

Wetland Mitigation Monitoring Report



Project Site:

Coles County Wetland Mitigation Site
(TR 1000N and TR 41)
County, Illinois

IDOT Sequence Number: 1273



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February 2013



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Project Summary

A second-year monitoring survey was conducted at the Coles County Wetland Mitigation Site in Coles County, Illinois. Introductory information, goal, objectives, performance criteria, methods, and results are presented in this report, followed by discussion and recommendations. Wetland determination results and a printout of the digital orthoquad (DOQ) showing wetland boundaries and sampling points are also included. Wetland determination forms can be found in Appendix A, site species lists are in Appendix B, figures are in Appendix C, and photographs are in Appendix D.

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Wetland Mitigation Monitoring Report

Coles County Wetland Mitigation Site

(TR 1000N and TR 41)

Coles County, Illinois

Introduction

Second-year monitoring was conducted on September 17, 2012 at the Coles County Wetland Mitigation Site. This project is located within the northeast infield of the I-57 and TR 1000N interchange, 2.5 miles northeast of Mattoon, Illinois. The project site comprises approximately 5.13 acres (Hanson Professional Services Inc. 2004), but, excluding embankment, it was mapped as approximately 3.31 acres during the first-year survey. The legal location is southwest quarter of the southeast quarter of Section 33, Township 13 North, Range 8, Coles County, Illinois. The site lies within the Embarras River drainage basin (Hydrologic Unit Code 05120112). The site was constructed and planted in 2008 with one tree species (bald cypress, *Taxodium distichum*), one shrub species (red osier dogwood, *Cornus sericea*), and a wetland grass and sedge mixture. The National Wetlands Inventory did not map any wetlands within the site, but the site is bordered to the west by a borrow pond that is mapped as an excavated, intermittently exposed, unconsolidated-bottom, palustrine wetland (PUBGx). Soils at the site are mapped as predominantly Drummer silty clay loam (Web Soil Survey), which is listed as a hydric soil.

This report discusses the goal, objectives, and performance criteria for the mitigation project, the methods used for monitoring the site, monitoring results, and discussion and recommendations based on the results. Methods and results are discussed by performance criterion for each goal.

Goal, Objectives, and Performance Criteria

Goal, objectives, and performance criteria for the Coles County Wetland Mitigation Site follow those specified in the Wetland Compensation Plan (Hanson Professional Services Inc. 2004) developed for this site. Performance criteria are based on those specified in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), *Illinois Wetland Restoration and Creation Guide* (Admiraal et al. 1997), and in *Guidelines for Developing Mitigation Proposals* (USACE 1993). The project goal should be attained by the end of the 5-year monitoring period. Goal, objectives, and performance criteria are listed below.

Project goal: To create a more functional wetland than those impacted by the roadway construction.

Objectives: Replace impacted wetland types at a ratio of 1:1 or greater with functional jurisdictional wetlands of similar function and type. Locate the wetlands within the same drainage basin as the impacted wetlands. Design the wetland to remove sediments and nutrients from surface water runoff, in order to prevent these materials from entering the Riley Creek aquatic system. Plant the compensation site with native hydrophytic vegetation. The

total wetland acreage required at this site as compensation for impacts of road projects on TR 1000N and TR 41 is 4.6 ac.

Performance criteria:

1. Vegetation coverage: The site was to have been seeded with a temporary grass cover immediately following completion of site preparation activities, and within three weeks at least 75 percent of the ground surface should have been vegetated.
2. Woody planted species survivorship: Following the period of establishment, 100 percent of the planted trees and shrubs should be alive and healthy. At the end of the five-year monitoring period 80 percent of the planted trees and 75 percent of the shrubs must be alive and healthy.
3. Predominance of hydrophytic vegetation: At the end of the five-year monitoring period, at least 75 percent of the wetland area should be covered by persistent hydrophytic vegetation. The wetland community must achieve the following percent coverage in the following years: year 1, 15 percent; year 2, 30 percent; year 3, 45 percent; year 4, 60 percent.
4. Native species composition: At the end of five years, 50 percent of the species in the herbaceous layer should be native. The percentages of native plants that should be established in the following years are: year 1, 10 percent; year 2, 20 percent; year 3, 30 percent; year 4, 40 percent. None of the three most dominant plant species in any stratum may be non-native.
5. Wetland site classification: Five years following construction, the site should be a jurisdictional wetland. The site should classify as part forested wetland, and part emergent wetland.

Methods

1. Vegetation coverage: No vegetation surveys were performed at the site for three years following its preparation and planting. A visual estimate of existing vegetation coverage was noted for the first-year monitoring survey in 2011, and again for the second-year survey.
2. Woody planted species survivorship: In order to create a forested wetland, tree saplings and shrubs were to be planted at the compensation site as specified in the Wetland Compensation Plan (Hanson Professional Services Inc. 2004). Planting was completed in 2008. Planted species and numbers are shown in Table 1. Both trees and shrubs were to be 36 inch bare root plants.

