

Appendix H:
Wetlands and Threatened & Endangered
Species Report



SUPPLEMENTAL REPORT: WETLAND DELINEATION AND THREATENED & ENDANGERED SPECIES REPORT



CANE RIVER BRIDGE
CHURCH STREET
ROUTE LA 1-X

State Project No. H.001271
Federal Aid Project No. H001271
Natchitoches Parish, Louisiana

OCTOBER 2018



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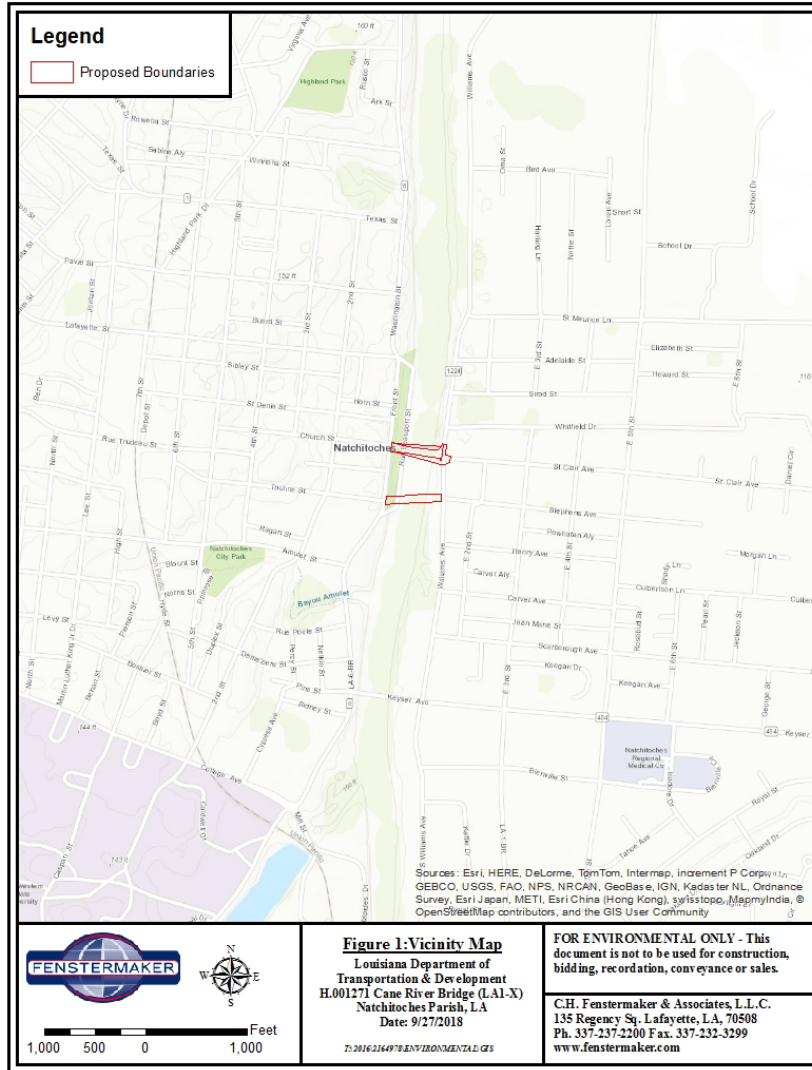
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1.0 INTRODUCTION

C.H. Fenstermaker & Associates, L.L.C. (Fenstermaker) conducted a wetland delineation within the proposed right-of-way (ROW) in preparation for the proposed replacement of the existing Cane River Bridge on Church Street (LA 1-X) located in the City of Natchitoches in Natchitoches Parish, Louisiana. The project was undertaken to determine the effects of replacing the existing Cane River Bridge either on the same or slightly skewed alignment. While the new bridge is under construction, a temporary bridge located at Touline Street may be required for detouring traffic. The delineation was limited to

Figure 1: Vicinity Map



the road ROW for the four proposed alternatives and the area adjacent to the ROW (Figure 1). The ROW for the two bridge locations will be referred to collectively as the "Site."

The Site is mostly within the existing ROW of Church Street and intersecting streets with some additional ROW required alongside, for widening, at the proposed temporary bridge on Touline Street, and at various locations along the route to be improved.

The Site is located in Sections 43, 50, and 51; T9N– R7W in Natchitoches Parish, Louisiana. The Site can be found on the Natchitoches North, Louisiana quadrangle map. The approximate point-of-beginning (POB) for the bridge replacement (Church Street and St. Clair Avenue) is near Latitude 31° 45' 39.02"N and Longitude 93° 05' 10.25"W and traverses eastward approximately 550-ft. to the point-of-ending (POE) located near Latitude

31°45'38.52"N and Longitude 93° 5'3.89"W. The approximate POB for proposed temporary bridge (Touline Street and Stephens Avenue) is near Latitude 31°45'33.74"N and Longitude 93°05'10.53"W and traverses east northeast approximately 575-ft. to the POE located near Latitude 31°45'34.14"N and Longitude 93° 05'3.83"W. The existing bridge crosses Cane River Lake and the proposed temporary bridge would also cross Cane River Lake.

