

Wetland Delineation Report



Project Site:
US 20 Freeport Bypass West
Stephenson County, Illinois

IDOT Sequence Number: 10487



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Project Summary

A wetland survey was conducted for the proposed wetland mitigation site along US 20 west of Freeport in Stephenson County, Illinois. All potential wetlands within the specified project area were examined. Two sites met the three criteria of a wetland established in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* [U.S. Army Corps of Engineers (USACE) 2010] and were, therefore, determined to be wetlands. Summary information regarding the wetland determination sites is presented in the wetland project report. Wetland determination forms are found in Appendix A and wetland plant species lists are included in Appendix B. Wetland boundaries were recorded using a Trimble Global Positioning System. The spatial data have been digitally uploaded to the Illinois Site Assessment Tracking System (http://frostycap.isgs.uiuc.edu/idot_extranet). Locations of determination sites were overlaid on a digital orthophoto quadrangle (DOQ) using ArcGIS; the resulting figure is included in Appendix C. Additional maps and figures are also included in Appendix C.

Signed: 
 Dr. Allen Plocher
 INHS/IDOT Project Coordinator

Date: January 27, 2012

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Cover Photo: Facing south overlooking the mitigation area from US 20.

US 20 Freeport Bypass West Stephenson County, Illinois

Introduction

A wetland survey was conducted on August 15, 2011 for the Weber property along US 20 west of Freeport in Stephenson County, Illinois. Additionally, planted trees were identified and counted on October 26, 2011.

Methods

All potential wetlands within the specified study area were examined. Characteristics of vegetation, soils, hydrology, and topography were evaluated during field investigation and on-site wetland determination. Locations of observation points for wetland determinations were selected based on plant community borders and topographic changes. The following sources were examined while surveying the project corridor to determine wetland locations and boundaries: aerial photographs; U.S. Geological Survey topographic map (Freeport West 7.5 minute quadrangle); National Wetlands Inventory (NWI) map (Freeport West 7.5 minute quadrangle) (U.S. Fish and Wildlife Service); Illinois Wetlands Inventory (U.S. Fish and Wildlife Service, Illinois Department of Natural Resources, Illinois Natural History Survey 1996); *National List of Plant Species that Occur in Wetlands: Illinois* (Reed 1988); the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987); the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (USACE 2010); the USDA-NRCS *Official Series Descriptions*; and the USDA-NRCS *Web Soil Survey*. Positional inaccuracies are known to occur with downloaded sources of digital data listed above. As presented on maps and figures in this report, data can be shifted from their actual position when compared to modern aerial photography.

Wetland determinations were conducted using definitions and guidelines established in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (USACE 2010). Data from these determinations were recorded on U.S. Army Corps of Engineers' Wetland Determination Data Forms – Midwest Region (Appendix A); a data form was completed for each wetland sampling point. All potential wetlands, including all areas mapped as wetlands by the NWI, were described using at least one sampling point. Results of these determinations are summarized in the following text. Adjacent upland areas were also investigated; forms were not completed for these areas. Comprehensive plant species lists were compiled for each wetland site and are presented in Appendix B.

Wetland boundaries were recorded using a Trimble Global Positioning System (either model Pathfinder Pro XR or Pathfinder Pro XRS), with a presumed accuracy of +/- 0.5 m under optimal field conditions. Spatial data were digitally uploaded to the Illinois Site Assessment Tracking System (http://froscopy.isgs.uiuc.edu/idot_extranet). Locations of determination sites were overlaid on a digital orthophoto quadrangle (DOQ) and approximate area was determined for

each wetland site using ArcGIS 10.0 software (ESRI 2010). Resulting areas are calculated in acres, reported to two decimal places. Site location, with respect to the nearest road, was measured from the edge of the pavement and is reported to the nearest foot.