Table 1. Planted woody species.

Species	Common Name	Quantity
<i>Taxodium distichum</i>	bald cypress	109
<i>Cornus sericea</i>	red osier dogwood	2021

All apparently living planted trees and shrubs at the site were counted. Dead trees and shrubs were also counted. The Wetland Compensation Plan calls for measurement of height and diameter at breast height of planted trees, as well as shoot growth. Due to the small size of the planted trees, however, only their height was measured. All of the 51 trees counted at the site were sampled.

3. Predominance of hydrophytic vegetation: The method for determining dominant vegetation at a wetland site is described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* [U.S. Army Corps of Engineers (USACE) 2010] and further explained in the *Federal Manual for Identifying and Delineating Jurisdictional Wetlands* (Federal Interagency Committee for Wetland Delineation 1989). It is based on aerial coverage estimates for individual plant species. Each of the dominant plant species is then assigned its wetland indicator status rating (Lichvar and Kartesz 2009). Any plant rated facultative or wetter (*i.e.*, FAC, FACW, and OBL) is considered a hydrophyte. A predominance of wetland vegetation in the plant community exists if more than 50% of the dominant species present are hydrophytic. Predominance of hydrophytic vegetation was determined at the sampling point level as part of the routine wetland determination procedure. According to the Wetland Compensation Plan (Hanson Professional Services Inc. 2004), intensive sampling of the herbaceous vegetation was not required for first-year monitoring of the site. Site-wide dominant species were estimated visually, and are noted in the site species list.
4. Native species composition: Complete lists of plant species present were compiled for wet and non-wet portions of the site. 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).
5. Wetland site classification: Areas that meet the Federal definition of a wetland were identified and mapped in order to measure the site’s progression toward jurisdictional wetland status. Characteristics of vegetation, soils, hydrology, and topography were evaluated during field investigation and on-site wetland determination. 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.

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. 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.

The Illinois State Geological Survey is monitoring the site for wetland hydrology throughout the five-year monitoring period. A summary of this year's hydrology data is included in Results.

Photo stations were established at the site in 2011 at three locations (Figure 2). Photographs taken at each station during the second-year survey are included in Appendix D.

Results

1. Vegetation coverage: At the time of the first-year monitoring survey, much of the site was bare ground. The central portion of the site (referred to in the site plan as Zone C), which was to have been planted with a seed mix, was more than 50 percent bare ground. At the time of the second-year survey, vegetation coverage had increased, but Zone C still appears to have far less than 75 percent cover.
2. Woody plant species survivorship: The results of the planted woody species census are presented in Table 2. Trees were to have been planted in three sections of the site: the northwest corner, the southwest corner, and an island in the middle of the site. In each of these areas, respectively, tree counts were 2, 33, and 16. Average tree height was 36.1 inches.

Table 2. Planted woody species survival.

Species	Common Name	Number Planted	Number Surviving	Percent Survival
<i>Taxodium distichum</i>	bald cypress	109	51	47%
<i>Cornus sericea</i>	red osier dogwood	2021	3	0.1%

3. Predominance of hydrophytic vegetation: 2.37 acres of the mitigation site (Site 2, see site summaries below) met the criteria for dominant hydrophytic vegetation. This portion of the site was sparsely vegetated, but based on a visual estimate, it appeared to meet the second-year hydrophytic vegetation coverage requirement of 30 percent. *Echinochloa muricata*, *Ludwigia palustris*, and *Typha angustifolia* were the three most dominant wetland site dominant species. Please see wetland determination forms (Appendix A) for dominant species at all sampling points.

4. Native species composition: 31 of the 37 species identified in the wetland portion of the site (excluding planted trees and shrubs) are native. Therefore, 84 percent of the species in the herbaceous layer were native in the second year of monitoring. *Typha angustifolia*, one of the three overall most dominant species in the wetland site, however, is non-native. Including planted species, the wetland site's FQI is 10.6, indicating that although most species at the site are native, weedy species predominate.
5. Wetland site classification: The portions of the site that met and failed to meet the three federal wetland criteria are summarized below, and labeled in Figure 1. More detailed information about soils, vegetation and hydrology can be found in the wetland determination forms (Appendix A).

Site Number: 1Community type: **Forbland**National Wetlands Inventory code: **U (Upland)**Site location: **Outer edge of site and island, including tree and shrub plantings**Hydrophytic vegetation? **No** Hydric soils? **Yes** Wetland hydrology? **Yes**Is this site a wetland? **No**Total site area: **0.94 acres****Site Number: 2**Community type: **Marsh**National Wetlands Inventory code: **U (Upland)**Site location: **Interior of site, including pond edge, open water, and mud flat areas**Hydrophytic vegetation? **Yes** Hydric soils? **Yes** Wetland hydrology? **Yes**Is this site a wetland? **Yes**Total site area: **2.37 acres**Mean Coefficient of Conservatism (mean C): **1.9** Floristic Quality Index (FQI): **10.6**

Hydrology: According to the 2012 ISGS annual monitoring report (Miner et al 2012), 2.61 acres of the Coles County Wetland Mitigation Site satisfied wetland hydrology criteria (Environmental Laboratory 1987) during more than 5 percent of the 2012 growing season (Figure 2), 2.38 acres satisfied the wetland hydrology criteria for more than 12.5 percent of the growing season, and 2.61 acres satisfied the wetland hydrology criteria (USACE 2010) for 14 or more consecutive days. Total precipitation for the 2012 monitoring period was 101 percent of normal, and 91 percent of normal for the period March through May (Miner et al 2012).

