



TECHNICAL MEMORANDUM

To: John Mettille, CDM Smith

From: Rebecca Colvin

Re: Field Summary, Combined Alternate 2
US 51 Bridge Replacement, Ballard County, KY and Alexander County, IL
Item 1-100.00 and 1-1140.00

Date: September 20, 2013

Third Rock Consultants, LLC was retained by CDM Smith, Inc. to prepare a summary of environmental resources associated with the proposed US 51 bridge replacement in Ballard County, Kentucky and Alexander County, Illinois. An Environmental Overview was prepared in March 2013 for a large study area encompassing several alternative corridors; since that time, the project team has selected Combined Alternate 2 as the preferred corridor for the project. This memorandum details air quality, traffic noise, aquatic and terrestrial, underground storage tanks/hazardous materials, and socioeconomic resources associated with Combined Alternate 2

Air Quality

The proposed project is located in the Paducah (KY)-Cairo (IL) Interstate Air Quality Control Region. No traffic control measures are currently required for the area. The area is in attainment for all criteria, transportation-related pollutants established by the United States Environmental Protection Agency. The project is not anticipated to have any direct, indirect, or cumulative impacts to air quality.

Traffic Noise

The Federal Highway Administration (FHWA) Noise Standard requires that noise abatement measures be considered when traffic noise impacts are identified. Vehicle tires, engines, and exhaust propagate noise at levels dependent upon the volume, speed, percentage of trucks, and the slope of the roadway. These traffic noises are measured in decibels in the A-scale (dBA). The A-scale is designed to best approximate the way noise is heard by the human ear. Due to the logarithmic nature of noise measurements, a three-dBA increase in the noise level represents a doubling in the noise level, but this increase is barely detectable by the human ear. A 10-dBA increase is perceived as a doubling of the noise level. Noise levels decrease in proportion with the square of the distance from the source such that a 4.5-dBA decrease is usually achieved when the distance from the roadway is doubled. Based on these noise propagation principles, traffic noise is not usually a serious problem for receptors more than 500 feet from heavily traveled freeways or more than 100 to 200 feet from lightly traveled roads.

According to the FHWA, traffic noise impacts occur when the predicted traffic noise levels approach (are within one dBA) or exceed the noise abatement criteria (NAC) or when the predicted traffic noise levels substantially exceed the existing noise level. The noise abatement criteria are established to address traffic noise levels that interfere with speech communication.

Noise Abatement Criteria are broken into seven activity categories (A to G) by description of land use and evaluation location (exterior or interior). A field review of the Combined Alternate 2 Corridor indicated that only Activity Category G (undeveloped lands) is present within 500 feet of the preferred corridor. No traffic noise criteria are established for Activity Category G land use because these land uses are not noise sensitive. Therefore, the project will have no effect on noise sensitive land uses.

Aquatic and Terrestrial Ecosystems

Third Rock biologists performed an aquatic and terrestrial reconnaissance of the Combined Alternate 2 corridor on September 3, 2013. Topographic and aerial maps were utilized in order to navigate the preferred corridor. The US Fish and Wildlife Service (USFWS), in correspondence dated March 13, 2013, and April 1, 2013 (included in the Environmental Overview prepared for the project in April 2013), determined that 12 federally listed species may occur within the larger, project vicinity: the federally endangered gray bat (*Myotis grisescens*), Indiana bat (*Myotis sodalis*), least tern (*Sterna antillarum*), orange-footed pearlymussel (*Plethobasus cooperianus*), sheepnose mussel (*Plethobasus cyphus*), fanshell mussel (*Cyprogenia stegaria*), pink mucket mussel (*Lampsilis abrupta*), ring pink mussel (*Obovaria retusa*), clubshell mussel (*Pleurobema clava*), rough pigtoe mussel (*Pleurobema plenum*), fat pocketbook mussel (*Potamilus capax*), and pallid sturgeon (*Scaphirhynchus albus*). Further, although bald eagle was officially removed from the List of Endangered and Threatened Species, USFWS notes that it continues to be protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. Habitats for federally listed threatened or endangered species were documented with photographs and GPS. Streams were assessed using Rapid Bioassessment Field Data Sheets (RBP forms). Four suspected wetlands were delineated using the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coast Plain Region*. RBP Forms and Wetland Determination Field Data Sheets are attached. All water resources are included in the attached Jurisdictional Determination Form. Photographs are attached.

Aquatic Resources

In addition to the Ohio River, one stream, shown on Table 1, was documented within the preferred corridor. The stream location is shown on the attached exhibit. The stream channel appears to be a drainage channel connecting a forested wetland with the Ohio River to the southeast.

TABLE 1 – STREAMS

STREAM #	STREAM TYPE	RBP SCORE
1	Ephemeral	88

Four wetlands, totaling 63.9 acres, shown on Table 2, page 3, were documented within the preferred corridor. The wetland locations are shown on the attached exhibit. Photographs from data collection plots as well as photo station (PS) points from the interior of Wetland 1 are also attached.

TABLE 2 – WETLANDS

WETLAND #	ACRES
1	30.8
2	7.5
3	21.5
4	4.1

Federally Listed / Protected Species

Approximately 66.3 acres of Indiana bat summer roost habitat was documented within the preferred corridor, as well as two known snag locations. Habitat and snag locations are shown on the attached exhibit. Photographs are also attached.

Approximately 102.3 acres of the Ohio River are within the preferred corridor. The Ohio River represents potential gray bat foraging habitat as well as habitat for all listed mussel species and the pallid sturgeon. The habitats for gray bat, listed mussels, and the pallid sturgeon are shown on the attached exhibit.

Bald eagle habitat is present within the preferred corridor. Although no bald eagle nests were identified during the field reconnaissance, the Ohio River and mature trees and snags near the river constitute appropriate habitat. If a bald eagle nest is discovered within or adjacent to the preferred corridor an evaluation must be performed to determine whether the project is likely to disturb nesting bald eagles. The KDFWR requests that as a bald eagle nest is known to occur near the preferred corridor, they be contacted prior to the start of the project for necessary steps to reduce potential impacts to bald eagle nests.

No interior least tern habitat was found within the preferred corridor.

Underground Storage Tanks/Hazardous Materials

A qualified Third Rock environmental professional conducted a field reconnaissance of the Combined Alternate 2 corridor on September 3, 2013. The reconnaissance activities involved driving the project corridor roads and walking along inaccessible areas.

The refined project corridor contains an even mixture of agricultural fields and wooded river bottomland along the Ohio River. The Illinois Central Gulf Railroad and US Highway 51 are the only infrastructure features located within the project corridor. No structures of any type were observed.

