative abundance. **(Mark with an * any species that forms extensive monocultural patches).**

- | | |
|---|---|
| a <u><i>Polygonum hydropiper</i></u> | d <u> </u> |
| b <u><i>Carex sp.</i></u> | e <u> </u> |
| c <u> </u> | f <u> </u> |

Dominant **Shrub** Species listed in order of relative abundance.

- | | |
|---|---|
| a <u> </u> | c <u> </u> |
| b <u> </u> | d <u> </u> |

Dominant **Tree** Species listed in order of relative abundance.

- | | |
|---|---|
| a <u> </u> | c <u> </u> |
| b <u> </u> | d <u> </u> |

Tree & shrub canopy: X nil separate, seldom touching often touching More or less closed

Mature trees (>12" dbh) present: yes X no

Other remarks (include personal comments about what adds to or detracts from the quality of this wetland site).

3b.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
 _____ **X** 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*]
 _____ **X** needle sedge spp. (*Eleocharis*) sp.1 =2
 *additional=8
 _____ nutsedge spp. (*Cyperus*) 2
 _____ *orchid spp.: species (if known) _____
 _____ **2** rush spp. (*Juncus*) 4
 _____ **5** 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
 _____ **X** moneywort (*Lysimachia nummularia*) 0
 _____ monkey flower spp. (*Mimulus*) 4
 _____ nettle (*Urtica pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-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 petio/ata*) 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
- X** _____ 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 (*Oxyopolis 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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, shell bark (*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 # 149c Data Reference # S5W149 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? Yes
• If standing water is present, is the water greater than 2 meters in depth? No
Is standing water normally present in an adjacent polygon? Yes

2.3 Apparent Hydroperiod (check one):

Permanently Flooded Artificially Flooded
 Seasonally Flooded
 Saturated (surface water seldom present) Artificially Drained

2.4 Soil Type:

Organic (i.e. peat, etc.) Mineral Both Mineral and Organic Present

2.5 Wetland Community Type for this NWI polygon (see Key to Wetland Communities of Indiana):

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

2.7 Presence of Invasive Exotics (Score as: S = Scattered, F = Frequent, or C = Common):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): Multiflora rose

2.8 Presence of Special Hydrologic Conditions (i.e. seeps, wet slopes, floating mat):

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

2.10 Presence of Known Federal or Indiana Rare, Threatened or Endangered Species:

None observed or known to be present
 RTES Present (list) _____

2.11 Wetland Polygon Quality Descriptor (see: Wetland Quality Descriptions and check one):

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators

3a.1 Notable Features that influence water quality and hydrology:

Estimated herbaceous plant cover (percentage) in the polygon X 100-75 75-50 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% covers)

3a.2 Water Quality Protection Questions:

1. X Y N Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. Y X 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. X 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. X 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 X N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. Y X 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) 1-2 Approximate slope (percent) 1-5

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 X 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. X Y N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. X Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. X 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. X 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)?

Tier 3b Individual Polygon: Rapid Vegetation Description

3b.1 Zonation and Interspersion:

1. How many vegetation zones are evident in this wetland polygon? 1

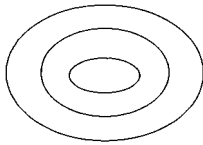
1b. If only one vegetation zone is evident, which best describes the site?

Polygon composed of a mosaic of small vegetation patches, hummocks, or tussocks; heterogeneous textures across the polygon.

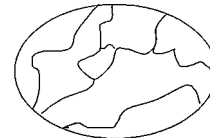
Polygon composed of a single vegetation type with more or less uniform texture across the polygon.

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 | <u>Solidago canadensis</u> | d | _____ |
| b | <u>Lysimachia nummularia</u> | e | _____ |
| c | <u>Glyceria striata</u> | f | _____ |

Dominant **Shrub** Species listed in order of relative abundance.

- | | | | |
|---|------------------------|---|-------|
| a | <u>Lindera benzoin</u> | c | _____ |
| b | _____ | d | _____ |

Dominant **Tree** Species listed in order of relative abundance.

- | | | | |
|---|-------------------------|---|--------------------------------|
| a | <u>Acer rubrum</u> | c | <u>Fraxinus pennsylvanicus</u> |
| b | <u>Acer saccharinum</u> | 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.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservationism

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
X _____ 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
X _____ 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
2 _____ 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
2 _____ 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
X _____ water plantain (*Alisma plantago-aquat.*) 2

Herbs: dicots - lvs. opposite/whorled

- X** _____ *bedstraw spp. (*Galium*) 6
 _____ beggar's tick spp. (*Bidens*) 3
 _____ blue vervain (*Verbena hastata*) 3
 _____ boneset (*Eupatorium perfoliatum*) 4
 _____ bugleweed spp. (*Lycopus*) 5
X _____ 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
X _____ mint spp.: e.g. hedge nettle, mtn. m., skullcap 5
X _____ moneywort (*Lysimachia nummularia*) 0
 _____ monkey flower spp. (*Mimulus*) 4
 _____ nettle (*Urtica pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandem*) 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.-, panicle-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 petio/ata*) 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
- X** 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 (*Oxyopolis rigidior*) 7
- _____ *great angelica (*Angelica atropurpurea*) 6
- _____ hog peanut/gd. nut spp. (*Amphicarpaea & Apios*) 5
- _____ honewort (*Cryptotaenia canadensis*) 3
- _____ meadow rue spp. (*Thalictrum*) 5
- X** poison ivy (vine) (*Rhus radicans*) 1
- _____ *queen-of-the-prairie (*Filipendula rubra*) 9
- _____ senna spp. (*Cassia*) 4
- X** 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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush blueberry (*V. corymbosum*, N) 9
- _____ *leatherleaf (*Chamaedaphne calycul.*, N) 10
- _____ meadowsweet & hardhack spp. (*Spiraea*) 4
- _____ *ninebark (*Physocarpus opulifolius*) 7
- _____ *shrubby cinquefoil (*Potentilla fruticosa*) 9
- X** spice bush (*Lindera benzoin*) 5
- _____ *swamp dewberry (*Rubus hispidus*) 6
- _____ *swamp holly & winterberry (*Ilex* spp.) 7
- X** swamp rose (*Rosa palustris*) 5

Trees - lvs. needle shaped

- _____ *tamarack (*Larix laricina*, N) 10

Trees - lvs. compound

- _____ *ash, black (*Fraxinus nigra*) 7
- X** ash, green (*Fraxinus pennsylvanica*) 3
- _____ *ash, pumpkin (*Fraxinus tomentosa*, SW) 8
- _____ boxelder (*Acer negundo*) 1
- _____ hickory, bitternut (*Carya cordiformis*) 5
- _____ *hickory, shell bark (*Carya laciniosa*) 8
- _____ honey locust (*Gleditsia triacanthos*) 1
- _____ *poison sumac (*Rhus vernix*) 3

Trees - lvs. simple and opposite

- X** red maple (*Acer rubrum*) 5
- X** 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: 10/15/2011

Wetland site name: S5W150

Data Reference #: 150

Date of Site Visit: 10/15/2011

NWI polygons in Site (quadrangle and NWI id. numbers: Hindustan

TIER 1 SUMMARY:

- a. Total wetland area (hectares): 0.03 hectares (0.07 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. 150

- a. Indiana Wetland community type: Wet meadow
- b. Standing water – contribution to animal habitat: Valuable Favorable Neutral
- c. Disturbances to site: Dam
- 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 Description: 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 interspersions as indicator of animal habitat: Valuable Favorable Neutral
- b. Stratification as indicator of animal habitat: Valuable Neutral
- c. Number of dominant plant taxa observed: 4 Rating: Good Medium Poor
- d. Average coefficient of conservatism: 4.25 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: 8 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: S5W150

Ownership (if known): _____

USGS Topographic Quadrangle(s): Hindustan

USGS Watershed map 14-Digit HUC: Bryant Creek (Morgan) 05120201180040

Identify each NWI Polygon within the Wetland Site (Polygon specific data)

NWI Polygon ID Number	150				
Cowardin Classification	PEMC				
Polygon Size (hectares)	0.03 (0.07 acre)				

NWI Polygon ID Number					
Cowardin Classification					
Polygon Size (hectares)					

1.2 Site Visit:

Team Members: K. Schroeder & D. White

Agency: INDOT

Date assessed: 10/15/2011 Time assessed: 4:15 pm

Weather conditions: 70°F sunny

Note any unusual weather events that may have influenced the current conditions within this wetland system (e.g. recent heavy rains, an unusually dry season, an especially early spring, etc.):

1.3 Wetland Size:

Size of site under assessment: 0.03 hectare (0.07 acre)

Size of total wetland complex (all continuous wetland polygons): 0.03 hectare (0.07 acre)

1.4 Site Setting:

Degree of isolation from other wetlands or wetland complexes:

- The site is connected upstream and downstream with other wetlands
- The site is only connected upstream with other wetlands
- The site is only connected downstream with other wetlands
- Other wetlands are nearby (within 0.25 mile) but not connected
- The wetland site is isolated

(General assessment of adjacent land use / land cover in the area within 50 meters of the perimeter of the wetland site (indicate the % abundance of each type):

- 100 Native Vegetation - woodland Road / highway / railroad bed / parking lot
- Native Vegetation - old field / scrub Industrial
- Agricultural- tilled Residential – single family
- Agricultural - pasture Commercial or multifamily residential
- Recreation - green space, mowed

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? No
Is standing water normally present in an adjacent polygon? No

2.3 Apparent Hydroperiod (check one):

Permanently Flooded Artificially Flooded
 Seasonally Flooded
 Saturated (surface water seldom present) Artificially Drained

2.4 Soil Type:

Organic (i.e. peat, etc.) Mineral Both Mineral and Organic Present

2.5 Wetland Community Type for this NWI polygon (see Key to Wetland Communities of Indiana):

Wet meadow

2.6 Disturbances of Hydrology (check all that apply):

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):

Garlic Mustard Glossy Buckthorn
 Phragmites Reed canary grass
 Purple loosestrife Other (list): _____

2.8 Presence of Special Hydrologic Conditions (i.e. seeps, wet slopes, floating mat):

2.9 Presence of Special Community Types:

Bog Fen Wet Sand / Muck Flats or Mari Seeps

2.10 Presence of Known Federal or Indiana Rare, Threatened or Endangered Species:

None observed or known to be present
 RTES Present (list) _____

2.11 Wetland Polygon Quality Descriptor (see: Wetland Quality Descriptions and check one):

Good Medium Poor

Tier 3a Individual Polygon: Rapid Hydrology Indicators**3a.1 Notable Features that influence water quality and hydrology:**

Estimated herbaceous plant cover (percentage) in the polygon 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% covers)

3a.2 Water Quality Protection Questions:

1. X Y N Does the wetland have a significant amount of vegetative (specifically perennial and woody plant) density to potentially uptake dissolved nutrients?
2. X 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 X 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 X 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 X N Are there recreational lakes, navigable watercourses, or water supply sources located within a mile down gradient in the local watershed?
6. X 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) 40 Approximate slope (percent) 15

3a.3 Flood and Stormwater Storage / Attenuation Questions:

1. If wetland in question is a depressional wetland answer 1a, if not, answer 1b
 - 1a. X 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 X 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 X N Does the wetland **lack** man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?
3. X Y N Is the flood potential high in the sub-watershed in which the wetland is located (history of flood damages)?
4. Y X 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. X 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)?