The following alternatives were analyzed as a part of the wetland delineation and threatened and endangered species analysis:

- Alternative 1 – This proposed alternative will replace the existing 2-lane Cane River Bridge with a 3-lane section. This alternative ties the east end of the Cane River Bridge directly into St. Clair Avenue, eliminating the existing offset intersection. This alternative also provides a detour route south of the existing bridge at Touline Street so that traffic is redirected temporarily. The temporary bridge provides two 12-ft. lanes and allows 2-way traffic to be maintained across Cane River throughout the entire construction process.
- Alternative 2 – This proposed alternative will replace the existing 2-lane Cane River Bridge with a 3-lane section. This alternative also provides a detour route south of the existing bridge at Touline Street so that traffic is redirected temporarily. The temporary bridge provides two 12-ft. lanes and allows 2-way traffic to be maintained across Cane River throughout the entire construction process.
- Alternative 3 – This proposed alternative will demolish the existing 2-lane Cane River Bridge and replace it with a 3-lane section. This alternative ties the east end of the Cane River Bridge directly into St. Clair Avenue, eliminating the existing offset intersection. This alternative provides no temporary bridge, so traffic will be detoured during the construction process.
- Alternative 4 – This proposed alternative will demolish the existing 2-lane Cane River Bridge and replace it with a 3-lane section along the existing alignment. This alternative provides no temporary bridge, so traffic will be detoured during the construction process.
- No Build Alternative – In addition to Build Alternatives, the alternative of taking no action is also evaluated in detail. A No-build Alternative is required by NEPA to be studied for purposes of comparison and for consideration in cases where adverse impacts to the environment might outweigh the benefits derived from addressing the purpose and need. The resulting environmental effects from taking no action will be compared with the effects of permitting the proposed action. Where a choice of “no action” by the agency would result in predictable actions by others, these actions are considered to be consequences of the No-build Alternative and are included in the analysis. Other planned and programmed activities, such as road and right-of-way maintenance and other regional improvements, would be performed as scheduled under the No-build Alternative.

2.0 METHODOLOGY

Fenstermaker conducted the delineation in accordance with the *1987 U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0, November 2010)*. Aerial photography, Natural Resource Conservation Service (NRCS) Natchitoches Parish soil survey maps, and U.S. Geological Survey (USGS) topographic quadrangle maps were reviewed prior to the initiation of the field work to identify the potential extent of wetlands present on the subject property.

The purpose of the wetland delineation was to determine the presence/absence of wetlands using the three technical criteria: vegetation, hydrology, and soils. It is necessary that all three criteria be present in order to be a jurisdictional wetland. The absence of any one of these criteria could exclude an area from being a wetland under the jurisdiction of the Corps of Engineers.

The routine wetland delineation was conducted on April 12, 2018 and an additional site visit was made on June 27, 2018. The additional site visit was conducted to determine the presence of the Northern Long-eared Bat (*Myotis septentrionalis*) following online research of the U.S. Fish and Wildlife Service (USFWS) for potential threatened and endangered species.

Routine Wetland Delineation Data Forms (*Appendix A*), as approved by USACE were completed for each vegetation community encountered throughout the property. These data forms contain sufficient information regarding the presence or absence of hydric soils, hydrophytic vegetation, and wetland hydrology, to support the demarcation of a wetland boundary. Locations of each sample plot are presented on *Figures 2* and *3*.

2.1 Vegetation

In order for the vegetation to be considered hydrophytic (wet), the prevalent vegetation must consist of macrophytes that are typically adapted to areas having hydrologic and soil conditions unique to wetlands. By definition, hydrophytic species, due to morphological, physiological, and/or reproductive adaptation(s), have the ability to grow, effectively compete, reproduce, and/or persist in anaerobic soil conditions. Macrophytes are any plant material that can be seen without the aid of magnification.

Dominant vegetation was recorded on the data forms along with the indicator status as listed in the *National List of Plant Species Occurring in Wetlands* published by USFWS. As part of the vegetation criteria, species dominance was evaluated using the “50/20 rule” which ranks plant species that immediately exceed 50-percent of the total dominance measure for a vegetation stratum, plus any additional species comprising 20-percent or more of the total dominance measure for that stratum. If the recorded plant species did not exceed 50-percent of the total dominance, then the prevalence index was used. The prevalence index is a wetland indicator which takes into account all plant species and calculates a weighted average by assigning each indicator status category a numeric code (OBL = 1, FACW = 2, FAC = 3, FACU = 4, and UPL = 5). Plant species are also weighted by their abundance. The prevalence index ranges from 1 to 5, and a prevalence index of 3.0 or less indicates that hydrophytic vegetation is present.

2.2 Hydrology

As defined by the 1987 USACE Manual, the term “wetland hydrology” encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively. While they may not provide an abundance of information about long-term wetness conditions on a given site, wetland hydrology indicators provide evidence that the Site currently has a wetland hydrologic regime. This information, coupled with the presence of hydrophytic vegetation and hydric soils, provides evidence of long-term as well as short-term wetland conditions. Wetland hydrology indicators were recorded at each sample plot as per the USACE requirements. In order to meet the hydrology criteria of a wetland, a sample location must meet one primary indicator or two secondary indicators (*Table 1*).

Table 1: Wetland Hydrology Indicators

Primary Indicators		Secondary Indicators
Surface water (A1)	Water-stained leaves (B9)	Surface soil cracks (B6)
High water table (A2)	Aquatic fauna (B13)	Sparsely vegetated concave surface (B8)
Saturation (A3)	Marl deposits (B15)	Drainage patterns (B10)
Water marks (B1)	Hydrogen sulfide odor (C1)	Moss trim lines (B16)
Sediment deposits (B2)	Oxidized rhizospheres along living roots (C3)	Dry season water table (C2)
Drift deposits (B3)	Presence of reduced iron (C4)	Crayfish burrows (C8)
Algal mat or crust (B4)	Recent iron reduction in tilled soils (C6)	Saturation visible on aerials (C9)
Iron deposits	Thin muck surface (C7)	Geomorphic position (D2)
Inundation visible on aerials (B7)		Shallow aquitard (D3)
		Fac-neutral test (D5)

Source: COE Wetland Delineation Manual, 1987.