Each native plant species was assigned a “coefficient of conservatism” (C) (Taft et al. 1997), a subjective rating of species fidelity to undegraded natural communities, ranging from zero to ten. Conservative species - those more likely to be found in “pristine” natural areas - were assigned high numbers, whereas non-conservative species - those that occur in anthropogenically disturbed areas - were given lower numbers. Non-native species and those not identifiable to species level were not assigned a rating. The Floristic Quality Index (FQI) is computed as $FQI = (\text{mean } C) \times (\sqrt{N})$, where mean C is the mean coefficient of conservatism for all native plant species at a site and N is the total number of native plant species at the site. In very general terms, higher FQI values for plant communities indicate more similarity to “pristine” natural areas, as compared to those communities with lower FQI values. Botanical nomenclature follows *Vascular Flora of Illinois* (Mohlenbrock 2002).

Wetland Site Summaries

Site Number: 1

Community type: **Floodplain forest**

National Wetlands Inventory code: **PEMC (seasonally flooded, emergent, palustrine wetland) and U (upland)**

Site location: **65 feet south of US 20**

Hydrophytic vegetation? **Yes** Hydric soils? **Yes** Wetland hydrology? **Yes**

Is this site a wetland? **Yes**

Area of site occurring within the project corridor: **0.60 acre**

Total site area: **0.60 acre**

Does this wetland require IEPA Case Specific Water Quality Certification? **No**

Mean Coefficient of Conservatism (mean C): **1.5** Floristic Quality Index (FQI): **5.6**

Site Number: 2

Community type: **Wet meadow**

National Wetlands Inventory code: **U (Upland)**

Site location: **65 feet south of US 20**

Hydrophytic vegetation? **Yes** Hydric soils? **Yes** Wetland hydrology? **Yes**

Is this site a wetland? **Yes**

Area of site occurring within the project corridor: **8.00 acres**

Total site area: **8.00 acres**

Does this wetland require IEPA Case Specific Water Quality Certification? **No**

Mean Coefficient of Conservatism (mean C): **2.1** Floristic Quality Index (FQI): **10.8**

Stream Description

Site name: **Pecatonica River**

Site location: **Flowing from north to south along the eastern boundary of the project area**

Community type: **River**

National Wetlands Inventory code: **R2UBH (permanently flooded, unconsolidated bottom, lower perennial, riverine)**

USGS 8-Digit Hydrologic Unit Code (HUC): **07090003 (Pecatonica River)**

Watershed area: **1297 mi² (U.S. Geological Survey 2010)**

Riffles present? **No**

Pools present? **No**

Mussel shell material present? **No**

Is the stream or body of water permanent? **Yes**

Is the stream identified by IDNR (2008) as a biologically significant stream? **No**

Stream Integrity Rating: **None**

Stream Diversity Rating: **None**

Threatened/Endangered Species and Natural Communities of Special Interest

No species listed as threatened or endangered federally or in Illinois were found within the project corridor. No natural communities of special interest were noted.

Additional Results/Remarks

As part of the effort to assess this site for mitigation use, trees planted at this site in spring 2011 were identified to species and counted. Data from this tree count can be found in Table 1 below. Additionally, the Illinois State Geological Survey established monitoring wells to assess wetland hydrology across the entire project area. Their monitoring wells provide the most accurate depiction of wetland hydrology on site and will take precedence over any other determinations of wetland hydrology. For further information, please see Miner et al. 2011.

Table 1. Tree count by species observed at US 20 Freeport Bypass West

Species	Planted	Counted
<i>Carya illinoensis</i>	29	29
<i>Platanus occidentalis</i>	29	29
<i>Quercus bicolor</i>	49	49
<i>Quercus ellipsoidalis</i>	29	29
<i>Quercus macrocarpa</i>	29	29
Grand total	165	165