3b.4 Species richness and indicator species. Check all species observed within the polygon. Important: if multiple species from one genus or family (marked with spp.) are seen, indicate the number of species.

(N = northern Indiana

SW = southwestern Indiana

numbers = C-coefficients

* = species with high conservatism

Herbs: non-seed plants

- _____ horsetail, scouring rush spp. (*Equisetum*) 2
 _____ *ferns: marsh 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) _____
1 _____ rush spp. (*Juncus*) 4
2 _____ 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-leaved 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
X _____ 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 pro cera*) 1
 _____ purple loosestrife (*Lythrum salicaria*) 0
 _____ *richweed (*Collinsonia canadensis*) 8
 _____ *St. John's wort spp. (*Hypericum/Triandemum*) 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
X _____ other aster spp. (e.g. New Engl.-, panicle-a) 3
 _____ *black-eyed Susan (*Rudbeckia fulgida*) 8
 _____ cardinal flower (*Lobelia cardinalis*) 4

InWrap, Terg revised June 2005

- _____ cress spp. (*Cardamine*) 4
- _____ dock spp.: swamp-, water-, pale- (*Rumex*) 4
- _____ garlic mustard (*Alliaria petio/ata*) 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
- X** _____ 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
- X** _____ *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
- _____ button bush (*Cepha/anthus 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
- _____ *high bush 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, shell bark (*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



**APPENDIX F
FINAL WETLAND TECHNICAL REPORT**

TECHNICAL REPORT APPENDICES

APPENDIX A	Wetland Site Forms
APPENDIX B	I-69 Wetland Quality Assessment Profile Sheets
APPENDIX C	Wetland Matrix for I-69 Alternatives Carried Forward for Detailed Analysis
APPENDIX D	InWRAP Data Sheets
APPENDIX E	Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Bloomington/Monroe Sampling Date: 10-11-11
 Applicant/Owner: INDOT State: IN Sampling Point: S5W011
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 31, 9N 1W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.17154391020 Long: -86.56982966780 Datum: NAD 83
 Soil Map Unit Name: Crider-Urban Land Complex NWI classification: PEM

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	<u>85</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Typha angustifolia</u>	<u>15</u>	<u>N</u>	<u>OBL</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>100</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = 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 15 x 1 = 15
 FACW species 85 x 2 = 170
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: 100 (A) 185 (B)
 Prevalence Index = B/A = 1.85

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.)	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

SOIL

Sampling Point: S5W011

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 5/2	85	7.5YR 5/6	15		M	silt loam	
4-20	10YR 5/1	60	10YR 5/8	40		M	Silty clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)
---	---	--

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
---	--

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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 Bloomington to Martinsville City/County: Bloomington/Monroe Sampling Date: 2/19/13
 Applicant/Owner: INDOT State: IN Sampling Point: S5W011UPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: 31, 9N 1W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.17154708560 Long: -86.56986037030 Datum: NAD 83
 Soil Map Unit Name: Crider-Urban Land Complex NWI classification: UPL

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species <u>100</u> x 4 = <u>400</u> UPL species _____ x 5 = _____ Column Totals: <u>100</u> (A) <u>400</u> (B) Prevalence Index = B/A = <u>4</u>
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Festuca sp.</u>	<u>100</u>	<u>Y</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>100</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: S5W011UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 4/3	100					silty clay	
4-20	10YR 5/8	100					Silty 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:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>		
Remarks: _____ _____ _____								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: _____ _____		
Remarks: _____ _____		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Bloomington/Monroe Sampling Date: 10-15-11
 Applicant/Owner: INDOT State: IN Sampling Point: S5W021
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 4, 9N 1W
 Landform (hillslope, terrace, etc.): Ditch/Depression Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.24392187600 Long: -86.53501737770 Datum: NAD 83
 Soil Map Unit Name: Stendal Silt Loam NWI classification: PEM

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Typha latifolia</u>	<u>95</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Phalaris arundinacea</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>100</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = 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 95 x 1 = 95
 FACW species 5 x 2 = 10
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: 100 (A) 105 (B)
 Prevalence Index = B/A = 1.05

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Remarks: (Include photo numbers here or on a separate sheet.)

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Bloomington/Monroe Sampling Date: 2/19/2013
 Applicant/Owner: INDOT State: IN Sampling Point: S5W021UPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: 4, 9N 1W
 Landform (hillslope, terrace, etc.): Ditch/Depression Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.24397839320 Long: -86.53493051260 Datum: NAD 83
 Soil Map Unit Name: Stendal Silt Loam NWI classification: UPL

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Festuca sp.</u>	<u>75</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Phalaris arundinacea</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = 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: 2 (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 25 x 2 = 50
 FAC species _____ x 3 = _____
 FACU species 95 x 4 = 380
 UPL species _____ x 5 = _____
 Column Totals: 100 (A) 430 (B)
 Prevalence Index = B/A = 4.30

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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.)

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Bloomington/Monroe Sampling Date: 10-12-11
 Applicant/Owner: INDOT State: IN Sampling Point: S5W062a
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 8, 9N 1W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.22911927660 Long: -86.54255732990 Datum: Nad 83
 Soil Map Unit Name: Bonnie Silt Loam 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Lemna minor</u>	<u>70</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Lysimachia nummularia</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>95</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = 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 70 x 1 = 70
 FACW species 25 x 2 = 50
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: 95 (A) 120 (B)
 Prevalence Index = B/A = 1.26

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.)	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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SOIL

Sampling Point: S5W062a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-11	2.5Y 6/2	80	10YR 5/8	20	C	PL	Silt loam	
11-20	N 2.5/0	90	7.5YR 5/6	10	D	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:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____		
Remarks: _____ _____ _____								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0-4"</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>12"</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>Surface</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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 Bloomington to Martinsville City/County: Bloomington/Monroe Sampling Date: 10-12-11
 Applicant/Owner: INDOT State: IN Sampling Point: S5W062b
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 8, 9N 1W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): None
 Slope (%): <5% Lat: 39.22959394990 Long: -86.54266766780 Datum: Nad 83
 Soil Map Unit Name: Haymond Silt Loam, Stendal silt loam NWI classification: PFO1A

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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Fraxinus pennsylvanica</u>	20	Y	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. <u>Acer saccharinum</u>	20	Y	FACW															
3. <u>Ulmus americana</u>	5	N	FACW															
4. _____																		
5. _____																		
<u>45</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: right;">Total % Cover of:</td> <td style="width: 50%; text-align: left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>20</u></td> <td>x 1 = <u>20</u></td> </tr> <tr> <td>FACW species <u>95</u></td> <td>x 2 = <u>190</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: <u>120</u> (A)</td> <td><u> </u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.88</u>	Total % Cover of:	Multiply by:	OBL species <u>20</u>	x 1 = <u>20</u>	FACW species <u>95</u>	x 2 = <u>190</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: <u>120</u> (A)	<u> </u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>20</u>	x 1 = <u>20</u>																	
FACW species <u>95</u>	x 2 = <u>190</u>																	
FAC species <u>5</u>	x 3 = <u>15</u>																	
FACU species _____	x 4 = _____																	
UPL species _____	x 5 = _____																	
Column Totals: <u>120</u> (A)	<u> </u> (B)																	
<u>30</u> = Total Cover																		
<u>30</u> = Total Cover																		
<u>30</u> = Total Cover																		
<u>40</u> = Total Cover																		
<u>5</u> = Total Cover																		
<u>5</u> = Total Cover																		

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: S5W062b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 4/3	100					Silt loam	
4-20	10YR5/2	80	10YR 4/6	20	D	M	Silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Bloomington/Monroe Sampling Date: 2/19/2013
 Applicant/Owner: INDOT State: IN Sampling Point: S5W062UPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: 8, 9N 1W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.22907077840 Long: -86.54127655000 Datum: Nad 83
 Soil Map Unit Name: Haymond Silt Loam, Stendal silt loam NWI classification: UPL

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Festuca sp.</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Galium aparine</u>	<u>25</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Solidago canadensis</u>	<u>15</u>	<u>N</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>100</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
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: 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 100 x 4 = 400
 UPL species _____ x 5 = _____
 Column Totals: 100 (A) 400 (B)
 Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.)	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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SOIL

Sampling Point: S5W062UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR 5/3	100					Silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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)

Indicators for Problematic Hydric Soils³:

- 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)
- Coast Prairie Redox (A16)
- Iron-Manganese Masses (F12)
- Other (Explain in Remarks)

³Indicators 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)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Fauna (B13)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> True Aquatic Plants (B14)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Gauge or Well Data (D9)
<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Other (Explain in Remarks)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): _____
 Saturation Present? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Monroe Sampling Date: 10-14-11
 Applicant/Owner: INDOT State: IN Sampling Point: S5W066
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 8, 9N 1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.23352232800 Long: -86.54205559810 Datum: Nad 83
 Soil Map Unit Name: Stendal Silt Loam NWI classification: PEM

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Scirpus validus</u>	85	Y	OBL	
2. <u>Typha latifolia</u>	2	N	OBL	
3. <u>Carex lupulina</u>	5	N	OBL	
4. <u>Polygonum pensylvanicum</u>	5	N	FACW	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
97 = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = 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 92 x 1 = 92
 FACW species 5 x 2 = 10
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: 97 (A) 102 (B)
 Prevalence Index = B/A = 1.05

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.)	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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SOIL

