

**Attachment 7**  
**Eola Main Line Improvements Wetland Delineation Report**





# Technical Memo

## Wetland Report for Chicago to Iowa City Intercity Passenger Rail - Eola Main Line Improvements

July 2010

Prepared for: Illinois DOT and Iowa DOT

### INTRODUCTION AND PROJECT SUMMARY

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In 2009, the Illinois Department of Transportation (Illinois DOT) and Iowa Department of Transportation (Iowa DOT) prepared a Service Level (Tier 1) Environmental Assessment (2009 EA) describing the potential environmental impacts from reestablishing intercity passenger rail service between Chicago and Iowa City. The 2009 EA was submitted to Federal Railroad Administration (FRA) as part of Illinois DOT and Iowa DOT High-speed Intercity Passenger Rail Program grant application. The 2009 grant application was not successful. However, Illinois DOT and Iowa DOT are submitting a new grant application to FRA for consideration of funding the intercity passenger rail service between Chicago and Iowa City under the FRA's 2010 Notice of Funding Availability for Service Development Programs under the HSIPR Program. As part of the 2010 HSIPR Grant Application, Illinois DOT and Iowa DOT intend to resubmit the 2009 EA with supplemental information, including this description of possible impacts to aquatic resources from the Eola Main Line Improvements and conceptual mitigation for those impacts. The Eola Main Line Improvements are a component of the set of required infrastructure improvements that would be required to reestablish intercity passenger rail service between Chicago and Iowa City (Figure 1). Detailed discussions of the purpose and need and a description of the Eola Main Line Improvements are included in Chapters 1 and 2 of the Supplemental Information to the 2009 EA.

The Project area for this Wetland Report is the BNSF Railway (BNSF) Eola Rail Yard located within Aurora, Illinois. The Project is located in Sections 17 and 18 of Township 38 north, Range 9 east of DuPage County, Illinois, and Sections 13 and 14 of Township 38 north, Range 8 east of Kane County (See Figure 1).

HDR conducted a wetland observation of the Project area on July 6, 2010, to identify wetlands within it (See Figure 1).

## WETLAND SITES SUMMARY

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HDR conducted a wetland and waters of the U.S. identification on behalf of Illinois DOT on July 6, 2010, at the Eola Yard. The following sources were used to determine the wetland boundaries and waters of the U.S. locations:

- Soil Survey of DuPage and Kane County, Illinois
- United State Geological Survey (USGS) topographic maps
- National Wetland Inventory (NWI) maps
- 1987 Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987)
- Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (U.S. Army Corp of Engineers, 2008)
- NRCS, USDA, Web Soil Survey

The survey limits were within the Eola Yard, which presented several constraints for completing full routine wetland delineation. The challenges included safety of the delineators and previous disturbances of the area due to the construction of the rail yard. Observing the soil profile was difficult due to the presence of fill material (gravel and cobble-sized ballast) associated with the construction of the rail yard; in most cases, the upland area was ballast, which created distinct wetland boundaries. Wetland boundaries were determined by on-site observations, as well as off-site or desktop analysis due to the constraints of conducting delineation inside a working rail yard. A “Routine Wetland Determination Data Form” was completed for accessible wetland and upland areas. In locations where it was difficult to document the soil profile, the hydrology and vegetation community were relied upon for the wetland determination. These forms are present in Attachment B. Sampling points and wetland boundaries were documented in the field and are shown on Figure 2. Non-wetland waters of the U.S. were also identified and further discussed in a Stream Assessment Technical Memo (HDR, 2010).

In addition to the wetland observation within the survey limits, surrounding wetland areas were noted during the field visit and a desktop analysis was conducted. See Figure 2 for the desktop delineation for the areas outside of the survey limits.

Also during the on-site observation, the Floristic Quality Index (FQI) was used to assess the ecological integrity of communities (Swink and Wilhelm, 1994; Taft et al., 1997). This index provides a measure for the quality or environmental integrity of each individual community. The FQI is calculated as follows:

$$FQI = R/\sqrt{N}$$

Where R represents the sum of the numerical ratings for all species recorded at the site and N represents the total number of recorded species. Numerical ratings for each species are shown in the species list for each community. Plants not native to Illinois are not scored. The mean Coefficient of Conservatism (mean C), defined as the sum of the numerical ratings divided by the total number of native Illinois species (R/N), was also determined. Although generalizations are problematic, for interpretive purposes it can be said that FQI values of ten or less for individual sites indicate low natural quality. Sites with FQI values of twenty or more (mean C > 3.0) possess some evidence of native character and may be considered environmental assets. See Attachment D for the FQI for each area.

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## **EOLA YARD IMPROVEMENTS WETLAND OVERVIEW**

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Brief narratives of the delineated wetlands that met all wetland criteria are presented below.

### ***Wetland Area 1***

The area characterized by Sampling Point 1 is located between the main tracks and a rail spur that extends south on the eastern edge of the Project area (See Attachment C- Photo Log). This area is a palustrine forested wetland (PFO) dominated by box elder (*Acer negundo*) and green ash (*Fraxinus pennsylvanica*). The area appears to be altered on the eastern edge for a transmission corridor. A connection from this area to Night Heron Marsh occurs through culvert systems beneath the railroad spur. Night Heron Marsh is outside of the survey limits but is adjacent to the Project area. Night Heron Marsh is a persistent emergent wetland.

### ***Drainage 1***

Sampling Point 3 characterizes an unnamed drainage that conveys stormwater through the Eola Rail Yard culvert system (See Attachment C- Photo Log). The drainage extends east to west between a maintenance roadway and existing rail line. A culvert on the east end of the drainage conveys flow from Eola Road Marsh, a persistent emergent wetland. The culvert on the west end connects to Drainage 2 and 3. The eastern portion of the drainage has vegetation communities that include narrow leaf cattail (*Typha angustifolia*) and reed canary grass (*Phalaris arundinacea*). The western portion of the drainage is dominated by elderberry (*Sambucus canadensis*) (See Attachment B- Sampling Point 3).

### ***Drainage 2***

Drainage 2 displayed similar characteristics to the eastern portion of Drainage 1. It consists of a linear drainage with associated wetland fringe that was inaccessible during the field survey; therefore no Sampling Points were collected. The drainage is also connected to the culvert system that conveys stormwater and flow from the adjacent marshes to Indian Creek. The drainage is dominated by reed canary grass (*Phalaris arundinacea*) and narrow leaf cattail (*Typha angustifolia*). Hydrology was present displaying surface water, and soils were assumed to be hydric by referencing Sampling Point 3.

### ***Drainage 3 (Indian Creek)***

Drainage 3 displayed similar characteristics to the western portion of Drainage 1. Drainage 3 is a linear drainageway that extends from Eola Road Marsh to the west, connecting with the other drainages to convey stormwater. Two linear features are included for this drainage; a small feature extends east to west between the main tracks and southern rail spur, while a large feature extends east to west and continues to the western portion of the survey limits (See Figure 2). Drainage 3 also flows across the western portion of the survey limits for the Project (See Attachment B-Sampling Point 5). Some sources note this channel as Indian Creek; further discussion of the drainages and contribution to Indian Creek is contained in the Stream Assessment Technical Memorandum (HDR, 2010). Dominant vegetation included box elder (*Acer negundo*) and green ash (*Fraxinus pennsylvanica*). Hydrology was present displaying surface water, and soils were assumed to be hydric due to inundation.