Literature Cited

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APPENDIX A

Wetland Determination Forms

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: US 20 Freeport Bypass West City/County: Stephenson Sampling Date: August 15, 2011
 Applicant/Owner: IDOT District 2 State: IL Sampling Point: 1A
 Investigator(s): Zylka, Kurylo, and Matthews Section, Township, Range: Section 15, Township 27N, Range 7E
 Landform (hillslope, terrace, etc.): Depression on floodplain Local relief (concave, convex, none): Concave
 Slope (%): 0% Lat: 42.33087 Long: -89.68107 Datum: NAD 83
 Soil Map Unit Name: NRCS mapped as Huntsville silt loam, revised to Sawmill silty clay 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"/>	Is the Sampled Area within a Wetland? 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"/>	
Remarks: Community type: <u>Floodplain forest</u>			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Acer saccharinum</u>	90%	Yes	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: _____ (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. _____	_____	_____	_____	Total % Cover of: _____ Multiply by: _____
2. _____	_____	_____	_____	OBL species _____ x 1 = _____
3. _____	_____	_____	_____	FACW species _____ x 2 = _____
4. _____	_____	_____	_____	FAC species _____ x 3 = _____
5. _____	_____	_____	_____	FACU species _____ x 4 = _____
_____ = Total Cover				UPL species _____ x 5 = _____
				Column Totals: _____ (A) _____ (B)
				Prevalence Index = B/A = _____
Herb Stratum (Plot size: <u>5 ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. _____	_____	_____	_____	<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	_____	_____	_____	<input type="checkbox"/> 2 - Dominance Test is >50%
3. _____	_____	_____	_____	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹
4. _____	_____	_____	_____	<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30 ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. _____	_____	_____	_____	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: 1A

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 2/1	100					SICL	
6-25	10YR 2/1	98	7.5YR 3/3	2	C	M	SICL	
25-40	10YR 2/1	80	7.5YR 3/3	20	C	M	SICL	

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

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<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 type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" 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)	

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Dark Surface (S7)
<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Other (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)		Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" 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 checked="" 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 checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input checked="" 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 <input type="checkbox"/>	Depth (inches): <u><6</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>0</u>	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>0</u>	

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: US 20 Freeport Bypass West City/County: Stephenson Sampling Date: August 15, 2011
 Applicant/Owner: IDOT District 2 State: IL Sampling Point: 2A
 Investigator(s): Zylka, Kurylo, and Matthews Section, Township, Range: Section 15, Township 27N, Range 7E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): concave
 Slope (%): 0% Lat: 42.33022 Long: -89.67877 Datum: NAD 83
 Soil Map Unit Name: NRCS mapped as Huntsville silt loam, revised to Lawson silty clay loam NWI classification: U

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"/>	Is the Sampled Area within a Wetland?	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"/>			
Remarks: Community type: <u>Wet meadow</u>					

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</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 _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
Sapling/Shrub Stratum (Plot size: <u>15 ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____ = Total Cover					
Herb Stratum (Plot size: <u>5 ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1. <u>Panicum pensylvanicum</u>	<u>40%</u>	<u>Yes</u>	<u>FACW+</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - 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. <u>Echinochloa muricata</u>	<u>30%</u>	<u>Yes</u>	<u>OBL</u>		
3. <u>Setaria faberi</u>	<u>30%</u>	<u>Yes</u>	<u>FACU+</u>		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
<u>100%</u> = Total Cover					
Woody Vine Stratum (Plot size: <u>30 ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
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: 2A

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 2/1	100					SICL	
4-8	10YR 2/1	98	10YR 3/4	2	C	M	SICL	
8-15	10YR 2/1	100					SICL	
15-18	10YR 2/1	50					SICL	
	10YR 2/2	50						
18-24	10YR 2/2	100					SICL	

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

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<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 type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" 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)	

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Dark Surface (S7)
<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Other (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)		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 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 checked="" 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 checked="" 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 <input type="checkbox"/>	Depth (inches): <60
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): 0

Wetland Hydrology Present? Yes No

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

Remarks:

APPENDIX B

Wetland Plant Species Lists

Site 1 – Floodplain forest

SPECIES LIST (Dominant species and strata indicated by bold.)

Scientific name	Common name	Stratum	Wetland indicator status	Coefficient of conservatism
<i>Acer negundo</i>	box elder	tree	FACW-	1
<i>Acer saccharinum</i>	silver maple	tree	FACW	1
<i>Amaranthus tuberculatus</i>	tall waterhemp	herb	OBL	1
<i>Ambrosia trifida</i>	giant ragweed	herb	FAC+	0
<i>Aster lanceolatus</i>	panicked aster	herb	FACW	3
<i>Bidens frondosa</i>	common beggar's ticks	herb	FACW	1
<i>Echinochloa muricata</i>	spiny barnyard grass	herb	OBL	0
<i>Elymus virginicus</i>	Virginia wild rye	herb	FACW-	4
<i>Persicaria pensylvanica</i>	pinkweed	herb	FACW+	1
<i>Populus deltoides</i>	eastern cottonwood	tree	FAC+	2
<i>Rumex crispus</i>	curly dock	herb	FAC+	*
<i>Salix interior</i>	sandbar willow	shrub	OBL	1
<i>Salix nigra</i>	black willow	tree	OBL	3
<i>Toxicodendron radicans</i>	poison ivy	vine	FAC+	1
<i>Vitis riparia</i>	riverbank grape	vine	FACW-	2

