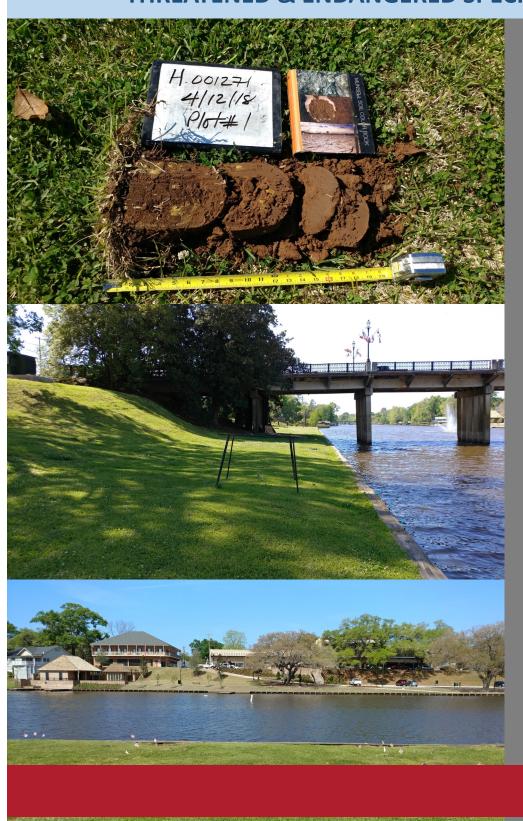
Appendix H:

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



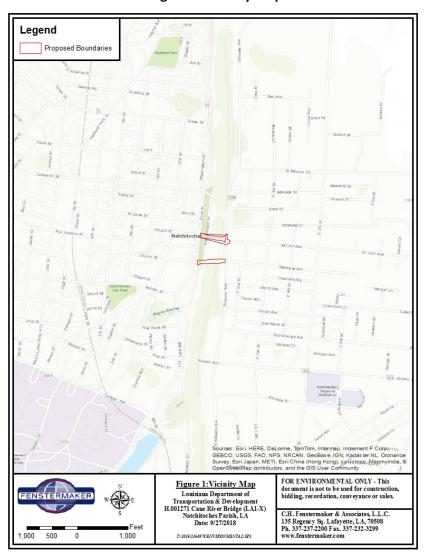
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1.0 INTRODUCTION

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. approximate point-of-beginning (POB) for bridge the 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 Latitude near

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

Prim	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 subdominant 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*.

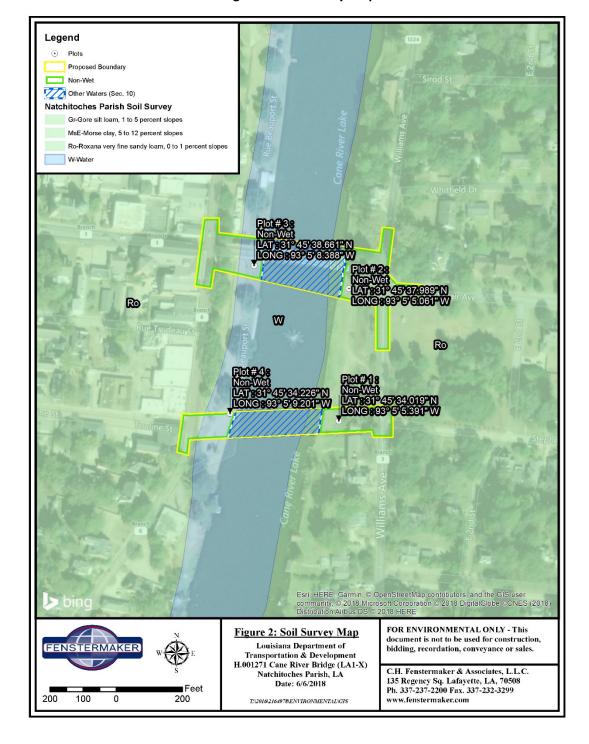


Figure 2: Soil Survey Map

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 +	Replacement-Church Street	0.5472	
Temporary)	Temporary- Touline Street	0.5035	
	TOTAL (ALT 1)	1.0507	
2 (Same	Replacement- Church Street	0.5296	250' wide x depth (unknown)
Alignment + Temporary)	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.