2.3 Soils

Hydric soils are defined as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Almost all hydric soils exhibit characteristic morphologies that are a result of repeated periods of saturation and/or inundation for more than a few days at a time. When combined with anaerobic microbial activity in the soil, saturation and inundation causes a depletion of oxygen in the soil. This anaerobiosis process results in characteristic morphologies such as the reduction, translocation, and/or the accumulation of iron, which persists in the soil whether it is wet or dry. This process forms features in the soil that are called redoximorphic features. These characteristic morphologies are particularly useful for identifying hydric soils.

The soil investigation criterion requires the use of a soil probe or a pit excavated to a 20-inch depth in order to investigate for hydric indicators. These indicators typically include, but are not limited to: gleyed or low-chroma colors (redox depletions), redox concentrations, listed on the local hydric soils list, and listed on the national hydric soils list. Information recorded on the data forms included soil colors, size, and texture.

Photographs were also taken at each sample plot where a data form was completed. These photographs show a representative soil profile, as well as overviews of the sample plot (*Appendix B*). Additional photographs were taken of various water features in the project area.

3.0 RESULTS AND DISCUSSION

The general terrain conditions of the Site can be described as undulating and hill slopes. The vegetation habitat can be characterized as herbaceous areas that are maintained as lawns along the river. A few trees were present near the ROW. Development in the area is composed of commercial and residential.

Four sample locations (Plots 1-4) were taken within or adjacent to the Site. Plot locations were selected

based on visual observations of changes in vegetation and topography. Recorded data forms are presented in *Appendix A* and photographs are presented in *Appendix B*. The photographs illustrate typical conditions that were observed at each Plot, obvious jurisdictional wetlands, other waters, and at various points along the ROW. The following subsections describe the different plant communities, hydrological conditions, and soil conditions observed during the investigations performed in 2018.

3.1 Vegetation

The vegetation on the Site was limited to herbaceous communities with a few trees. These herbaceous communities can be characterized as maintained grassy areas along the river banks. Dominant and sub-dominant species of vegetation associated with the project area can be referenced in the corresponding data sheets in *Appendix A*.

Only Plot 2 was dominated by hydrophytes and met the hydrophytic vegetation criteria of a wetland. A complete list of vegetation associated with each plot can be found in the corresponding data sheets located in *Appendix A*. The location of each plot, relative to the ROW, is illustrated in *Figures 2 and 3*.

3.2 Hydrology

The topography of the ROW can be described as undulating with 1 to 8-percent slopes, and hill slopes with 12 to 30-percent slopes. According to Google Earth Imagery, elevations range from approximately 97-ft. to 120-ft. along and adjacent to the ROW. *Figure 2* displays the aerial image illustrating the ROW crossing the river and its banks. The image was used to observe surface hydrology. Surface hydrology appeared to be confined within the river banks. The ROW crosses the Cane River, which is listed as a navigable waterway by the Vicksburg District of the US Army Corps of Engineers. Navigable waterways are jurisdictional under Section 10 of the Rivers and Harbors Act. The Cane River is identified on the United States Geological Survey (USGS) quadrangle map. A table with total acres located within the ROW and impacted for each alternative are located in *Section 5.0*.