## ***Wetland Area 2***

This is an erosion feature located between an abandoned rail track and a fence along the boundary of the rail yard in western portion of the Project area. The area was observed during the wetland survey, but a Sampling Point was not collected due to constraints. The area conveys runoff through a 5-10 foot ditch that flows into a storm sewer pipeline. Dominant vegetation included reed canary grass (*Phalaris arundinacea*).

**Table 1: Wetland Determination Data Sheet Summary**

<b>Area/Drainage</b>	<b>Acres within Survey Limits</b>
Wetland Area 1	0.4
Drainage 1	2.8
Drainage 2	3.5
Drainage 3	1.6
Wetland Area 2	0.1
<b>Total</b>	<b>8.4</b>

*Note: Acres include culvert systems that flow beneath the main rail lines.*

The wetland observation determined the wetland boundaries for the survey limits despite the constraints that occurred due to the Eola Yard location. For the proposed Preferred Alternative - Two Round-trip Trains per Day scenario, construction would impact approximately 1.7 acres, based on preliminary design. This direct effect would result in minor alteration to the current stream and stormwater conveyances.

## **FUTURE PHASES OF THE PROJECT**

Should FRA approve the Illinois and Iowa DOTs' 2010 HSIPR grant application, the next step in the development process would be to conduct a detailed Project Level (Tier 2) NEPA evaluation, including preliminary engineering and permitting. During this process, a detailed alternatives analysis would be conducted and additional wetland delineation would be conducted. During the alternatives analysis, additional sampling points would need to be collected within the Eola Rail Yard Project area. During the Project Level NEPA and permitting process, a mitigation plan to avoid, minimize, and mitigate for wetland impacts would be developed beyond a concept phase and coordinated with all appropriate federal and state agencies including the Illinois Department of Natural Resources (IDNR). Illinois DOT would work with these agencies to identify the best alternatives to avoid and minimize impacts to wetland resources.

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**REFERENCES**

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Cowardin, et al. December 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. FWS/OBS-79/31. U.S. Department of Interior, Washington, D.C.

HDR, 2010. Stream Assessment Technical Memo.

Environmental Laboratory. January 1987. *Corps of Engineers Wetland Delineation Manual*, Waterways Experiment Station, Vicksburg, Mississippi.

U.S. Army Corps of Engineers. 2008. *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region*, ed. J.S. Wakely, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-08-27. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