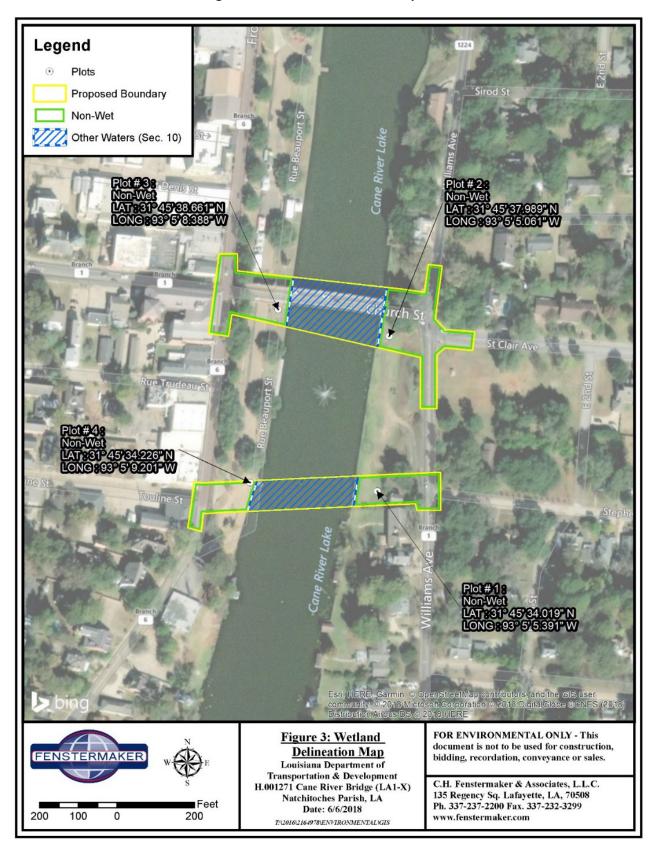


Figure 3: Wetland Delineation Map

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. Department of Agriculture, Natural Resources Conservation Service. 1995. *Soil Mapping Units and Hydric Soils Designations, Louisiana, Third Edition*. May 1995.
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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"						
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 ye							
	tly disturbed? Are "Normal Circumstances" present? Yes No						
	problematic? (If needed, explain any answers in Remarks.) Impling point locations, transects, important features, etc.						
Hydrophytic Vegetation Present? Yes O No •							
Hydric Soil Present? Yes • No •	Is the Sampled Area						
Wetland Hydrology Present? Yes O No •	within a Wetland? Yes O No						
Remarks:							
Remarks.							
HYDROLOGY							
Wetland Hydrology Indicators:	Secondary Indicators (minimum of 2 required)						
Primary Indicators (minimum of one required; check all that apply)							
Surface Water (A1) Aquatic Fauna (B1)							
High Water Table (A2) Marl Deposits (B1							
Saturation (A3) Hydrogen Sulfide	_ ` ` '						
	heres along Living Roots (C3) Dry Season Water Table (C2)						
Sediment Deposits (B2) Presence of Redu							
	uction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9)						
☐ Algal Mat or Crust (B4) ☐ Thin Muck Surface							
☐ Iron Deposits (B5) ☐ Other (Explain in							
Inundation Visible on Aerial Imagery (B7)	FAC-Neutral Test (D5)						
Water-Stained Leaves (B9)	Sphagnum moss (D8) (LRR T, U)						
Field Observations:							
Surface Water Present? Yes No Depth (inches):							
Water Table Present? Yes No Depth (inches):							
	Wetland Hydrology Present? Yes ○ No ●						
(includes capillary fringe) Yes No Depth (inches):							
Describe Recorded Data (stream gauge, monitoring well, aerial phot	os, previous inspections), if available:						
Remarks:							

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

			minant pecies?		Sampling Point: 1
	Absolute		el.Strat. I	ndicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover	. (Cover	Status	Number of Dominant Species
1	0_		0.0%		That are OBL, FACW, or FAC:1(A)
2			0.0%		Total Number of Dominant
3	0_		0.0%		Species Across All Strata: 2 (B)
4	0		0.0%		
5	0		0.0%		Percent of dominant Species That Are OBL FACW or FAC: 50.0% (A/B)
6	0_		0.0%		That Are OBL, FACW, or FAC:50.0% (A/B)
7	0_		0.0%		Prevalence Index worksheet:
8	0		0.0%		Total % Cover of: Multiply by:
50% of Total Cover: 0 20% of Total Cover: 0	0 =	= Tot	tal Cover		0BL species0 x 1 =0
Sapling or Sapling/Shrub Stratum (Plot size:)				FACW species
1	0		0.0%		FAC species66 x 3 =198
2.			0.0%		FACU species 31 x 4 = 124
3.			0.0%		UPL species $\frac{2}{x}$ x $5 = \frac{10}{x}$
4			0.0%		Column Totals: 99 (A) 332 (B)
5			0.0%		
5			0.0%		Prevalence Index = $B/A = 3.354$
7			0.0%		Hydrophytic Vegetation Indicators:
8.	0		0.0%		David Took for the december 12 to 12
50% of Total Cover: 0 20% of Total Cover: 0	0 =	= Tot	tal Cover		1 - Rapid Test for Hydrophytic Vegetation
		- 10	tui Covci		2 - Dominance Test is > 50%
Shrub Stratum (Plot size:)	_				☐ 3 - Prevalence Index is ≤3.0 1
1		<u> </u>	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)
2		<u> </u>	0.0%		17.1
3		Н-	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4		\sqcup _	0.0%		
5		Ц_	0.0%		Definition of Vegetation Strata:
6		Ш_	0.0%		Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
50% of Total Cover: 0 20% of Total Cover: 0	=	= Tot	tal Cover		(7.6 cm) or larger in diameter at breast height (DBH).
Herb Stratum (Plot size:)					
1 . Trifolium repens	30	✓	30.3% F	ACU	Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
2. Rumex crispus	5		5.1% F	AC	than 3 in. (7.6 cm) DBH.
3. Stenotaphrum secundatum	60	~	60.6% F	AC	, ,
4. Geranium carolinianum	2		2.0% L	JPL	Sapling/Shrub - Woody plants, excluding vines, less
5. Vitis rotundifolia	1		1.0% F	AC	than 3 in. DBH and greater than 3.28 ft (1m) tall.
6. Taraxacum officinale			1.0% F	ACU	Shrub - Woody plants, excluding woody vines,
7			0.0%		approximately 3 to 20 ft (1 to 6 m) in height.
8			0.0%		, , , ,
9			0.0%		Herb - All herbaceous (non-woody) plants, including
10	0		0.0%		herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately
11	0		0.0%		3 ft (1 m) in height.
12.	0		0.0%		
50% of Total Cover: 49.5 20% of Total Cover: 19.8		 Tot=	tal Cover		Woody vine - All woody vines, regardless of height.
Woody Vine Stratum (Plot size:)	0		0.00/		
1			0.0%		
2	0_		0.0%		
3			0.0%		
4		<u>H</u> -	0.0%		Hydrophytic
5	-	Ш_	0.0%		Vegetation
50% of Total Cover: 0 20% of Total Cover: 0	=	= Tot	tal Cover		Present? Yes O NO
Remarks: (If observed, list morphological adaptations below).					
*Indicator suffix = National status or professional decision assigned because R	egional status	not de	efined by FWS		