Sampling Point: S5W066

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 5/2	95	7.5YR 5/6	5		M	Silt loam	
4-20	7.5Y 6/1	85	7.5YR 5/6	15		M	Silty clay loam	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____		
Remarks: _____ _____ _____								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)		
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>8</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>Surface</u> (includes capillary fringe)		
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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 Bloomington to Martinsville City/County: Monroe Sampling Date: 2-19-2013
 Applicant/Owner: INDOT State: IN Sampling Point: S5W066UPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: 8, 9N 1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.23387443860 Long: -86.54186568070 Datum: Nad 83
 Soil Map Unit Name: Stendal Silt Loam NWI classification: UPL

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Festuca sp.</u>	<u>75</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Glechoma hederacea</u>	<u>15</u>	<u>N</u>	<u>FACU</u>	
3. <u>Taraxacum officinale</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>95</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
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 95 x 4 = 380
 UPL species _____ x 5 = _____
 Column Totals: 95 (A) 380 (B)
 Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.)	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Monroe Sampling Date: 10-14-11
 Applicant/Owner: INDOT State: IN Sampling Point: S5W068
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 5, 9N 1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.23798214240 Long: -86.53906938780 Datum: NAD 83
 Soil Map Unit Name: Bonnie Silt Loam NWI classification: PEM

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Rubus occidentalis</u>	<u>5</u>	<u>Y</u>	<u>UPL</u>	
2. <u>Lonicera maackii</u>	<u>5</u>	<u>Y</u>	<u>UPL</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Typha latifolia</u>	<u>20</u>	<u>Y</u>	<u>OBL</u>	
3. <u>Juncus effusus</u>	<u>15</u>	<u>Y</u>	<u>OBL</u>	
4. <u>Solidago canadensis</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
5. <u>Polygonum pensylvanicum</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	
6. <u>Carex lupulina</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
7. <u>Cyperus esculentus</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
8. <u>Aster ericoides</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
 Total Number of Dominant Species Across All Strata: 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 40 x 1 = 40
 FACW species 40 x 2 = 80
 FAC species _____ x 3 = _____
 FACU species 15 x 4 = 60
 UPL species 10 x 5 = 50
 Column Totals: 105 (A) 230 (B)
 Prevalence Index = B/A = 2.19

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.)	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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SOIL

Sampling Point: S5W068

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 4/2	98	10YR 6/8	2		M	Silty clay loam	
10-20	2.5Y 7/1	80	10YR 5/8	20		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:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: _____ _____ _____								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)		
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>14</u>		
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: _____ _____		
Remarks: _____ _____		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Monroe Sampling Date: 2-19-2013
 Applicant/Owner: INDOT State: IN Sampling Point: S5W068UPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: 5, 9N 1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.23822260270 Long: -86.53884445030 Datum: NAD 83
 Soil Map Unit Name: Bonnie Silt Loam NWI classification: UPL

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Festuca sp.</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Solidago canadensis</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Aster ericoides</u>	<u>15</u>	<u>N</u>	<u>FACU</u>	
4. <u>Polygonum pensylvanicum</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>95</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
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: 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 10 x 2 = 20
 FAC species _____ x 3 = _____
 FACU species 85 x 4 = 340
 UPL species _____ x 5 = _____
 Column Totals: 95 (A) 360 (B)
 Prevalence Index = B/A = 3.79

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.)	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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SOIL

Sampling Point: S5W068UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 4/3	100					Silty clay loam	
10-20	10YR 5/3	80	10YR 5/6	20		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:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes _____ No <u>X</u>		
Remarks: _____ _____ _____								

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		
Field Observations:		Wetland Hydrology Present? Yes _____ No <u>X</u>	
Surface Water Present?	Yes _____ No <u>X</u> Depth (inches): _____		
Water Table Present?	Yes _____ No <u>X</u> Depth (inches): _____		
Saturation Present? (includes capillary fringe)	Yes _____ No <u>X</u> Depth (inches): _____		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: _____ _____			

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Monroe Sampling Date: 10-13-11
 Applicant/Owner: INDOT State: IN Sampling Point: S5W069e
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 4 and 5, 9N 1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): <2% Lat: 39.23861331250 Long: -86.53853825300 Datum: NAD 83
 Soil Map Unit Name: Bonnie Silt Loam NWI classification: PEMC

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Leersia oryzoides</u>	<u>40</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Polygonum sagittatum</u>	<u>25</u>	<u>Y</u>	<u>OBL</u>	
3. <u>Eleocharis acicularis</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	
4. <u>Carex sp.</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>85</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = 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 75 x 1 = 75
 FACW species 10 x 2 = 20
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: 85 (A) 95 (B)
 Prevalence Index = B/A = 1.17

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.)	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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SOIL

Sampling Point: S5W069e

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	2.5Y7/1	85	10YR 5/8	15		M	Silty clay loam	
6-20	2.5Y 8/1	75	10YR 5/8	25	C	M	Silty clay loam	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____		
Remarks: 								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)		
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>8"</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>4"</u> (includes capillary fringe)		
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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 Bloomington to Martinsville City/County: Monroe Sampling Date: 2/19/2013
 Applicant/Owner: INDOT State: IN Sampling Point: S5W069eUPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: 4 and 5, 9N 1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): <2% Lat: 39.23867671810 Long: -86.53847544570 Datum: NAD 83
 Soil Map Unit Name: Bonnie Silt Loam NWI classification: UPL

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Glechoma hederacea</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Festuca sp.</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Aster ericoides</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
4. <u>Solidago canadensis</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
5. <u>Eupatorium altissimum</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
6. <u>Carex sp.</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>80</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
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: 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 5 x 2 = 10
 FAC species _____ x 3 = _____
 FACU species 75 x 4 = 300
 UPL species _____ x 5 = _____
 Column Totals: 80 (A) 310 (B)
 Prevalence Index = B/A = 3.88

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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.)

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Monroe Sampling Date: 10-13-11
 Applicant/Owner: INDOT State: IN Sampling Point: S5W069f
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 4 and 5, 9N 1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): <2% Lat: 39.23825632030 Long: -86.53785264640 Datum: NAD 83
 Soil Map Unit Name: Bonnie Silt Loam NWI classification: PSS1A

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				_____ = Total Cover
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Cephalanthus occidentalis</u>	<u>20</u>	<u>Y</u>	<u>OBL</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
				<u>20</u> = Total Cover
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Polygonum hydropiper</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Leersia oryzoides</u>	<u>20</u>	<u>Y</u>	<u>OBL</u>	
3. <u>Eleocharis acicularis</u>	<u>15</u>	<u>N</u>	<u>OBL</u>	
4. <u>Lysimachia nummularia</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	
5. <u>Polygonum lapathifolium</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
6. <u>Bidens frondosa</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
				<u>85</u> = Total Cover
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
				_____ = Total Cover

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
 Total Number of Dominant Species Across All Strata: 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 85 x 1 = 85
 FACW species 20 x 2 = 40
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: 105 (A) 125 (B)
 Prevalence Index = B/A = 1.20

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.)	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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SOIL

Sampling Point: S5W069f

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	2.5Y6/1	65	7.5YR 4/6	35		M	Silty clay	
6-20	2.5Y 7/1	60	10YR 6/1	40		M	Silty clay loam	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____		
Remarks: 								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)		
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): ⁴ _____		
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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 Bloomington to Martinsville City/County: Monroe Sampling Date: 10-13-11
 Applicant/Owner: INDOT State: IN Sampling Point: S5W069g
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 4 and 5, 9N 1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): <2% Lat: 39.23784935830 Long: -86.53691094750 Datum: NAD 83
 Soil Map Unit Name: Bonnie Silt Loam NWI classification: PABGh

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Lemna minor</u>	<u>25</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Carex sp.</u>	<u>2</u>	<u>N</u>	<u>FACW</u>	
3. <u>Polygonum hydropiper</u>	<u>2</u>	<u>N</u>	<u>OBL</u>	
4. <u>Eleocharis tenuis</u>	<u>2</u>	<u>N</u>	<u>FACW</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>31</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = 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 27 x 1 = 27
 FACW species 4 x 2 = 8
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: 31 (A) 35 (B)
 Prevalence Index = B/A = 1.13

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.) Mostly open water void of vegetation.	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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SOIL

Sampling Point: S5W069g

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	2.5Y6/1	80	10YR 5/8	20		M	Silty clay	
12-20	10Y 4/1	100					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:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____		
Remarks: _____ _____ _____								

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		
Field Observations:			
Surface Water Present?	Yes <input checked="" type="checkbox"/> No _____	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Water Table Present?	Yes <input checked="" type="checkbox"/> No _____	Depth (inches): <u>Surface</u>	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No _____	Depth (inches): <u>Surface</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: _____			

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Monroe Sampling Date: 2-19-2013
 Applicant/Owner: INDOT State: IN Sampling Point: S5W069gUPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: 4 and 5, 9N 1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): <2% Lat: 39.23820600070 Long: -86.53779639100 Datum: NAD 83
 Soil Map Unit Name: Bonnie Silt Loam NWI classification: UPL

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Glechoma hederacea</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Carex sp.</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
3. <u>Phalaris arundinacea</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>50</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
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 10 x 2 = 20
 FAC species _____ x 3 = _____
 FACU species 40 x 4 = 160
 UPL species _____ x 5 = _____
 Column Totals: 50 (A) 180 (B)
 Prevalence Index = B/A = 3.6

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Remarks: (Include photo numbers here or on a separate sheet.)

Mostly open water void of vegetation.

SOIL

Sampling Point: S5W069gUPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 4/4	95	10YR 5/8	5		M	Silty clay	
8-20	10YR 4/6	95	10YR6/8	5		M	Silty 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:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>		
Remarks: _____ _____ _____								

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		
Field Observations:		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: _____ _____			

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Section 5 City/County: Monroe Sampling Date: 7/10/12
 Applicant/Owner: INDOT State: IN Sampling Point: W069i-1
 Investigator(s): J. Dabkowski Section, Township, Range: 4,9N,1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.1418 Long: -86.3217 Datum: NAD 83
 Soil Map Unit Name: Bonnie silt loam (Bo) NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (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 <u>x</u> No _____ Hydric Soil Present? Yes <u>x</u> No _____ Wetland Hydrology Present? Yes <u>x</u> No _____	Is the Sampled Area within a Wetland? Yes <u>x</u> No _____
Remarks: This data point met all three wetland criteria and is within a wetland. This data point was taken during severe drought conditions.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				
1. <i>Fraxinus pennsylvanica</i>	5	Yes	FACW	
2. <i>Cephalanthus occidentalis</i>	3	Yes	OBL	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>1m2</u>)				
1. <i>Eleocharis obtusa</i>	40	Yes	OBL	
2. <i>Echinochloa muricata</i>	40	Yes	OBL	
3. <i>Xanthium strumarium</i>	10	No	FAC	
4. <i>Phyla lanceolata</i>	5	No	OBL	
5. <i>Symphotrichum oterionis</i>	3	No	FAC	
6. <i>Symphotrichum lanceolatum</i>	2	No	FAC	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = 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 88 x 1 = 88
 FACW species 5 x 2 = 10
 FAC species 15 x 3 = 45
 FACU species 0 x 4 = 0
 UPL species 0 x 5 = 0
 Column Totals: 108 (A) 143 (B)
 Prevalence Index = B/A = 1.3

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No _____

Remarks: (Include photo numbers here or on a separate sheet.)