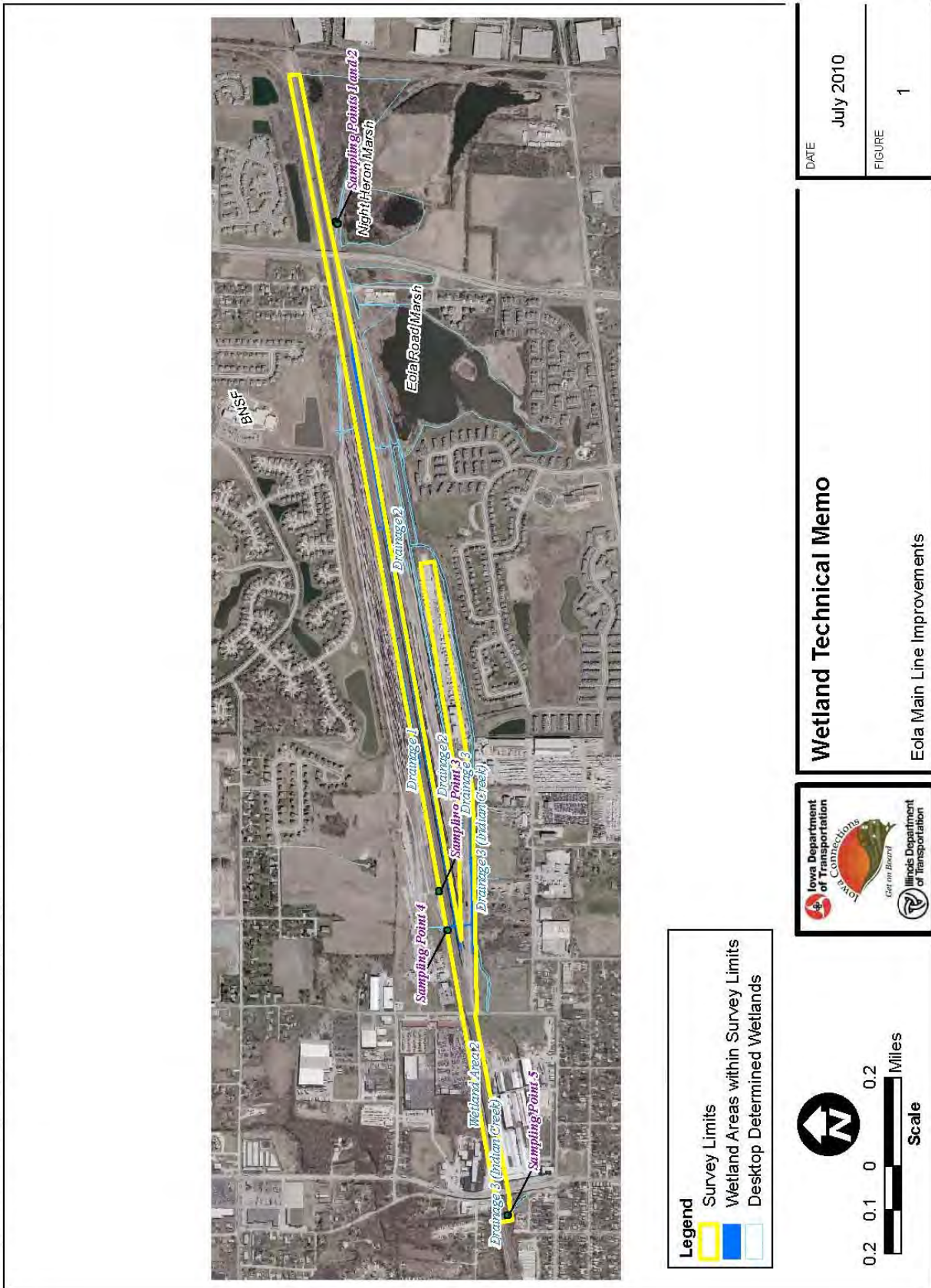


**Attachment A- Figures**

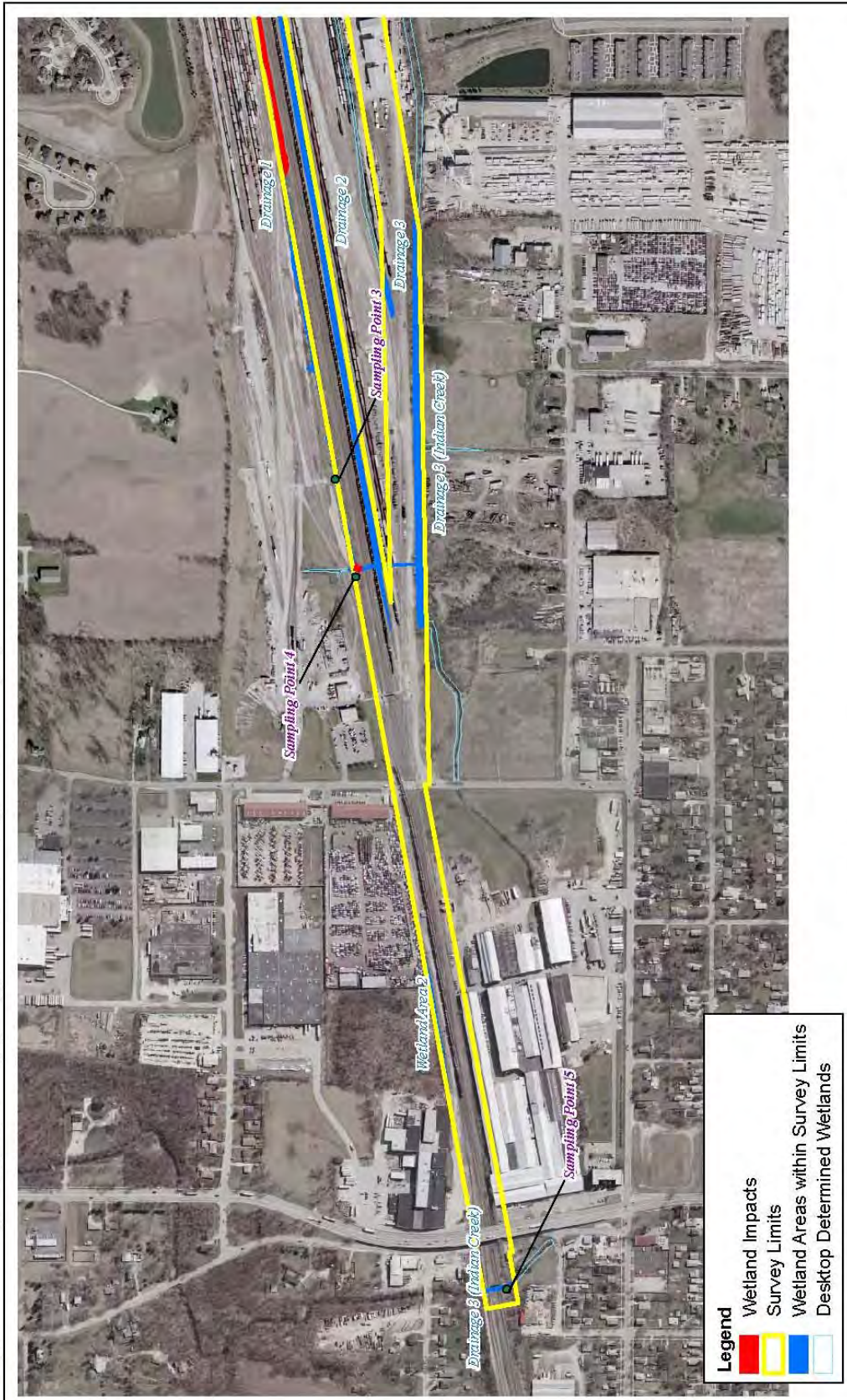


Figure 1: Project Location Map

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DATE	July 2010
FIGURE	2

**Wetland Technical Memo**  
Eola Main Line Improvements

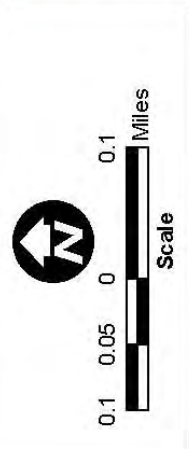
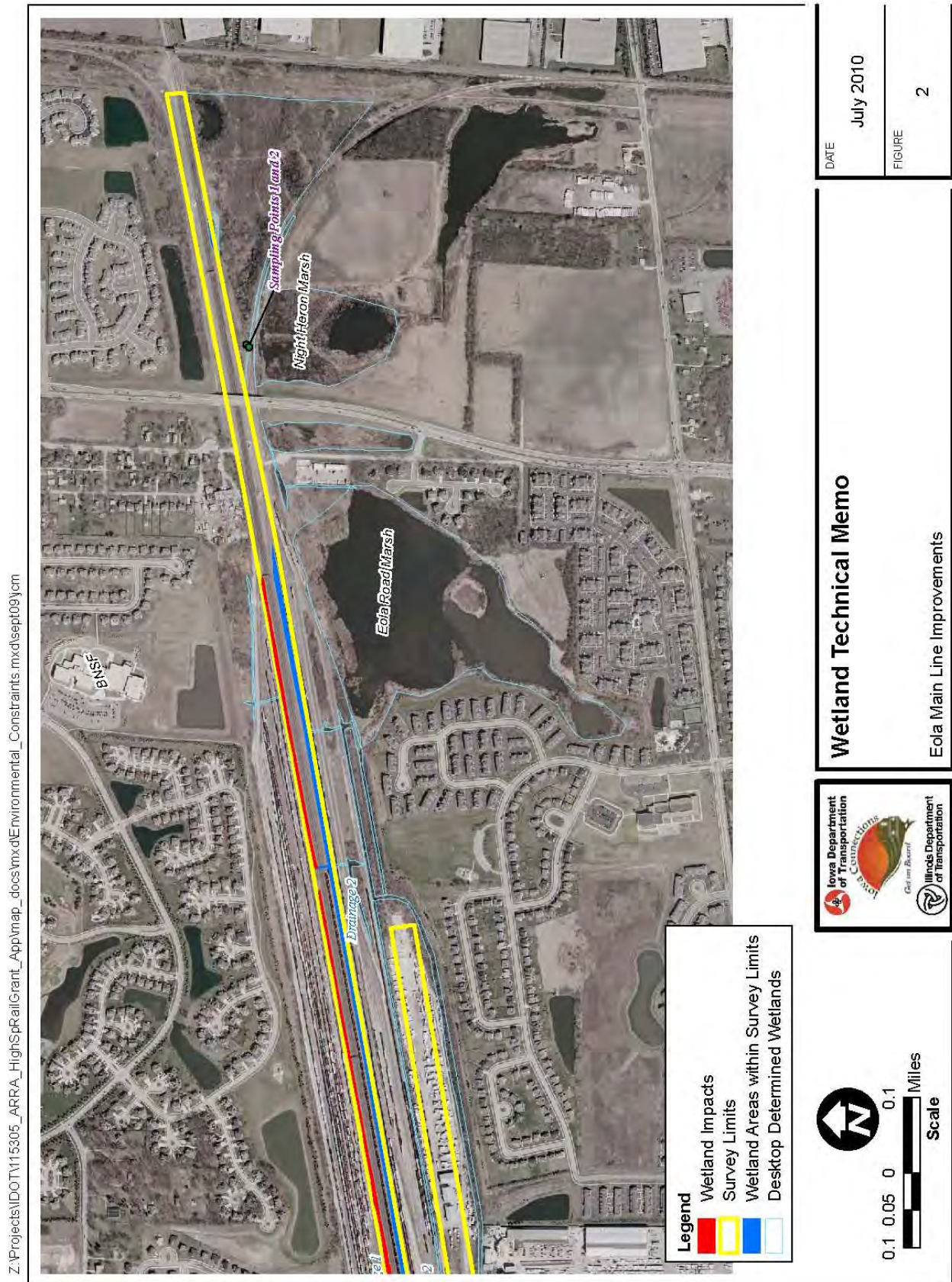