SOIL Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)											
Depth Matrix					Red	lox Featu	res		_		
(inches)	Color (ı	moist)	<u>%</u>	Color (moist)	<u>%</u>	Type 1	Loc2	Texture Remarks		
0-6	7.5YR	3/1	95%	7.5YR	4/6	5%	С	М	Silt Loam		
6-16	7.5YR	4/2	65%	7.5YR	4/6	10%	С	М	Silt Loam		
				7.5YR	4/4	25%	С	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	_ <u>M</u>	Silt Loam		
Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ² Location: PL=Pore Lining. M=Matrix Hydric Soil Indicators: Tudicators for Problematic Hydric Soile ³ :											
									Indicators for Problematic Hydric Soils ³ :		
Histosol (•				yvalue Belo				1 cm Muck (A9) (LRR O)		
	pedon (A2)			_	n Dark Surf				2 cm Muck (A10) (LRR S)		
☐ Black Hist				Loa	my Mucky	Mineral (F	1) (LRR O)	Reduced Vertic (F18) (outside MLRA 150A,B)		
	Sulfide (A4)			Loa	my Gleyed	Matrix (F2	!)		Piedmont Floodplain Soils (F19) (LRR P, S, T)		
Stratified	Layers (A5)			☐ Dep	oleted Matr	ix (F3)			Anomalous Bright Loamy Soils (F20) (MLRA 153B)		
Organic B	odies (A6) (L	RR P, T, U)	✓ Red	lox Dark Su	ırface (F6)			Red Parent Material (TF2)		
5 cm Muc	ky Mineral (A	7) (LRR P,	T, U)	☐ Dep	oleted Dark	Surface (F	7)		Very Shallow Dark Surface (TF12)		
Muck Pres	sence (A8) (LI	RR U)		Rec	lox Depres	sions (F8)			Other (Explain in Remarks)		
1 cm Muc	k (A9) (LRR F	P, T)		☐ Mar	l (F10) (LR	RU)			outer (Explain in remains)		
Depleted	Below Dark S	urface (A1	.1)	☐ Dep	oleted Ochr	ic (F11) (M	1LRA 151)				
☐ Thick Dar	k Surface (A1	2)		☐ Iron	n-Mangane:	se Masses	(F12) (LR	R O, P, T)			
Coast Pra	irie Redox (A:	16) (MLRA	150A)		bric Surfac						
Sandy Mu	ıck Mineral (S	1) (LRR O,	, S)		ta Ochric (F			,			
	yed Matrix (S		,		-	c (F18) (MLRA 150A, 150B)			³ Indicators of hydrophytic vegetation and		
Sandy Re	-	,				dplain Soils (F19) (MLRA 149A) wetland hydrology must be present, unless disturbed or problematic.					
	Matrix (S6)								49A, 153C, 153D)		
	ace (S7) (LRR	PSTI	n		illalous bil	grit Loarry	3011S (F20	U) (MLKA 14	133C, 133C)		
Daik Suit	acc (57) (LIN	(1, 5, 1, 0	')								
Restrictive L	ayer (if obse	erved):									
Type:	h \ .					_			Hydric Soil Present? Yes No		
Depth (inc	nes):					_			100 0 110 0		
Remarks:											

