Exhibit 8 Wetlands Delineation Study



City of Natchitoches Highway 478 Development Tract

Jurisdictional Determination of Waters of the United States, Including Wetlands, for the Proposed 155-Acre LED Tract

Prepared For:

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Courtesy of:

Altec Environmental Consulting, LLC

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2 Introduction

Land & Aquatic Resource Management, LLC (L&A) was contracted by Altec Environmental Consulting, LLC (Altec) to conduct a jurisdictional determination for the proposed Louisiana Economic Development (LED) Tract (Project). The Project consists of an approximately 155-acre tract near Highway 478 in Natchitoches Parish. The Project is located ±7.1-miles south-southwest of Natchitoches, Louisiana (Appendix A, Figure 1). The Project is located in Section 20, Township 8 North, Range 7 West and can be found on the *Natchitoches South*, *Louisiana*, U.S. Geological Survey 7.5-minute topographic map. Additionally, the Project is located in close proximity to N 31.659249° latitude; W 93.1071677° longitude (WGS 1984).

L&A was contracted to conduct the delineation based on an area of interest boundary provided by Altec. The delineation was not specific to identifying acreages or impacts for proposed areas of development or infrastructure.



3 REGULATORY FRAMEWORK

Under the authority of Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act of 1899, the Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (USACE) share regulatory authority over waters of the United States. Waters of the United States include all waters that are, have, or may be used for interstate and/or international commerce, including all water that is subject to the tide; all waters that are rivers, streams, sloughs, lakes, mudflats, sandflats, wetlands, wet meadows, prairie potholes, playa lakes, or natural ponds, and the use, degradation, or destruction of the aforementioned that could affect interstate and international commerce; all impoundments of the above-mentioned; all tributaries of the above-mentioned; territorial seas; and all wetlands adjacent to the above-mentioned waters. The width of waters of the United States is defined as that portion that falls within the limits of the ordinary high-water mark (OHWM). Field indicators of OHWM include clear and natural lines on opposite sides of the banks or shoreline, scouring, sedimentary deposits, drift lines, exposed roots, shelving, destruction of terrestrial vegetation, and the presence of litter debris. Typically, the width of waters of the United States (within defined banks) corresponds to the two-year flood event.

More specifically, under the authority of Section 404 of the CWA, the USACE regulates the discharge of dredged and fill material into all waters of the United States, including wetlands. Non-tidal waters of the United States are generally described as rivers and streams, including the smallest of tributaries, any impoundments on those rivers and streams (e.g., ponds and lakes), and any wetlands adjacent to those features. Wetlands are defined as those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, mudflats, wet meadows, playa lakes, and similar areas. In the absence of adjacent wetlands, the limits of USACE jurisdictions extend to the OHWM of non-tidal waters of the United States. When adjacent wetlands are present, the limits of jurisdiction extend beyond the OHWM to the limit of the adjacent wetlands. If there is no hydrologic connection between wetlands and a water of the United States the wetlands may be considered isolated and may not exist within the jurisdiction of the USACE.

For purposes of Section 404 of the CWA, waters of the United States are defined at 33 Code of Federal Regulations (CFR) §328.3 as:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.
- 2. All interstate waters, including interstate wetlands. Jurisdictional Determination of Waters of the United States



- 3. All other waters, such as intrastate lakes, rivers, streams (including ephemeral streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use,
 - i. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
 - ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - iii. Which are used or could be used for industrial purpose by industries in interstate commerce.
- 4. All impoundments of water otherwise defined as waters of the United States under the definition.
- 5. Tributaries of waters identified in paragraphs 1–4 above.
- 6. The territorial seas.
- 7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs 1–6 above.

Under Section 10 of the Rivers and Harbors Act of 1899, the USACE regulates navigable waters of the United States, a subset of waters of the United States. Navigable waters of the United States are defined at 33 CFR §329 as those waters that are subject to the ebb and flow of the tide and/or presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the water body, and is not extinguished by later actions or events which impede or destroy navigable capacity. Navigable waters in the United States include many coastal waters, including bays, and major portions of major rivers.



4 METHODS

4.1 Purpose

The purpose of this investigation was to determine if environmental constraints applicable to waters of the U.S., candidate, threatened, or endangered species and/or if known items of historical significance occurs within the Project area. The investigation included an on-the-ground investigation during the month of March 2020.