 This data point met the hydrophytic vegetation criteria.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Monroe Sampling Date: 10-14-11
 Applicant/Owner: INDOT State: IN Sampling Point: S5W070a
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 8, 9N 1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None
 Slope (%): <2% Lat: 39.23618414970 Long: -86.54076419740 Datum: NAD 83
 Soil Map Unit Name: Bonnie 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Platanus occidentalis</u>	5	Y	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. _____																		
3. _____																		
4. _____																		
5. _____																		
<u>5</u> = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15</u>)																		
1. <u>Liquidambar styraciflua</u>	10	Y	FACW	Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: right;">Total % Cover of:</td> <td style="width: 50%; text-align: left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>110</u></td> <td>x 1 = <u>110</u></td> </tr> <tr> <td>FACW species <u>17</u></td> <td>x 2 = <u>34</u></td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: <u>132</u> (A)</td> <td><u>164</u> (B)</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>110</u>	x 1 = <u>110</u>	FACW species <u>17</u>	x 2 = <u>34</u>	FAC species _____	x 3 = _____	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species _____	x 5 = _____	Column Totals: <u>132</u> (A)	<u>164</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>110</u>	x 1 = <u>110</u>																	
FACW species <u>17</u>	x 2 = <u>34</u>																	
FAC species _____	x 3 = _____																	
FACU species <u>5</u>	x 4 = <u>20</u>																	
UPL species _____	x 5 = _____																	
Column Totals: <u>132</u> (A)	<u>164</u> (B)																	
2. <u>Salix sp.</u>	2	N	FACW															
3. _____																		
4. _____																		
5. _____																		
<u>12</u> = Total Cover																		
Herb Stratum (Plot size: <u>5</u>)																		
1. <u>Typha latifolia</u>	80	Y	OBL	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> 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.														
2. <u>Juncus effusus</u>	20	N	OBL															
3. <u>Carex lupulina</u>	10	N	OBL															
4. <u>Solidago canadensis</u>	5	N	FACU															
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
<u>115</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>15</u>)																		
1. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>														
2. _____																		
_____ = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)																		

SOIL

Sampling Point: S5W070a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 7/1	85	7.5YR 6/8	15		M	Silty clay loam	
6-20	2.5Y 7/1	80	10YR 5/8	20		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:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____		
Remarks: 								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)		
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>16"</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>Surface</u> (includes capillary fringe)		
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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 Bloomington to Martinsville City/County: Monroe Sampling Date: 10-13-11
 Applicant/Owner: INDOT State: IN Sampling Point: S5W070b
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 8, 9N 1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None
 Slope (%): <2% Lat: 39.23625879620 Long: -86.54186330110 Datum: _____
 Soil Map Unit Name: Bonnie Silt Loam NWI classification: PFO1A

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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	45	Y	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83</u> (A/B)																
2. <u>Quercus palustris</u>	20	Y	FACW																	
3. <u>Carya glabra</u>	10	N	FACU																	
4. <u>Quercus velutina</u>	5	N	UPL																	
5. <u>Ulmus americana</u>	5	N	FACW																	
<u>85</u> = Total Cover																				
Sapling/Shrub Stratum																				
(Plot size: <u>15</u>)																				
1. <u>Liquidambar styraciflua</u>	10	Y	FACW	Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>5</u></td> <td style="text-align: center;"><u>5</u> x 1 = <u>5</u></td> </tr> <tr> <td>FACW species <u>60</u></td> <td style="text-align: center;"><u>60</u> x 2 = <u>120</u></td> </tr> <tr> <td>FAC species _____</td> <td style="text-align: center;">x 3 = _____</td> </tr> <tr> <td>FACU species <u>55</u></td> <td style="text-align: center;"><u>55</u> x 4 = <u>220</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td style="text-align: center;"><u>5</u> x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>125</u> (A)</td> <td style="text-align: center;"><u>370</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.96</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>5</u>	<u>5</u> x 1 = <u>5</u>	FACW species <u>60</u>	<u>60</u> x 2 = <u>120</u>	FAC species _____	x 3 = _____	FACU species <u>55</u>	<u>55</u> x 4 = <u>220</u>	UPL species <u>5</u>	<u>5</u> x 5 = <u>25</u>	Column Totals: <u>125</u> (A)	<u>370</u> (B)	Prevalence Index = B/A = <u>2.96</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>5</u>	<u>5</u> x 1 = <u>5</u>																			
FACW species <u>60</u>	<u>60</u> x 2 = <u>120</u>																			
FAC species _____	x 3 = _____																			
FACU species <u>55</u>	<u>55</u> x 4 = <u>220</u>																			
UPL species <u>5</u>	<u>5</u> x 5 = <u>25</u>																			
Column Totals: <u>125</u> (A)	<u>370</u> (B)																			
Prevalence Index = B/A = <u>2.96</u>																				
2. <u>Lindera benzoin</u>	10	Y	FACW																	
3. <u>Ulmus americana</u>	5	N	FACW																	
4. _____																				
5. _____																				
<u>25</u> = Total Cover																				
Herb Stratum																				
(Plot size: <u>5</u>)																				
1. <u>Symphytotrichum lateriflorum</u>	10	Y	FACW																	
2. <u>Carex lupulina</u>	5	Y	OBL																	
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
<u>15</u> = Total Cover																				
Woody Vine Stratum																				
(Plot size: <u>15</u>)																				
1. _____																				
2. _____																				
_____ = Total Cover																				
Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> 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 <input checked="" type="checkbox"/> No _____																				
Remarks: (Include photo numbers here or on a separate sheet.)																				

SOIL

Sampling Point: S5W070b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	2.5Y 7/1	80	10YR 5/6	20		M	Silty clay loam	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input checked="" type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: _____ _____ _____								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)		
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: _____ _____ _____		
Remarks: _____ _____ _____		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Monroe Sampling Date: 10-14-11
 Applicant/Owner: INDOT State: IN Sampling Point: S5W070c
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 8, 9N 1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None
 Slope (%): <2% Lat: 39.23500495410 Long: -86.54236846110 Datum: NAD 83
 Soil Map Unit Name: Bonnie 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>5</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>90</u> x 1 = <u>90</u> FACW species <u>5</u> x 2 = <u>10</u> FAC species _____ x 3 = _____ FACU species <u>5</u> x 4 = <u>20</u> UPL species _____ x 5 = _____ Column Totals: <u>100</u> (A) <u>120</u> (B) Prevalence Index = B/A = <u>1.20</u>
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. <u>Salix sp.</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
<u>5</u> = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)				
1. <u>Leersia oryzoides</u>	<u>60</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Juncus effusus</u>	<u>20</u>	<u>Y</u>	<u>OBL</u>	
3. <u>Carex lupulina</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	
4. <u>Solidago canadensis</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>95</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: S5W070c

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 7/1	85	7.5YR 6/8	15		M	Silty clay loam	
6-20	2.5Y 7/1	80	10YR 5/8	20		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:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____		
Remarks: _____ _____ _____								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)		
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>16"</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>Surface</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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 Bloomington to Martinsville City/County: Monroe Sampling Date: 2-19-2013
 Applicant/Owner: INDOT State: IN Sampling Point: S5W070UPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: 8, 9N 1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None
 Slope (%): <2% Lat: 39.23614203420 Long: -86.54299688430 Datum: NAD 83
 Soil Map Unit Name: Bonnie Silt Loam NWI classification: UPL

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: <u>30</u>)					
1. <u>Quercus rubra</u>	30	Y	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25</u> (A/B)	
2. <u>Carya ovata</u>	20	Y	FACU		
3. <u>Acer Saccharium</u>	5	N	FACW		
4. <u>Quercus velutina</u>	5	N	UPL		
5. _____					
	60	= Total Cover		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species <u>12</u> x 2 = <u>24</u> FAC species _____ x 3 = _____ FACU species <u>55</u> x 4 = <u>220</u> UPL species <u>5</u> x 5 = <u>25</u> Column Totals: <u>72</u> (A) <u>269</u> (B) Prevalence Index = B/A = <u>3.73</u>	
Sapling/Shrub Stratum (Plot size: <u>15</u>)					
1. <u>Lindera benzoin</u>	5	Y	FACW		
2. <u>Ulmus americana</u>	2	N	FACW		
3. _____					
4. _____					
5. _____					
	7	= Total Cover			
Herb Stratum (Plot size: <u>5</u>)					
1. <u>Solidago canadensis</u>	5	Y	FACU	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
	5	= Total Cover			
Woody Vine Stratum (Plot size: <u>15</u>)					
1. _____				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
2. _____					
		= Total Cover			
Remarks: (Include photo numbers here or on a separate sheet.)					