Discussion

The Coles County Wetland Mitigation Site has potential to meet the performance criteria, due to its hydric soils and wetland hydrology. However, survival of planted species in the second year of monitoring (four years after site establishment) is poor. Fewer than 50 percent of planted trees and only 0.1 percent of planted shrubs appeared to be alive. Seeded herbaceous species showed very poor survival. Low survival of the planted species this year could be a residual effect of flooding in 2011,

given that rainfall early in the 2011 growing season was greater than normal (Miner et al. 2011). It is recommended that the site be re-planted with native woody and herbaceous vegetation.

The site overall met the first criterion for native herbaceous species composition. However approximately 0.94 acre of the site was dominated by weedy upland herbaceous species, including the areas of the site that were to have been planted with hydrophytic trees (*Taxodium distichum*) and shrubs (*Cornus sericea*). The site failed to meet the second criterion, as one of the three most dominant herbaceous species, *Typha angustifolia*, is non-native.

Approximate wetland acreage at the site in the second year of monitoring was 2.37 acres. The size of the wetland might increase as hydrophytic vegetation becomes established. However, the potential size of this site is limited by its enclosure within embankments to north, west, and south, and a forested ridge to the west. The total area of the site, excluding these uplands, was mapped during the first-year survey as approximately 3.31 acres, which is 1.3 acres less than the wetland acreage required for compensation.

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APPENDIX A

Wetland Determination Forms

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-57/TR 1000 N Interchange City/County: Coles Sampling Date 9/17/2012
 Applicant/Owner: IDOT District 7 State: IL Sampling Point 1A
 Investigator(s): Sivicek, Wiesbrook, and Wilm Section, Township, Range: Sec 33, T13 N, R8 E
 Landform (hillslope, terrace, etc.): Excavated depression Local relief (concave, convex, none): Concave
 Slope (%): <1 Lat: 39.52214 Long: -88.31181 Datum: NAD 83
 Soil Map Unit Name: NRCS mapped as Dana SIL, revised to Endoaquent NWI classification: U
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes
 Are Vegetation No, Soil No, or Hydrology No 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? <u>No</u> Hydric Soil Present? <u>Yes</u> Wetland Hydrology Present? <u>No</u>	Is the Sampled Area within a Wetland? <u>No</u>
Remarks: Community type is forbland.	

VEGETATION -Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				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. _____				
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: 15 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Taxodium distichum</i>	5	Yes	OBL	
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: 5 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Solidago canadensis</i>	15	Yes	FACU	
2. <i>Aster pilosus</i>	10	Yes	FACU	
3. <i>Melilotus officinalis</i>	7	No	FACU	
4. <i>Medicago lupulina</i>	5	No	FACU	
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
_____ = Total Cover				
1-Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? <u>No</u>				
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		
0-13+	2.5Y 4/2	75	2.5Y 5/6	25	C	M	SICL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

² Location: 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"/> 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)

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? <u>Yes</u>
---	--

Remarks: Soil profile was highly disturbed.

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two is required)
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"/> 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)
<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? <u>No</u> Depth (inches): _____ Water Table Present? <u>No</u> Depth (inches): _____ Saturation Present? <u>No</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? <u>No</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

According to ISGS monitoring well data, this sampling point fails to meet any criteria for wetland hydrology (Miner et al. 2012)

Remarks:

SOIL

Sampling Point: 1B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	2.5Y 4/3	100					SICL	
2-13+	2.5Y 4/2	90	2.5Y 5/6	10	C	M	SICL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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"/> 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? <u>Yes</u>
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Remarks: Soil profile was highly disturbed.

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two is required)
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"/> 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)
<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 checked="" type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface Water Present? <u>No</u> Depth (inches): _____ Water Table Present? <u>No</u> Depth (inches): _____ Saturation Present? <u>No</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? <u>Yes</u>
--	--

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

According to ISGS monitoring well data, this sampling point meets both the 5% and 14-day criteria for wetland hydrology (Miner et al. 2012)

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-57/TR 1000 N Interchange City/County: Coles Sampling Date 9/17/2012
 Applicant/Owner: IDOT District 7 State: IL Sampling Point 1C
 Investigator(s): Sivicek, Wiesbrook, and Wilm Section, Township, Range: Sec 33, T13 N, R8 E
 Landform (hillslope, terrace, etc.): Excavated depression Local relief (concave, convex, none): Concave
 Slope (%): <3 Lat: 39.52363 Long: -88.31193 Datum: NAD 83
 Soil Map Unit Name: NRCS mapped as Drummer SICL, revised to Endoaquent NWI classification: U
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes
 Are Vegetation No, Soil No, or Hydrology No 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? <u>No</u> Hydric Soil Present? <u>Yes</u> Wetland Hydrology Present? <u>No</u>	Is the Sampled Area within a Wetland? <u>No</u>
Remarks: Community type is forbland.	