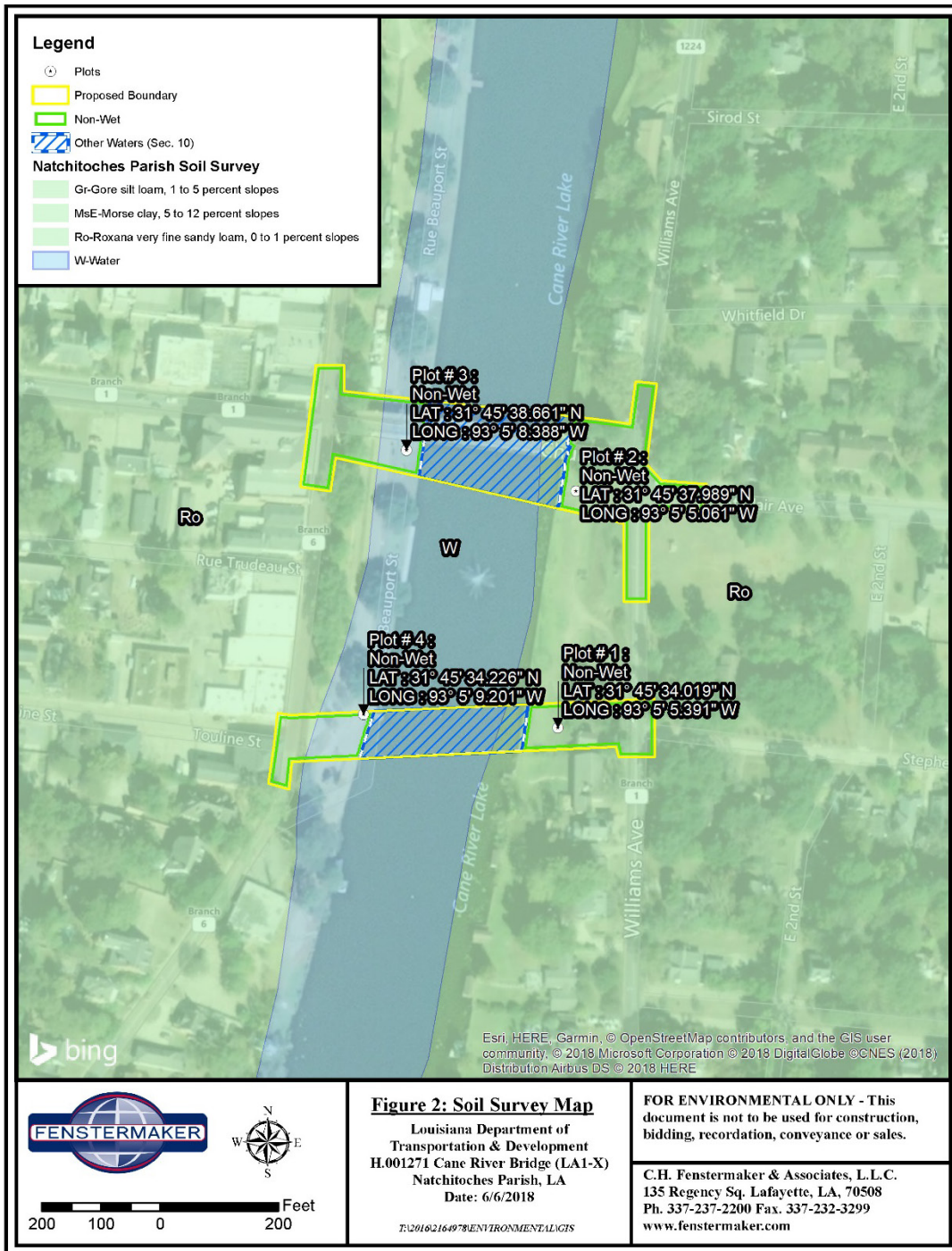
None of the four plots taken met the hydrology criteria of a wetland. Wetland hydrology indicators associated with each plot can be referenced in the corresponding data sheets of *Appendix A*.

3.3 Soils

According to the Natchitoches Parish Soil Survey, the Site has only one soil type mapped within the ROW. The soil is listed as Ro-Roxana very fine sandy loam; 0 to 1 percent slopes. According to the NRCS Web Soil Survey, only 2-percent of the Ro mapped soil unit is a hydric (wetland) soil. Plot locations relative to the map unit can be referenced on *Figure 2* and in the corresponding data sheets in *Appendix A*.

The wetland delineation revealed that only Plot 1 contained hydric soil indicators, thus meeting the hydric soils criteria of a wetland. Soil samples were not taken at Plots 3 and 4 due to the location of these plots in a manicured lawn and park setting. However, if Plots 3 and 4 could meet the hydric soils criteria, it would not meet the overall 3 criteria of a wetland. Soil characteristics associated with the plots can be found in the corresponding data sheets located in *Appendix A*.

Figure 2: Soil Survey Map



4.0 THREATENED AND ENDANGERED SPECIES EVALUATION

Section 7 of the Endangered Species Act of 1973 requires federal agency actions (e.g., project approvals, funding, other actions) to be implemented so that species listed as protected are not jeopardized in

terms of their existence or habitat. The U.S. Fish and Wildlife Service (USFWS) is charged with implementing this law and maintaining a list of protected plants and animals and their protection status.

Online research was conducted at the USFWS Louisiana Endangered Species Act Project Review and Guidance for Other Federal Trust Resources website. The application is designed to streamline the review of projects for potential effects to federally-listed threatened and endangered species and their critical habitats.

The results of the research indicate that Natchitoches Parish provides habitat for endangered and threatened species. The threatened and endangered species known to exist in Natchitoches Parish are the Red-Cockaded Woodpecker (*Picoides borealis*), the Northern Long-eared Bat (*Myotis septentrionalis*), and the Interior Least Tern (*Sterna antillarum*). The habitat near the project area is not conducive for the Red-Cockaded Woodpecker or the Interior Least Tern. The Northern Long-eared Bat can roost under bridges; therefore, a site visit was performed on June 27, 2018 to determine the presence of this species. The Northern Long-eared Bat was not detected under or near the bridge or within the project corridor.

Additionally, correspondence from USFWS during the Solicitation of Views process stated, "This project has been reviewed for effects to Federal trust resources under our jurisdiction and currently protected by the Endangered Species Act of 1973 (Act). The project, as proposed, will have no effect on those resources." Correspondence from the Louisiana Wildlife and Fisheries, Office of Wildlife stated, "After careful review of our database, no impacts to rare, threatened, or endangered species or critical habitats are anticipated for the proposed project. No state or federal parks, wildlife refuges, wildlife management areas, or scenic streams are known to occur at the specified site within Louisiana's boundaries."

5.0 FINDINGS AND CONCLUSIONS

In conclusion, four data plots (Plots 1-4) were collected for the wetland delineation. None of these plots contained all technical criteria of a wetland. As a result, no wetlands were identified within the ROW for the four alternatives; however, all alternatives cross the Cane River, which is listed as a navigable waterway by the Vicksburg District of the U.S. Army Corps of Engineers. Navigable waterways are jurisdictional under Section 10 of the Rivers and Harbors Act. See *Figure 3, Wetland Delineation Detail*, for the boundaries of the ROW and the river.