In addition, a desktop assessment using USGS topographic maps, aerial photographs, Natural Resources Conservation Service (NRCS) soils data, Federal Emergency Management Agency floodplain (FEMA) maps, and U.S Fish and Wildlife Service's (USFWS) National Wetland Inventory (NWI) maps were utilized to identify potential characteristics of problematic areas listed above.

4.2 WETLAND CLASSIFICATION

A wetland assessment and delineation was completed within the Project area following the methods described in the USACE 1987 Wetlands Delineation Manual and augmented with the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0). These methods for delineating wetlands require that, under normal circumstances, an area meet three criteria to be designated as a wetland. The criteria are: (1) the prevalence of hydrophytic vegetation, (2) the presence of hydric soils, and (3) the presence of wetland hydrology.

The wetland assessment and delineation consisted of the following:

- Large Area, greater than 5 acres, Determination Method described in the Wetlands Delineation Manual (USACE, 1987), sample plots were taken along predetermined transects, as defined within the delineation manual based on baseline length, to determine wetland or non-wetland status. Visual observations were used to identify vegetation, soil, and hydrological characteristics within the vicinity of the sample plots. Completed wetland determination data forms are attached at the end of this report in Appendix B.
- Plant community types in proximity to potential wetland boundaries were identified. All dominant plant species were identified within the visually perceived wetland boundary or until the nearest significant vegetative community change. The ecologist selected a representative observation point for each plant community, visually determined the dominant species from each stratum of the community and recorded the wetland indicator status of the dominant species. A determination was then made as to whether the vegetation was hydrophytic. Plant identification and nomenclature follows *Common Vascular Plants of the Louisiana Marsh* and *Aquatic and Wetland Plants of the Western Gulf Coast*.



- Hydrophytic vegetation is typically present where the frequency and duration of inundation or soil saturation exert a controlling influence on the plant species present. Plant species are assigned a wetland indicator status according to the probability of species occurring in wetlands. Hydrophytic vegetation was determined present where greater than 50 percent of the dominant species were listed as FAC, FACW, or OBL. The North American Digital Flora: National Wetland Plant List (NWPL) was used to determine the indicator status of all plant species. Hydrophytic plant indicator status designations conform to the following:
 - OBL Plants that occur almost always (estimated probability >99 percent) in wetlands under natural conditions but may also occur rarely (estimated probability <1 percent) in nonwetlands.
 - FACW Plants that occur usually (estimated probability >67 percent to 99 percent) in wetlands under natural conditions, but also occur (estimated probability 1 to 33 percent) in non-wetlands.
 - FAC Plants with a similar likelihood (estimated probability 33 to 67 percent) of occurring in both wetlands and non-wetlands.
 - FACU Plants that occur sometimes (estimated probability 1 to <33 percent) in wetlands but occur more often (estimated probability >67 to 99 percent) in non-wetlands.
 - UPL Plants that occur rarely (estimated probability <1 percent) in wetlands, but almost always occur (estimated probability >99 percent) in non-wetlands under natural conditions.
- Soil pits were dug at sample plots for the potential wetlands being investigated. Munsell Soil Color Charts were used to evaluate the hue, value, and chroma of representative soils and associated soil mottles. When appropriate, soil mottles were also characterized by their size, distinction, and frequency of occurrence. Soil indicators from the samples were then recorded and determined if the soils were hydric. Reducing conditions on site may be indicated by the presence of oxidized root channels, sulfuric odor, and mottling or gleyed soils. Also noted were other hydrological indicators such as soil saturation within the upper 12 inches of the soil, standing water existing within the soil pits, and the depth to saturated soil. The soil pit was left open for at least 10 minutes to allow free water in the soil to stabilize before recording the depth to free water in the pit and the depth to saturated soil.

Field investigations were conducted during the month of March 2020 to determine the primary biological and hydrological characteristics of the proposed Project area, and to identify appropriate areas to establish wetland delineation sampling plots. Appropriate jurisdictional wetland boundaries were derived from wetland sampling plot analysis and subsequently recorded using a Trimble global positioning system (GPS) receiver. For areas between sample points, the wetland/upland boundary was determined by interpolation of the position of vegetation and hydrologic indicators. This information



was then projected onto a representative aerial photograph to display the cumulative, on-site jurisdictional wetland area. If applicable, wetland feature polygons and potential jurisdictional water boundaries have been identified on a map with corresponding labels and provided within Appendix A.