The numerous Environmental Data Resources (EDR) mapped sites identified in the Underground Storage Tank / Hazardous Materials White Paper (White Paper) submitted on March 19, 2013 are located greater than 0.5-mile from the preferred corridor and subsequently do not represent an environmental condition for the proposed project. Visibility was generally good throughout the preferred corridor during the site visit. A thorough investigation was conducted. No evidence of a recognized environmental condition was observed. No additional research is recommended at this time concerning Combined Alternate 2.

Socioeconomic Resources

The Combined Alternate 2 corridor was examined on September 3, 2013 to determine if Combined Alternate 2 would have an impact on socioeconomic resources. A soybean field is located between US 51 and the Ohio River in the Kentucky portion of the preferred corridor, and a wooded wetland is present on the Illinois portion of the preferred corridor. A Tourism/Welcome Center is near Combined Alternate 2, but it is to the south of the preferred corridor and subsequently, would not be impacted. Fort Defiance Park, owned by the City of Cairo, is also located to the south of the preferred corridor, outside of the project's impact area. As the new bridge will be constructed near the existing bridge, area traffic patterns will not change, minimizing impacts to area residences and businesses. No homes, businesses, or community facilities are located within the preferred corridor.

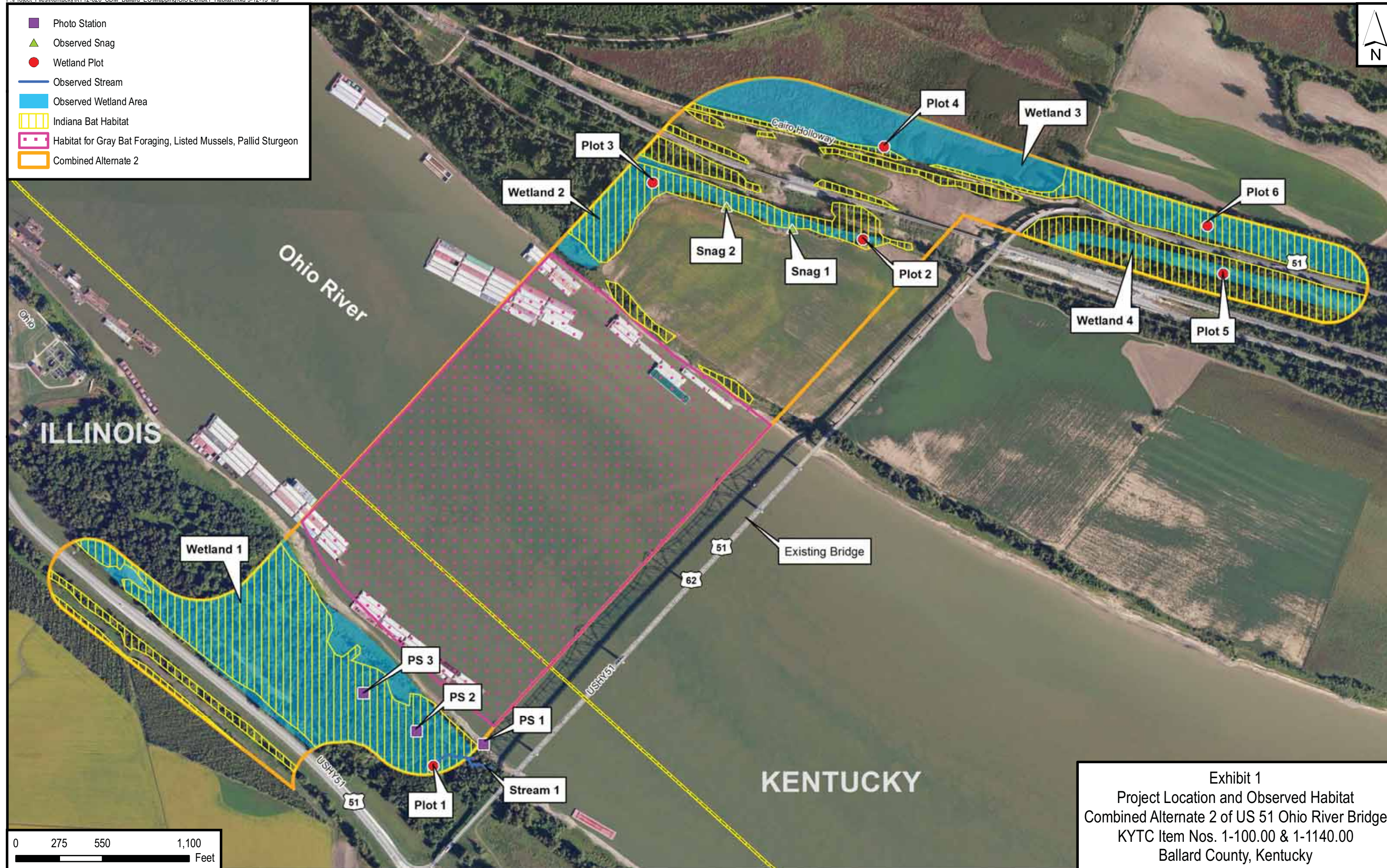


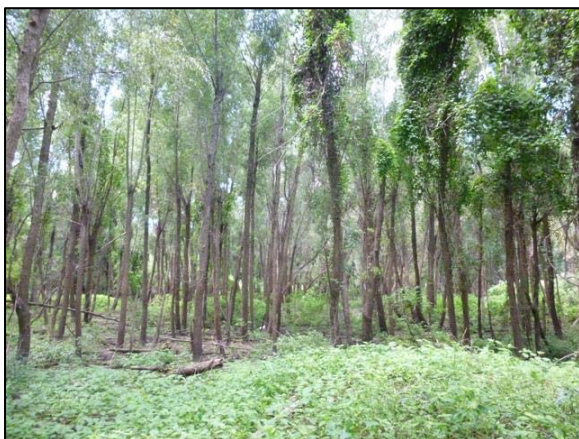
Exhibit 1
Project Location and Observed Habitat
Combined Alternate 2 of US 51 Ohio River Bridge
KYTC Item Nos. 1-100.00 & 1-1140.00
Ballard County, Kentucky