It is Fenstermaker's opinion that a Department of the Army Permit will be required prior to any construction activities that occur within the banks of the river. These construction activities include, but are not limited to, the deposition of fill material, dredging, or installation or replacement of structures. Table 2 identifies the jurisdictional waters (Cane River) and the acreage located within the ROW for the four alternatives.

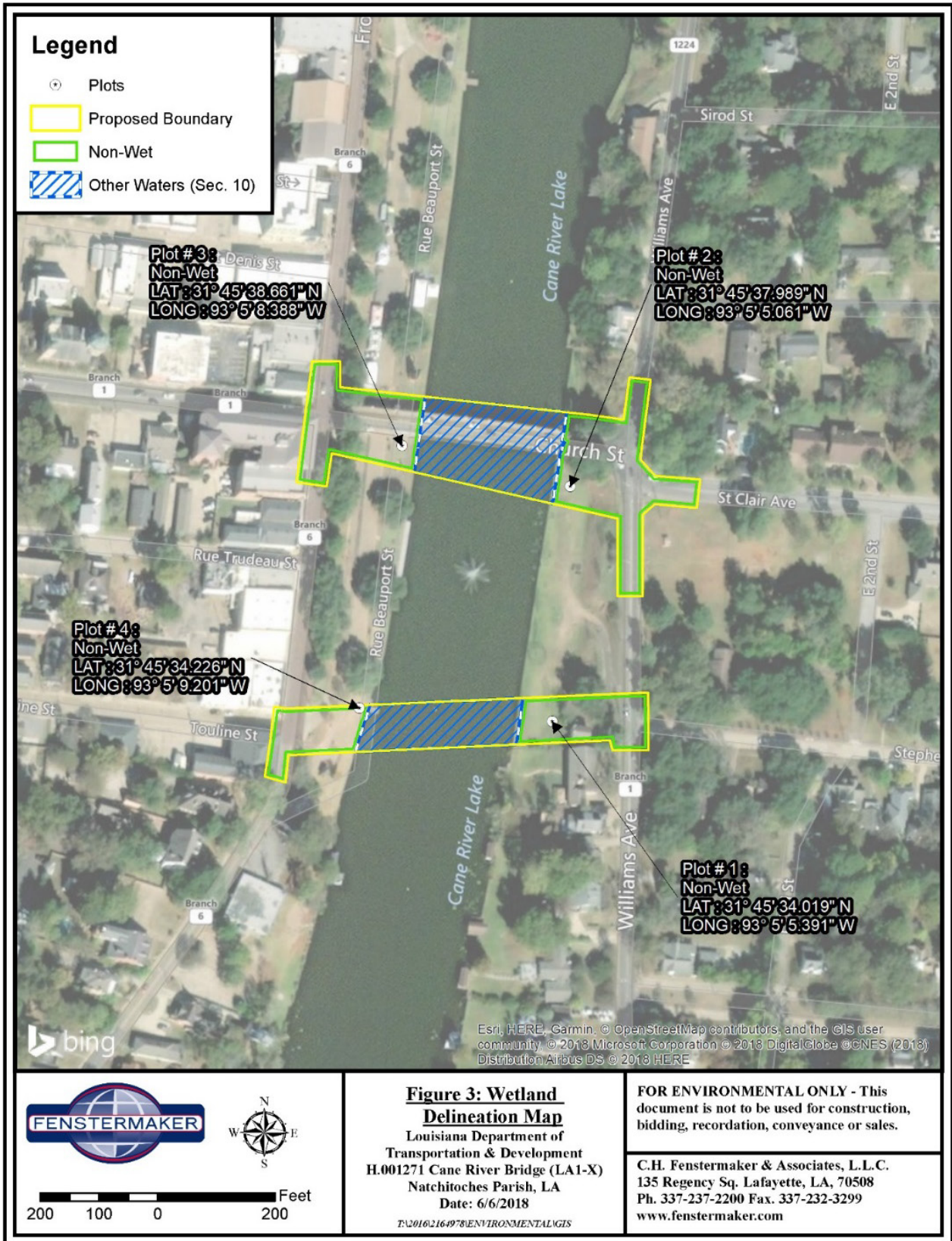
Table 2: Potential Impacts to Waters of the U.S.

Alternative	Bridge	Waters of the US (Acres)	Other Water Dimensions
1 (Skewed + Temporary)	Replacement-Church Street	0.5472	250' wide x depth (unknown)
	Temporary- Touline Street	0.5035	
TOTAL (ALT 1)		1.0507	
2 (Same Alignment + Temporary)	Replacement- Church Street	0.5296	
	Temporary- Touline Street	0.5035	
TOTAL (ALT 2)		1.0331	
3 (Skewed)	Replacement- Church Street	0.5472	
4 (Same Alignment)	Replacement- Church Street	0.5296	

A Threatened and Endangered Species (T&E) evaluation was completed during the field visit. It was determined that the ROW for both alternatives will not impact any (T&E) species or their habitats.

A jurisdictional wetland determination can only be made by the USACE. Consultants such as Fenstermaker can perform field investigations (delineations), collect data in a prescribed manner, and submit it to the COE along with recommendations; however, it is the USACE that makes the final determination.

Figure 3: Wetland Delineation Map



6.0 REFERENCES

Federal Register. July 13, 1994. *Changes in Hydric Soils of the United States*.

U.S. Army Corps of Engineers. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1, U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS.

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U.S. Army Corps of Engineers. 2012. *Atlantic and Gulf Coastal Plain Region-National Wetlands Plant List, Final Draft Ratings*. Prepared by U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory (CRREL), Hanover, NH, and BONAP, Chapel Hill, NC.