4.3 STREAM CLASSIFICATION

Streams are generally classified as having perennial, intermittent, or ephemeral flow. Perennial streams are those that sustain some amount of continuous flow throughout the year. Groundwater accounts for most of this flow. Overland sheetflow during and after rainfall provides supplemental flow and is responsible for high-water events. All other streams are classified as either ephemeral or intermittent. Neither ephemeral nor intermittent streams have year-round flow, and both receive water as overland sheetflow from rainfall; however, a portion of water flowing in intermittent streams is contributed by groundwater. Furthermore, some stream classifications specify that an ephemeral stream generally flows less than 30 days per year while seasonal flow in intermittent streams typically lasts longer than 30 days (but not throughout the year).

Flow is not always immediately evident, and without continual monitoring of a stream over an extended period of time, stream flow classification can be challenging. L&A investigators were present in the study area during March 2020. Due to limited field observations, additional stream flow classification methods were used. Field reconnaissance included walking available stream channels within the study area and documenting the following: (1) pooling characteristics, (2) the average extent or width of the plane, or mark, of OHWM, which is created by the fluctuations of the depth of water flowing through the channel, (3) presence of springs, seeps, and perched water tables, and (4) location of wetlands and type of hydrophytic vegetation they support.

The limits of all streams exhibiting an OHWM were mapped during the field survey. For purposes of deciding jurisdiction, aerial photo interpretation was used to verify that the natural streams and other drainages were part of the surface tributary system. Drainages or channels that could not be traced to the surface tributary system, did not traverse a wetland area or did not appear to replace the function of a natural drainage previously filled or was otherwise non-functional were identified as upland drainage ditches (likely non-waters of the United States).



5 RESULTS

Field activities associated with the preparation of this preliminary jurisdictional determination request were conducted in March 2020 by L&A's Environmental Specialist, John Collins. In order to perform an investigation of potentially jurisdictional waters of the U.S. waterbodies, including wetlands, the proposed Project was investigated on foot. The following details the findings of this investigation.

5.1 SITE DESCRIPTION

The Project is located within the EPA's South-Central Plains Ecoregion of Louisiana and the Southern Tertiary Uplands level four Ecoregion as described by the Louisiana Department of Wildlife and Fisheries (LDWF). The region covers the majority of Louisiana's longleaf pine range west of the Mississippi River. The region of Tertiary geology is more hilly and dissected than the Flatwoods (35f), and soils are generally better drained over the more permeable sediments. Soils are Ultisols and Alfisols with silt loam to loamy sand textures. The Pliocene-age to Eocene-age geology contains a variety of siltstones, sandstones, and calcareous and acidic clays. Historical vegetation was dominated by longleaf pinebluestem woodlands, but a variety of forest types were present, including shortleaf pine-hardwood forests, calcareous forests, mixed hardwood- loblolly pine forests, and hardwood-dominated forests along streams. Some small, scattered prairies with many rare plants are associated with areas of calcareous clay soils. On more mesic sites, some American beech or magnolia-beech-loblolly pine forests occur. Some sandstone outcrops of the Catahoula Formation have distinctive barrens or glades that contain several rare species. Seeps in sand hills support acid bog species including southern sweetbay, gallberry, wax-myrtles, fetterbush, insectivorous plants, orchids, and wild azalea. Currently, the ecoregion in Texas and Louisiana has more pine forest than the oak-pine and pasture land cover more typical to the north in 35a. Large parts of the region are public National Forest land.

Representative photographs were taken at various sampling locations throughout the Project and are included as Appendix B to this report. The following discussion describes the vegetative communities, as well as hydrology and hydric soil indicators, if applicable identified during the field review. This discussion also provides a listing of all waters of the United States, including wetlands, identified within the Project area, if applicable.

5.2 VEGETATION

During the field investigation five habitat/vegetative communities were identified within the Project area. The habitat/vegetative communities consisted of early successional pine plantation, mid-successional pine plantation, upland hardwood forest, bottomland hardwood wetland (PFO), and emergent wetlands (PEM). The following discussion describes the community type identified during the field investigation.



Dominate representative plant species found throughout the early successional pine plantation community consisted of loblolly pine (*Pinus taeda*, FAC); water oak (*Quercus nigra*, FAC); yaupon (*Ilex vomitoria*, FAC); waxmyrtle (*Morella cerifera*, FAC); red maple (*Acer rubrum*, FAC); Heller's rosette grass (*Dichanthelium oligosanthes*, FACU); broomsedge bluestem (*Andropogon viriginicus*, FAC); partridgeberry (*Mitchella repens*, FAC); primrose-leaved violet (*Viola primufolia*, FAC); blackeyed Susan (*Rudbeckia hirta*, FACU); Allegheny blackberry (*Rubus allegheniensis*, FACU); Elliott's blueberry (*Vaccinium elliottii*, FACW); muscadine grape (*Vitis rotundifolia*, FAC); and Carolina jessamine (*Gelsemium sempervirens*, FAC). Based on the technical criteria outlined in the *Wetlands Delineation Manual* and *Regional Supplement*, the vegetation observed within this community can be representative of a hydrophytic plant community.