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

policant/Owner: Louisiana Department of Transportation and Develope
andform (hillslope, terrace, etc.): Undulating Local relief (concave, convex, none): none Stope: 0.0 % / 0.0 ° ubregion (LRR or MLRA): LRR P Lat: 31°45′37.989" Long: 93°5′5.061" Datum: WG584 bit Map Unit Name: Ro-Roxana very fine sandy loam, 0 to 1 percent slopes NWI classification: re climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.) Are Vegetation , Soil , or Hydrology injufficantly disturbed? Are "Normal Circumstances" present? Yes No Are Vegetation Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No Watchad Hydrology Present? Yes No Are Normal Circumstances present? Yes No Are Yes No Are Wetland Hydrology Present? Yes No Are Normal Vegetation Present? Yes No Are Vegetation Vegetation Present? Yes No Are Vegetation Present? Yes No Are Vegetation Present? Yes No Are Vegetation Pr
Lat:: 31°45′37,989° Long:: 93°5′5,061° Datum: WGS84 Map Unit Name: Ro-Roxana very fine sandy loam, 0 to 1 percent slopes NWI classification:
NWT classification: New classification:
NWT classification: New classification:
re climatic/hydrologic conditions on the site typical for this time of year? Are Vegetation
Are Vegetation
Are Vegetation
SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No No No within a Wetland? Yes No within a Wetland? Yes No within a Wetland? Yes No Action No
Hydric Soil Present? Yes No within a Wetland? Yes No Wetland Hydrology Present? Yes No Wetland Hydrology Present? Yes No Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Surface Water (A1) Hydrogen Sulfide Odor (C1) Saturation (A3) Hydrogen Sulfide Odor (C1) Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3) Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Algal Mat or Crust (B4) Tinn Deposits (B5) Tinn Deposits (B5) Tinn Deposits (B5) Tinn Indications (Minimum of 2 required) Water Stained Leaves (B9) Field Observations: Surface Water Present? Yes No Depth (inches):
Hydric Soil Present? Yes No within a Wetland? Yes No Wetland Hydrology Present? Yes No Wetland Hydrology Present? Yes No Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Surface Water (A1) Hydrogen Sulfide Odor (C1) Saturation (A3) Hydrogen Sulfide Odor (C1) Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3) Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Algal Mat or Crust (B4) Tinn Deposits (B5) Tinn Deposits (B5) Tinn Deposits (B5) Tinn Indications (Minimum of 2 required) Water Stained Leaves (B9) Field Observations: Surface Water Present? Yes No Depth (inches):
Wetland Hydrology Present? Yes No No Within a Wetland? Remarks: Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) Aquatic Fauna (B13) High Water Table (A2) High Water Table (A2) Water Marks (B1) Water Marks (B1) Water Marks (B1) Drininge Patterns (B10) Saturation (A3) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Presence of Reduced Iron (C4) Sturface Water (A1) Again Mar Deposits (B2) Presence of Reduced Iron (C4) Sturface Water (A1) Again Mar Deposits (B2) Presence of Reduced Iron (C4) Sturface Water (A1) Recent Iron Reduction in Tilled Soils (C6) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) FAC-Neutral Test (D5) Sphagnum moss (D8) (LRR T, U)
Remarks: Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) High Water Table (A2) High Water Table (A2) Hydrogen Sulfide Odor (C1) Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3) Sediment Deposits (B2) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Field Observations: Surface Water Present? Secondary Indicators (minimum of 2 required) Spansed of Prequired Spansed Secondary Indicators (minimum of 2 required) Spansed Secondary Indicators (B8) Spansed Vegetated Concave Surface (B8) Spansed
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) Aquatic Fauna (B13) Sparsely Vegetated Concave Surface (B8) High Water Table (A2) Marl Deposits (B15) (LRR U) Drainage Patterns (B10) Saturation (A3) Hydrogen Sulfide Odor (C1) Moss Trim Lines (B16) Drift Deposits (B2) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Algal Mat or Crust (B4) Thin Muck Surface (C7) Geomorphic Position (D2) Iron Deposits (B5) Other (Explain in Remarks) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Sphagnum moss (D8) (LRR T, U) Field Observations: Surface Water Present? Yes No Depth (inches): Secondary Indicators (minimum of 2 required) Secondary Indicators (minimum of 2 required) Secondary Indicators (minimum of 2 required) Surface Secondary Indicators (minimum of 2 required) Surface Soil Cracks (B6) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Prainage Patterns (B10) Drainage Pattern
Wetland Hydrology Indicators: Secondary Indicators (minimum of 2 required) Primary Indicators (minimum of one required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) Aquatic Fauna (B13) Sparsely Vegetated Concave Surface (B8) High Water Table (A2) Marl Deposits (B15) (LRR U) Drainage Patterns (B10) Saturation (A3) Hydrogen Sulfide Odor (C1) Moss Trim Lines (B16) Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3) Dry Season Water Table (C2) Sediment Deposits (B2) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Thin Muck Surface (C7) Geomorphic Position (D2) Iron Deposits (B5) Other (Explain in Remarks) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) FAC-Neutral Test (D5) Water-Stained Leaves (B9) Depth (inches): Sphagnum moss (D8) (LRR T, U)
Wetland Hydrology Indicators: Secondary Indicators (minimum of 2 required) Primary Indicators (minimum of one required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) Aquatic Fauna (B13) Sparsely Vegetated Concave Surface (B8) High Water Table (A2) Marl Deposits (B15) (LRR U) Drainage Patterns (B10) Saturation (A3) Hydrogen Sulfide Odor (C1) Moss Trim Lines (B16) Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3) Dry Season Water Table (C2) Sediment Deposits (B2) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Thin Muck Surface (C7) Geomorphic Position (D2) Iron Deposits (B5) Other (Explain in Remarks) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) FAC-Neutral Test (D5) Water-Stained Leaves (B9) Depth (inches): Spectondary Indicators (minimum of 2 required; Sparsely Vegetated Concave Surface (B8) Sparsely
Wetland Hydrology Indicators: Secondary Indicators (minimum of 2 required) Primary Indicators (minimum of one required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) Aquatic Fauna (B13) Sparsely Vegetated Concave Surface (B8) High Water Table (A2) Marl Deposits (B15) (LRR U) Drainage Patterns (B10) Saturation (A3) Hydrogen Sulfide Odor (C1) Moss Trim Lines (B16) Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3) Dry Season Water Table (C2) Sediment Deposits (B2) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Thin Muck Surface (C7) Geomorphic Position (D2) Iron Deposits (B5) Other (Explain in Remarks) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) FAC-Neutral Test (D5) Water-Stained Leaves (B9) Depth (inches): Spectondary Indicators (minimum of 2 required; Sparsely Vegetated Concave Surface (B8) Sparsely
Primary Indicators (minimum of one required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) High Water Table (A2) Marl Deposits (B15) (LRR U) Saturation (A3) Hydrogen Sulfide Odor (C1) Water Marks (B1) Sediment Deposits (B2) Presence of Reduced Iron (C4) Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Algal Mat or Crust (B4) Thin Muck Surface (C7) Geomorphic Position (D2) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Pesh (inches): Depth (inches):
Surface Water (A1)
High Water Table (A2) Saturation (A3) Hydrogen Sulfide Odor (C1) Water Marks (B1) Sediment Deposits (B2) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Marl Deposits (B15) (LRR U) Drainage Patterns (B10) Moss Trim Lines (B16) Moss Trim Lines (B16) Dry Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Sphagnum moss (D8) (LRR T, U)
Saturation (A3)
Water Marks (B1)
Sediment Deposits (B2)
Drift Deposits (B3)
Algal Mat or Crust (B4)
☐ Iron Deposits (B5) ☐ Other (Explain in Remarks) ☐ Shallow Aquitard (D3) ☐ Inundation Visible on Aerial Imagery (B7) ☐ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR T, U) Field Observations: Surface Water Present? Yes No Depth (inches):
☐ Inundation Visible on Aerial Imagery (B7) ☐ FAC-Neutral Test (D5) ☐ Water-Stained Leaves (B9) ☐ Sphagnum moss (D8) (LRR T, U) Field Observations: Surface Water Present? Yes No Depth (inches):
Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes ○ No ● Depth (inches):
Field Observations: Surface Water Present? Yes ○ No ● Depth (inches):
Surface Water Present? Yes No Depth (inches):
Water Table Present? Yes No Depth (inches):
Wetland Hydrology Present? Yes () No ()
(includes capillary fringe) Yes V No V Depth (inches):
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Remarks:

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

	% Cover	R	Cover 50.0%	Indicator Status FAC	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC:		
Magnolia grandiflora Lagerstroemia indica	10	=		FAC			
Lagerstroemia indica	10	=			I mat are obli, racw, or rac.		
·			50.0%	UPL			
			0.0%		Total Number of Dominant		
		\Box	0.0%		Species Across All Strata: 3 (B)		
		П	0.0%		Percent of dominant Species		
			0.0%		That Are OBL, FACW, or FAC: 66.7% (A/B)		
	_		0.0%		Prevalence Index worksheet:		
	0		0.0%		Total % Cover of: Multiply by:		
50% of Total Cover: 10 20% of Total Cover: 4	20 =	= T	otal Cover		0BL speciles 0 x 1 = 0		
Sapling or Sapling/Shrub Stratum (Plot size:	.)				FACW species		
	0		0.0%		FAC speci es <u>100</u> x 3 = <u>300</u>		
	0		0.0%		FACU species $10 \times 4 = 40$		
	0		0.0%		UPL species $\frac{10}{10}$ x 5 = $\frac{50}{10}$		
			0.0%		Column Totals: 120 (A) 390 (B)		
			0.0%		1001 alim 10 tal 31		
			0.0%		Prevalence Index = B/A = 3.250		
			0.0%		Hydrophytic Vegetation Indicators:		
	0		0.0%		1 - Rapid Test for Hydrophytic Vegetation		
50% of Total Cover: 0 20% of Total Cover: 0	0 =	= T	otal Cover		✓ 2 - Dominance Test is > 50%		
Shrub Stratum (Plot size:)					3 - Prevalence Index is ≤3.0 ¹		
	0		0.0%				
			0.0%		☐ Problematic Hydrophytic Vegetation ¹ (Explain)		
		П	0.0%		¹ Indicators of hydric soil and wetland hydrology must		
		П	0.0%		be present, unless disturbed or problematic.		
			0.0%		Definition of Vegetation Strata:		
·	0		0.0%		Tree - Woody plants, excluding woody vines,		
		 = To	otal Cover		approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).		
Herb Stratum (Plot size:)					(
1 . Stenotaphrum secundatum	90	V	90.0%	FAC	Sapling - Woody plants, excluding woody vines,		
2 Trifolium repens	10		10.0%	FACU	approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.		
3.	0		0.0%				
4	0		0.0%		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.		
5	0		0.0%				
S			0.0%				
7			0.0%				
3			0.0%				
9			0.0%		Herb - All herbaceous (non-woody) plants, including		
)			0.0%		herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately		
1	0		0.0%		plants, except woody vines, less than approximately 3 ft (1 m) in height.		
2.	0		0.0%				
50% of Total Cover: 50 20% of Total Cover: 20	100 =	= T	otal Cover		Woody vine - All woody vines, regardless of height.		
Voody Vine Stratum (Plot size:)							
	0		0.0%				
			0.0%				
	0		0.0%				
			0.0%				
	0		0.0%		Hydrophytic Vegetation		
50% of Total Cover: 0 20% of Total Cover: 0	0 =	= T	otal Cover		Present? Yes No		