VEGETATION -Use scientific names of plants.

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____				Percent of Dominant Species That are OBL, FACW, or FAC: <u>0%</u> (A/B)
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: 15 ft radius)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: 5 ft radius)				
1. <u>Solidago canadensis</u>	40	Yes	FACU	
2. <u>Aster pilosus</u>	20	Yes	FACU	
3. <u>Melilotus officinalis</u>	10	No	FACU	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: 30 ft radius)				
1. _____				
2. _____				
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: 1C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 4/2	85	2.5Y 5/6	15	C	M	SICL	
2-6	N 3/	100					SICL	
6-8	2.5Y 4/2	80	2.5Y 5/6	20	C	M	SICL	
8-12+	2.5Y 4/1	90	2.5Y 5/6	10	C	M	SICL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: 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)	<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)	<p>Indicators for Problematic Hydric Soils³:</p> <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)
---	---	---

³ Indicators 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? <u>Yes</u></p>
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Remarks: Soil profile was highly disturbed. Layers from 6-12+ combined meet criteria for F3.

HYDROLOGY

<p>Wetland Hydrology Indicators: 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)	<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)	<p>Secondary Indicators (minimum of two is required)</p> <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)
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<p>Field Observations: Surface Water Present? <u>No</u> Depth (inches): _____ Water Table Present? <u>No</u> Depth (inches): _____ Saturation Present? <u>No</u> Depth (inches): _____ (includes capillary fringe)</p>	<p>Wetland Hydrology Present? <u>No</u></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 According to ISGS monitoring well data, this sampling point fails to meet any wetland hydrology criteria (Miner et al. 2012).

Remarks:

SOIL

Sampling Point: 1D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	2.5Y 4/3	95	2.5Y 5/6	5	C	M	SICL	
2-13+	2.5Y 4/1	75	2.5Y 5/6	25	C	M	SICL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

² Location: 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)	<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)	<p>Indicators for Problematic Hydric Soils³:</p> <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)
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³ Indicators 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? <u>Yes</u></p>
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Remarks: Soil profile was highly disturbed.

HYDROLOGY

<p>Wetland Hydrology Indicators: 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)	<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)	<p>Secondary Indicators (minimum of two is required)</p> <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)
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<p>Field Observations: Surface Water Present? <u>No</u> Depth (inches): _____ Water Table Present? <u>No</u> Depth (inches): _____ Saturation Present? <u>No</u> Depth (inches): _____ (includes capillary fringe)</p>	<p>Wetland Hydrology Present? <u>No</u></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 According to ISGS monitoring well data, this sampling point fails to meet any wetland hydrology criteria (Miner et al. 2012).

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: I-57/TR 1000 N Interchange City/County: Coles Sampling Date 9/17/2012
 Applicant/Owner: IDOT District 7 State: IL Sampling Point 2A
 Investigator(s): Sivicek, Wiesbrook, and Wilm Section, Township, Range: Sec 33, T13 N, R8 E
 Landform (hillslope, terrace, etc.): Excavated depression Local relief (concave, convex, none): Concave
 Slope (%): <1 Lat: 39.52318 Long: -88.31174 Datum: NAD 83
 Soil Map Unit Name: NRCS mapped as Drummer SICL, revised to Endoaquent NWI classification: U
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes
 Are Vegetation No, Soil No, or Hydrology No 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? <u>Yes</u> Hydric Soil Present? <u>Yes</u> Wetland Hydrology Present? <u>Yes</u>	Is the Sampled Area within a Wetland? <u>Yes</u>
Remarks: Community type is marsh.	

VEGETATION -Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30 ft radius</u>)				Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That are OBL, FACW, or FAC: _____ (A/B)
1. _____				
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>)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft radius</u>)				Hydrophytic Vegetation Indicators <input checked="" type="checkbox"/> 1-Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2-Dominance Test is >50% <input type="checkbox"/> 3-Prevalence Index is < or =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.
1. <u>Panicum dichotomiflorum</u>	60	Yes	FACW	
2. <u>Typha angustifolia</u>	15	No	OBL	
3. <u>Aster lanceolatus</u>	5	No	FAC	
4. <u>Aster pilosus</u>	3	No	FACU	
5. <u>Chamaesyce maculata</u>	2	No	FACU	
6. <u>Abutilon theophrasti</u>	1	No	FACU	
7. <u>Apocynum cannabinum</u>	1	No	FAC	
8. <u>Chamaesyce humistrata</u>	1	No	FACW	
9. <u>Setaria faberi</u>	1	No	FACU	
10. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft radius</u>)				Hydrophytic Vegetation Present? <u>Yes</u>
1. _____				
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	2.5Y 4/1	95	2.5Y 5/6	5	C	M	SICL	
4-13+	2.5Y 3/1	99	2.5Y 5/6	1	C	M	SICL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

² Location: 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)	<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)	<p>Indicators for Problematic Hydric Soils³:</p> <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)
---	---	---

³ Indicators 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? <u>Yes</u></p>
--	---

Remarks: Soil profile was highly disturbed.