Bridge, Facing West toward Northern Bank of Ohio River



PS1 - Facing West



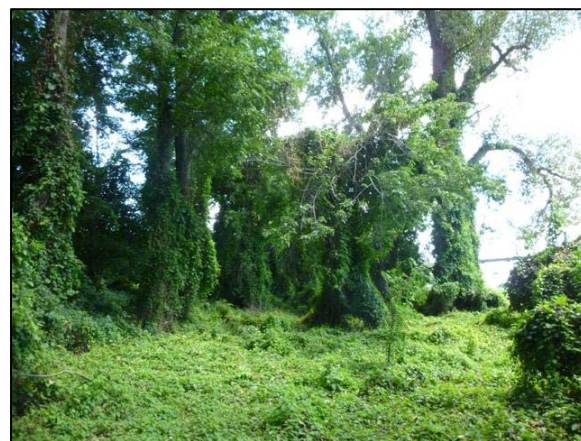
PS2 - Facing West in Wetland 1



PS3 - Facing West in Wetland 1



Plot 1 - Forested Wetland 1



Plot 2 - Potential Wetland 2



Plot 3 - Potential Wetland 2



Plot 4 - Wetland 3



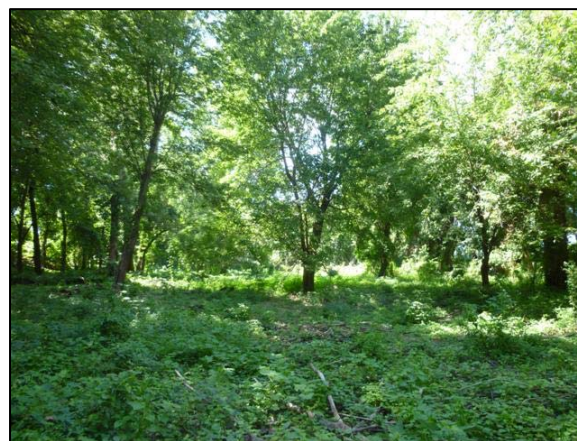
Plot 4 - Wetland 3 Understory



Plot 5 - Backwater Slough Wetland 4, Facing East



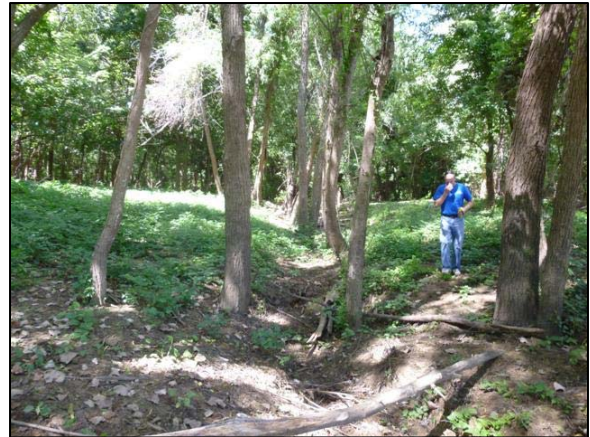
Plot 5 - Backwater Slough Wetland 4, Facing West



Plot 6 - Wetland 3



Stream 1 - Downstream View from Head



Stream 1 - From Confluence with Ohio River



Snag 1



Snag 2

HABITAT ASSESSMENT FIELD DATA SHEET — HIGH GRADIENT STREAMS, PAGE 1

STREAM NAME: Stream 1					LOCATION: Floodplain West of Bridge on South Bank of Ohio																			
STREAM WIDTH (FT): 2-5 DEPTH (FT): 0					PERENNIAL <input type="checkbox"/> INTERMITTENT <input type="checkbox"/> EPHEMERAL <input checked="" type="checkbox"/>																			
STATION #:					RIVERMILE:					COUNTY: Alexander					STATE: IL									
LAT:					LONG:					RIVER BASIN: Ohio														
CLIENT: CDM Smith					PROJECT NO. KY12-020																			
INVESTIGATORS/CREW: J. Storm, C. Bloyd																								
FORM COMPLETED BY: J. Storm					DATE: 8/3/13 TIME: 12:30 pm					REASON FOR SURVEY: US 51 Bridge Replacement														

Parameters to be evaluated in sampling reach	Habitat Parameter	Condition Category																				
		Optimal					Suboptimal					Marginal					Poor					
	1. Epifaunal Substrate/ Available Cover	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient.					40-70% mix of stable habitat; well suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).					20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.					Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.					
		SCORE: 8	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
	2. Embeddedness	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.					Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.					Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.					Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.					
		SCORE: 0	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
	3. Velocity/Depth Regime	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast-shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.)					Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).					Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low).					Dominated by 1 velocity/depth regime (usually slow-deep).					
		SCORE: 8	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
	4. Sediment Deposition	Little or no enlargement of islands or point bars and less than 5% of the bottom affected by sediment deposition.					Some new increase in bar formation, mostly from gravel, sand or fine sediment; 5-30% of the bottom affected; slight deposition in pools.					Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.					Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.					
		SCORE: 0	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
5. Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.					Water fills > 75% of the available channel; or <25% of channel substrate is exposed.					Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.					Very little water in channel and mostly present as standing pools.						
	SCORE: 0	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

HABITAT ASSESSMENT FIELD DATA SHEET — HIGH GRADIENT STREAMS, PAGE 2

	Habitat Parameter	Condition Category																				
		Optimal					Suboptimal					Marginal					Poor					
Parameters to be evaluated in sampling reach	6. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.					Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.					Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.					Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.					
	SCORE: 20	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	7. Frequency of Riffles (or bends)	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream < 7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.					Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.					Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.					Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ration of > 25.					
	SCORE: 10	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	8. Bank Stability (score each bank) Note: determine left or right side by facing downstream.	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. < 5% of bank affected.					Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.					Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.					Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.					
	SCORE: 10 (LB)	Left Bank		10	9		8	7	6			5	4	3			2	1	0			
	SCORE: 10 (RB)	Right Bank		10	9		8	7	6			5	4	3			2	1	0			
	9. Vegetative Protection (score each bank)	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or non-woody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.					70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.					50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.					Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.					
	SCORE: 1 (LB)	Left Bank		10	9		8	7	6			5	4	3			2	1	0			
	SCORE: 1 (RB)	Right Bank		10	9		8	7	6			5	4	3			2	1	0			
	10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.					Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.					Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.					Width of riparian zone <6 meters: little or no riparian vegetation due to human activities.					
	SCORE: 10 (LB)	Left Bank		10	9		8	7	6			5	4	3			2	1	0			
	SCORE: 10 (RB)	Right Bank		10	9		8	7	6			5	4	3			2	1	0			