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APPENDIX A: DATA FORMS

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: H.001271 Cane River Bridge (LA1-X) **City/County:** Natchitoches Parish **Sampling Date:** 12-Apr-18
Applicant/Owner: Louisiana Department of Transportation and Develop **State:** LA **Sampling Point:** 1
Investigator(s): Ryne Menard & Dominick Sparcella **Section, Township, Range:** S 50 T 9N R 7W
Landform (hillslope, terrace, etc.): hillslope **Local relief (concave, convex, none):** convex **Slope:** 2.0 % / 1.1 °
Subregion (LRR or MLRA): LRR P **Lat.:** 31°45'34.019" **Long.:** 93°5'5.391" **Datum:** WGS84
Soil Map Unit Name: Ro-Roxana very fine sandy loam, 0 to 1 percent slopes **NWI classification:** _____

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

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

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: _____	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of 2 required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along 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"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input 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"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: _____		
Remarks: _____		

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: 1

Tree Stratum	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
6. _____	0	<input type="checkbox"/> 0.0%	_____
7. _____	0	<input type="checkbox"/> 0.0%	_____
8. _____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size: _____)			
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
6. _____	0	<input type="checkbox"/> 0.0%	_____
7. _____	0	<input type="checkbox"/> 0.0%	_____
8. _____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	= Total Cover	
Shrub Stratum (Plot size: _____)			
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
6. _____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	= Total Cover	
Herb Stratum (Plot size: _____)			
1. <i>Trifolium repens</i>	30	<input checked="" type="checkbox"/> 30.3%	FACU
2. <i>Rumex crispus</i>	5	<input type="checkbox"/> 5.1%	FAC
3. <i>Stenotaphrum secundatum</i>	60	<input checked="" type="checkbox"/> 60.6%	FAC
4. <i>Geranium carolinianum</i>	2	<input type="checkbox"/> 2.0%	UPL
5. <i>Vitis rotundifolia</i>	1	<input type="checkbox"/> 1.0%	FAC
6. <i>Taraxacum officinale</i>	1	<input type="checkbox"/> 1.0%	FACU
7. _____	0	<input type="checkbox"/> 0.0%	_____
8. _____	0	<input type="checkbox"/> 0.0%	_____
9. _____	0	<input type="checkbox"/> 0.0%	_____
10. _____	0	<input type="checkbox"/> 0.0%	_____
11. _____	0	<input type="checkbox"/> 0.0%	_____
12. _____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>49.5</u> 20% of Total Cover: <u>19.8</u>	<u>99</u>	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	= 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: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 66 x 3 = 198

FACU species 31 x 4 = 124

UPL species 2 x 5 = 10

Column Total s: 99 (A) 332 (B)

Prevalence Index = B/A = 3.354

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

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

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes No

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: 1

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)	%	Tvpe ¹	Loc ²			
0-6	7.5YR	3/1	95%	7.5YR	4/6	5%	C	M	Silt Loam	
6-16	7.5YR	4/2	65%	7.5YR	4/6	10%	C	M	Silt Loam	
				7.5YR	4/4	25%	C	M	Silt Loam	
16-20	7.5YR	4/4	60%	7.5YR	8/3	5%	C	M	Silt Loam	
				7.5YR	3/2	15%	C	M	Silt Loam	
				5YR	4/6	20%	C	M	Silt Loam	

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

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: H.001271 Cane River Bridge (LA1-X) **City/County:** Natchitoches Parish **Sampling Date:** 12-Apr-18
Applicant/Owner: Louisiana Department of Transportation and Develop **State:** LA **Sampling Point:** 2
Investigator(s): Ryne Menard & Dominick Sparcella **Section, Township, Range:** S 51 T 9N R 7W
Landform (hillslope, terrace, etc.): Undulating **Local relief (concave, convex, none):** none **Slope:** 0.0 % / 0.0 °
Subregion (LRR or MLRA): LRR P **Lat.:** 31°45'37.989" **Long.:** 93°5'5.061" **Datum:** WGS84
Soil Map Unit Name: Ro-Roxana very fine sandy loam, 0 to 1 percent slopes **NWI classification:** _____

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="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: _____	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of 2 required)
Primary Indicators (minimum of one required; check all that apply)		
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along 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"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input 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"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: _____		
Remarks: _____		