SOIL Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)											
Denth Matrix Redox Features								_			
(inches)	Color (r	noist)	%	Color (moist)		%	Type 1	Loc ²	Texture Remarks		
0-3	7.5YR	3/1	95%	10YR	7/6	5%	С	М	Silt Loam		
3-4	7.5YR	3/1	65%	5YR	3/4	25%	С	М	Silt Loam		
				5YR	4/6	5%	С	М	Silt Loam		
4-7	7.5YR	3/1	80%	5YR	4/6	20%	С	M	Silt Loam		
7-20	7.5YR	3/3	75%	7.5YR	4/6	20%	C	М	Silt Loam		
				7.5YR	3/1	5%	D	M	Silt 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 Soils ³ :											
Black His Hydroger Stratified Organic E 5 cm Muc Muck Pre 1 cm Muc Depleted Thick Dai Coast Pra Sandy Mu	pedon (A2)	7) (LRR P, RR U) P, T) urface (A1 2) L6) (MLRA 1) (LRR O,	T, U) 1) 150A)	Thin Loa Loa Dep Rec Dep Rec In Jun Loa	yvalue Beloin Dark Surfi imy Mucky I imy Gleyed oleted Matri dox Dark Subleted Dark dox Depressi I (F10) (LR oleted Ochri in-Manganesi bric Surface ta Ochric (F	ace (S9) (I Matrix (F2 x (F3) rface (F6) Surface (F ions (F8) R U) c (F11) (M ie Masses e (F13) (LF	LRR S, T, (L) (LRR O) (L) (LRR O) (LRR 151) (F12) (LRR RR P, T, U) (LRR P, T, U)	U)) R O, P, T)	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)		
Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Restrictive Layer (if observed): Type:								unless disturbed or problematic.			
Depth (inc	ches):								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/Co	ounty: 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 Section	Section, Township, Range: S 43 T 9N R 7W						
Landform (hillslope, terrace, etc.): hillslope Local re	elief (concave, convex, none):convex Slope:3.0						
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 distur							
Are Vegetation, Soil, or Hydrology naturally problems							
SUMMARY OF FINDINGS - Attach site map showing sampling	(, . ,						
Hydrophytic Vegetation Present? Yes ○ No •	To the Country of Asses						
Hydric Soil Present? Yes ○ No •	Is the Sampled Area Westerness Yes No No						
Wetland Hydrology Present? Yes ○ No •	within a Wetland?						
Remarks:							
rendries							
HYDROLOGY							
Wetland Hydrology Indicators:	Secondary Indicators (minimum of 2 required)						
Primary Indicators (minimum of one required; check all that apply)	Surface Soil Cracks (B6)						
Surface Water (A1) Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)						
High Water Table (A2) Marl Deposits (B15) (LRR U							
☐ Saturation (A3) ☐ Hydrogen Sulfide Odor (C1							
☐ Water Marks (B1) ☐ Oxidized Rhizospheres alor							
☐ Sediment Deposits (B2) ☐ Presence of Reduced Iron							
☐ Drift Deposits (B3) ☐ Recent Iron Reduction in T							
☐ Algal Mat or Crust (B4) ☐ Thin Muck Surface (C7)	Geomorphic Position (D2)						
☐ Iron Deposits (B5) ☐ Other (Explain in Remarks)							
☐ Inundation Visible on Aerial Imagery (B7)	FAC-Neutral Test (D5)						
Water-Stained Leaves (B9)	Sphagnum moss (D8) (LRR T, U)						
Field Observations:							
Surface Water Present? Yes No • Depth (inches):							
Water Table Present? Yes No Depth (inches):							
	Wetland Hydrology Present? Yes ○ No ●						
(includes capillary fringe) Yes Vivo Depth (inches):							
Describe Recorded Data (stream gauge, monitoring well, aerial photos, prev	rious inspections), if available:						
Remarks:							

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

		Domina Species		Sampling Point: 3		
Tree Stratum (Plot size:)	Absolute % Cover	Rel.Stra	t. Indicato			
, , , , , , , , , , , , , , , , , , ,	0	0.0		Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)		
		0.0		That are ODE, FACW, OF FAC.		
		0.00		Total Number of Dominant		
		0.0	%	Species Across All Strata: (B)		
	0	0.0	%	Percent of dominant Species		
	0	0.0	 %	That Are OBL, FACW, or FAC: 0.0% (A/B)		
	_	0.0	 %	Prevalence Index worksheet:		
	0	0.0	%	Total % Cover of: Multiply by:		
50% of Total Cover: 0 20% of Total Cover: 0	0 =	= Total Co	over	0BL speciles 0 x 1 = 0		
Sapling or Sapling/Shrub Stratum (Plot size:	_)			FACW species <u>0</u> x 2 = <u>0</u>		
	0		%	FAC speciles 0 x 3 = 0		
	0		%	FACU species <u>56</u> x 4 = <u>224</u>		
	0	0.0	%	UPL species $\frac{2}{}$ x 5 = $\frac{10}{}$		
	0		%	Column Totals:		
	0	0.0	%			
	0		%	Prevalence Index = B/A = 4.034		
	0		%	Hydrophytic Vegetation Indicators:		
		0.0	<u> </u>	1 - Rapid Test for Hydrophytic Vegetation		
50% of Total Cover: 0 20% of Total Cover: 0	=	= Total Co	over	2 - Dominance Test is > 50%		
Shrub Stratum (Plot size:)				\Box 3 - Prevalence Index is ≤3.0 1		
	0		%	Problematic Hydrophytic Vegetation ¹ (Explain)		
	0	0.0	%	_		
	0		%	Indicators of hydric soil and wetland hydrology must		
	_		%	be present, unless disturbed or problematic.		
·	0		%	Definition of Vegetation Strata:		
	0	0.0	%	Tree - Woody plants, excluding woody vines,		
50% of Total Cover:0 20% of Total Cover:0	=	= Total Co	over	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).		
Herb Stratum (Plot size:)				Sapling - Woody plants, excluding woody vines,		
1 . Cynodon dactylon	55	94.8	% FACU	approximately 20 ft (6 m) or more in height and less		
2 . Geranium bicknellii		3.49		than 3 in. (7.6 cm) DBH.		
3 Taraxacum officinale			% FACU	O and line of Ohmate. When a development a construction of the original discount.		
<u> </u>				Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.		
5				=		
5		0.0		Shrub - Woody plants, excluding woody vines,		
7		0.0		approximately 3 to 20 ft (1 to 6 m) in height.		
3		0.0		Herb - All herbaceous (non-woody) plants, including		
9		0.0		herbaceous vines, regardless of size, and woody		
)		0.0		plants, except woody vines, less than approximately 3 ft (1 m) in height.		
1 2.		0.0				
Z. 50% of Total Cover: 29 20% of Total Cover: 11.6	- <u>0</u> 58 =			Woody vine - All woody vines, regardless of height.		
		- IUlai Cl	ovei			
Noody Vine Stratum (Plot size:)	0		.,			
		0.0		-		
		0.0		-		
		0.00		-		
		$\overline{}$		- Hydrophytic		
		0 0.0%		─ Vegetation		
50% of Total Cover: 0 20% of Total Cover: 0		0.0 = Total Co		Vegetation Present? Yes No		