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators (minimum of one is required: check all that apply)</p> <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 checked="" 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 checked="" type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<p>Secondary Indicators (minimum of two is required)</p> <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 checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
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<p>Field Observations:</p> Surface Water Present? <u>Yes</u> Depth (inches): <u><24</u> Water Table Present? <u>Yes</u> Depth (inches): <u>5</u> Saturation Present? <u>Yes</u> Depth (inches): <u>5</u> (includes capillary fringe)	<p>Wetland Hydrology Present? <u>Yes</u></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 According to ISGS monitoring well data, this sampling point meets all criteria for wetland hydrology (Miner et al. 2012).

Remarks: Portions of the site did not have surface water, water table, or saturation present.

APPENDIX B

Site Plant Species Lists

Site 1 - Forbland

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
<i>Aster pilosus</i>	hairy aster	H	FACU	0
<i>Melilotus officinalis</i> *	yellow sweet clover	H	FACU	-
<i>Populus deltoides</i>	eastern cottonwood	HS	FAC	2
<i>Solidago canadensis</i>	Canada goldenrod	H	FACU	1
<i>Agrostis gigantea</i>	red top	H	FACW	0
<i>Ambrosia artemisiifolia</i>	common ragweed	H	FACU	0
<i>Ambrosia trifida</i>	giant ragweed	H	FAC	0
<i>Aster novae-angliae</i>	New England aster	H	FACW	4
<i>Cirsium vulgare</i> *	bull thistle	H	FACU	-
<i>Cornus sericea</i> (p)	red osier dogwood	S	FACW	-
<i>Daucus carota</i> *	Queen Anne's lace	H	UPL	-
<i>Dipsacus laciniatus</i> *	cut-leaved teasel	H	UPL	-
<i>Elaeagnus umbellata</i> *	autumn olive	S	UPL	-
<i>Eupatorium serotinum</i>	late boneset	H	FAC	1
<i>Medicago lupulina</i> *	black medic	H	FACU	-
<i>Melilotus alba</i> *	white sweet clover	H	FACU	-
<i>Oenothera biennis</i>	common evening primrose	H	FACU	1
<i>Salix interior</i>	sandbar willow	HS	FACW	1
<i>Taxodium distichum</i> (p)	bald cypress	S	OBL	-
<i>Trifolium repens</i> *	white clover	H	FACU	-

*Non-native species Bold species is dominant in the denoted stratum

H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine

Planted species (p) are not included in mean C or FQI calculations.

Mean C = 1.0

FQI = 3.2

Site 2 - Marsh

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
<i>Echinochloa muricata</i>	spiny barnyard grass	H	OBL	0
<i>Ludwigia palustris var. americana</i>	marsh purslane	H	OBL	4
<i>Typha angustifolia</i> *	narrow-leaved cattail	H	OBL	-
<i>Abutilon theophrasti</i> *	buttonweed	H	FACU	-
<i>Amaranthus tuberculatus</i>	tall waterhemp	H	OBL	1
<i>Ammannia coccinea</i>	long-leaved ammannia	H	OBL	5
<i>Apocynum cannabinum</i>	dogbane	H	FAC	2
<i>Asclepias syriaca</i>	common milkweed	H	FACU	0
<i>Aster lanceolatus</i>	panicked aster	H	FAC	3
<i>Aster ontarionis</i>	Ontario aster	H	FAC	4
<i>Aster pilosus</i>	hairy aster	H	FACU	0
<i>Bidens frondosa</i>	common beggar's ticks	H	FACW	1
<i>Carex frankii</i>	bristly cattail sedge	H	OBL	4
<i>Chamaesyce humistrata</i>	spreading spurge	H	FACW	1
<i>Chamaesyce maculata</i>	spotted creeping spurge	H	FACU	0
<i>Cyperus strigosus</i>	long-scaled nut sedge	H	FACW	0
<i>Eleocharis erythropoda</i>	red-rooted spike rush	H	OBL	3
<i>Eupatorium serotinum</i>	late boneset	H	FAC	1
<i>Helenium autumnale</i>	sneezeweed	H	FACW	3
<i>Ipomoea sp.</i>	morning glory	H	-	-
<i>Juncus torreyi</i>	Torrey's rush	H	FACW	3
<i>Leucospora multifida</i>	Obe-wan-Conobea	H	FACW	3
<i>Lycopus americanus</i>	common water horehound	H	OBL	3
<i>Panicum capillare</i>	old witch grass	H	FAC	0
<i>Panicum dichotomiflorum</i>	fall panicum	H	FACW	0
<i>Persicaria lapathifolia</i>	curttop lady's thumb	H	FACW	0
<i>Persicaria pensylvanica</i>	pinkweed	H	FACW	1
<i>Phalaris arundinacea</i> *	reed canary grass	H	FACW	-
<i>Populus deltoides</i>	eastern cottonwood	HS	FAC	2
<i>Proserpinaca palustris</i>	mermaid weed	H	OBL	5
<i>Salix interior</i>	sandbar willow	HS	FACW	1
<i>Schoenoplectus tabernaemontani</i>	soft-stem bulrush	H	OBL	4
<i>Scirpus atrovirens</i>	dark green rush	H	OBL	4
<i>Setaria faberi</i> *	giant foxtail	H	FACU	-
<i>Sida spinosa</i> *	prickly sida	H	FACU	-
<i>Sonchus arvensis</i> *	field sow thistle	H	FACU	-
<i>Taxodium distichum (p)</i>	bald cypress	S	OBL	-
<i>Xanthium strumarium</i>	cocklebur	H	FAC	0