* Non-native species

mCv = 1.5

FQI = 5.6

Site 2 – Wet meadow

SPECIES LIST (Dominant species and strata indicated by bold.)

Scientific name	Common name	Stratum	Wetland indicator status	Coefficient of conservatism
<i>Abutilon theophrasti</i>	buttonweed	herb	FACU-	*
<i>Acer negundo</i>	box elder	herb	FACW-	1
<i>Acer saccharinum</i>	silver maple	herb	FACW	1
<i>Agrostis gigantea</i>	red top	herb	FACW	0
<i>Alisma subcordatum</i>	common water plantain	herb	OBL	2
<i>Ambrosia trifida</i>	giant ragweed	herb	FAC+	0
<i>Ammannia coccinea</i>	long-leaved ammannia	herb	OBL	5
<i>Asclepias verticillata</i>	horsetail milkweed	herb	UPL	1
<i>Aster lanceolatus</i>	panicked aster	herb	FACW	3
<i>Bidens frondosa</i>	common beggar's ticks	herb	FACW	1
<i>Carya illinoensis</i>	pecan	shrub	FACW	6
<i>Conyza canadensis</i>	horseweed	herb	FAC-	0
<i>Cyperus esculentus</i>	field nut sedge	herb	FACW	0
<i>Echinochloa muricata</i>	spiny barnyard grass	herb	OBL	0
<i>Eleocharis ovata</i> var. <i>obtusa</i>	blunt spike rush	herb	OBL	2
<i>Erigeron annuus</i>	annual fleabane	herb	FAC-	1
<i>Lolium multiflorum</i>	Italian rye grass	herb	UPL	*
<i>Panicum dichotomiflorum</i>	fall panicum	herb	FACW-	0
<i>Persicaria pensylvanica</i>	pinkweed	herb	FACW+	1
<i>Phalaris arundinacea</i>	reed canary grass	herb	FACW+	*
<i>Platanus occidentalis</i>	buttonwood	herb	FACW	3
<i>Populus deltoides</i>	eastern cottonwood	herb	FAC+	2
<i>Quercus bicolor</i>	swamp white oak	shrub	FACW+	7
<i>Quercus ellipsoidalis</i>	Hill's oak	shrub	UPL	5
<i>Quercus macrocarpa</i>	burr oak	shrub	FAC-	5
<i>Ranunculus sceleratus</i>	cursed crowfoot	herb	OBL	3
<i>Rorippa palustris</i>	marsh yellow cress	herb	OBL	4
<i>Salix interior</i>	sandbar willow	shrub	OBL	1
<i>Setaria faberi</i>	giant foxtail	herb	FACU+	*
<i>Setaria glauca</i>	pigeon grass	herb	FAC	*
<i>Toxicodendron radicans</i>	poison ivy	vine	FAC+	1
<i>Triticum aestivum</i>	wheat	herb	UPL	*