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Monroe Sampling Date: 10-15-11
 Applicant/Owner: INDOT State: IN Sampling Point: S5W091
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 10, 10N 1W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): <2% Lat: 39.32236032440 Long: -86.51230666590 Datum: NAD83
 Soil Map Unit Name: Berks-Wekert Complex NWI classification: PSS1A

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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks:	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status															
Tree Stratum (Plot size: <u>30</u>)																		
1. <u>Salix nigra</u>	5	Y	OBL	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83</u> (A/B)														
2. <u>Platanus occidentalis</u>	2	Y	FACW															
3. <u>Populus deltoides</u>	2	Y	FAC															
4. _____																		
5. _____																		
	9	= Total Cover		Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Total % Cover of:</td> <td style="width: 50%; text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>75</u></td> <td style="text-align: center;">x 1 = <u>75</u></td> </tr> <tr> <td>FACW species <u>62</u></td> <td style="text-align: center;">x 2 = <u>124</u></td> </tr> <tr> <td>FAC species <u>2</u></td> <td style="text-align: center;">x 3 = <u>6</u></td> </tr> <tr> <td>FACU species <u>25</u></td> <td style="text-align: center;">x 4 = <u>100</u></td> </tr> <tr> <td>UPL species _____</td> <td style="text-align: center;">x 5 = _____</td> </tr> <tr> <td>Column Totals: <u>164</u> (A)</td> <td style="text-align: center;"><u>305</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.86</u>	Total % Cover of:	Multiply by:	OBL species <u>75</u>	x 1 = <u>75</u>	FACW species <u>62</u>	x 2 = <u>124</u>	FAC species <u>2</u>	x 3 = <u>6</u>	FACU species <u>25</u>	x 4 = <u>100</u>	UPL species _____	x 5 = _____	Column Totals: <u>164</u> (A)	<u>305</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>75</u>	x 1 = <u>75</u>																	
FACW species <u>62</u>	x 2 = <u>124</u>																	
FAC species <u>2</u>	x 3 = <u>6</u>																	
FACU species <u>25</u>	x 4 = <u>100</u>																	
UPL species _____	x 5 = _____																	
Column Totals: <u>164</u> (A)	<u>305</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15</u>)																		
1. <u>Salix nigra</u>	35	Y	OBL															
2. _____																		
3. _____																		
4. _____																		
5. _____																		
	35	= Total Cover																
Herb Stratum (Plot size: <u>5</u>)																		
1. <u>Phalaris arundinacea</u>	50	Y	FACW	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> 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.														
2. <u>Cirsium arvense</u>	25	Y	FACU															
3. <u>Carex lurida</u>	15	N	OBL															
4. <u>Lycopus americanus</u>	15	N	OBL															
5. <u>Impatiens sp.</u>	10	N	FACW															
6. <u>Typha latifolia</u>	5	N	OBL															
7. _____																		
8. _____																		
9. _____																		
10. _____																		
	120	= Total Cover																
Woody Vine Stratum (Plot size: <u>15</u>)																		
1. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____														
2. _____																		
		= Total Cover																

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: S5W091

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 6/1	85	7.5YR 5/8	15	C	M	silt loam	
8-20	10YR 6/1	75	7.5YR 6/8	25	C	M	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:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____		
Remarks: 								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)		
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>14</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>Surface</u> (includes capillary fringe)		
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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 Bloomington to Martinsville City/County: Monroe Sampling Date: 2-19-2013
 Applicant/Owner: INDOT State: IN Sampling Point: S5W091UPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: 10, 10N 1W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): <2% Lat: 39.32198218360 Long: -86.51222991160 Datum: NAD83
 Soil Map Unit Name: Berks-We kert Complex NWI classification: UPL

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Poa pratensis</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Cirsium arvense</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Coronilla varia</u>	<u>15</u>	<u>N</u>	<u>NI</u>	
4. <u>Solidago canadensis</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>95</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = 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: 2 (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 _____ x 2 = _____
 FAC species 50 x 3 = 150
 FACU species 30 x 4 = 120
 UPL species _____ x 5 = _____
 Column Totals: 80 (A) 270 (B)
 Prevalence Index = B/A = 3.38

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.)	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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SOIL

Sampling Point: S5W091UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 4/3						silty clay	
8-20	2.5Y5/2	90	2.5Y 6/8	10		M	silty 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:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: _____ _____ _____								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: _____ _____		
Remarks: _____ _____		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Bloomington/Monroe Sampling Date: 10/14/2011
 Applicant/Owner: INDOT State: IN Sampling Point: S5W109
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 18, 11N, 1E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.39264544930 Long: -86.46143423410 Datum: NAD 83
 Soil Map Unit Name: Cuba Silt Loam NWI classification: PSS1A

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>80</u> x 1 = <u>80</u> FACW species <u>110</u> x 2 = <u>220</u> FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: <u>190</u> (A) <u>300</u> (B) Prevalence Index = B/A = <u>1.58</u>
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. <u>Salix nigra</u>	<u>60</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Platanus occidentalis</u>	<u>15</u>	<u>N</u>	<u>FACW</u>	
3. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
4. <u>Acer negundo</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
5. <u>Liquidambar styraciflua</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> 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.
1. <u>Phalaris arundinacea</u>	<u>80</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Polygonum hydropiper</u>	<u>20</u>	<u>Y</u>	<u>OBL</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: S5W109

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/2	98	7.5YR 5/6	2	C	M	silty clay loam	
4-20	2.5Y 6/1	80	7.5YR 5/6	20	C	M	Silty clay loam	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____		
³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.								
Remarks:								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): <u>8</u> Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): <u>6</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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 Bloomington to Martinsville City/County: Bloomington/Monroe Sampling Date: 2-19-2013
 Applicant/Owner: INDOT State: IN Sampling Point: S5W109UPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: 18, 11N, 1E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.39238849970 Long: -86.461126590770 Datum: NAD 83
 Soil Map Unit Name: Cuba Silt Loam NWI classification: UPL

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30</u>)				
1. <u>Robinia pseudoacacia</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)
2. <u>Salix nigra</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	
3. _____				
4. _____				
5. _____				
	<u>30</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15</u>)				
1. <u>Salix nigra</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species <u>20</u> x 2 = <u>40</u> FAC species _____ x 3 = _____ FACU species <u>30</u> x 4 = <u>120</u> UPL species _____ x 5 = _____ Column Totals: <u>50</u> (A) <u>160</u> (B) Prevalence Index = B/A = <u>3.2</u>
2. _____				
3. _____				
4. _____				
5. _____				
	<u>10</u>	= Total Cover		
Herb Stratum (Plot size: <u>5</u>)				
1. <u>Solidago canadensis</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
	<u>10</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>15</u>)				
1. _____				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
2. _____				

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: S5W109UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR 4/4	100					Silty sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

- Coast Prairie Redox (A16)
- Iron-Manganese Masses (F12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Gauge or Well Data (D9)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): _____
 Saturation Present? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Morgan Sampling Date: 10/15/2011
 Applicant/Owner: INDOT State: IN Sampling Point: S5W119
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 35, 11N, 1W
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.34761321330 Long: -86.50214525430 Datum: NAD 83
 Soil Map Unit Name: Hickory Loam - 18-50% slopes NWI classification: PEMC

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Typha latifolia</u>	<u>60</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Polygonum persicaria</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Scirpus atrovirens</u>	<u>20</u>	<u>N</u>	<u>OBL</u>	
4. <u>Carex sp.</u>	<u>15</u>	<u>N</u>	<u>FACW</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>145</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = 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 80 x 1 = 80
 FACW species 65 x 2 = 130
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: 145 (A) 210 (B)
 Prevalence Index = B/A = 1.45

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.)	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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SOIL

Sampling Point: S5W119

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 3/1	98	7.5YR 5/6	2	C	M	silt loam	
8-17	2.5Y 6/1	90	10 YR 5/8	10	C	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:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: <u>Clay/gravel</u> Depth (inches): <u>17</u>						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)		
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>Surface</u>		
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Morgan Sampling Date: 2-19-2013
 Applicant/Owner: INDOT State: IN Sampling Point: S5W119UPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: 35, 11N, 1W
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.34774689730 Long: -86.50201193170 Datum: NAD 83
 Soil Map Unit Name: Hickory Loam - 18-50% slopes NWI classification: UPL

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Festuca sp.</u>	<u>80</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Glechoma hederacea</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>90</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
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 90 x 4 = 360
 UPL species _____ x 5 = _____
 Column Totals: 90 (A) 360 (B)
 Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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: S5W119UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR3/3	100					sandy silt	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:			
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Morgan Sampling Date: 10-15-11
 Applicant/Owner: INDOT State: IN Sampling Point: S5W120
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 35, 11N 1W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): <2% Lat: 39.35070571760 Long: -86.49888421270 Datum: NAD 83
 Soil Map Unit Name: Bartle silt loam NWI classification: PEM

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Typha angustifolia</u>	<u>95</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Eupatorium fistulosum</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>100</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = 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 95 x 1 = 95
 FACW species 5 x 2 = 10
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: 100 (A) 105 (B)
 Prevalence Index = B/A = 1.05

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: S5W120

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR 6/2	80	7.5YR 6/8	20	C	M	silt loam	
18-20	5B 8/1	100					clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input checked="" type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)
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Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>16</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Morgan Sampling Date: 2-19-2013
 Applicant/Owner: INDOT State: IN Sampling Point: S5W120UPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: 35, 11N 1W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): <2% Lat: 39.35092905490 Long: -86.4978871380 Datum: NAD 83
 Soil Map Unit Name: Bartle silt loam NWI classification: UPL

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species <u>100</u> x 4 = <u>400</u> UPL species _____ x 5 = _____ Column Totals: <u>100</u> (A) <u>400</u> (B) Prevalence Index = B/A = <u>4</u>
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)				
1. <u>Festuca sp.</u>	<u>95</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Glechoma hederacea</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: S5W120UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 4/3	100					silty clay	
8-20	10YR4/4	90	10YR 6/8	10		M	silty 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:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>		
Remarks: _____ _____ _____								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: _____ _____ _____		
Remarks: _____ _____ _____		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Morgan Sampling Date: 10/14/2011
 Applicant/Owner: INDOT State: IN Sampling Point: S5W121
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 26, 11N, 1W
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.36326298630 Long: -86.48808117820 Datum: NAD 83
 Soil Map Unit Name: Bartle silt loam NWI classification: PEMC

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Juncus canadensis</u>	<u>40</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Bidens frondosa</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Aster ericoides</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>	
4. <u>Typha latifolia</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
5. <u>Cyperus esculentus</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>100</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = 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 45 x 1 = 45
 FACW species 35 x 2 = 70
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species 20 x 5 = 100
 Column Totals: 100 (A) 215 (B)
 Prevalence Index = B/A = 2.15

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.)	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

SOIL

Sampling Point: S5W121

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	2.5Y 5/2	80	7.5YR 4/6	20	C	M	silty clay loam	
10-20	2.5Y 7/1	75	10 YR 6/6	25	C	M	Silty 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:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Coast Prairie Redox (A16)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Iron-Manganese Masses (F12)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Mucky Mineral (F1)					
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)					
<input type="checkbox"/> 2 cm Muck (A10)			<input checked="" type="checkbox"/> Depleted Matrix (F3)					
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Redox Depressions (F8)					
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)						³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
Restrictive Layer (if observed):								
Type: _____								
Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	
Field Observations:		
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? Yes <input checked="" type="checkbox"/> No _____	Depth (inches): <u>14</u>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		
Roadside drainage ditch		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Morgan Sampling Date: 2-19-2013
 Applicant/Owner: INDOT State: IN Sampling Point: S5W121UPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: 26, 11N, 1W
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.36341715150 Long: -86.48794569740 Datum: NAD 83
 Soil Map Unit Name: Bartle silt loam NWI classification: UPL

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Festuca sp.</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Glechoma hederacea</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>60</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
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: 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 60 x 4 = 240
 UPL species _____ x 5 = _____
 Column Totals: 60 (A) 240 (B)
 Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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: S5W121UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR 4/4	100					silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Morgan Sampling Date: 10/14/2011
 Applicant/Owner: INDOT State: IN Sampling Point: S5W122
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 13, 11N, 1W
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.38553216160 Long: -86.46789455950 Datum: NAD 83
 Soil Map Unit Name: Martinsville Loam 0-2% slope NWI classification: PEMC

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Bidens frondosa</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Cyperus esculentus</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	
4. <u>Polygonum hydropiper</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
5. <u>Typha latifolia</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>120</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
 Total Number of Dominant Species Across All Strata: 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 10 x 1 = 10
 FACW species 110 x 2 = 220
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: 120 (A) 230 (B)
 Prevalence Index = B/A = 1.92

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.)	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Morgan Sampling Date: 2-19-2013
 Applicant/Owner: INDOT State: IN Sampling Point: S5W122UPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: 13, 11N, 1W
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.38620478530 Long: -86.46745757150 Datum: NAD 83
 Soil Map Unit Name: Martinsville Loam 0-2% slope NWI classification: UPL

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Festuca sp.</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Glechoa hederacea</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>80</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
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: 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 80 x 4 = 320
 UPL species _____ x 5 = _____
 Column Totals: 80 (A) 320 (B)
 Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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.)