TOTAL SCORE: 88

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coast Plain Region

Project/Site: US 51 Bridge Replacement City/County: Alexander Sampling Date: 9/3/13
Applicant/Owner: KYTC State: IL Sampling Point: Plot 1-WTL1
Investigator(s): J. Storm, C. Bloyd Section, Township, Range: _____
Landform (hillslope, terrace, etc.): Floodplain Local Relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR or MLRA): _____ Lat: 36.99038 Long: -89.151419 Datum: _____
Soil Map Unit Name: Orthents, silty, undulating NWI or WWI Classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in remarks.)
Are vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

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

Hydrophytic Vegetation Present? Yes X No _____
Hydric Soil Present? Yes X No _____
Wetland Hydrology Present? Yes X No _____
Remarks: **Is the sampled area within a wetland?** Yes X No _____
This is a forested wetland, but is inaccurately classified as emergent on NWI mapping.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		_____ Surface Soil Cracks (B6)
<u>X</u> Surface Water (A1)	<u>X</u> Water-Stained Leaves (B9)	<u>X</u> Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Aquatic Fauna (B13)	<u>X</u> Drainage Patterns (B10)
<u>X</u> Saturation (A3)	_____ Marl Deposits (B15) (LRR U)	_____ Moss Trim Lines (B16)
<u>X</u> Water Marks (B1)	_____ Hydrogen Sulfide Odor (B1)	_____ Dry-Season Water Table (C2)
<u>X</u> Sediment Deposits (B2)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Crayfish Burrows (C8)
<u>X</u> Drift Deposits (B3)	_____ Presence of Reduced Iron (C4)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Thin Muck Surface (C7)	<u>X</u> Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Other (Explain in Remarks)	<u>x</u> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): 2 in
Water Table Present? Yes _____ No _____ Depth (inches): _____
Saturation Present: Yes X No _____ Depth (inches): 6 in **Wetland Hydrology Present?** Yes X No _____
(includes capillary fringe)

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

Remarks:

VEGETATION – Use scientific names of plants.

 Sampling Point: Plot 1-WTL1

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Salix nigra</i>	85	Yes	OBL	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2.				
3.				
4.				
5.				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL Species <u>160</u> x 1 = <u>160</u> FACW Species <u>0</u> x 2 = <u>0</u> FAC Species <u>0</u> x 3 = <u>0</u> FACU Species <u>0</u> x 4 = <u>0</u> UPL Species <u>0</u> x 5 = <u>0</u> Column Totals: <u>160</u> (A) <u>160</u> (B) Prevalence Index = B/A = _____
6.				
8.				
			_____ = Total Cover	
Sapling Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: <u> </u> x Dominance Test is >50% <u> </u> x Prevalence Test is ≤3.0 ¹ <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. None				
2.				
3.				
4.				
5.				
6.				
7.				
			_____ = Total Cover	
Shrub Stratum (Plot size: _____)				
1. None				
2.				
3.				
4.				
5.				
6.				
7.				
			_____ = Total Cover	Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines, regardless of height.
Herb Stratum (Plot size: _____)				
1. <i>Boehmeria cylindrical</i>	75	Yes	OBL	
2.				
3.				
4.				
5.				
6.				
			_____ = Total Cover	
Woody Vine Stratum (Plot size: _____)				
1. None				
2.				
3.				
4.				
5.				
			_____ = Total Cover	
Remarks: (Include photo numbers here or on a separate sheet)				

SOIL

Sampling Point: Plot 1-WTL1

[illegible]

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coast Plain Region

Project/Site: US 51 Bridge Replacement City/County: Alexander Sampling Date: 9/3/13
Applicant/Owner: KYTC State: IL Sampling Point: Plot 2-WTL2
Investigator(s): J. Storm, C. Boyd Section, Township, Range: _____
Landform (hillslope, terrace, etc.): Floodplain Local Relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR or MLRA): _____ Lat: 36.999825 Long: -89.142509 Datum: _____
Soil Map Unit Name: Huntington-Combs Complex NWI or WWI Classification: None
Are climactic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in remarks.)
Are vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

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

Hydrophytic Vegetation Present? Yes X No _____
Hydric Soil Present? Yes _____ No X
Wetland Hydrology Present? Yes X No _____
Remarks: **Is the sampled area within a wetland?** Yes X No _____

This area has wetland hydrology, vegetation, a distinct boundary, and is located within a floodplain so is considered a potential forested wetland despite the lack of hydric soil color. This wetland may need confirmation from the USACE.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15) (LRR U)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (B1)
<input checked="" type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Moss Trim Lines (B16)
<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 checked="" type="checkbox"/> Geomorphic Position (D2)
<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present: Yes _____ No X Depth (inches): _____ **Wetland Hydrology Present?** Yes X No _____
(includes capillary fringe)

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

Remarks:

Geomorphic position lower than adjacent soybean field. Surround lands, which are not agriculture, are wetland. Is located within 100 year floodplain.

VEGETATION – Use scientific names of plants.

 Sampling Point: Plot 2-WTL2

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Carya illinoensis</i>	25	Yes	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60%</u> (A/B)
2. <i>Celtis laevigata</i>	20	Yes	FACW	
3. <i>Acer saccharinum</i>	15	Yes	FACW	
4. <i>Populus deltoides</i>	15	Yes	FAC	
5. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL Species <u>0</u> x 1 = <u>0</u> FACW Species <u>135</u> x 2 = <u>270</u> FAC Species <u>15</u> x 3 = <u>45</u> FACU Species <u>25</u> x 4 = <u>100</u> UPL Species <u>0</u> x 5 = <u>0</u> Column Totals: <u>175</u> (A) <u>415</u> (B) Prevalence Index = B/A = <u>2.37</u>
6. _____				
8. _____				
_____ = Total Cover				
Sapling Stratum (Plot size: _____)				
1. NA				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Test is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
_____ = Total Cover				
Shrub Stratum (Plot size: _____)				
1. NA				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. NA				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines, regardless of height.
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. <i>Brunnichia ovata</i>	100	Yes	FACW	
2. _____				
3. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
4. _____				
5. _____				
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet)				