SOIL Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth	Matrix			ox Featu	res				
(inches)	Color (moist)	% Color	(moist)	%	Tvpe 1	Loc2	Texture	Remarks	
							-		
				-			-		
				-					
1 Tymou C—Con	contration D-Danlation DN	4-Dodusod Matrix		Lor Conto	d Cand Crai		ion. DI —Doro Lining M	- Matrix	
Hydric Soil I	centration. D=Depletion. RN	i=Reduced Matrix	, CS=Covered	or Coated	a Sand Grai	ns ²Locat			
Histosol (6.6	(60) (100 6	- LD		blematic Hydric Soils ³ :	
_ `	•		olyvalue Belov				1 cm Muck (A9)		
	pedon (A2)	_	hin Dark Surfa)	2 cm Muck (A1	0) (LRR S)	
Black Hist			oamy Mucky N				Reduced Vertic	(F18) (outside MLRA 150A,B)	
	Sulfide (A4)		oamy Gleyed I)		Piedmont Flood	lplain Soils (F19) (LRR P, S, T)	
	Layers (A5)		epleted Matrix				Anomalous Brig	ht Loamy Soils (F20) (MLRA 153B)	
	odies (A6) (LRR P, T, U)	. =	edox Dark Sui	` ,			Red Parent Mat	rerial (TF2)	
	ky Mineral (A7) (LRR P, T, L		epleted Dark		7)		Very Shallow D	ark Surface (TF12)	
	sence (A8) (LRR U)		edox Depress				Other (Explain	in Remarks)	
	k (A9) (LRR P, T)		larl (F10) (LRF						
	Below Dark Surface (A11)		epleted Ochri						
	k Surface (A12)	_	on-Manganes			O, P, T)			
	irie Redox (A16) (MLRA 150		mbric Surface						
	ck Mineral (S1) (LRR O, S)		elta Ochric (F				³ Indicator	rs of hydrophytic vegetation and	
	eyed Matrix (S4)		educed Vertic				wetlan	d hydrology must be present,	
Sandy Re			iedmont Flood					ss disturbed or problematic.	
	Matrix (S6)	∟ A	nomalous Brig	ght Loamy	Soils (F20)	(MLRA 149	A, 153C, 153D)		
☐ Dark Surf	ace (S7) (LRR P, S, T, U)								
								<u> </u>	
Restrictive L	ayer (if observed):								
Type:	ayer (ii observea).								
Depth (incl	hes).			_			Hydric Soil Present	? Yes ○ No •	
	1103).			_					
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 Slop	pe: <u>8.0</u> % / <u>4.6</u> °			
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					
	ntly disturbed? Are "Normal Circumstances" present?	Yes ● No ○			
	problematic? (If needed, explain any answers in Rema	arke)			
SUMMARY OF FINDINGS - Attach site map showing		-			
Hydrophytic Vegetation Present? Yes ○ No ●					
Hydric Soil Present? Yes ○ No ●	Is the Sampled Area				
Wetland Hydrology Present? Yes O No •	within a Wetland?				
Remarks:					
HYDROLOGY					
Wetland Hydrology Indicators:	Secondary Indicators (minimus	m of 2 required)			
Primary Indicators (minimum of one required; check all that app		Secondary Indicators (minimum of 2 required) Surface Soil Cracks (86)			
Surface Water (A1) Aquatic Fauna		Sparsely Vegetated Concave Surface (B8)			
☐ High Water Table (A2) ☐ Marl Deposits	_ ' ' '	Drainage Patterns (B10)			
Saturation (A3) Hydrogen Sulf					
Water Marks (B1) Oxidized Rhizo	pheres along Living Roots (C3) Dry Season Water Table (C	(2)			
	duced Iron (C4) Crayfish Burrows (C8)				
		,			
Algal Mat or Crust (B4) Thin Muck Sur					
☐ Iron Deposits (B5) ☐ Other (Explain ☐ Inundation Visible on Aerial Imagery (B7)					
Water-Stained Leaves (B9)	FAC-Neutral Test (D5)) T 11)			
. ,	☐ Sphagnum moss (D8) (LRR	(1, 0)			
Field Observations: Surface Water Present? Yes No Depth (inche					
	les):				
): Wetland Hydrology Present? Yes 🔾	No 💿			
Saturation Present? (includes capillary fringe) Yes No Depth (inche):				
Describe Recorded Data (stream gauge, monitoring well, aerial p	otos, previous inspections), if available:				
Remarks:		_			
Reliais.					