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Monroe County Sampling Date: 10/14/2011
 Applicant/Owner: INDOT State: IN Sampling Point: S5W125a
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 4, 9N, 1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): none
 Slope (%): <2% Lat: 39.23996996780 Long: -86.53382887550 Datum: NAD 83
 Soil Map Unit Name: Bonnie 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Juncus effuses</u>	<u>25</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Polygonum pensylvanicum</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Carex sp.</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	
4. <u>Aster simplex</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	
5. <u>Lysimachia nummularia</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
6. <u>Xanthium chinense</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>67</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = 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 40 x 1 = 40
 FACW species 25 x 2 = 50
 FAC species 2 x 3 = 6
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: 67 (A) 96 (B)
 Prevalence Index = B/A = 1.43

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.)	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

SOIL

Sampling Point: S5W125a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-11	2.5Y 7/1	90	10YR 4/6	10	C	M	silty clay loam	
11-20	2.5Y 8/1	80	10YR 6/8	20	C	M	Silty clay loam	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators:			Indicators for Problematic Hydric Soils³:					
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____		
Remarks: _____ _____ _____								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)		
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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 Bloomington to Martinsville City/County: Monroe County Sampling Date: 10/14/2011
 Applicant/Owner: INDOT State: IN Sampling Point: S5W125f
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 4, 9N, 1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): none
 Slope (%): <2% Lat: 39.24132626460 Long: -86.53405264590 Datum: NAD 83
 Soil Map Unit Name: Bonnie Silt Loam NWI classification: PFO1A

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Stratum	Plot size	Absolute % Cover	Dominant Species?	Indicator Status															
Tree Stratum (Plot size: <u>30</u>)																			
1. <u>Fraxinus pennsylvanica</u>		<u>20</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83</u> (A/B)														
2. <u>Carya ovata</u>		<u>20</u>	<u>Y</u>	<u>FACU</u>															
3. <u>Liquidambar styraciflua</u>		<u>15</u>	<u>Y</u>	<u>FACW</u>															
4. <u>Platanus occidentalis</u>		<u>5</u>	<u>N</u>	<u>FACW</u>															
5. _____																			
		<u>60</u>	= Total Cover		Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Total % Cover of:</td> <td style="width: 50%; text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>75</u></td> <td>x 2 = <u>150</u></td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species <u>25</u></td> <td>x 4 = <u>100</u></td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: <u>110</u> (A)</td> <td><u>260</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.36</u>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>75</u>	x 2 = <u>150</u>	FAC species _____	x 3 = _____	FACU species <u>25</u>	x 4 = <u>100</u>	UPL species _____	x 5 = _____	Column Totals: <u>110</u> (A)	<u>260</u> (B)
Total % Cover of:	Multiply by:																		
OBL species <u>10</u>	x 1 = <u>10</u>																		
FACW species <u>75</u>	x 2 = <u>150</u>																		
FAC species _____	x 3 = _____																		
FACU species <u>25</u>	x 4 = <u>100</u>																		
UPL species _____	x 5 = _____																		
Column Totals: <u>110</u> (A)	<u>260</u> (B)																		
Sapling/Shrub Stratum (Plot size: <u>15</u>)																			
1. <u>Lindera benzoin</u>		<u>20</u>	<u>Y</u>	<u>FACW</u>															
2. <u>Liquidambar styraciflua</u>		<u>15</u>	<u>Y</u>	<u>FACW</u>															
3. <u>Carya ovata</u>		<u>5</u>	<u>N</u>	<u>FACU</u>															
4. <u>Rosa palustris</u>		<u>5</u>	<u>N</u>	<u>OBL</u>															
5. _____																			
		<u>45</u>	= Total Cover																
Herb Stratum (Plot size: <u>5</u>)																			
1. <u>Carex lurida</u>		<u>5</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> 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.														
2. _____																			
3. _____																			
4. _____																			
5. _____																			
6. _____																			
7. _____																			
8. _____																			
9. _____																			
10. _____																			
		<u>5</u>	= Total Cover																
Woody Vine Stratum (Plot size: <u>15</u>)																			
1. _____					Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>														
2. _____																			
			= Total Cover																

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: S5W125f

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	2.5Y 6/1	90	10YR 5/6	5	C	M	silty clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Monroe County Sampling Date: 2-19-2013
 Applicant/Owner: INDOT State: IN Sampling Point: S5W125UPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: 4, 9N, 1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): none
 Slope (%): <2% Lat: 39.24167524900 Long: -86.53541364230 Datum: NAD 83
 Soil Map Unit Name: Bonnie Silt Loam NWI classification: UPL

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Festuca sp.</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Solidago canadensis</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
3. <u>Taraxacum officinale</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>55</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
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 55 x 4 = 220
 UPL species _____ x 5 = _____
 Column Totals: 55 (A) 220 (B)
 Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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: S5W125UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	10YR 4/3	100					silty clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
---	--

Remarks: _____

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: _____	
Remarks: _____	

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Monroe Sampling Date: 10-14-11
 Applicant/Owner: INDOT State: IN Sampling Point: S5W127
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 4, 9N 1W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): <2% Lat: 39.24209524750 Long: -86.53475530420 Datum: NAD83
 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	45	Y	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. <u>Quercus palustris</u>	15	Y	FACW																	
3. <u>Ulmus americana</u>	10	N	FACW																	
4. <u>Platanus occidentalis</u>	2	N	FACW																	
5. _____																				
72 = Total Cover																				
Sapling/Shrub Stratum	(Plot size: <u>15</u>)																			
1. <u>Rosa palustris</u>	10	Y	OBL	Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; text-align: right;">Total % Cover of:</td> <td style="width:50%; text-align: left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>44</u></td> <td>x 2 = <u>88</u></td> </tr> <tr> <td>FAC species <u>45</u></td> <td>x 3 = <u>135</u></td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: <u>99</u> (A)</td> <td><u>233</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.35</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>44</u>	x 2 = <u>88</u>	FAC species <u>45</u>	x 3 = <u>135</u>	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: <u>99</u> (A)	<u>233</u> (B)	Prevalence Index = B/A = <u>2.35</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>10</u>	x 1 = <u>10</u>																			
FACW species <u>44</u>	x 2 = <u>88</u>																			
FAC species <u>45</u>	x 3 = <u>135</u>																			
FACU species _____	x 4 = _____																			
UPL species _____	x 5 = _____																			
Column Totals: <u>99</u> (A)	<u>233</u> (B)																			
Prevalence Index = B/A = <u>2.35</u>																				
2. <u>Lindera benzoin</u>	5	Y	FACW																	
3. _____																				
4. _____																				
5. _____																				
15 = Total Cover																				
Herb Stratum	(Plot size: <u>5</u>)																			
1. <u>Lysimachia nummularia</u>	10	Y	FACW	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> 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.																
2. <u>Carex sp.</u>	2	N	FACW																	
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
12 = Total Cover																				
Woody Vine Stratum	(Plot size: <u>15</u>)																			
1. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
2. _____																				
_____ = Total Cover																				
Remarks: (Include photo numbers here or on a separate sheet.)																				

SOIL

Sampling Point: S5W127

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 5/1	90	7.5YR 5/6	10	C	M	silty clay loam	
6-20	2.5Y 7/1	65	7.5YR 5/8	35	C	M	silty clay loam	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>								
Remarks:								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)		
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Monroe Sampling Date: 2-19-2013
 Applicant/Owner: INDOT State: IN Sampling Point: S5W127UPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: 4, 9N 1W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): <2% Lat: 39.24191014280 Long: -86.53532520300 Datum: NAD83
 Soil Map Unit Name: Bonnie Silt Loam NWI classification: UPL

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Festuca sp.</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Carex sp.</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
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 5 x 2 = 10
 FAC species _____ x 3 = _____
 FACU species 30 x 4 = 120
 UPL species _____ x 5 = _____
 Column Totals: 35 (A) 130 (B)
 Prevalence Index = B/A = 3.71