Figure 2b: Analyzed Sites – DuPage County





**Attachment B- Data Sheets**



### WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Eola Yard EA City/County: DuPage County Sampling Date: July 6, 2010  
 Applicant/Owner: Iowa DOT and Illinois DOT State: IL Sampling Point: 1  
 Investigator(s): J. Bartletti, R. Keith, and B. Baker Section, Township, Range: Sec 18/17, T38N, R9E  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave  
 Slope (%): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Drummer silty clay loam, 0 to 2 percent slopes NWI or WWI 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 _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Remarks: The sampling point characterized by this data sheet an inundated marsh connected to Night Heron Marsh. This area is a wetland due to the presence of hydrophytic vegetation, hydrology, and assumed hydric soils. Sampling point is located on the east end of the project limits.	

#### VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Fraxinus pennsylvanica</u>	20	Y	FACW	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. <u>Acer negundo</u>	20	Y	FACW-	
3. <u>Salix nigra</u>	20	Y	OBL	
4. _____				
5. _____				
<u>60</u> = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Totals: _____ (A) <u>0</u> (B)  Prevalence Index = B/A = <u>0</u>
Sapling/Shrub Stratum (Plot size: <u>15 ft</u> )				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Phalaris arundinacea</u>	10	Y	FACW+	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
<u>10</u> = Total Cover				
Woody Vine Stratum (Plot size: _____ )				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
1. _____				
2. _____				
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)  Dominate species were documented for the purposes of this data sheet, but a complete inventory of vegetation was completed for the FQI.				



### WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Eola Yard EA City/County: DuPage County Sampling Date: July 6, 2010  
 Applicant/Owner: Iowa DOT and Illinois DOT State: IL Sampling Point: 2  
 Investigator(s): J. Bartletti, R. Keith, and B. Baker Section, Township, Range: Sec. 18/17, T38N, R9E  
 Landform (hillslope, terrace, etc.): Railroad embankment Local relief (concave, convex, none): Concave  
 Slope (%): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Drummer silty clay loam, 0 to 2 percent slopes NWI or WWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Remarks: The sampling point characterized by this data sheet upland to Sampling Point 2 and it the edge of existing railroad tracks. Sampling point is located on the east end of the project limits.	

#### VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5 ft</u> )				
1. <u>Bromus inermis</u>	20	Y	UPL	
2. <u>Mellilotus officinalis</u>	10	Y	FACU	
3. <u>Daucus pusillus</u>	10	Y	UPL	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
40 = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: _____ )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)  Dominate species were documented for the purposes of this data sheet, but a complete inventory of vegetation was completed for the FQI.				

**Dominance Test worksheet:**  
 Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)  
 Total Number of Dominant Species Across All Strata: 0 (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 = 0  
 FACW species \_\_\_\_\_ x 2 = 0  
 FAC species \_\_\_\_\_ x 3 = 0  
 FACU species 10 x 4 = 40  
 UPL species 30 x 5 = 150  
 Column Totals: 40 (A) 190 (B)  
 Prevalence Index = B/A = 4.75

**Hydrophytic Vegetation Indicators:**  
 \_\_\_ Dominance Test is >50%  
 \_\_\_ Prevalence Index is ≤3.0<sup>1</sup>  
 \_\_\_ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No



## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Eola Yard EA City/County: Kane County Sampling Date: July 6, 2010  
 Applicant/Owner: Iowa DOT and Illinois DOT State: IL Sampling Point: 3  
 Investigator(s): J. Bartletti, R. Keith, and B. Baker Section, Township, Range: Sec. 14/13, T38N, R8E  
 Landform (hillslope, terrace, etc.): Railroad ditch Local relief (concave, convex, none): Concave  
 Slope (%): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Orthents, loamy, undulating NWI or WWI classification: N/A

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 _____	<b>Is the Sampled Area within a Wetland?</b>	Yes <input checked="" type="checkbox"/>	No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____			
Remarks: The sampling point characterized by this data sheet is linear waterway that is located between railroad track main line and maintenance road. Wetland fringe is associated with the linear waterway due to the presence of dominant hydrophytes, hydric soils, and presence of hydrology.					

## VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: _____ )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____	2 (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: _____	3 (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: _____	67 (A/B)
4. _____	_____	_____	_____	= Total Cover	
5. _____	_____	_____	_____		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft</u> )				<b>Prevalence Index worksheet:</b>	
1. <u>Sambucus canadensis</u>	20	Y	FACW+	Total % Cover of:	Multiply by:
2. _____	_____	_____	_____	OBL species _____	x 1 = 0
3. _____	_____	_____	_____	FACW species _____	x 2 = 0
4. _____	_____	_____	_____	FAC species _____	x 3 = 0
5. _____	_____	_____	_____	FACU species _____	x 4 = 0
20 = Total Cover				UPL species _____	x 5 = 0
<u>Herb Stratum</u> (Plot size: <u>5 ft</u> )				Column Totals: _____	(A) 0 (B)
1. <u>Phalaris arundinacea</u>	25	Y	FACW+	Prevalence Index = B/A = 0	
2. <u>Solidago canadensis</u>	20	Y	FACU		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
45 = Total Cover				<b>Hydrophytic Vegetation Indicators:</b>	
<u>Woody Vine Stratum</u> (Plot size: _____ )				<input checked="" type="checkbox"/> Dominance Test is >50%	
1. _____	_____	_____	_____	___ Prevalence Index is ≤3.0 <sup>1</sup>	
2. _____	_____	_____	_____	___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
= Total Cover				___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.					
Remarks: (Include photo numbers here or on a separate sheet.)				<b>Hydrophytic Vegetation Present?</b>	
Dominant vegetation was noted for this data sheet, vegetation community was documented for FQI.				Yes <input checked="" type="checkbox"/> No _____	

**SOIL**

Sampling Point: 3

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 <sup>1</sup>	Loc <sup>2</sup>		
0-9	10YR 3/1	80	10YR 5/6	20	C	PL	Silt loam	
9-20	10YR 2/1	100					Silt loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <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)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <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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<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Remarks:  
  
Soil profile is previously disturbed due to development of the railroad embankments.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	
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 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)	
<b>Field Observations:</b> Surface Water Present?    Yes <input checked="" type="checkbox"/> No _____    Depth (inches): <u>3-4</u> Water Table Present?    Yes <input checked="" type="checkbox"/> No _____    Depth (inches): <u>9</u> Saturation Present?    Yes <input checked="" type="checkbox"/> No _____    Depth (inches): <u>At Surface</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:  Channels convey hydrology through rail yard from west to eastern end, along the main tracks.	

## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Eola Yard EA City/County: Kane County Sampling Date: July 6, 2010  
 Applicant/Owner: Iowa DOT and Illinois DOT State: IL Sampling Point: 4  
 Investigator(s): J. Bartletti, R. Keith, and B. Baker Section, Township, Range: Sec. 14/13, T38N, R8E  
 Landform (hillslope, terrace, etc.): Ditch between two main rail lines Local relief (concave, convex, none): Convex  
 Slope (%): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Orthents, clayey, undulating NWI or WWI classification: N/A

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Remarks: The sampling point characterized by this data sheet is upland to Sampling Point 3. Area is on west side of Sampling Point 3 located within ditch area between two main rail tracks.	

### VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: _____ )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: _____ )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Poa pratensis</u>	60	Y	FAC-	
2. <u>Trifolium repens</u>	20	Y	FACU+	
3. <u>Rumex crispus</u>	10	N	FAC+	
4. <u>Phalaris arundinacea</u>	10	N	FACW+	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
100 = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: _____ )	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 = 0  
 FACW species 10 x 2 = 20  
 FAC species 70 x 3 = 210  
 FACU species 20 x 4 = 80  
 UPL species \_\_\_\_\_ x 5 = 0  
 Column Totals: 100 (A) 310 (B)  
 Prevalence Index = B/A = 3.10

**Hydrophytic Vegetation Indicators:**  
 Dominance Test is >50%  
 Prevalence Index is ≤3.0<sup>1</sup>  
 Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  
 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Remarks: (Include photo numbers here or on a separate sheet.)  The area failed to display dominant hydrophytes.	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
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### WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Eola Yard EA City/County: Kane County Sampling Date: July 6, 2010  
 Applicant/Owner: Iowa DOT and Illinois DOT State: IL Sampling Point: 5  
 Investigator(s): J. Bartletti, R. Keith, and B. Baker Section, Township, Range: Sec. 14/13, T38N, R8E  
 Landform (hillslope, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave  
 Slope (%): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Milford silty clay loam, 0 to 2 percent slopes NWI or WWI classification: N/A

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 _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Remarks: The sampling point characterized by this data sheet is linear waterway with associated riparian buffer due to the presence of hydrophytic vegetation, hydrology, and assumed hydric soils.	

#### VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Fraxinus pennsylvanica</u>	20	Y	FACW	<b>Dominance Test worksheet:</b> 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>Acer saccharinum</u>	20	Y	FACW	
3. _____				
4. _____				
5. _____				
<u>40</u> = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Totals: _____ (A) <u>0</u> (B)  Prevalence Index = B/A = <u>0</u>
<b>Sapling/Shrub Stratum (Plot size: <u>15 ft</u> )</b>				
1. <u>Fraxinus pennsylvanica</u>	10	Y	FACW	
2. <u>Sambucus canadensis</u>	10	Y	FACW-	
3. _____				
<u>20</u> = Total Cover				
<b>Herb Stratum (Plot size: <u>5 ft</u> )</b>				
1. <u>Phalaris arundinacea</u>	20	Y	FACW+	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
<u>20</u> = Total Cover				
<b>Woody Vine Stratum (Plot size: _____ )</b>				
1. _____				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
2. _____				
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)  Dominate species were documented for the purposes of this data sheet, but a complete inventory of vegetation was completed for the FQI.				

**SOIL**

Sampling Point: 5

**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 <sup>1</sup>	Loc <sup>2</sup>		

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b> <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)	<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b> <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Iron-Manganese Masses (F12) <input checked="" type="checkbox"/> Other (Explain in Remarks)
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<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Remarks:  
  
Hydric soils were assumed due to inundation and geomorphic position. Intermittent stream bed was cobble.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> 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 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)		

<b>Field Observations:</b> Surface Water Present?    Yes <input checked="" type="checkbox"/> No _____    Depth (inches): <u>2-12</u> Water Table Present?    Yes <input checked="" type="checkbox"/> No _____    Depth (inches): <u>At Surface</u> Saturation Present?    Yes <input checked="" type="checkbox"/> No _____    Depth (inches): <u>0</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
--	--

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

Remarks:  
  
Linear waterway with a wetted width of approximately 15 feet wide, and a depth of flowing water less than 12 inches. Waterway is a intermittent stream that flows east to west. This data form documents a portion of Indian Creek, that crosses beneath the rail tracks from south to north.

**Attachment C- Photo Log**





**Sampling Point 1** – Wetland Area 1 located on the in the southeastern portion of the survey limits for the Project. Looking north.



**Sampling Point 1** – Wetland Area 1 located on the in the southeastern portion of the survey limits for the Project. Looking north.



**Sampling Point 1 and 2** – Sampling points on the south side of Wetland Area 1. Looking west.



**Sampling Point 3** – Drainage 1 was represented by Sampling Point 3 and flows east to west through the Eola Rail Yard. Looking east.



**Sampling Point 3** – Sampling points on the south side of Drainage 1. Looking west.



**Drainage 1** – Segment of Drainage 1 located east of Sampling Point 3 area. Looking west.



**Drainage 1** – Segment of Drainage 1 east of Sampling Point 3 area. Looking west.



**Drainage 2** – Linear drainage with associated wetland fringe. Looking west.



**Drainage 3** – Linear drainage that is located along the southern portion of the survey limits. Looking west.



**Sampling Point 5** – Drainage 3 (Indian Creek) located on the in the southwestern portion of the survey limits for the Project. Looking north.



**Sampling Point 5** – Drainage 3 (Indian Creek) located on the in the southwestern portion of the survey limits for the Project.  
Looking south



**Wetland Area 2** – Erosion feature located on northwest side of the survey limits conveying stormwater runoff. Looking east.

**Attachment D- FQI**



Site: Wetland area 1  
 Locale: Between main tracks and spur line  
 Date: July 06, 2010 1 hours  
 By: JLB  
 File: c:\DOCUME~1\jbartlet\Desktop\FQA\studies\Eola\_Wetland\_1.inv

FLORISTIC QUALITY DATA		Native	21	75.0%	Adventive	7	25.0%
21	NATIVE SPECIES	Tree	7	25.0%	Tree	0	0.0%
28	Total Species	Shrub	2	7.1%	Shrub	1	3.6%
2.0	NATIVE MEAN C	W-Vine	1	3.6%	W-Vine	0	0.0%
1.5	W/Adventives	H-Vine	0	0.0%	H-Vine	0	0.0%
9.4	NATIVE FQI	P-Forb	5	17.9%	P-Forb	1	3.6%
8.1	W/Adventives	B-Forb	1	3.6%	B-Forb	3	10.7%
-1.2	NATIVE MEAN W	A-Forb	5	17.9%	A-Forb	0	0.0%
-0.6	W/Adventives	P-Grass	0	0.0%	P-Grass	2	7.1%
AVG: Faculative (+)		A-Grass	0	0.0%	A-Grass	0	0.0%
		P-Sedge	0	0.0%	P-Sedge	0	0.0%
		A-Sedge	0	0.0%	A-Sedge	0	0.0%
		Fern	0	0.0%			