* Non-native species

mCv = 2.1

FQI = 10.8

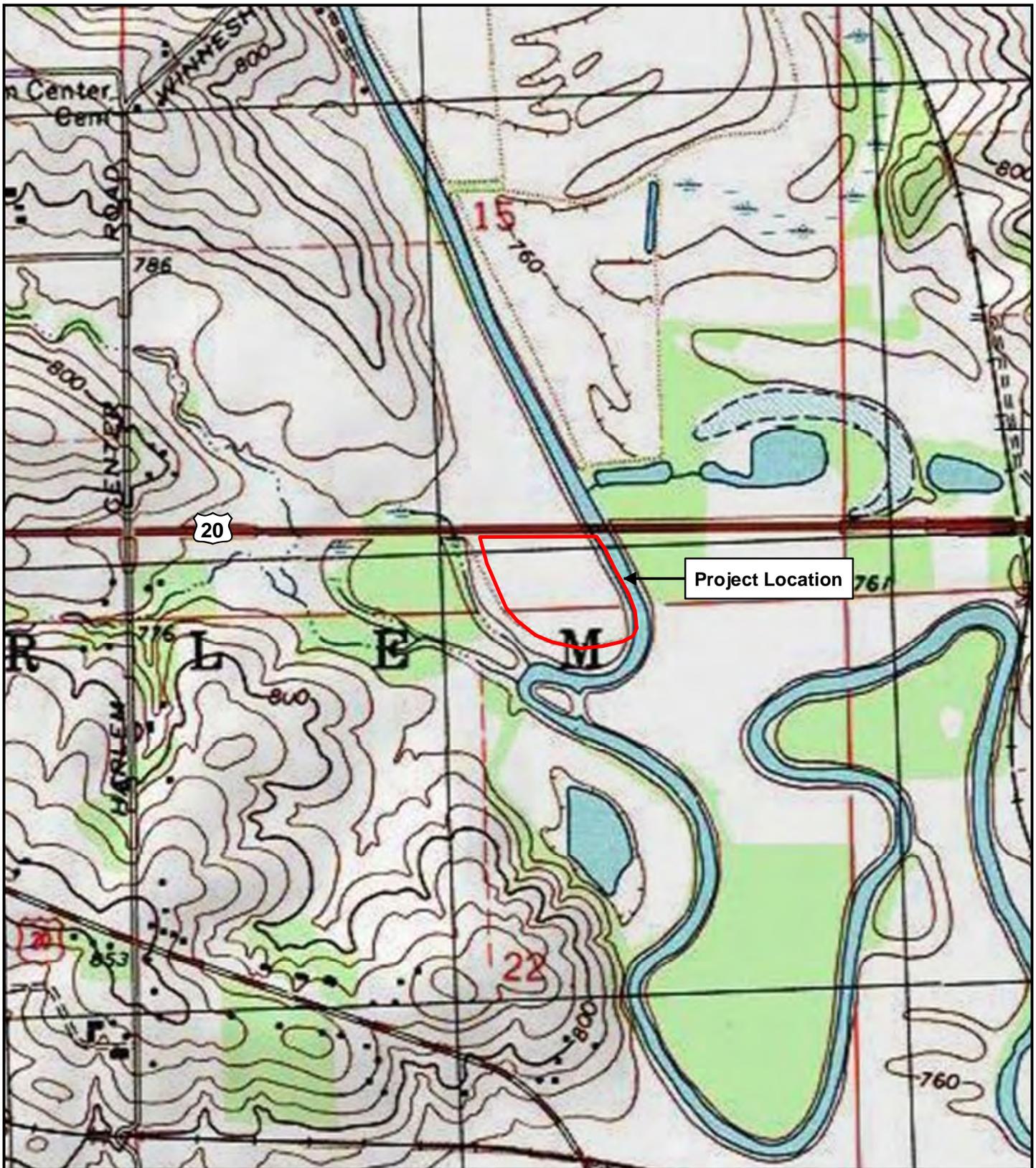
APPENDIX C

Figures

Figure 1 – Project Location Map

Figure 2 – National Wetlands Inventory Map

Figure 3 – Wetland Delineation Map



Wetland Science Program
 Illinois Natural History Survey
 Prairie Research Institute
 1816 South Oak Street
 Champaign, Illinois 61820