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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: S5W127UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR 4/3	100					silty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<p>Indicators for Problematic Hydric Soils³:</p> <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p>Restrictive Layer (if observed): Type: _____ Depth (inches): _____</p>	<p>Hydric Soil Present? Yes _____ No <u>X</u></p>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:		
<p>Primary Indicators (minimum of one is required; check all that apply)</p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<p>Secondary Indicators (minimum of two required)</p> <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)
<p>Field Observations:</p> Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		<p>Wetland Hydrology Present? Yes _____ No <u>X</u></p>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Monroe Sampling Date: 04/27/12
 Applicant/Owner: INDOT State: IN Sampling Point: S5W128a
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 3, 10N 1W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): <2% Lat: 39.33337347310 Long: -86.51139924660 Datum: NAD83
 Soil Map Unit Name: Berks-Wekert Complex 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status																	
Tree Stratum (Plot size: <u>30</u>)																				
1. <u>Platanus occidentalis</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
2. <u>Fraxinus pennsylvanica</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>																	
3. <u>Acer rubrum</u>	<u>5</u>	<u>N</u>	<u>FAC</u>																	
4. _____																				
5. _____																				
	<u>40</u>	= Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15</u>)																				
1. <u>Acer negundo</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>	Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Total % Cover of:</td> <td style="width: 50%; text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>2</u></td> <td style="text-align: center;"><u>x 1 = 2</u></td> </tr> <tr> <td>FACW species <u>67</u></td> <td style="text-align: center;"><u>x 2 = 134</u></td> </tr> <tr> <td>FAC species <u>34</u></td> <td style="text-align: center;"><u>x 3 = 102</u></td> </tr> <tr> <td>FACU species _____</td> <td style="text-align: center;"><u>x 4 = _____</u></td> </tr> <tr> <td>UPL species _____</td> <td style="text-align: center;"><u>x 5 = _____</u></td> </tr> <tr> <td>Column Totals: <u>103</u> (A)</td> <td style="text-align: center;"><u>238</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.31</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>2</u>	<u>x 1 = 2</u>	FACW species <u>67</u>	<u>x 2 = 134</u>	FAC species <u>34</u>	<u>x 3 = 102</u>	FACU species _____	<u>x 4 = _____</u>	UPL species _____	<u>x 5 = _____</u>	Column Totals: <u>103</u> (A)	<u>238</u> (B)	Prevalence Index = B/A = <u>2.31</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>2</u>	<u>x 1 = 2</u>																			
FACW species <u>67</u>	<u>x 2 = 134</u>																			
FAC species <u>34</u>	<u>x 3 = 102</u>																			
FACU species _____	<u>x 4 = _____</u>																			
UPL species _____	<u>x 5 = _____</u>																			
Column Totals: <u>103</u> (A)	<u>238</u> (B)																			
Prevalence Index = B/A = <u>2.31</u>																				
2. <u>Acer rubrum</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>																	
3. <u>Viburnum dentatum</u>	<u>2</u>	<u>N</u>	<u>FAC</u>																	
4. <u>Salix nigra</u>	<u>2</u>	<u>N</u>	<u>OBL</u>																	
5. _____																				
	<u>24</u>	= Total Cover																		
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Lysimachia nummularia</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>																	
2. <u>Carex sp.</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>																	
3. <u>Onoclea sens blis</u>	<u>2</u>	<u>N</u>	<u>FACW</u>																	
4. <u>Agrimonia parviflora</u>	<u>2</u>	<u>N</u>	<u>FAC</u>																	
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
	<u>19</u>	= Total Cover																		
Woody Vine Stratum (Plot size: <u>15</u>)																				
1. <u>Toxicodendron radicans</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>																	
2. _____																				
	<u>20</u>	= Total Cover																		

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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: S5W128a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-20	2.5Y 7/1	70	7.5YR 5/6	30	C	M	Silt Loam	

¹Type: -C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

- Coast Prairie Redox (A16)
- Iron-Manganese Masses (F12)
- Other (Explain in Remarks)

³Indicators 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): Surface
 Saturation Present? Yes No _____ Depth (inches): Surface
 (includes capillary fringe)

Wetland Hydrology Present? Yes No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Standing water in middle approx. 3" deep.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Monroe Sampling Date: 2/19/2013
 Applicant/Owner: INDOT State: IN Sampling Point: S5W128UPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: 3, 10N 1W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): <2% Lat: 39.33340552840 Long: -86.51267215750 Datum: NAD83
 Soil Map Unit Name: Berks-Wekert Complex NWI classification: UPL

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Carex sp.</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Agrimonia pariflora</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Toxicodendron radicans</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
_____ = Total Cover				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
 Total Number of Dominant Species Across All Strata: 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 30 x 2 = 60
 FAC species 32 x 3 = 96
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: 62 (A) 156 (B)
 Prevalence Index = B/A = 2.52

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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: S5W128UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR 4/3	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:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed):						Hydric Soil Present? Yes _____ No <u>X</u>		
Type: _____ Depth (inches): _____								
Remarks:								

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		
Field Observations:		Wetland Hydrology Present? Yes _____ No <u>X</u>	
Surface Water Present? Yes _____ No <u>X</u>	Depth (inches): _____		
Water Table Present? Yes _____ No <u>X</u>	Depth (inches): _____		
Saturation Present? Yes _____ No <u>X</u>	Depth (inches): _____		
(includes capillary fringe)			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Bloomington/Monroe Sampling Date: 04/26/12
 Applicant/Owner: INDOT State: IN Sampling Point: S5W145
 Investigator(s): K. Schroeder, D. White Section, Township, Range: S28, T 10N, R1W
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.27255796550 Long: -86.52369601770 Datum: NAD 83
 Soil Map Unit Name: Crider Silt loam NWI classification: PEM

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. <u>Salix sericea</u>	5	Y	OBL	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
5 = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)				
1. <u>Polygonum pensylvanicum</u>	40	Y	FACW	
2. <u>Carex sp.</u>	40	Y	FACW	
3. <u>Polygonum persicaria</u>	20	N	FACW	
4. <u>Prunella vulgaris</u>	10	N	FAC	
5. <u>Impatiens sp.</u>	10	N	FACW	
6. <u>Brassica rapa</u>	5	N	UPL	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
125 = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
 Total Number of Dominant Species Across All Strata: 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 5 x 1 = 5
 FACW species 110 x 2 = 220
 FAC species 10 x 3 = 30
 FACU species _____ x 4 = _____
 UPL species 5 x 5 = 25
 Column Totals: 130 (A) 280 (B)
 Prevalence Index = B/A = 2.15

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.)	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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SOIL

Sampling Point: S5W145

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	2.5YR 5/1	95	10YR 4/6	5	C	M	silt loam	
4-20	10YR 5/2	80	7.5YR 5/6	20	C	M	clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>3"</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Bloomington/Monroe Sampling Date: 2-19-2013
 Applicant/Owner: INDOT State: IN Sampling Point: S5W145UPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: S28, T 10N, R1W
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.27262184970 Long: -86.52363101300 Datum: NAD 83
 Soil Map Unit Name: Crider Silt loam NWI classification: UPL

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Festuca sp.</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Carex sp.</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Prunella vulgaris</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
4. <u>Brassica rapa</u>	<u>5</u>	<u>N</u>	<u>UPL</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>60</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = 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: 2 (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 10 x 2 = 20
 FAC species 5 x 3 = 15
 FACU species 40 x 4 = 160
 UPL species 5 x 5 = 25
 Column Totals: 60 (A) 220 (B)
 Prevalence Index = B/A = 3.66

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.)	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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SOIL

Sampling Point: S5W145UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	5YR 4/3	100					clay loam	
4-20	7.5YR 5/3	60	7.5YR 5/6	40		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:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes _____ No <u>X</u>		
Remarks: _____ _____ _____								

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		
Field Observations:		Wetland Hydrology Present? Yes _____ No <u>X</u>	
Surface Water Present?	Yes _____ No <u>X</u> Depth (inches): _____		
Water Table Present?	Yes _____ No <u>X</u> Depth (inches): _____		
Saturation Present? (includes capillary fringe)	Yes _____ No <u>X</u> Depth (inches): _____		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: _____ _____			

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Bloomington/Monroe Sampling Date: 04/26/12
 Applicant/Owner: INDOT State: IN Sampling Point: S5W146
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 28, 10N, 1W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.23632563970 Long: -86.53919479230 Datum: NAD 83
 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																													
1. <u>Quercus bicolor</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>88</u> (A/B)																												
2. <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>																													
3. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>																													
4. _____																																
5. _____																																
<u>25</u> = Total Cover				Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td align="center" colspan="2">Total % Cover of:</td> <td align="center" colspan="2">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td align="center"><u>5</u></td> <td align="center">x 1 =</td> <td align="center"><u>5</u></td> </tr> <tr> <td>FACW species</td> <td align="center"><u>69</u></td> <td align="center">x 2 =</td> <td align="center"><u>138</u></td> </tr> <tr> <td>FAC species</td> <td align="center"><u>20</u></td> <td align="center">x 3 =</td> <td align="center"><u>60</u></td> </tr> <tr> <td>FACU species</td> <td align="center"><u>15</u></td> <td align="center">x 4 =</td> <td align="center"><u>60</u></td> </tr> <tr> <td>UPL species</td> <td></td> <td align="center">x 5 =</td> <td></td> </tr> <tr> <td>Column Totals:</td> <td align="center"><u>109</u> (A)</td> <td></td> <td align="center"><u>263</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.41</u>	Total % Cover of:		Multiply by:		OBL species	<u>5</u>	x 1 =	<u>5</u>	FACW species	<u>69</u>	x 2 =	<u>138</u>	FAC species	<u>20</u>	x 3 =	<u>60</u>	FACU species	<u>15</u>	x 4 =	<u>60</u>	UPL species		x 5 =		Column Totals:	<u>109</u> (A)		<u>263</u> (B)
Total % Cover of:		Multiply by:																														
OBL species	<u>5</u>	x 1 =	<u>5</u>																													
FACW species	<u>69</u>	x 2 =	<u>138</u>																													
FAC species	<u>20</u>	x 3 =	<u>60</u>																													
FACU species	<u>15</u>	x 4 =	<u>60</u>																													
UPL species		x 5 =																														
Column Totals:	<u>109</u> (A)		<u>263</u> (B)																													
<u>44</u> = Total Cover																																
Sapling/Shrub Stratum (Plot size: <u>15</u>)																																
1. <u>Fraxinus pennsylvanica</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>																													
2. <u>Acer saccharum</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>																													
3. <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>																													
4. <u>Ulmus americana</u>	<u>2</u>	<u>N</u>	<u>FACW</u>																													
5. <u>Quercus bicolor</u>	<u>2</u>	<u>N</u>	<u>FACW</u>																													
<u>44</u> = Total Cover																																
Herb Stratum (Plot size: <u>5</u>)																																
1. <u>Phalaris arundinacea</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>																													
2. <u>Carex sp.</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>																													
3. <u>Carex lupulina</u>	<u>5</u>	<u>N</u>	<u>OBL</u>																													
4. _____																																
5. _____																																
6. _____																																
7. _____																																
8. _____																																
9. _____																																
10. _____																																
<u>40</u> = Total Cover																																
Woody Vine Stratum (Plot size: <u>15</u>)																																
1. _____																																
2. _____																																
_____ = Total Cover																																

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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: S5W146