ACRONYM	C SCIENTIFIC NAME	W WETNESS	PHYSIOGNOMY	COMMON NAME
ACENEG	1 Acer negundo	-2 FACW-	Nt Tree	BOXELDER
ACESAI	1 Acer saccharinum	-3 FACW	Nt Tree	SILVER MAPLE
AMARUD	0 Amaranthus rudis	-3 FACW	Nt A-Forb	TAMARISK WATERHEMP
AMBART	0 Ambrosia artemisiifolia	3 FACU	Nt A-Forb	COMMON RAGWEED
APOCAN	2 Apocynum cannabinum	0 FAC	Nt P-Forb	DOGBANE
ARCMIN	0 ARCTIUM MINUS	5 UPL	Ad B-Forb	COMMON BURDOCK
CONCAN	0 Conyza canadensis	1 FAC-	Nt A-Forb	HORSEWEED
DAUCAR	0 DAUCUS CAROTA	4 FACU-	Ad B-Forb	QUEEN ANNE'S LACE
EUPSER	1 Eupatorium serotinum	-1 FAC+	Nt P-Forb	LATE BONESET
FRAPES	2 Fraxinus pennsylvanica v. subintegerrima	-3 FACW	Nt Tree	GREEN ASH
GEUVER	1 Geum vernum	1 FAC-	Nt P-Forb	SPRING AVENS
GLETRI	2 Gleditsia triacanthos	0 FAC	Nt Tree	HONEY LOCUST
HORJUB	0 HORDEUM JUBATUM	-1 FAC+	Ad P-Grass	SQUIRREL-TAIL GRASS
IMPCAP	2 Impatiens capensis	-3 FACW	Nt A-Forb	SPOTTED TOUCH-ME-NOT
LEMMIR	3 Lemna minor	-5 OBL	Nt A-Forb	SMALL DUCKWEED
LYSLAN	6 Lysimachia lanceolata	0 FAC	Nt P-Forb	LANCE-LEAVED LOOSESTRIFE
MELOFC	0 MELILOTUS OFFICINALIS	3 FACU	Ad B-Forb	YELLOW SWEET CLOVER
OENBIB	1 Oenothera biennis	3 FACU	Nt B-Forb	COMMON EVENING PRIMROSE
PHAARU	0 PHALARIS ARUNDINACEA	-4 FACW+	Ad P-Grass	REED CANARY GRASS
POPDEL	2 Populus deltoides	-1 FAC+	Nt Tree	EASTERN COTTONWOOD
RHACAT	0 RHAMNUS CATHARTICA	3 FACU	Ad Shrub	COMMON BUCKTHORN
RUBSTR	6 Rubus strigosus	-2 FACW-	Nt P-Forb	RED RASPBERRY
RUMCRP	0 RUMEX CRISPUS	-1 FAC+	Ad P-Forb	CURLY DOCK
SALEXI	1 Salix exigua	-5 OBL	Nt Shrub	SANDBAR WILLOW
SALNIG	3 Salix nigra	-5 OBL	Nt Tree	BLACK WILLOW
SAMCAN	2 Sambucus canadensis	4 FACU-	Nt Shrub	COMMON ELDER

ULMAME 5 *Ulmus americana*

-2 FACW- Nt Tree AMERICAN ELM

VITRIP 2 *Vitis riparia*

-2 FACW- Nt W-Vine RIVERVBANK GRAPE

Site: Sampling Point 3  
 Locale: Drainage 1 and 2  
 Date: July 06, 2010 1 hours  
 By: JLB  
 File: c:\DOCUME~1\jbartlet\Desktop\FQA\studies\Eola\_Drainage\_1\_2.inv

FLORISTIC QUALITY DATA		Native	45	80.4%	Adventive	11	19.6%
45	NATIVE SPECIES	Tree	6	10.7%	Tree	0	0.0%
56	Total Species	Shrub	2	3.6%	Shrub	1	1.8%
2.5	NATIVE MEAN C	W-Vine	3	5.4%	W-Vine	1	1.8%
2.0	W/Adventives	H-Vine	0	0.0%	H-Vine	0	0.0%
16.7	NATIVE FQI	P-Forb	20	35.7%	P-Forb	2	3.6%
15.0	W/Adventives	B-Forb	2	3.6%	B-Forb	4	7.1%
-1.6	NATIVE MEAN W	A-Forb	4	7.1%	A-Forb	0	0.0%
-1.0	W/Adventives	P-Grass	3	5.4%	P-Grass	2	3.6%
AVG:	Fac. Wetland (-)	A-Grass	0	0.0%	A-Grass	1	1.8%
		P-Sedge	3	5.4%	P-Sedge	0	0.0%
		A-Sedge	0	0.0%	A-Sedge	0	0.0%
		Fern	2	3.6%			

ACRONYM	C SCIENTIFIC NAME	W WETNESS	PHYSIOGNOMY	COMMON NAME
ACENEG	1 Acer negundo	-2 FACW-	Nt Tree	BOXELDER
ALIPAM	2 Alisma plantago-aquatica v. americanum	-5 OBL	Nt P-Forb	AMERICAN WATER PLANTAIN
AMARUD	0 Amaranthus rudis	-3 FACW	Nt A-Forb	TAMARISK WATERHEMP
AMBART	0 Ambrosia artemisiifolia	3 FACU	Nt A-Forb	COMMON RAGWEED
APOCAN	2 Apocynum cannabinum	0 FAC	Nt P-Forb	DOGBANE
ARCMIN	0 ARCTIUM MINUS	5 UPL	Ad B-Forb	COMMON BURDOCK
ASCINC	4 Asclepias incarnata	-5 OBL	Nt P-Forb	SWAMP MILKWEED
ASCSYR	0 Asclepias syriaca	5 UPL	Nt P-Forb	COMMON MILKWEED
BOECYC	3 Boehmeria cylindrica	-5 OBL	Nt P-Forb	FALSE NETTLE
CAMRAD	2 Campsis radicans	0 FAC	Nt W-Vine	TRUMPET CREEPER
CXNORM	4 Carex normalis	-3 FACW	Nt P-Sedge	SPREADING OVAL SEDGE
CXSQUA SEDE	5 Carex squarrosa	-5 OBL	Nt P-Sedge	NARROW-LEAVED CATTAIL
CONCAN	0 Conyza canadensis	1 FAC-	Nt A-Forb	HORSEWEED
DAUCAR	0 DAUCUS CAROTA	4 FACU-	Ad B-Forb	QUEEN ANNE'S LACE
EQUARV	0 Equisetum arvense	0 FAC	Nt Fern	COMMON HORSETAIL
EQUHYE	2 Equisetum hyemale affine	-2 FACW-	Nt Fern	TALL SCOURING RUSH
ERIANN	1 Erigeron annuus	1 FAC-	Nt B-Forb	ANNUAL FLEABANE
EUPSER	1 Eupatorium serotinum	-1 FAC+	Nt P-Forb	LATE BONESET
GEUVER	1 Geum vernum	1 FAC-	Nt P-Forb	SPRING AVENS
GLETRI	2 Gleditsia triacanthos	0 FAC	Nt Tree	HONEY LOCUST
HELGRO	2 Helianthus grosseserratus	-2 FACW-	Nt P-Forb	SAWTOOTH SUNFLOWER
HORJUB	0 HORDEUM JUBATUM	-1 FAC+	Ad P-Grass	SQUIRREL-TAIL GRASS
IMPCAP	2 Impatiens capensis	-3 FACW	Nt A-Forb	SPOTTED TOUCH-ME-NOT
JUNINT	3 Juncus interior	-1 FAC+	Nt P-Forb	INLAND RUSH
LEEORY	3 Leersia oryzoides	-5 OBL	Nt P-Grass	RICE CUT GRASS
LYSLAN	6 Lysimachia lanceolata	0 FAC	Nt P-Forb	LANCE-LEAVED LOOSESTRIFE