Dominate representative plant species found throughout the mid-successional pine plantation community consisted of loblolly pine (*Pinus taeda*, FAC); sweetgum (*Liquidambar styraciflua*, FAC); water oak (*Quercus nigra*, FAC); American beautyberry (*Callicarpa americana*, FACU); yaupon (*Ilex vomitoria*, FAC); waxmyrtle (*Morella cerifera*, FAC); red maple (*Acer rubrum*, FAC); flowering dogwood (*Cornus florida*, FACU); Heller's rosette grass (*Dichanthelium oligosanthes*, FACU); Indian woodoats (*Chasmanthium latifolium*, FAC); longleaf woodoats (*Chasmanthium sessiliflorum*, FAC); partridgeberry (*Mitchella repens*, FAC); pond flatsedge (*Cyperus ochraceus*, FACW); blackeyed Susan (*Rudbeckia hirta*, FACU); dogfennel (*Eupatorium capilllifolium*, FACU); cinnamon fern (*Osmundastrum cinnamomeum*, FACW); cat greenbrier (*Smilax bona-nox*, FAC); common greenbrier (*Smilax rotundifolia*, FAC); poison ivy (*Toxicodendron radicans*, FAC); and Carolina jessamine (*Gelsemium sempervirens*, FAC). Based on the technical criteria outlined in the *Wetlands Delineation Manual* and *Regional Supplement*, the vegetation observed within this community can be representative of a hydrophytic plant community.

The upland hardwood forest vegetative community was found along streamside management zones (SMZs). Dominate representative plant species found throughout the upland hardwood forest community consisted of loblolly pine (*Pinus taeda*, FAC); water oak (*Quercus nigra*, FAC); white oak (*Quercua alba*, FACU); American beech (*Fagus grandifolia*, FACU); red maple (*Acer rubrum*, FAC); sweetgum (*Liquidambar styraciflua*, FAC); Heller's rosette grass (*Dichanthelium oligosanthes*, FACU); Elliott's blueberry (*Vaccinium elliottii*, FACW); cinnamon fern (*Osmundastrum cinnamomeum*, FACW); royal fern (*Osmundastrum regalis*, OBL); longleaf woodoats (*Chasmanthium sessiliflorum*, FAC); muscadine grape (*Vitis rotundifolia*, FAC); cat greenbrier (*Smilax bona-nox*, FAC). Based on the technical criteria outlined in the *Wetlands Delineation Manual* and *Regional Supplement*, the vegetation observed within this community can be representative of a hydrophytic plant community.

Dominate representative plant species found throughout the bottomland hardwood forest community (PFO) consisted of water oak (*Quercus nigra*, FAC); sweetgum (*Liquidambar styraciflua*, FAC); Elliott's blueberry (*Vaccinium elliottii*, FACW); longleaf woodoats (*Chasmanthium sessiliflorum*, FAC); muscadine grape (*Vitis rotundifolia*, FAC); Carolina jessamin (*Gelsemium sempervirens*, FAC). Based on the technical



criteria outlined in the *Wetlands Delineation Manual* and *Regional Supplement*, the vegetation observed within this community can be representative of a hydrophytic plant community.

Dominate representative plant species found throughout the emergent wetland community (PEM) consisted of sweetbay (*Magnolia viriginiana*, OBL); loblolly pine (*Pinus taeda*, FAC); waxmyrtle (*Morella cerifera*, FAC); eastern baccharis (*Baccharis halimifolia*, FACW); primrose-leaved violet (*Viola primufolia*, FAC); dwarf spikerush (*Eleocharis parvula*, OBL); and Carolina jessamine (*Gelsemium sempervirens*, FAC). Based on the technical criteria outlined in the *Wetlands Delineation Manual* and *Regional Supplement*, the vegetation observed within this community can be representative of a hydrophytic plant community.

5.3 Hydrology

Areas often documented as indicators of hydrology consist of, but are not limited to, areas of saturation, inundation, water marks, drift deposits, oxidized root channels on living roots, or streams/creeks that have characteristics indicative of those considered jurisdictional waters by the Clean Water Act.