*Non-native species Bold species is dominant in the denoted stratum

Mean C = 1.9

H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine

FQI = 10.6

Planted species (p) are not included in mean C or FQI calculations.

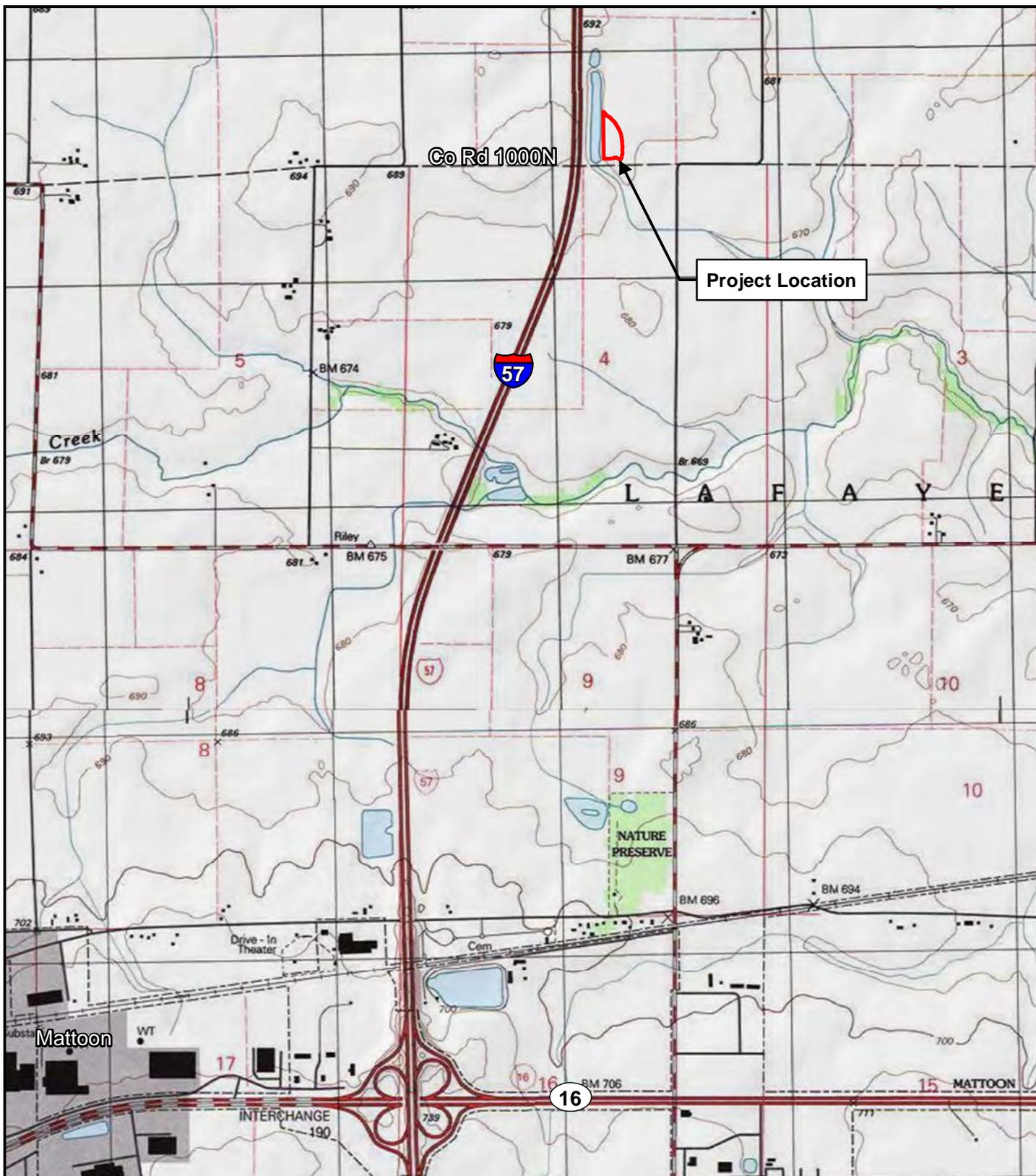
APPENDIX C

Figures

Figure 1 – Project Location Map

Figure 2 – Wetland Mitigation Monitoring Map

Figure 3 – ISGS 2012 Wetland Hydrology Map