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: 2

Tree Stratum (Plot size: _____)		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.	<u>Magnolia grandiflora</u>	10	<input checked="" type="checkbox"/> 50.0%	FAC
2.	<u>Lagerstroemia indica</u>	10	<input checked="" type="checkbox"/> 50.0%	UPL
3.	_____	0	<input type="checkbox"/> 0.0%	_____
4.	_____	0	<input type="checkbox"/> 0.0%	_____
5.	_____	0	<input type="checkbox"/> 0.0%	_____
6.	_____	0	<input type="checkbox"/> 0.0%	_____
7.	_____	0	<input type="checkbox"/> 0.0%	_____
8.	_____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>10</u> 20% of Total Cover: <u>4</u>		20	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size: _____)				
1.	_____	0	<input type="checkbox"/> 0.0%	_____
2.	_____	0	<input type="checkbox"/> 0.0%	_____
3.	_____	0	<input type="checkbox"/> 0.0%	_____
4.	_____	0	<input type="checkbox"/> 0.0%	_____
5.	_____	0	<input type="checkbox"/> 0.0%	_____
6.	_____	0	<input type="checkbox"/> 0.0%	_____
7.	_____	0	<input type="checkbox"/> 0.0%	_____
8.	_____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>		0	= Total Cover	
Shrub Stratum (Plot size: _____)				
1.	_____	0	<input type="checkbox"/> 0.0%	_____
2.	_____	0	<input type="checkbox"/> 0.0%	_____
3.	_____	0	<input type="checkbox"/> 0.0%	_____
4.	_____	0	<input type="checkbox"/> 0.0%	_____
5.	_____	0	<input type="checkbox"/> 0.0%	_____
6.	_____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>		0	= Total Cover	
Herb Stratum (Plot size: _____)				
1.	<u>Stenotaphrum secundatum</u>	90	<input checked="" type="checkbox"/> 90.0%	FAC
2.	<u>Trifolium repens</u>	10	<input type="checkbox"/> 10.0%	FACU
3.	_____	0	<input type="checkbox"/> 0.0%	_____
4.	_____	0	<input type="checkbox"/> 0.0%	_____
5.	_____	0	<input type="checkbox"/> 0.0%	_____
6.	_____	0	<input type="checkbox"/> 0.0%	_____
7.	_____	0	<input type="checkbox"/> 0.0%	_____
8.	_____	0	<input type="checkbox"/> 0.0%	_____
9.	_____	0	<input type="checkbox"/> 0.0%	_____
10.	_____	0	<input type="checkbox"/> 0.0%	_____
11.	_____	0	<input type="checkbox"/> 0.0%	_____
12.	_____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>50</u> 20% of Total Cover: <u>20</u>		100	= Total Cover	
Woody Vine Stratum (Plot size: _____)				
1.	_____	0	<input type="checkbox"/> 0.0%	_____
2.	_____	0	<input type="checkbox"/> 0.0%	_____
3.	_____	0	<input type="checkbox"/> 0.0%	_____
4.	_____	0	<input type="checkbox"/> 0.0%	_____
5.	_____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>		0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 100 x 3 = 300

FACU species 10 x 4 = 40

UPL species 10 x 5 = 50

Column Total s: 120 (A) 390 (B)

Prevalence Index = B/A = 3,250

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is > 50%
 - 3 - Prevalence Index is ≤ 3.0¹
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes No

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: 2

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)	%	Tvpe ¹	Loc ²				
0-3	7.5YR	3/1	95%	10YR	7/6	5%	C	M	Silt Loam	
3-4	7.5YR	3/1	65%	5YR	3/4	25%	C	M	Silt Loam	
				5YR	4/6	5%	C	M	Silt Loam	
4-7	7.5YR	3/1	80%	5YR	4/6	20%	C	M	Silt Loam	
7-20	7.5YR	3/3	75%	7.5YR	4/6	20%	C	M	Silt Loam	
				7.5YR	3/1	5%	D	M	Silt Loam	

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

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: H.001271 Cane River Bridge (LA1-X) **City/County:** Natchitoches Parish **Sampling Date:** 12-Apr-18
Applicant/Owner: Louisiana Department of Transportation and Develop **State:** LA **Sampling Point:** 3
Investigator(s): Ryne Menard & Dominick Sparcella **Section, Township, Range:** S 43 T 9N R 7W
Landform (hillslope, terrace, etc.): hillslope **Local relief (concave, convex, none):** convex **Slope:** 3.0 % / 1.7 °
Subregion (LRR or MLRA): LRR P **Lat.:** 31°45'38.661" **Long.:** 93°5'8.388" **Datum:** WGS84
Soil Map Unit Name: W-Water **NWI classification:** _____

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

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

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: _____	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of 2 required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along 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"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input 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"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: _____		
Remarks: _____		

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: 3

Tree Stratum	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
6. _____	0	<input type="checkbox"/> 0.0%	_____
7. _____	0	<input type="checkbox"/> 0.0%	_____
8. _____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	= Total Cover	
Sapling or Sapling/Shrub Stratum (Plot size: _____)			
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
6. _____	0	<input type="checkbox"/> 0.0%	_____
7. _____	0	<input type="checkbox"/> 0.0%	_____
8. _____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	= Total Cover	
Shrub Stratum (Plot size: _____)			
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
6. _____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	= Total Cover	
Herb Stratum (Plot size: _____)			
1. <u>Cynodon dactylon</u>	55	<input checked="" type="checkbox"/> 94.8%	FACU
2. <u>Geranium bicknellii</u>	2	<input type="checkbox"/> 3.4%	UPL
3. <u>Taraxacum officinale</u>	1	<input type="checkbox"/> 1.7%	FACU
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
6. _____	0	<input type="checkbox"/> 0.0%	_____
7. _____	0	<input type="checkbox"/> 0.0%	_____
8. _____	0	<input type="checkbox"/> 0.0%	_____
9. _____	0	<input type="checkbox"/> 0.0%	_____
10. _____	0	<input type="checkbox"/> 0.0%	_____
11. _____	0	<input type="checkbox"/> 0.0%	_____
12. _____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>29</u> 20% of Total Cover: <u>11.6</u>	<u>58</u>	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 56 x 4 = 224

UPL species 2 x 5 = 10

Column Total s: 58 (A) 234 (B)

Prevalence Index = B/A = 4.034

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is > 50%
 - 3 - Prevalence Index is ≤3.0¹
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes No