Aerial infrared photography and LiDAR-derived digital elevation models were utilized as tools to help establish wetland boundaries, if applicable, and as a secondary form of verification of areas designated as wetlands. Saturation and inundation generally appear as areas of dark gray to blue on infrared photography and usually provide a wetland signature or footprint that was used during the preliminary alignment and as tool to verify that wetland boundaries determined in the field closely represent historical signatures. Not all wetlands are apparent based on infrared photography alone. Indicators of wetland of hydrology were identified within the proposed Project area.

The field investigation revealed four wetlands (Wetlands 1-4) and nine other waters (Streams 1-9) on the Project (Appendix A, Figures 2 & 5). Previous logging activities and recent precipitation events had an impact on observable hydrologic conditions in the field that were taken into context when analyzing the Project. Numerous ruts caused by logging equipment were observed across the Project. These were often inundated with water and contained emergent hydrophytic vegetation; however, were not considered to be jurisdictional. Significant amounts of logging slash had previously been distributed across Stream 1 immediately north of Bayou Blue Road, causing areas of saturation and inundation of the area. Based on observations made during the field investigation and utilizing spatial data, it is L&A's opinion that the logging slash is damming up downstream flowing water and causing the saturation and inundation to unnaturally occur. Clearing of the logging slash would likely restore the natural hydrology and de-inundate the area. Photos of the previously mentioned scenario can be observed in Appendix B, Photos 65-68.



5.4 Soils

The Project area is located within the *Soil Survey of Natchitoches Parish, Louisiana* (Figure 2). The soil survey was utilized to establish the geomorphological setting and soil types present. Detailed soil map unit descriptions and soil characteristics were derived from information available in the online NRCS Web Soil Survey and soil series locations were determined from information available in the on-line NRCS Soil Survey Geographic (SSURGO) database. The NRCS *National Hydric Soils List* was also used to identify the limits of mapped hydric soils within the Project area. The table below indicates the soils found within the Project area and their characteristics.

5.4.1 Mapped Soils

The soil mapping unit identified in the Project area located in Natchitoches Parish included Bellwood clay, 5 to 12 percent slopes (Bd), Keithville loam, 1 to 5 percent slopes (Ke), and Sacul fine sandy loam, 1 to 5 percent slopes (Sa), and Sacul fine sandy loam, 5 to 12 percent slopes (Sc). The characteristic of the soil mapping unit is identified below in Table 1. According to the National Hydric Soil List, all of the previously mentioned soil series are not commonly considered to be hydric soils.

Table 1. Characteristics of the Soil Mapping Units Intersected by the Proposed Project.

Soil Series Name	Percent Slopes	Drainage Class	Hydric Classification	Parish
Bellwood clay (Bd)	5 to 12 Percent	Somewhat poorly drained	Non-Hydric	Natchitoches
Keithville loam (Ke)	1 to 5 Percent	Moderately well drained	Non-Hydric	Natchitoches
Sacul fine sandy loam (Sa)	1 to 5 Percent	Moderately well drained	Non-Hydric	Natchitoches
Sacul fine sandy loam (Sc)	5 to 12 Percent	Moderately well drained	Non-Hydric	Natchitoches

5.5 WETLANDS AND OTHER WATERS OF THE UNITED STATES

Four wetlands and (Wetland 1-4) and nine streams (Streams 1-9) were identified within the proposed Project area (Appendix A, Figure 2 & 5). The characteristics of the waters are identified below in Table 2.

Table 2. Characteristics of Jurisdictional Waters within the Project.

Map Identification	Classification	Wetland (Acres)	Other Waters (Linear Feet)	Ordinary High Water Mark (OWHM) (Length (ft.) x Depth (ft.))
Wetland 1	PFO	4.579	-	-
Wetland 2	PEM	0.454	-	-
Wetland 3	PEM	0.120	-	-
Wetland 4	PFO	0.123	-	-
Stream 1	Intermittent	-	4,960	6x3
Stream 2	Intermittent	-	2,119	4x2
Stream 3	Ephemeral	-	877	3x2
Stream 4	Intermittent	-	905	3x2
Stream 5	Ephemeral	-	137	4x2
Stream 6	Ephemeral	-	256	2x1
Stream 7	Ephemeral	-	137	2x1
Stream 8	Ephemeral	-	373	3x2
Stream 9	Ephemeral	-	153	4x2
To	tal	5.276	9,917	-

5.6 FEMA FLOOD PLAINS

Some areas of the Project do fall within FEMA Flood Zone A (100-year floodplain) in Natchitoches Parish (Figure 4). FEMA Flood Zone A is considered a Special Flood Hazard Area (SFHA) and therefore, activities within the mapped Flood Zone A are regulated by FEMA via the Natchitoches Parish floodplain administrator. Any construction activities within the mapped Flood Zone A may require a Flood Development Permit (FDP).