University of Illinois at Urbana-Champaign



ILLINOIS NATURAL HISTORY SURVEY
PRAIRIE RESEARCH INSTITUTE

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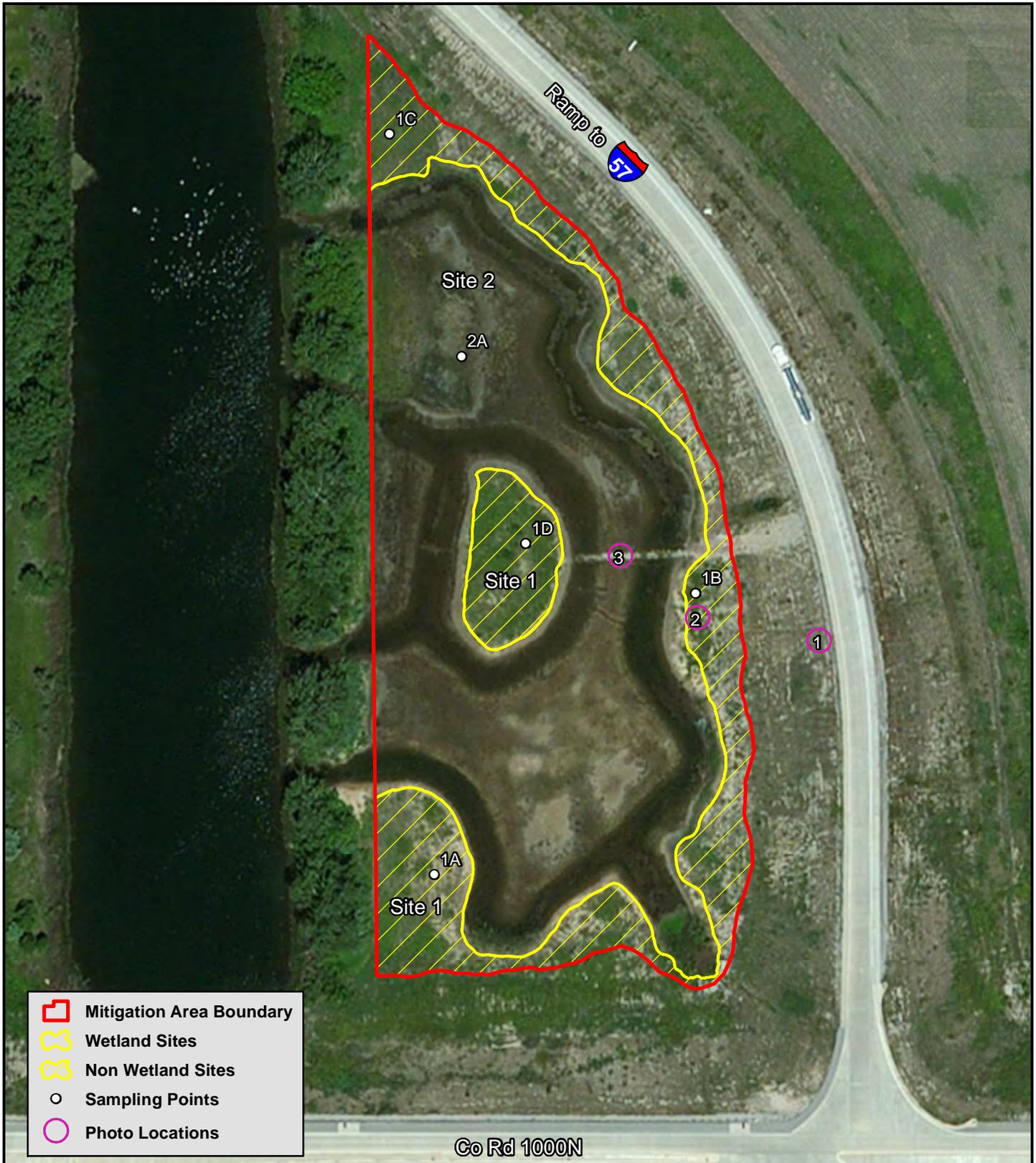
Figure 1
Project Location Map
I-57 (FAI 57) at County Road 1000N
Coles County

Seq. No: 1273



February 2013





- ▭ Mitigation Area Boundary
- ▭ Wetland Sites
- ▭ Non Wetland Sites
- Sampling Points
- Photo Locations