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

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)	%	Tv _{0e} ¹	Loc ²		

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

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U) <input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U) <input type="checkbox"/> Muck Presence (A8) (LRR U) <input type="checkbox"/> 1 cm Muck (A9) (LRR P, T) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A) <input type="checkbox"/> Sandy Muck Mineral (S1) (LRR O, S) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U) <input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U) <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Marl (F10) (LRR U) <input type="checkbox"/> Depleted Ochric (F11) (MLRA 151) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T) <input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U) <input type="checkbox"/> Delta Ochric (F17) (MLRA 151) <input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A) <input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	<p>Indicators for Problematic Hydric Soils³:</p> <input type="checkbox"/> 1 cm Muck (A9) (LRR O) <input type="checkbox"/> 2 cm Muck (A10) (LRR S) <input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T) <input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 153B) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p>Restrictive Layer (if observed):</p> Type: _____ Depth (inches): _____	<p>Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/></p>
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Remarks:
 No plot taken due to manicured park area.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: H.001271 Cane River Bridge (LA1-X) **City/County:** Natchitoches Parish **Sampling Date:** 12-Apr-18
Applicant/Owner: Louisiana Department of Transportation and Develop **State:** LA **Sampling Point:** 4
Investigator(s): Ryne Menard & Dominick Sparcella **Section, Township, Range:** S 43 T 9N R 7W
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** convex **Slope:** 8.0 % / 4.6 °
Subregion (LRR or MLRA): LRR P **Lat.:** 31°45'34.226" **Long.:** 93°5'9.201" **Datum:** WGS84
Soil Map Unit Name: W-Water **NWI classification:** _____

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

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

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: _____	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of 2 required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along 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"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input 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"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: _____		
Remarks: _____		

VEGETATION (Five/Four Strata) - Use scientific names of plants.

Sampling Point: 4

Tree Stratum	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. <u>Quercus virginiana</u>	20	<input checked="" type="checkbox"/>	100.0%	FACU
2. _____	0	<input type="checkbox"/>	0.0%	
3. _____	0	<input type="checkbox"/>	0.0%	
4. _____	0	<input type="checkbox"/>	0.0%	
5. _____	0	<input type="checkbox"/>	0.0%	
6. _____	0	<input type="checkbox"/>	0.0%	
7. _____	0	<input type="checkbox"/>	0.0%	
8. _____	0	<input type="checkbox"/>	0.0%	
50% of Total Cover: <u>10</u> 20% of Total Cover: <u>4</u>	20	= Total Cover		
Sapling or Sapling/Shrub Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/>	0.0%	
2. _____	0	<input type="checkbox"/>	0.0%	
3. _____	0	<input type="checkbox"/>	0.0%	
4. _____	0	<input type="checkbox"/>	0.0%	
5. _____	0	<input type="checkbox"/>	0.0%	
6. _____	0	<input type="checkbox"/>	0.0%	
7. _____	0	<input type="checkbox"/>	0.0%	
8. _____	0	<input type="checkbox"/>	0.0%	
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	0	= Total Cover		
Shrub Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/>	0.0%	
2. _____	0	<input type="checkbox"/>	0.0%	
3. _____	0	<input type="checkbox"/>	0.0%	
4. _____	0	<input type="checkbox"/>	0.0%	
5. _____	0	<input type="checkbox"/>	0.0%	
6. _____	0	<input type="checkbox"/>	0.0%	
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	0	= Total Cover		
Herb Stratum (Plot size: _____)				
1. <u>Cynodon dactylon</u>	90	<input checked="" type="checkbox"/>	100.0%	FACU
2. _____	0	<input type="checkbox"/>	0.0%	
3. _____	0	<input type="checkbox"/>	0.0%	
4. _____	0	<input type="checkbox"/>	0.0%	
5. _____	0	<input type="checkbox"/>	0.0%	
6. _____	0	<input type="checkbox"/>	0.0%	
7. _____	0	<input type="checkbox"/>	0.0%	
8. _____	0	<input type="checkbox"/>	0.0%	
9. _____	0	<input type="checkbox"/>	0.0%	
10. _____	0	<input type="checkbox"/>	0.0%	
11. _____	0	<input type="checkbox"/>	0.0%	
12. _____	0	<input type="checkbox"/>	0.0%	
50% of Total Cover: <u>45</u> 20% of Total Cover: <u>18</u>	90	= Total Cover		
Woody Vine Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/>	0.0%	
2. _____	0	<input type="checkbox"/>	0.0%	
3. _____	0	<input type="checkbox"/>	0.0%	
4. _____	0	<input type="checkbox"/>	0.0%	
5. _____	0	<input type="checkbox"/>	0.0%	
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 110 x 4 = 440

UPL species 0 x 5 = 0

Column Total s: 110 (A) 440 (B)

Prevalence Index = B/A = 4.000

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is > 50%
 - 3 - Prevalence Index is ≤3.0¹
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes No

Remarks: (If observed, list morphological adaptations below).

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

APPENDIX B: PHOTOGRAPHS



Photo 1: Plot #1, Soil Sample



Photo 2: Plot #1, Vegetation facing west



Photo 3: Plot #2, Soil Sample



Photo 4: Plot #2, Vegetation facing east



Photo 5: Plot #3, Soil Sample



Photo 6: Plot #3, Vegetation facing west



Photo 7: Plot #4, Soil Sample



Photo 8: Plot #4, Vegetation facing east



Photo 9: View of existing bridge at Church Street



Photo 10: View of existing bridge at Church Street



Photo 11: View of existing bridge at Church Street



Photo 12: View of existing bridge at Church Street