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	2.5Y3/1	98	10YR 5/6	2		M	muck	
5-8	10YR 5/1	85	10YR 5/6	15	D	M	silt loam	
8-20	2.5Y6/1	85	7.5YR5/8	15	D	M	silty clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input checked="" type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0.5"</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>0.4"</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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 Bloomington to Martinsville City/County: Bloomington/Monroe Sampling Date: 2-19-2013
 Applicant/Owner: INDOT State: IN Sampling Point: S5W146UPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: 28, 10N, 1W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.23542184200 Long: -86.53963795290 Datum: NAD 83
 Soil Map Unit Name: Bonnie Silt Loam NWI classification: UPL

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer rubrum</u>	10	Y	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)
2. <u>Acer saccharum</u>	5	N	FACU	
3. _____				
4. _____				
5. _____				
	15	= Total Cover		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>20</u> x 3 = <u>60</u> FACU species <u>45</u> x 4 = <u>180</u> UPL species _____ x 5 = _____ Column Totals: <u>75</u> (A) <u>260</u> (B) Prevalence Index = B/A = <u>3.46</u>
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1. <u>Acer saccharum</u>	15	Y	FACU	
2. <u>Acer rubrum</u>	10	N	FAC	
3. _____				
4. _____				
5. _____				
	25	= Total Cover		
<u>Herb Stratum</u> (Plot size: <u>5</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Festuca sp.</u>	25	Y	FACU	
2. <u>Carex sp.</u>	10	N	FACW	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
	35	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)				Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
1. _____				
2. _____				

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: S5W146UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 4/3	90	10YR 6/8	10	C	M	silty clay	
4-18	10YR 6/2	50	10YR 6/8	50	C	M	silty 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:						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: _____ _____ _____								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)		
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: _____ _____		
Remarks: _____ _____		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Bloomington/Monroe Sampling Date: 04/27/12
 Applicant/Owner: INDOT State: IN Sampling Point: S5W147
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 18, 8N, 1W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.13484490160 Long: -86.57221360990 Datum: NAD 83
 Soil Map Unit Name: Hagerstown 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status															
Tree Stratum (Plot size: <u>30</u>)																		
1. <u>Fraxinus pennsylvanica</u>	15	Y	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. <u>Ulmus americana</u>	10	Y	FACW															
3. <u>Salix nigra</u>	5	N	OBL															
4. <u>Platanus occidentalis</u>	5	N	OBL															
5. _____																		
	35	= Total Cover		Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Total % Cover of:</td> <td style="width: 50%; text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>50</u></td> <td>x 1 = <u>50</u></td> </tr> <tr> <td>FACW species <u>62</u></td> <td>x 2 = <u>124</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: <u>127</u> (A)</td> <td><u>219</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.72</u>	Total % Cover of:	Multiply by:	OBL species <u>50</u>	x 1 = <u>50</u>	FACW species <u>62</u>	x 2 = <u>124</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: <u>127</u> (A)	<u>219</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>50</u>	x 1 = <u>50</u>																	
FACW species <u>62</u>	x 2 = <u>124</u>																	
FAC species <u>15</u>	x 3 = <u>45</u>																	
FACU species _____	x 4 = _____																	
UPL species _____	x 5 = _____																	
Column Totals: <u>127</u> (A)	<u>219</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15</u>)																		
1. <u>Salix nigra</u>	20	Y	OBL															
2. <u>Cornus amomum</u>	15	Y	FACW															
3. <u>Fraxinus pennsylvanica</u>	8	N	FACW															
4. <u>Ulmus americana</u>	2	N	FACW															
5. _____																		
	45	= Total Cover																
Herb Stratum (Plot size: <u>5</u>)																		
1. <u>Eleocharis acicularis</u>	20	Y	OBL	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> 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.														
2. <u>Carex sp.</u>	12	Y	FACW															
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
	32	= Total Cover																
Woody Vine Stratum (Plot size: <u>15</u>)																		
1. <u>Toxicodendron radicans</u>	10	Y	FAC															
2. <u>Parthenocissus quinquefolia</u>	5	N	FAC															
3. _____																		
	15	= Total Cover																

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: S5W147

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	2.5Y3/1	98	10YR 5/6	2	D	M	muck	
4-8	2.5Y 5/1	100					silt loam	
8-20	10Y5/2	80	7.5YR6/6	20	D	M	Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input checked="" type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>5"</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>Surface</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Ground and surface water fed. Drainage patterns significant. Pools of standing water.

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Bloomington/Monroe Sampling Date: 2-19-2013
 Applicant/Owner: INDOT State: IN Sampling Point: S5W147UPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: 18, 8N, 1W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.13478180460 Long: -86.57238293350 Datum: NAD 83
 Soil Map Unit Name: Hagerstown Silt Loam NWI classification: UPL

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Festuca sp.</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Daucus carota</u>	<u>10</u>	<u>N</u>	<u>UPL</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>50</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
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 40 x 4 = 160
 UPL species 10 x 5 = 50
 Column Totals: 50 (A) 210 (B)
 Prevalence Index = B/A = 4.2

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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: S5W147UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Table with columns: Depth (inches), Matrix (Color (moist), %), Redox Features (Color (moist), %, Type¹, Loc²), Texture, Remarks. Row 1: 0-18, 5YR 4/4, 100, Silty clay.

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

- ___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Other (Explain in Remarks)

³Indicators 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)

Secondary Indicators (minimum of two required)

- ___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)
___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No 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 Bloomington to Martinsville City/County: Monroe Sampling Date: 04/27/12
 Applicant/Owner: INDOT State: IN Sampling Point: S5W148
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 3, 10N, 1W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.33269120240 Long: -86.51340886170 Datum: NAD 83
 Soil Map Unit Name: Berks-We kert Complex NWI classification: PEM

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Phalaris arundinacea</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Typha angustifolia</u>	<u>20</u>	<u>N</u>	<u>OBL</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>50</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = 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 50 x 1 = 50
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: 50 (A) 50 (B)
 Prevalence Index = B/A = 1.0

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.)	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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SOIL

Sampling Point: S5W148

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 4/1	80	7.5 YR 5/6	20	C	PL	Silt loam	
6-24	2.5Y 7/1	70	10YR 6/6	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: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)						Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: _____ _____ _____								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>3"</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>Surface</u> (includes capillary fringe)		
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Pools of standing water 3" deep. Inundated during storm events.		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Monroe Sampling Date: 2/19/2013
 Applicant/Owner: INDOT State: IN Sampling Point: S5W148UPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: 3, 10N, 1W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): <5% Lat: 39.33266092310 Long: -86.51339561750 Datum: NAD 83
 Soil Map Unit Name: Berks-We kert Complex NWI classification: UPL

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Festuca sp.</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Taraxacum officinale</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
3. <u>Solidago canadensis</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
4. <u>Glechoma hederacea</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>45</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
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 45 x 4 = 180
 UPL species _____ x 5 = _____
 Column Totals: 45 (A) 180 (B)
 Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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: S5W148UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 4/2	100					Silty clay	
6-18	2.5Y6/2	60	10YR3/6	40		M	Silty clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Monroe Sampling Date: 10-13-11
 Applicant/Owner: INDOT State: IN Sampling Point: S5W149a
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 4, 9N 1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): <2% Lat: 39.24038841410 Long: -86.53742127050 Datum: NAD 83
 Soil Map Unit Name: Bonnie Silt Loam NWI classification: PEMC

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Polygonum hyrdopiper</u>	<u>40</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Carex sp.</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Dichanthelium clandestinum</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	
4. <u>Solidago canadensis</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
5. <u>Eupatorium altissimum</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>115</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = 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 40 x 1 = 40
 FACW species 30 x 2 = 60
 FAC species _____ x 3 = _____
 FACU species 10 x 4 = 40
 UPL species _____ x 5 = _____
 Column Totals: 80 (A) 140 (B)
 Prevalence Index = B/A = 1.75

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.)	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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SOIL

Sampling Point: S5W149a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-9	2.5Y7/1	85	10YR 5/8	15	C	M	Silty clay loam	
9-20	2.5Y 8/1	75	10YR 5/8	25	C	M	Silty clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

- Coast Prairie Redox (A16)
- Iron-Manganese Masses (F12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Gauge or Well Data (D9)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? Yes No Depth (inches): 16"
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: I-69 Bloomington to Martinsville City/County: Monroe Sampling Date: 10-13-11
 Applicant/Owner: INDOT State: IN Sampling Point: S5W149b
 Investigator(s): K. Schroeder, D. White Section, Township, Range: 4, 9N 1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): <2% Lat: 39.24038841410 Long: -86.53742127050 Datum: NAD 83
 Soil Map Unit Name: Bonnie Silt Loam NWI classification: PEMC

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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Polygonum hyrdopiper</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Carex sp.</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Typha latifolia</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	
4. <u>Solidago canadensis</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
5. <u>Scirpus cyperinus</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>80</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = 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 45 x 1 = 45
 FACW species 30 x 2 = 60
 FAC species _____ x 3 = _____
 FACU species 5 x 4 = 20
 UPL species _____ x 5 = _____
 Column Totals: 80 (A) 125 (B)
 Prevalence Index = B/A = 1.56

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.)	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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SOIL

Sampling Point: S5W149b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	2.5Y7/1	85	10YR 5/8	15	C	M	Silty clay loam	
8-20	2.5Y 8/1	75	10YR 5/8	25	C	M	Silty clay loam	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators:			Indicators for Problematic Hydric Soils³:					
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____		
Remarks: _____ _____ _____								

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 14"		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> 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 Bloomington to Martinsville City/County: Monroe Sampling Date: 2/19/2013
 Applicant/Owner: INDOT State: IN Sampling Point: S5W149UPL
 Investigator(s): D. White, T. Keefe Section, Township, Range: 4, 9N 1W
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
 Slope (%): <2% Lat: 39.24075270580 Long: -86.53718029520 Datum: NAD 83
 Soil Map Unit Name: Bonnie Silt Loam NWI classification: UPL

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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Festuca sp.</u>	<u>35</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Carex sp.</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Cirsium arvense</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
4. <u>Solidago canadensis</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
5. <u>Eupatorium altissimum</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>70</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = 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: 2 (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 15 x 2 = 30
 FAC species _____ x 3 = _____
 FACU species 55 x 4 = 220
 UPL species _____ x 5 = _____
 Column Totals: 70 (A) 250 (B)
 Prevalence Index = B/A = 3.57

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.)	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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SOIL

Sampling Point: S5W149UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-9	10YR 4/4	95	10YR 5/8	5		M	Silty clay	
9-20	10YR4/6	95	10YR 6/8	5		M	Silty 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: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)						Indicators for Problematic Hydric Soils³: <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes _____ No <u>X</u>		
Remarks: _____ _____ _____								

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: _____ _____			
Remarks: _____ _____ _____			