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

	Dominant Species?			Sampling Point: 4		
(District of		R	el.Strat.		Dominance Test worksheet:	
(Plot size:)	% Cover		Cover	Status	Number of Dominant Species	
Quercus virginiana	20		100.0%	FACU	That are OBL, FACW, or FAC: (A)	
			0.0%		Total Number of Dominant	
	_		0.0%		Species Across All Strata: (B)	
			0.0%		Percent of dominant Species	
			0.0%		That Are OBL, FACW, or FAC: 0.0% (A/B)	
	0		0.0%			
			0.0%		Prevalence Index worksheet:	
00/ of Total Course 40 200/ of Total Course 4	0	 	0.0%		Total % Cover of: Multiply by:	
0% of Total Cover: 10 20% of Total Cover: 4		= 10	otal Cover		0BL speciles	
apling or Sapling/Shrub Stratum (Plot size:					FACW species x 2 =	
	0_	Н	0.0%		FAC species $0 \times 3 = 0$	
		Н	0.0%		FACU species110 x 4 =440	
	_	Н	0.0%		UPL speci es $0 \times 5 = 0$	
		Н	0.0%		Column Total s: <u>110</u> (A) <u>440</u> (B)	
	_	Н	0.0%		Prevalence Index = B/A = 4,000	
		Н	0.0%		Hydrophytic Vegetation Indicators:	
		Н	0.0%		nydrophytic vegetation indicators:	
	0_	Ш	0.0%		1 - Rapid Test for Hydrophytic Vegetation	
0% of Total Cover: 0 20% of Total Cover: 0	:	= To	otal Cover		2 - Dominance Test is > 50%	
nrub Stratum (Plot size:)					\Box 3 - Prevalence Index is ≤3.0 1	
	0		0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)	
	0		0.0%			
	0		0.0%		¹ Indicators of hydric soil and wetland hydrology must	
			0.0%		be present, unless disturbed or problematic.	
	0		0.0%		Definition of Vegetation Strata:	
	0		0.0%		Tree - Woody plants, excluding woody vines,	
0% of Total Cover:0 20% of Total Cover:0	:	0 = Total Cover			approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
erb Stratum (Plot size:)					Sapling - Woody plants, excluding woody vines,	
_ Cynodon dactylon		V	100.0%	FACU	approximately 20 ft (6 m) or more in height and less	
	0	Ц	0.0%		than 3 in. (7.6 cm) DBH.	
	0		0.0%			
	0	Ц	0.0%		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.	
	0	Ц	0.0%			
		Ц	0.0%			
	0_	Ц	0.0%			
			0.0%		Horb All borbooks (non-suredis) starts in the	
		Ц	0.0%		Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody	
<u>, </u>	0_		0.0%		plants, except woody vines, less than approximately	
•	0	Ш	0.0%		3 ft (1 m) in height.	
	0		0.0%		l	
0% of Total Cover: 45 20% of Total Cover: 18	90 :	= To	otal Cover		Woody vine - All woody vines, regardless of height.	
Oody Vine Stratum (Plot size:)		_				
			0.0%			
			0.0%			
	-		0.0%			
	0		0.0%		l	
	0		0.0%		Hydrophytic Vegetation Present? Yes No No	
50% of Total Cover: 0 20% of Total Cover: 0	0 :	= To	otal Cover			
emarks: (If observed, list morphological adaptations below).					l	

SOIL Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Denth	Denth Matrix Redox Features									
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Tvpe 1	Loc ²	Texture Remarks			
							Tr-			
¹ Type: C=Cond	centration. D=Depletion	. RM=Reduce	d Matrix, CS=Covere	ed or Coate	d Sand Gra	ins ² Locat	tion: PL=Pore Lining. M=Matrix			
Hydric Soil I	ndicators:						Indicators for Problematic Hydric Soils ³ :			
Histosol (A1)		Polyvalue Belo	ow Surface	(S8) (LRR	S. T. U)				
_ `	pedon (A2)		☐ Thin Dark Sur				1 cm Muck (A9) (LRR O)			
Black Hist			Loamy Mucky			')	2 cm Muck (A10) (LRR S)			
	Sulfide (A4)						Reduced Vertic (F18) (outside MLRA 150A,B)			
	Layers (A5)		Loamy Gleyed		2)		☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)			
			Depleted Mati				Anomalous Bright Loamy Soils (F20) (MLRA 153B)			
	odies (A6) (LRR P, T, U)		Redox Dark S	` '			Red Parent Material (TF2)			
	ky Mineral (A7) (LRR P,	T, U)	Depleted Darl	k Surface (F7)		☐ Very Shallow Dark Surface (TF12)			
	sence (A8) (LRR U)		Redox Depres	ssions (F8)			Other (Explain in Remarks)			
1 cm Muc	k (A9) (LRR P, T)		☐ Marl (F10) (Li	RR U)			, ,			
Depleted	Below Dark Surface (A1	1)	Depleted Och	ric (F11) (N	MLRA 151)					
☐ Thick Darl	k Surface (A12)		☐ Iron-Mangane	ese Masses	(F12) (LRR	O, P, T)				
Coast Prai	rie Redox (A16) (MLRA	150A)	Umbric Surfac			,				
	ck Mineral (S1) (LRR O,		Delta Ochric (
	yed Matrix (S4)	-,	Reduced Vert			1E0D\	³ Indicators of hydrophytic vegetation and			
Sandy Red						•	wetland hydrology must be present,			
			☐ Piedmont Floo				unless disturbed or problematic.			
	Matrix (S6)		☐ Anomalous Br	right Loamy	Soils (F20) (MLRA 149	9A, 153C, 153D)			
☐ Dark Surfa	ace (S7) (LRR P, S, T, U)								
Postrictive I	ayer (if observed):									
	ayei (ii observeu).									
Type:	> -						Hydric Soil Present? Yes ○ No ●			
Depth (incl	nes):						1,000			
Remarks:										
No plot taken	due to manicured pl	lot area.								

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