SOIL

Sampling Point: Plot 2-WTL2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)							
Depth	Matrix		Redox Features				Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture
0-14	10 YR 4/4		None				loam
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains						² Location: PL=Pore Lining, M=Matrix	
Hydric Soil Indicators:						Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/>	Histosol (A1)	<input type="checkbox"/>	Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/>	1 cm Muck (A9) (LRR O)		
<input type="checkbox"/>	Histic Epipedon (A2)	<input type="checkbox"/>	Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/>	2 cm Muck (A10) (LRR S)		
<input type="checkbox"/>	Black Histic (A3)	<input type="checkbox"/>	Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/>	Reduced Vertic (F18) (Outside MLRA		
<input type="checkbox"/>	Hydrogen Sulfide (A4)	<input type="checkbox"/>	Loamy Gleyed Matrix (F2)	<input type="checkbox"/>	150A, B)		
<input type="checkbox"/>	Stratified Layers (A5)	<input type="checkbox"/>	Depleted Matrix (F3)	<input type="checkbox"/>	Piedmont Floodplain Soils (F19)(LRR P,S,T)		
<input type="checkbox"/>	Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/>	Redox Dark Surface (F6)	<input type="checkbox"/>	Anomalous Bright Loamy Soils (F20)		
<input type="checkbox"/>	5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/>	Depleted Dark Surface (F7)	<input type="checkbox"/>	(MLRA 1503B)		
<input type="checkbox"/>	Muck Presence (A8) (LRR U)	<input type="checkbox"/>	Redox Depressions (F8)	<input type="checkbox"/>	Red Parent Material (TF2)		
<input type="checkbox"/>	1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/>	Marl (F10) (LRR U)	<input type="checkbox"/>	Very Shallow Dark Surface (TF12)		
<input type="checkbox"/>	Depleted Below Dark Surface (A11)	<input type="checkbox"/>	Depleted Ochric (F11) (MLRA 151)	<input type="checkbox"/>	Other (Explain in Remarks)		
<input type="checkbox"/>	Thick Dark Surface (A11)	<input type="checkbox"/>	Iron-Manganese Masses (F12) (LRR O, P, T)				
<input type="checkbox"/>	Coast Prairie Redox (A16)(MLRA 150A)	<input type="checkbox"/>	Umbric Surface (F13) (LRR P, T, U)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present.			
<input type="checkbox"/>	Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/>	Delta Ochric (F17) (MLRA 151)				
<input type="checkbox"/>	Sandy Gleyed Matrix (S4)	<input type="checkbox"/>	Reduced Vertic (F18) (MLRA 150A, 150B)				
<input type="checkbox"/>	Sandy Redox (S5)	<input type="checkbox"/>	Piedmont Floodplain Soils (F19) (MLRA 149A)				
<input type="checkbox"/>	Stripped Matrix (S6)	<input type="checkbox"/>	Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)				
<input type="checkbox"/>	Dark Surface (S7) (LRR P, S, T, U)						
Restrictive Layer (if observed):							
Type: _____					Hydric Soil Present? Yes No X		
Depth (inches): _____							
Remarks: 							

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coast Plain Region

Project/Site: US 51 Bridge Replacement City/County: Ballard Sampling Date: 9/3/13
Applicant/Owner: KYTC State: KY Sampling Point: Plot 3-WTL2
Investigator(s): J. Storm, C. Bloyd Section, Township, Range: _____
Landform (hillslope, terrace, etc.): Floodplain Local Relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR or MLRA): _____ Lat: 37.000683 Long: -89.147118 Datum: _____
Soil Map Unit Name: Huntington-Combs Complex NWI or WWI Classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in remarks.)
Are vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
Are vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

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

Hydrophytic Vegetation Present? Yes X No _____
Hydric Soil Present? Yes _____ No X
Wetland Hydrology Present? Yes X No _____
Remarks: **Is the sampled area within a wetland?** Yes X No _____

This area has wetland hydrology, vegetation, a distinct boundary, and is located within a floodplain so is considered a potential forested wetland despite the lack of hydric soil color. This wetland may need confirmation from the USACE.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15) (LRR U)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (B1)
<input checked="" type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Moss Trim Lines (B16)
<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 checked="" type="checkbox"/> Geomorphic Position (D2)
<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): X
Water Table Present? Yes _____ No _____ Depth (inches): X
Saturation Present: Yes _____ No _____ Depth (inches): X **Wetland Hydrology Present?** Yes X No _____
(includes capillary fringe)

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

Remarks:

Geomorphic position lower than adjacent soybean field. Surrounding lands not used for agriculture are wetlands. Is located within 100 year floodplain.

VEGETATION – Use scientific names of plants.

 Sampling Point: Plot 3-WTL2

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Celtis laevigata</i>	50	Yes	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</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>80</u> (A/B)
2. <i>Acer saccharinum</i>	30	Yes	FACW	
3.				
4.				
5.				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL Species <u>0</u> x 1 = _____ FACW Species <u>120</u> x 2 = <u>240</u> FAC Species <u>50</u> x 3 = <u>150</u> FACU Species <u>0</u> x 4 = <u>0</u> UPL Species <u>0</u> x 5 = <u>0</u> Column Totals: <u>170</u> (A) <u>390</u> (B) Prevalence Index = B/A = <u>2.29</u>
6.				
8.				
_____ = Total Cover				
Sapling Stratum (Plot size: _____)				
1. <i>Celtis laevigata</i>	20	Yes	FACW	
2.				
3.				
4.				
5.				
6.				
7.				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Test is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
_____ = Total Cover				
Shrub Stratum (Plot size: _____)				
1. NA				
2.				
3.				
4.				
5.				
6.				
7.				
_____ = Total Cover				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines, regardless of height.
Herb Stratum (Plot size: _____)				
1. <i>Campsis radicans</i>	50	Yes	FAC	
2. <i>Boehmeria cylindrica</i>	20	Yes	FACW	
3.				
4.				
5.				
6.				
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
2.				
3.				
4.				
5.				
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet)				