MELOFC	0	MELILOTUS OFFICINALIS	3	FACU	Ad B-Forb	YELLOW SWEET CLOVER
MORRUB	4	Morus rubra	1	FAC-	Nt Tree	RED MULBERRY
OENBIB	1	Oenothera biennis	3	FACU	Nt B-Forb	COMMON EVENING PRIMROSE
PARQUI	2	Parthenocissus quinquefolia	1	FAC-	Nt W-Vine	VIRGINIA CREEPER
PHAARU	0	PHALARIS ARUNDINACEA	-4	FACW+	Ad P-Grass	REED CANARY GRASS
PHRAUS	1	Phragmites australis	-4	FACW+	Nt P-Grass	COMMON REED
POLHYO	4	Polygonum hydropiperoides	-5	OBL	Nt P-Forb	MILD WATER PEPPER
POPDEL	2	Populus deltoides	-1	FAC+	Nt Tree	EASTERN COTTONWOOD
RHACAT	0	RHAMNUS CATHARTICA	3	FACU	Ad Shrub	COMMON BUCKTHORN
RUBSTR	6	Rubus strigosus	-2	FACW-	Nt P-Forb	RED RASPBERRY
RUDSUB	5	Rudbeckia subtomentosa	-3	FACW	Nt P-Forb	SWEET BLACK-EYED SUSAN
RUMCRP	0	RUMEX CRISPUS	-1	FAC+	Ad P-Forb	CURLY DOCK
SAGLAT	4	Sagittaria latifolia	-5	OBL	Nt P-Forb	COMMON ARROWHEAD
SALEXI	1	Salix exigua	-5	OBL	Nt Shrub	SANDBAR WILLOW
SALNIG	3	Salix nigra	-5	OBL	Nt Tree	BLACK WILLOW
SAMCAN	2	Sambucus canadensis	4	FACU-	Nt Shrub	COMMON ELDER
SAPOFF	0	SAPONARIA OFFICINALIS	3	FACU	Ad P-Forb	BOUNCING BET
SCIATR	4	Scirpus atrovirens	-5	OBL	Nt P-Sedge	DARK GREEN RUSH
SETGLA	0	SETARIA GLAUCA	0	FAC	Ad A-Grass	PIGEON GRASS
SOLDUL	0	SOLANUM DULCAMARA	0	FAC	Ad W-Vine	BITTERSWEET NIGHTSHADE
SOLCAN	1	Solidago canadensis	3	FACU	Nt P-Forb	CANADA GOLDENROD
SOLGIG	3	Solidago gigantea	-3	FACW	Nt P-Forb	LATE GOLDENROD
SPAPEC	4	Spartina pectinata	-4	FACW+	Nt P-Grass	PRAIRIE CORD GRASS
THAREV	5	Thalictrum revolutum	0	FAC	Nt P-Forb	WAXY MEADOW RUE
TRAOHI	3	Tradescantia ohiensis	2	FACU+	Nt P-Forb	COMMON SPIDERWORT
TYPLAT	1	Typha latifolia	-5	OBL	Nt P-Forb	BROAD-LEAVED CATTAIL
ULMAME	5	Ulmus americana	-2	FACW-	Nt Tree	AMERICAN ELM
VERBLA	0	VERBASCUM BLATTARIA	4	FACU-	Ad B-Forb	MOTH MULLEIN
VERHAS	3	Verbena hastata	-4	FACW+	Nt P-Forb	BLUE VERVAIN
VITRIP	2	Vitis riparia	-2	FACW-	Nt W-Vine	RIVERVBANK GRAPE

Site: Drainage 3 (Indian Creek)  
 Locale: South Branch  
 Date: July 06, 2010 1 hours  
 By: JLB  
 File: c:\DOCUME~1\jbartlet\Desktop\FQA\studies\Eola\_Drainage\_3.inv

FLORISTIC QUALITY DATA		Native	26	66.7%	Adventive	13	33.3%
26	NATIVE SPECIES	Tree	6	15.4%	Tree	0	0.0%
39	Total Species	Shrub	2	5.1%	Shrub	1	2.6%
2.2	NATIVE MEAN C	W-Vine	2	5.1%	W-Vine	0	0.0%
1.4	W/Adventives	H-Vine	0	0.0%	H-Vine	0	0.0%
11.0	NATIVE FQI	P-Forb	7	17.9%	P-Forb	3	7.7%
9.0	W/Adventives	B-Forb	1	2.6%	B-Forb	4	10.3%
-0.7	NATIVE MEAN W	A-Forb	7	17.9%	A-Forb	2	5.1%
0.1	W/Adventives	P-Grass	1	2.6%	P-Grass	2	5.1%
AVG: Faculative (+)		A-Grass	0	0.0%	A-Grass	1	2.6%
		P-Sedge	0	0.0%	P-Sedge	0	0.0%
		A-Sedge	0	0.0%	A-Sedge	0	0.0%
		Fern	0	0.0%			