Project Location Map
US 20, Freeport Bypass West
Stephenson County

Seq. No: 10487

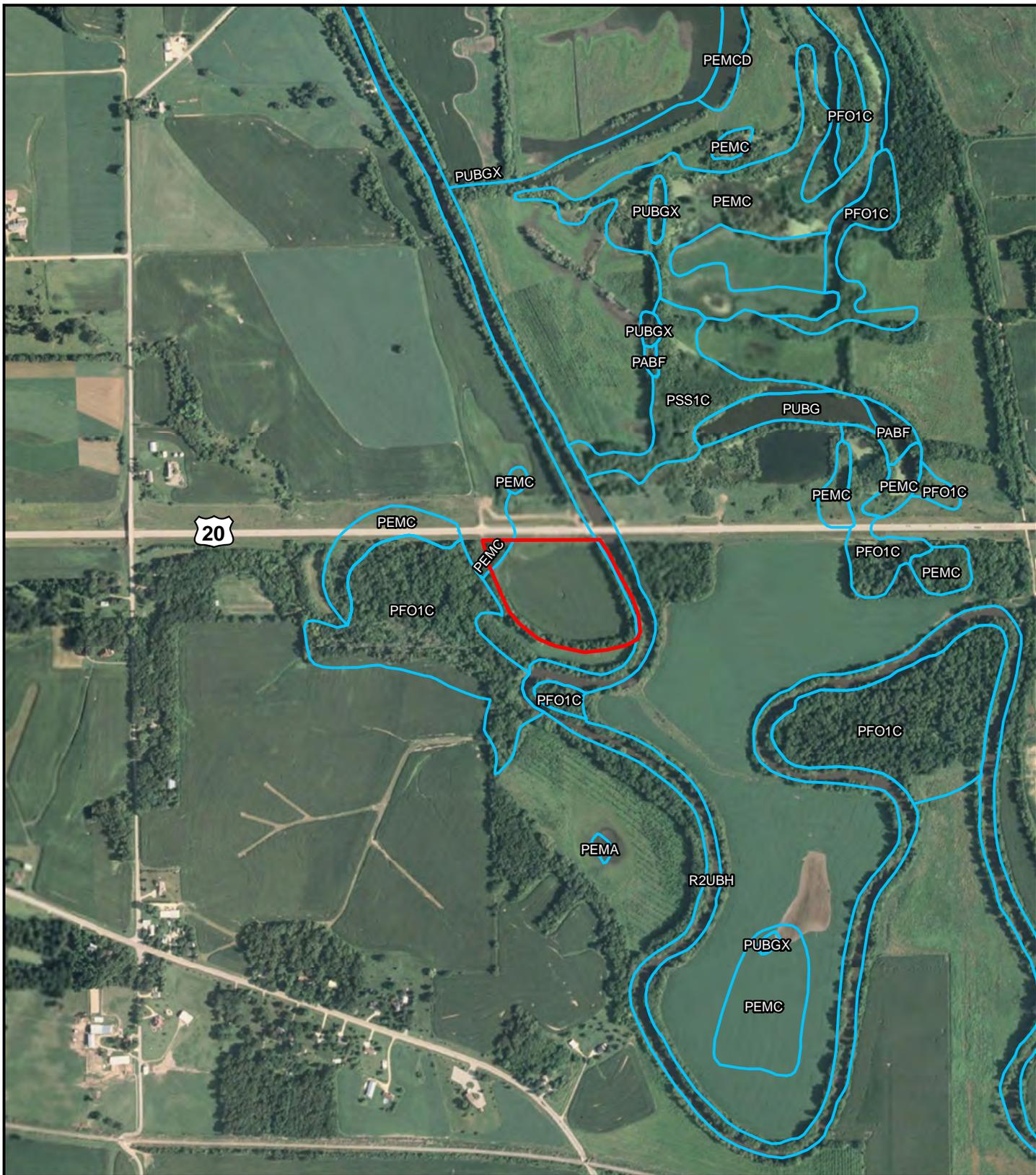
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 1 : 12,000

0 Feet 1,000
 1 inch : 1,000 feet

12/2011

Figure 1

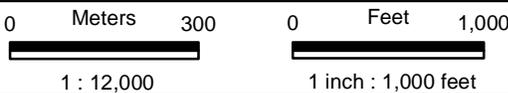




ILLINOIS
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National Wetlands Inventory Map
US 20, Freeport Bypass West
Stephenson County