SOIL

Sampling Point: Plot WTL2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth	Matrix	Redox Features						Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	
0-14	10 YR 4/4	None					loam	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains ² Location: PL=Pore Lining, M=Matrix								
Hydric Soil Indicators:					Indicators for Problematic Hydric Soils³:			
<input type="checkbox"/> Histosol (A1)		<input type="checkbox"/>	Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/>	1 cm Muck (A9) (LRR O)			
<input type="checkbox"/> Histic Epipedon (A2)		<input type="checkbox"/>	Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/>	2 cm Muck (A10) (LRR S)			
<input type="checkbox"/> Black Histic (A3)		<input type="checkbox"/>	Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/>	Reduced Vertic (F18) (Outside MLRA			
<input type="checkbox"/> Hydrogen Sulfide (A4)		<input type="checkbox"/>	Loamy Gleyed Matrix (F2)		150A, B)			
<input type="checkbox"/> Stratified Layers (A5)		<input type="checkbox"/>	Depleted Matrix (F3)	<input type="checkbox"/>	Piedmont Floodplain Soils (F19)(LRR P,S,T)			
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)		<input type="checkbox"/>	Redox Dark Surface (F6)	<input type="checkbox"/>	Anomalous Bright Loamy Soils (F20)			
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)		<input type="checkbox"/>	Depleted Dark Surface (F7)		(MLRA 1503B)			
<input type="checkbox"/> Muck Presence (A8) (LRR U)		<input type="checkbox"/>	Redox Depressions (F8)	<input type="checkbox"/>	Red Parent Material (TF2)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)		<input type="checkbox"/>	Marl (F10) (LRR U)	<input type="checkbox"/>	Very Shallow Dark Surface (TF12)			
<input type="checkbox"/> Depleted Below Dark Surface (A11)		<input type="checkbox"/>	Depleted Ochric (F11) (MLRA 151)	<input type="checkbox"/>	Other (Explain in Remarks)			
<input type="checkbox"/> Thick Dark Surface (A11)		<input type="checkbox"/>	Iron-Manganese Masses (F12) (LRR O, P, T)					
<input type="checkbox"/> Coast Prairie Redox (A16)(MLRA 150A)		<input type="checkbox"/>	Umbric Surface (F13) (LRR P, T, U)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present.			
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)		<input type="checkbox"/>	Delta Ochric (F17) (MLRA 151)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		<input type="checkbox"/>	Reduced Vertic (F18) (MLRA 150A, 150B)					
<input type="checkbox"/> Sandy Redox (S5)		<input type="checkbox"/>	Piedmont Floodplain Soils (F19) (MLRA 149A)					
<input type="checkbox"/> Stripped Matrix (S6)		<input type="checkbox"/>	Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)					
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)								
Restrictive Layer (if observed):								
Type: _____				Hydric Soil Present? Yes No X				
Depth (inches): _____								
Remarks: 								

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coast Plain Region

Project/Site: US 51 Bridge Replacement City/County: Ballard Sampling Date: 9/3/13
Applicant/Owner: KYTC State: KY Sampling Point: Plot 4-WTL3
Investigator(s): J. Storm, C. Bloyd Section, Township, Range: _____
Landform (hillslope, terrace, etc.): 100 Year Floodplain Local Relief (concave, convex, none): None Slope (%): 0
Subregion (LRR or MLRA): _____ Lat: 37.001458 Long: -89.142125 Datum: _____
Soil Map Unit Name: Newark-Lindside Complex NWI or WWI Classification: Freshwater emergent
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in remarks.)
Are vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes <u>X</u>	No _____	
Remarks:			
This scrub and sapling wetland is inaccurately labeled as an emergent wetland on NWI mapping.			

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Water-Stained Leaves (B9)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Aquatic Fauna (B13)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Marl Deposits (B15) (LRR U)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Hydrogen Sulfide Odor (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Presence of Reduced Iron (C4)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Thin Muck Surface (C7)	<u>X</u> Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Other (Explain in Remarks)	<u>X</u> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present: Yes _____ No X Depth (inches): _____ **Wetland Hydrology Present?** Yes X No _____
(includes capillary fringe)

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

Remarks:

Wetland is within USDA NRCS easement boundary.

VEGETATION – Use scientific names of plants.

 Sampling Point: Plot 4-WTL3

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. NA				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66</u> (A/B)
2.				
3.				
4.				
5.				
6.				
8.				
_____ = Total Cover				
Sapling Stratum (Plot size: _____)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL Species <u>0</u> x 1 = <u>0</u> FACW Species <u>60</u> x 2 = <u>120</u> FAC Species <u>40</u> x 3 = <u>120</u> FACU Species <u>0</u> x 4 = <u>0</u> UPL Species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>240</u> (B) Prevalence Index = B/A = <u>2.4</u>
1. Salix nigra	40	Yes	FACW	
2. Populus deltoides	40	Yes	FAC	
3. Acer saccharinum	20	Yes	FACW	
4.				
5.				
6.				
7.				
_____ = Total Cover				
Shrub Stratum (Plot size: _____)				
1. NA				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Test is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.				
3.				
4.				
5.				
6.				
7.				
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. NA				
2.				
3.				
4.				
5.				
6.				
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. NA				
2.				
3.				
4.				
5.				
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____

SOIL

Sampling Point: Plot 4-WTL3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)							
Depth	Matrix		Redox Features			Remarks	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture
0-14	10 YR 4/2	50%	10YR4/6	50%			loam
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains ² Location: PL=Pore Lining, M=Matrix							
Hydric Soil Indicators:				Indicators for Problematic Hydric Soils³:			
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)			<input type="checkbox"/> 1 cm Muck (A9) (LRR O)	
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)			<input type="checkbox"/> 2 cm Muck (A10) (LRR S)	
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)			<input type="checkbox"/> Reduced Vertic (F18) (Outside MLRA	
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			150A, B)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/>		<input type="checkbox"/> Depleted Matrix (F3)			<input type="checkbox"/> Piedmont Floodplain Soils (F19)(LRR P,S,T)	
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)			<input type="checkbox"/> Redox Dark Surface (F6)			<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)	
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)			<input type="checkbox"/> Depleted Dark Surface (F7)			(MLRA 1503B)	
<input type="checkbox"/> Muck Presence (A8) (LRR U)			<input type="checkbox"/> Redox Depressions (F8)			<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)			<input type="checkbox"/> Marl (F10) (LRR U)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)			<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Thick Dark Surface (A11)			<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)				
<input type="checkbox"/> Coast Prairie Redox (A16)(MLRA 150A)			<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present.	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)			<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)				
<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)				
<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)				
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)							
Restrictive Layer (if observed):							
Type: _____			Hydric Soil Present?		Yes	X	No _____
Depth (inches): _____							
Remarks: 							

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coast Plain Region

Project/Site: US 51 Bridge Replacement City/County: Ballard Sampling Date: 9/3/13
 Applicant/Owner: KYTC State: KY Sampling Point: Plot 5-WTL4
 Investigator(s): J. Storm, C. Bloyd Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Slough Local Relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR or MLRA): _____ Lat: 36.999453 Long: -89.134657 Datum: _____
 Soil Map Unit Name: Newark-Lindside Complex NWI or WWI Classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in remarks.)
 Are vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

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

Hydrophytic Vegetation Present? Yes X No _____
 Hydric Soil Present? Yes X No _____
 Wetland Hydrology Present? Yes X No _____
 Remarks: _____
 Is the sampled area within a wetland? Yes X No _____
 This emergent wetland has some trees on the margin.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)			
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15) (LRR U)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (B1)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): _____
 Saturation Present: Yes X No _____ Depth (inches): _____ Wetland Hydrology Present? Yes X No _____
 (includes capillary fringe)
 Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:

 Remarks:
 Backwater slough

VEGETATION – Use scientific names of plants.