6 Conclusions

In conclusion, Land and Aquatic Resource Management, LLC identified 9,917 linear feet of streams and 5.276 acres of wetlands within the assessment area. It is our opinion that these waters will be jurisdictional waters of the US and would require permitting prior to filling, altering, or otherwise impacting the features.

L&A has concluded that the other waters as described above would be considered Waters of the United States, as defined in 33 CFR Part 328.3(a), and are subject to jurisdiction of the USACE; however, only the USACE has the authority to issue an official determination of jurisdiction.

L&A, LLC has conducted this assessment based on the techniques and protocols available through the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service to assess the probability of impacts to each referenced constraint. The results of his records research are available in Appendix D.

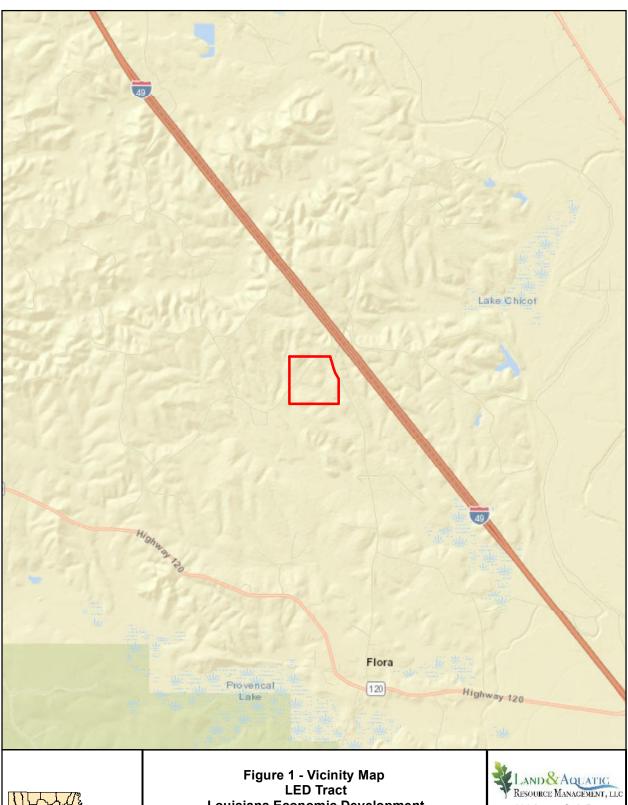
Sincerely,



Matthew Williams, PWS

Appendix A – Maps and Figures







Louisiana Economic Development Natchitoches Parish, Louisiana

Legend Site Boundary

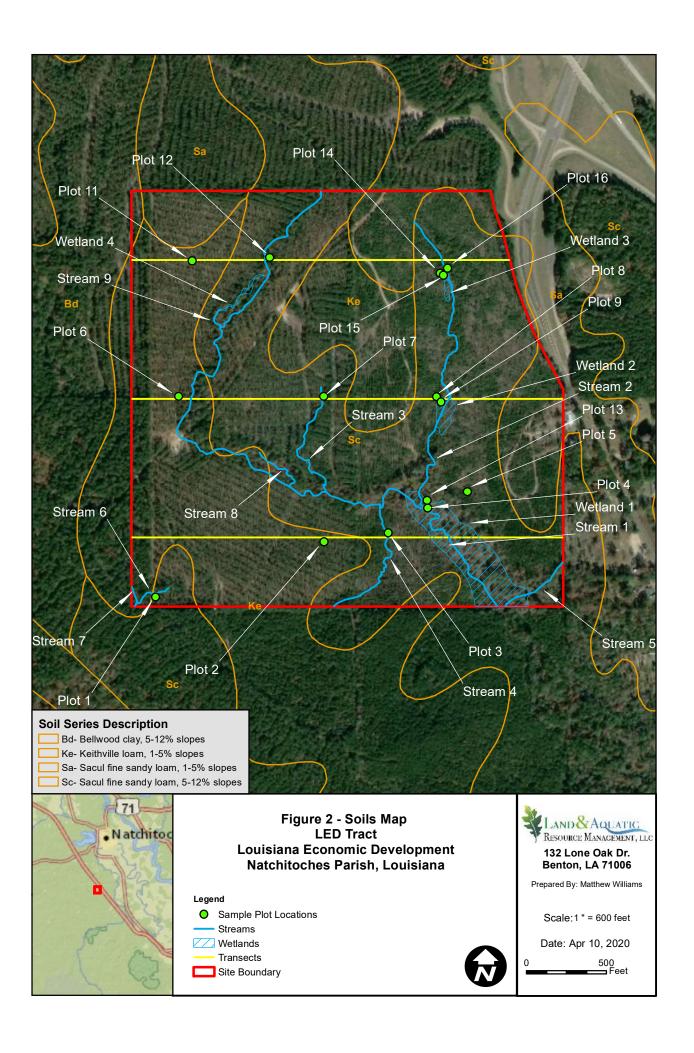


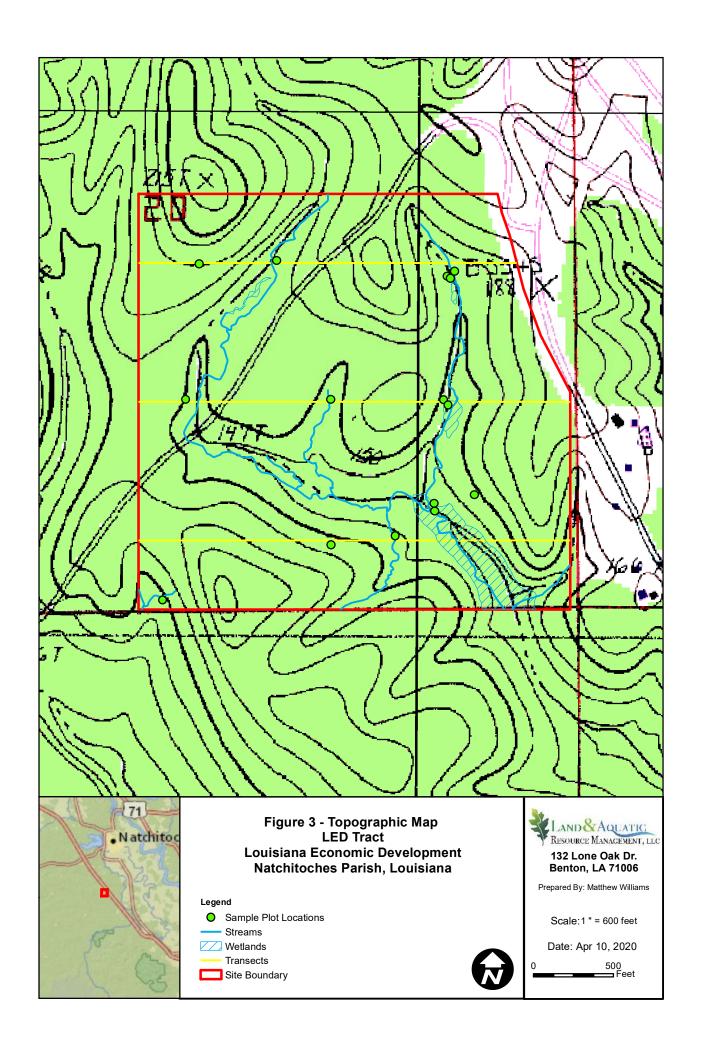
Prepared By: Matthew Williams

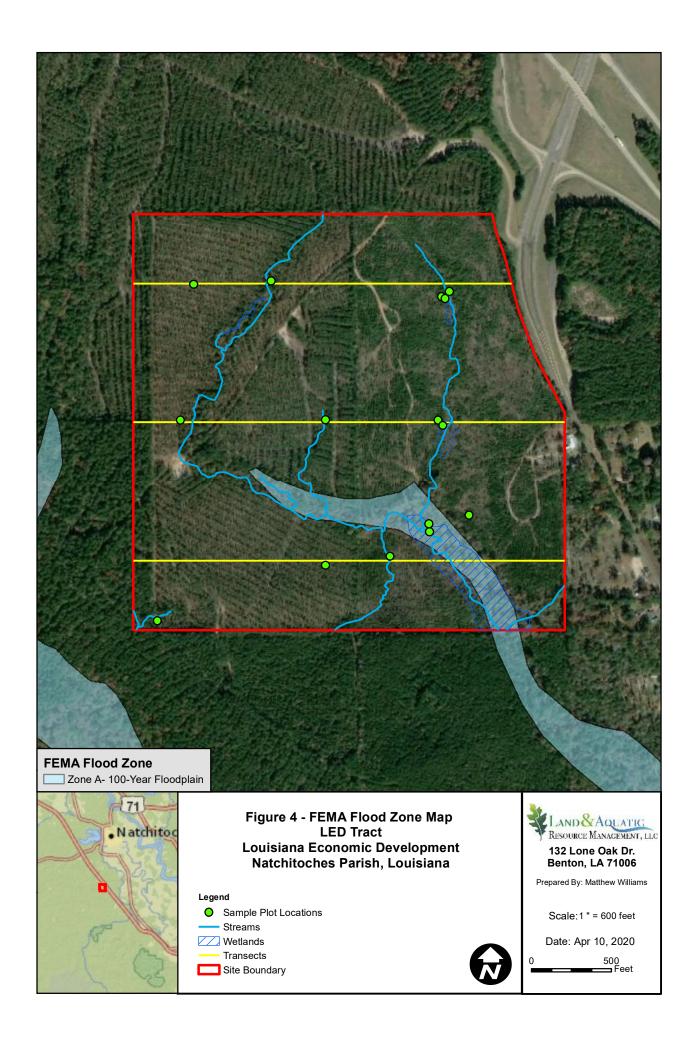
Scale:1 " = 5,280 feet