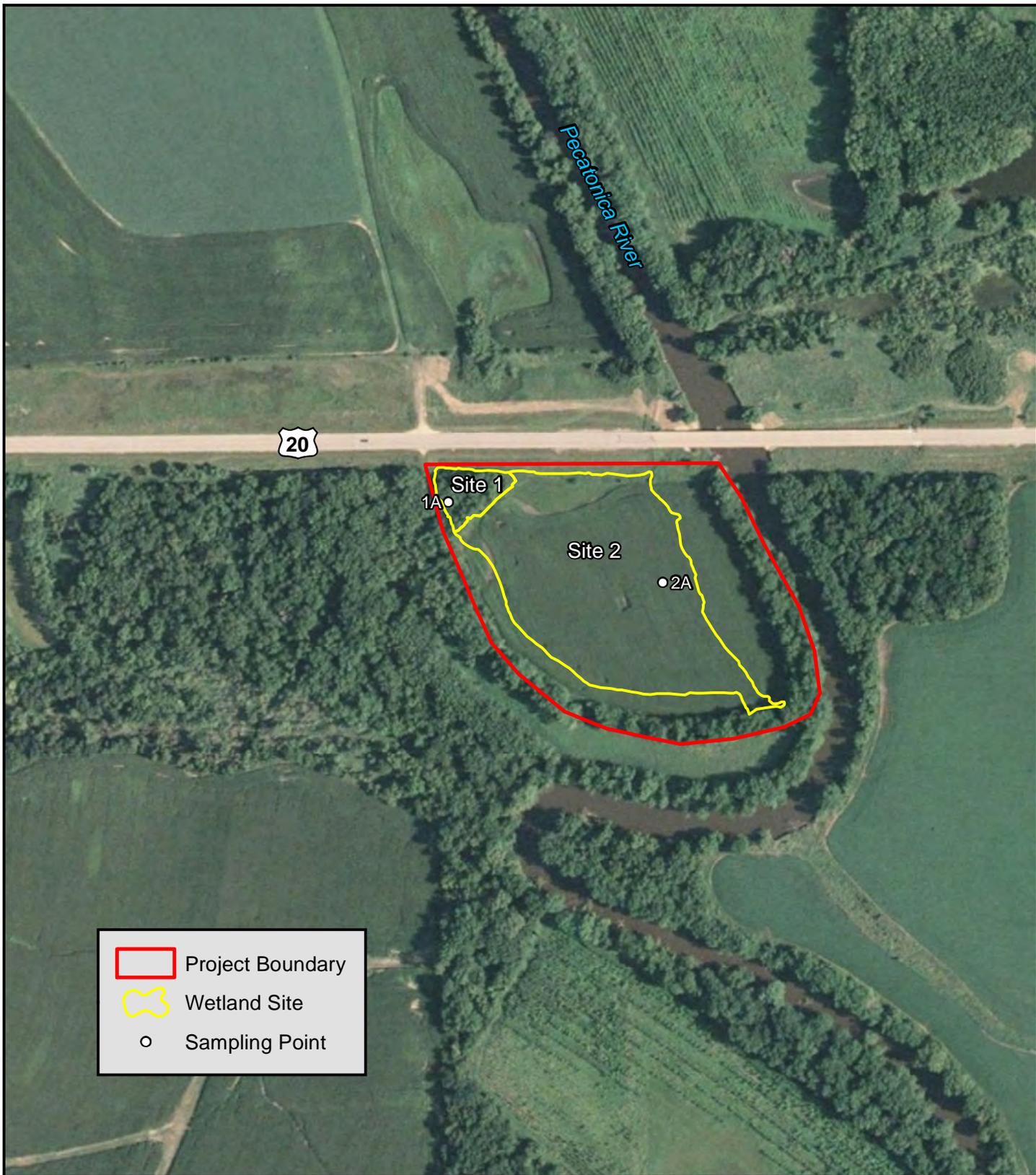
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Figure 2





	Project Boundary
	Wetland Site
	Sampling Point



Wetland Science Program
 Illinois Natural History Survey
 Prairie Research Institute
 1816 South Oak Street
 Champaign, Illinois 61820

Wetland Delineation Map
US 20, Freeport Bypass West
Stephenson County

Seq. No: 10487

0 Meters 100

 1 : 4,800

0 Feet 400

 1 inch : 400 feet

12/2011

Figure 3