 Sampling Point: Plot 5-WTL4

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Salix nigra</i>	10	Yes	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. <i>Acer saccharinum</i>	10	Yes	FACW	
3.				
4.				
5.				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL Species <u>50</u> x 1 = <u>50</u> FACW Species <u>20</u> x 2 = <u>40</u> FAC Species <u>0</u> x 3 = <u>0</u> FACU Species <u>0</u> x 4 = <u>0</u> UPL Species <u>0</u> x 5 = <u>0</u> Column Totals: <u>70</u> (A) <u>90</u> (B) Prevalence Index = B/A = <u>1.29</u>
6.				
8.				
_____ = Total Cover				
Sapling Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Test is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
1. NA				
2.				
3.				
4.				
5.				
6.				
7.				
_____ = Total Cover				
Shrub Stratum (Plot size: _____)				
1. NA				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.				
3.				
4.				
5.				
6.				
7.				
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. <i>Lemna minor</i>	50	Yes	OBL	
2.				
3.				
4.				
5.				
6.				
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. NA				
2.				
3.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No
4.				
5.				
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet) Wetland a concave depression with duckweed at bottom and black willow and silver maple at the wetland/upland margin.				

SOIL

Sampling Point: Plot 5-WTL4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)							
Depth	Matrix		Redox Features		Remarks		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture
0-6	Gley 1 6/N	50	Gley 2 2.5/10B	50			Loam
6-14	10 YR 4/2	80	10 YR 5/1	20			loam
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains					² Location: PL=Pore Lining, M=Matrix		
Hydric Soil Indicators:					Indicators for Problematic Hydric Soils³:		
_____ Histosol (A1)			_____ Polyvalue Below Surface (S8) (LRR S, T, U)			_____ 1 cm Muck (A9) (LRR O)	
_____ Histic Epipedon (A2)			_____ Thin Dark Surface (S9) (LRR S, T, U)			_____ 2 cm Muck (A10) (LRR S)	
_____ Black Histic (A3)			_____ Loamy Mucky Mineral (F1) (LRR O)			_____ Reduced Vertic (F18) (Outside MLRA	
_____ Hydrogen Sulfide (A4)			_____ Loamy Gleyed Matrix (F2)			150A, B)	
_____ Stratified Layers (A5)			<u>X</u> Depleted Matrix (F3)			_____ Piedmont Floodplain Soils (F19)(LRR P,S,T)	
_____ Organic Bodies (A6) (LRR P, T, U)			_____ Redox Dark Surface (F6)			_____ Anomalous Bright Loamy Soils (F20)	
_____ 5 cm Mucky Mineral (A7) (LRR P, T, U)			_____ Depleted Dark Surface (F7)			(MLRA 1503B)	
_____ Muck Presence (A8) (LRR U)			_____ Redox Depressions (F8)			_____ Red Parent Material (TF2)	
_____ 1 cm Muck (A9) (LRR P, T)			_____ Marl (F10) (LRR U)			_____ Very Shallow Dark Surface (TF12)	
_____ Depleted Below Dark Surface (A11)			_____ Depleted Ochric (F11) (MLRA 151)			_____ Other (Explain in Remarks)	
_____ Thick Dark Surface (A11)			_____ Iron-Manganese Masses (F12) (LRR O, P, T)				
_____ Coast Prairie Redox (A16)(MLRA 150A)			_____ Umbric Surface (F13) (LRR P, T, U)			³ Indicators of hydrophytic vegetation and	
_____ Sandy Mucky Mineral (S1) (LRR O, S)			_____ Delta Ochric (F17) (MLRA 151)			wetland hydrology must be present.	
_____ Sandy Gleyed Matrix (S4)			_____ Reduced Vertic (F18) (MLRA 150A, 150B)				
_____ Sandy Redox (S5)			_____ Piedmont Floodplain Soils (F19) (MLRA 149A)				
_____ Stripped Matrix (S6)			_____ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)				
_____ Dark Surface (S7) (LRR P, S, T, U)							
Restrictive Layer (if observed):							
Type: _____				Hydric Soil Present? Yes <u> X </u> No _____			
Depth (inches): _____							
Remarks: 							

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coast Plain Region

Project/Site: US 51 Bridge Replacement City/County: Ballard Sampling Date: 9/3/13
Applicant/Owner: KYTC State: KY Sampling Point: Plot 6-WTL3
Investigator(s): J. Storm, C. Bloyd Section, Township, Range: _____
Landform (hillslope, terrace, etc.): 100 Year Floodplain Local Relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR or MLRA): _____ Lat: 37.00028 Long: -89.13504 Datum: _____
Soil Map Unit Name: Newark-Lindside Compel NWI or WWI Classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in remarks.)
Are vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes <u>X</u>	No _____	
Remarks:			
Forested wetland non indicated on NWI mapping.			

Is the sampled area within a wetland? Yes X No _____

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Water-Stained Leaves (B9)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Aquatic Fauna (B13)	_____ Drainage Patterns (B10)
_____ Saturation (A3)	_____ Marl Deposits (B15) (LRR U)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Hydrogen Sulfide Odor (B1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	<u>X</u> Oxidized Rhizospheres on Living Roots (C3)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Presence of Reduced Iron (C4)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Stunted or Stressed Plants (D1)
_____ Iron Deposits (B5)	_____ Thin Muck Surface (C7)	<u>X</u> Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Other (Explain in Remarks)	<u>X</u> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present: Yes _____ No X Depth (inches): _____ **Wetland Hydrology Present?** Yes X No _____
(includes capillary fringe)
Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:
Remarks:

VEGETATION – Use scientific names of plants.