ACRONYM	C SCIENTIFIC NAME	W WETNESS	PHYSIOGNOMY	COMMON NAME
ABUTHE	0 ABUTILON THEOPHRASTI	4 FACU-	Ad A-Forb	BUTTONWEED
ACENEG	1 Acer negundo	-2 FACW-	Nt Tree	BOXELDER
ACESAI	1 Acer saccharinum	-3 FACW	Nt Tree	SILVER MAPLE
AMARUD	0 Amaranthus rudis	-3 FACW	Nt A-Forb	TAMARISK WATERHEMP
AMBART	0 Ambrosia artemisiifolia	3 FACU	Nt A-Forb	COMMON RAGWEED
AMBTRI	0 Ambrosia trifida	-1 FAC+	Nt A-Forb	GIANT RAGWEED
APOCAN	2 Apocynum cannabinum	0 FAC	Nt P-Forb	DOGBANE
ARCMIN	0 ARCTIUM MINUS	5 UPL	Ad B-Forb	COMMON BURDOCK
CENMAC	0 CENTAUREA MACULOSA	5 UPL	Ad B-Forb	SPOTTED CENTAUREA
CONCAN	0 Conyza canadensis	1 FAC-	Nt A-Forb	HORSEWEED
DAUCAR	0 DAUCUS CAROTA	4 FACU-	Ad B-Forb	QUEEN ANNE'S LACE
EUPSER	1 Eupatorium serotinum	-1 FAC+	Nt P-Forb	LATE BONESET
FRAPES	2 Fraxinus pennsylvanica v. subintegerrima	-3 FACW	Nt Tree	GREEN ASH
GEUVER	1 Geum vernum	1 FAC-	Nt P-Forb	SPRING AVENS
GLETRI	2 Gleditsia triacanthos	0 FAC	Nt Tree	HONEY LOCUST
HORJUB	0 HORDEUM JUBATUM	-1 FAC+	Ad P-Grass	SQUIRREL-TAIL GRASS
IMPCAP	2 Impatiens capensis	-3 FACW	Nt A-Forb	SPOTTED TOUCH-ME-NOT
IPOPAN	2 Ipomoea pandurata	3 FACU	Nt P-Forb	WILD SWEET POTATO
LEMMIR	3 Lemna minor	-5 OBL	Nt A-Forb	SMALL DUCKWEED
LEOCAR	0 LEONURUS CARDIACA	5 UPL	Ad P-Forb	MOTHERWORT
LINVUL	0 LINARIA VULGARIS	5 UPL	Ad A-Forb	BUTTER-AND-EGGS
LYSLAN	6 Lysimachia lanceolata	0 FAC	Nt P-Forb	LANCE-LEAVED LOOSESTRIFE
MELOFC	0 MELILOTUS OFFICINALIS	3 FACU	Ad B-Forb	YELLOW SWEET CLOVER
OENBIB	1 Oenothera biennis	3 FACU	Nt B-Forb	COMMON EVENING PRIMROSE
PHAARU	0 PHALARIS ARUNDINACEA	-4 FACW+	Ad P-Grass	REED CANARY GRASS
PHRAUS	1 Phragmites australis	-4 FACW+	Nt P-Grass	COMMON REED

POPDEL	2	<i>Populus deltoides</i>	-1	FAC+	Nt Tree	EASTERN COTTONWOOD
RHACAT	0	<i>RHAMNUS CATHARTICA</i>	3	FACU	Ad Shrub	COMMON BUCKTHORN
RUBSTR	6	<i>Rubus strigosus</i>	-2	FACW-	Nt P-Forb	RED RASPBERRY
RUMCRP	0	<i>RUMEX CRISPUS</i>	-1	FAC+	Ad P-Forb	CURLY DOCK
SALEXI	1	<i>Salix exigua</i>	-5	OBL	Nt Shrub	SANDBAR WILLOW
SAMCAN	2	<i>Sambucus canadensis</i>	4	FACU-	Nt Shrub	COMMON ELDER
SETGLA	0	<i>SETARIA GLAUCA</i>	0	FAC	Ad A-Grass	PIGEON GRASS
TOXRAD	1	<i>Toxicodendron radicans</i>	3	FACU	Nt W-Vine	POISON IVY
TRIREF	9	<i>Trifolium reflexum</i>	5	UPL	Nt A-Forb	BUFFALO CLOVER
TYPANG	0	<i>TYPHA ANGUSTIFOLIA</i>	-5	OBL	Ad P-Forb	NARROW-LEAVED CATTAIL
ULMAME	5	<i>Ulmus americana</i>	-2	FACW-	Nt Tree	AMERICAN ELM
VERHAS	3	<i>Verbena hastata</i>	-4	FACW+	Nt P-Forb	BLUE VERVAIN
VITRIP	2	<i>Vitis riparia</i>	-2	FACW-	Nt W-Vine	RIVERVBANK GRAPE

Site: Wetland area 2  
 Locale: Erosional feature along abandoned track  
 Date: July 06, 2010 1 hours  
 By: JLB  
 File: c:\DOCUME~1\jbartlet\Desktop\FQA\studies\Eola\_Wetland\_2.inv

FLORISTIC QUALITY DATA		Native		Adventive	
12	NATIVE SPECIES	Tree	2 10.0%	Tree	1 5.0%
20	Total Species	Shrub	1 5.0%	Shrub	1 5.0%
1.3	NATIVE MEAN C	W-Vine	1 5.0%	W-Vine	0 0.0%
0.8	W/Adventives	H-Vine	0 0.0%	H-Vine	0 0.0%
4.6	NATIVE FQI	P-Forb	3 15.0%	P-Forb	1 5.0%
3.6	W/Adventives	B-Forb	1 5.0%	B-Forb	3 15.0%
-0.5	NATIVE MEAN W	A-Forb	3 15.0%	A-Forb	0 0.0%
0.6	W/Adventives	P-Grass	1 5.0%	P-Grass	2 10.0%
AVG:	Faculative	A-Grass	0 0.0%	A-Grass	0 0.0%
		P-Sedge	0 0.0%	P-Sedge	0 0.0%
		A-Sedge	0 0.0%	A-Sedge	0 0.0%
		Fern	0 0.0%		

ACRONYM	C SCIENTIFIC NAME	W WETNESS	PHYSIOGNOMY	COMMON NAME
AILALT	0 AILANTHUS ALTISSIMA	5 UPL	Ad Tree	TREE-OF-HEAVEN
AMARUD	0 Amaranthus rudis	-3 FACW	Nt A-Forb	TAMARISK WATERHEMP
AMBART	0 Ambrosia artemisiifolia	3 FACU	Nt A-Forb	COMMON RAGWEED
APOCAN	2 Apocynum cannabinum	0 FAC	Nt P-Forb	DOGBANE
ARCMIN	0 ARCTIUM MINUS	5 UPL	Ad B-Forb	COMMON BURDOCK
CONCAN	0 Conyza canadensis	1 FAC-	Nt A-Forb	HORSEWEED
DAUCAR	0 DAUCUS CAROTA	4 FACU-	Ad B-Forb	QUEEN ANNE'S LACE
EUPSER	1 Eupatorium serotinum	-1 FAC+	Nt P-Forb	LATE BONESET
FRAPES	2 Fraxinus pennsylvanica v. subintegerrima	-3 FACW	Nt Tree	GREEN ASH
HORJUB	0 HORDEUM JUBATUM	-1 FAC+	Ad P-Grass	SQUIRREL-TAIL GRASS
MELOFC	0 MELILOTUS OFFICINALIS	3 FACU	Ad B-Forb	YELLOW SWEET CLOVER
MORRUB	4 Morus rubra	1 FAC-	Nt Tree	RED MULBERRY
OENBIB	1 Oenothera biennis	3 FACU	Nt B-Forb	COMMON EVENING PRIMROSE
PHAARU	0 PHALARIS ARUNDINACEA	-4 FACW+	Ad P-Grass	REED CANARY GRASS
PHRAUS	1 Phragmites australis	-4 FACW+	Nt P-Grass	COMMON REED
RHACAT	0 RHAMNUS CATHARTICA	3 FACU	Ad Shrub	COMMON BUCKTHORN
SAMCAN	2 Sambucus canadensis	4 FACU-	Nt Shrub	COMMON ELDER
TRIPRA	0 TRIFOLIUM PRATENSE	2 FACU+	Ad P-Forb	RED CLOVER
TYPLAT	1 Typha latifolia	-5 OBL	Nt P-Forb	BROAD-LEAVED CATTAIL
VITRIP	2 Vitis riparia	-2 FACW-	Nt W-Vine	RIVERVBANK GRAPE