University of Illinois at Urbana-Champaign



Wetland Science Program
 1816 South Oak Street
 Champaign, Illinois 61820

Figure 2

**Wetland Mitigation Monitoring Map
 I-57 (FAI 57) at County Road 1000N
 Coles County**

Seq. No: 1273

0 Meters 25

0 Feet 100

February 2013



Coles County Wetland Mitigation Site (TR 1000N and TR 41) Estimated Areal Extent of 2012 Wetland Hydrology September 1, 2011 through August 31, 2012

Map based on 2012 Farm Service Agency digital orthophotography, Coles County, Illinois (USDA-FSA 2012)

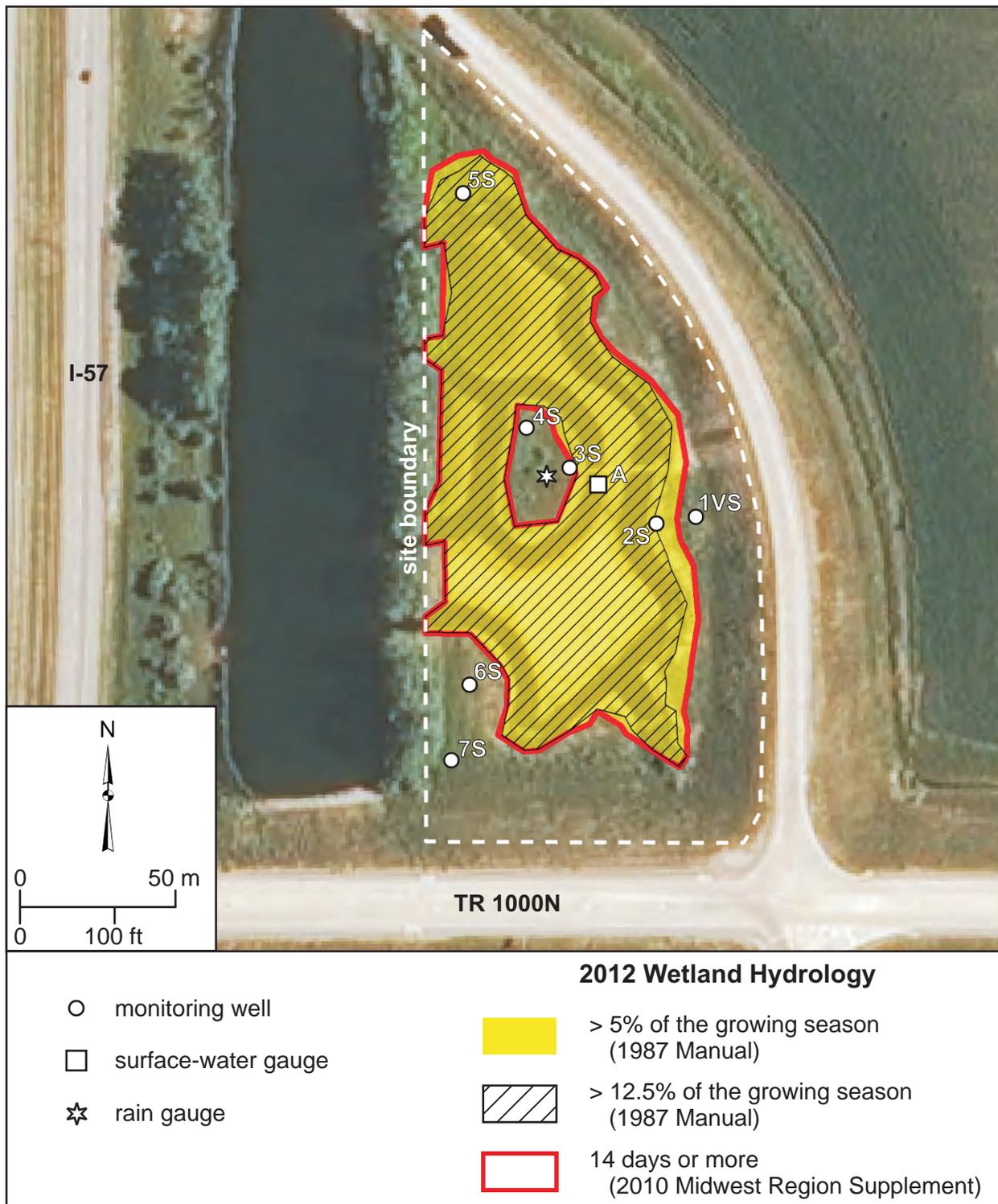


Figure 3. ISGS 2012 Wetland Hydrology Map (Miner et al. 2012)

APPENDIX D

Photographs of Wetland Mitigation Site



Photo 1. Facing southwest from photo station 1 (located just west of roadway).



Photo 2. Facing northwest from photo station 1.



Photo 3. Facing northwest from photo station 2 (located at ISGS monitoring well 2S).



Photo 4. Facing south from photo station 2.



Photo 5. Facing west from photo station 3 (located on rock bridge).



Photo 6. Facing northwest from photo station 3.



Photo 7. Facing south from photo station 3.