 Sampling Point: Plot 6-WTL3

Tree Stratum (Plot Size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer saccharinum	25	Yes	FACW
2. Celtis laevigata	15	Yes	FACW
3. Populus deltoides	10	Yes	FAC
4.			
5.			
6.			
8.			
_____ = Total Cover			
Sapling Stratum (Plot size:)			
1. NA			
2.			
3.			
4.			
5.			
6.			
7.			
_____ = Total Cover			
Shrub Stratum (Plot size:)			
1. NA			
2.			
3.			
4.			
5.			
6.			
7.			
_____ = Total Cover			
Herb Stratum (Plot size:)			
1. Boehmeria cylindrical	50	Yes	FACW
2. Solanum carolinense	10	No	UPL
3.			
4.			
5.			
6.			
_____ = Total Cover			
Woody Vine Stratum (Plot size:)			
1. NA			
2.			
3.			
4.			
5.			
_____ = Total Cover			
Remarks: (Include photo numbers here or on a separate sheet)			

Dominance Test worksheet:			
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)	
Prevalence Index worksheet:			
Total % Cover of:	_____	Multiply by:	_____
OBL Species	<u>0</u>	x 1 =	_____
FACW Species	<u>90</u>	x 2 =	<u>180</u>
FAC Species	<u>10</u>	x 3 =	<u>20</u>
FACU Species	<u>0</u>	x 4 =	_____
UPL Species	<u>10</u>	x 5 =	<u>50</u>
Column Totals:	<u>110</u>	(A)	<u>250</u> (B)
Prevalence Index = B/A = <u>2.27</u>			
Hydrophytic Vegetation Indicators:			
<input checked="" type="checkbox"/> Dominance Test is >50%			
<input checked="" type="checkbox"/> Prevalence Test is ≤3.0 ¹			
_____ Problematic Hydrophytic Vegetation ¹ (Explain)			
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
Definitions of Four Vegetation Strata:			
Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.			
Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in (7.6 cm) DBH.			
Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.			
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.			
Woody vine – All woody vines, regardless of height.			
Hydrophytic Vegetation Present?			
Yes	<input checked="" type="checkbox"/>	No	_____

SOIL

Sampling Point: Plot 6-WTL3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth	Matrix	Redox Features						Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	
0-14	10 YR 4/2	90	10 YR 4/5	10			loam	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains							² Location: PL=Pore Lining, M=Matrix	
Hydric Soil Indicators:					Indicators for Problematic Hydric Soils³:			
_____ Histosol (A1)	_____ Polyvalue Below Surface (S8) (LRR S, T, U)	_____ 1 cm Muck (A9) (LRR O)						
_____ Histic Epipedon (A2)	_____ Thin Dark Surface (S9) (LRR S, T, U)	_____ 2 cm Muck (A10) (LRR S)						
_____ Black Histic (A3)	_____ Loamy Mucky Mineral (F1) (LRR O)	_____ Reduced Vertic (F18) (Outside MLRA						
_____ Hydrogen Sulfide (A4)	_____ Loamy Gleyed Matrix (F2)	150A, B)						
_____ Stratified Layers (A5)	<u>X</u> Depleted Matrix (F3)	_____ Piedmont Floodplain Soils (F19)(LRR P,S,T)						
_____ Organic Bodies (A6) (LRR P, T, U)	_____ Redox Dark Surface (F6)	_____ Anomalous Bright Loamy Soils (F20)						
_____ 5 cm Mucky Mineral (A7) (LRR P, T, U)	_____ Depleted Dark Surface (F7)	(MLRA 1503B)						
_____ Muck Presence (A8) (LRR U)	_____ Redox Depressions (F8)	_____ Red Parent Material (TF2)						
_____ 1 cm Muck (A9) (LRR P, T)	_____ Marl (F10) (LRR U)	_____ Very Shallow Dark Surface (TF12)						
_____ Depleted Below Dark Surface (A11)	_____ Depleted Ochric (F11) (MLRA 151)	_____ Other (Explain in Remarks)						
_____ Thick Dark Surface (A11)	_____ Iron-Manganese Masses (F12) (LRR O, P, T)							
_____ Coast Prairie Redox (A16)(MLRA 150A)	_____ Umbric Surface (F13) (LRR P, T, U)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present.						
_____ Sandy Mucky Mineral (S1) (LRR O, S)	_____ Delta Ochric (F17) (MLRA 151)							
_____ Sandy Gleyed Matrix (S4)	_____ Reduced Vertic (F18) (MLRA 150A, 150B)							
_____ Sandy Redox (S5)	_____ Piedmont Floodplain Soils (F19) (MLRA 149A)							
_____ Stripped Matrix (S6)	_____ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)							
_____ Dark Surface (S7) (LRR P, S, T, U)								
Restrictive Layer (if observed):								
Type: _____	Hydric Soil Present?	Yes X No						
Depth (inches): _____								
Remarks: 								

ATTACHMENT

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): 9/13/13

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:
James Storm, Third Rock Consultants LLC, 2526 Regency

C. DISTRICT OFFICE, FILE NAME, AND NUMBER:

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:

US 51 Bridge Replacement

(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: KY, IL County/parish/borough: Alexander, IL and Ballard, KY
City: Cairo, IL

Center coordinates of site (lat/long in degree decimal format): Lat.
89.146178° N, Long. 36.993418° W

Universal Transverse Mercator:

Name of nearest waterbody: Ohio River

Identify (estimate) amount of waters in the review area:

Non-wetland waters: 1 stream linear feet: 100 width (ft) and/or acres.

Cowardin Class: Riverine

Stream Flow: Ephemeral

Wetlands: 63.9 acres.

Cowardin Class: Forested

Name of any water bodies on the site that have been identified as Section 10 waters:

Tidal:

Non-Tidal: Ohio River

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☐ Office (Desk) Determination. Date:

☒ Field Determination. Date(s): 9/3/13

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this

preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring “pre-construction notification” (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant’s acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

This preliminary JD finds that there “*may be*” waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply

- checked items should be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:.

- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
- ☐ Office concurs with data sheets/delineation report.
- ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps: .
- ☐ Corps navigable waters' study: .
- ☐ U.S. Geological Survey Hydrologic Atlas: .
- ☐ USGS NHD data.
- ☐ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name: .
- ☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
- ☐ National wetlands inventory map(s). Cite name: .
- ☐ State/Local wetland inventory map(s): .
- ☒ FEMA/FIRM maps: .
- ☒ 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- ☒ Photographs: ☒ Aerial (Name & Date): .
or ☒ Other (Name & Date): Photo log prepared by Third Rock.
- ☐ Previous determination(s). File no. and date of response letter: .
- ☐ Other information (please specify): .

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature and date of
Regulatory Project Manager
(REQUIRED)

Signature and date of
person requesting preliminary JD
(REQUIRED, unless obtaining
the signature is impracticable)

SAMPLE

Site number	Latitude	Longitude	Cowardin Class	Estimated amount of aquatic resource in review area	Class of aquatic resource
Ohio River	89.151016	36.990582	R	1650 ft	Perennial river
Stream 1	89.151016	36.990582	R4SB	100 ft	ephemeral
Wetland 1	89.151419	36.99038	Forested	30.8 ac	wetland
Wetland 2	89.147118	36.999825	Scrub/sapling	7.5 ac	wetland
Wetland 3	89.134657	36.999453	Forested	21.5 ac	wetland
Wetland 4	89.13504	37.00028	Forested	4.1 ac	wetland