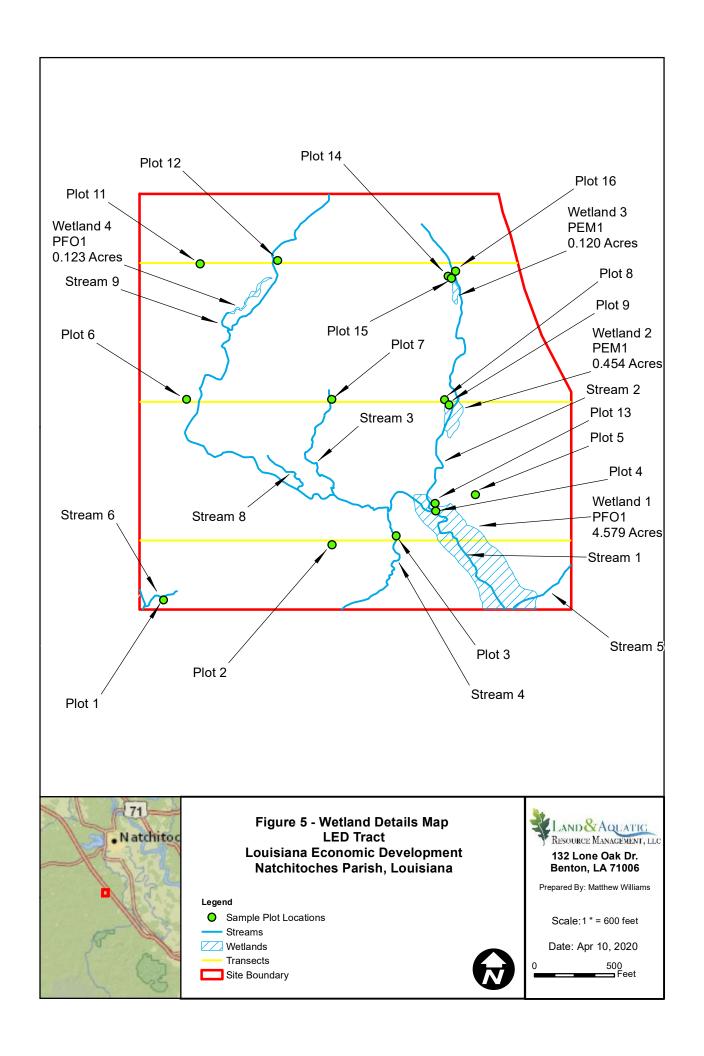
Date: Apr 10, 2020

0.5









Appendix B – Data Sheets & Photographs

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Highway 478 Development Tract	City/County:	Natchitoches		Sampling Date:	24-Ma	r-20		
Applicant/Owner: Louisisna Economic Development		State: LA	Sampling	Point: 1				
Investigator(s): _John Collins	Section, Tow	nship, Range: S	20 T	8N R	7W	_		
.andform (hillslope, terrace, etc.): Streambank	Local relief (co	oncave, convex, noi	ne): none	Slope:	3.0 % /	1.7°		
iubregion (LRR or MLRA): LRR P	Lat.: 31 39 20.208	Long.:	-93 06 38.5	.51 D a	atum: WGS	3 84		
Soil Map Unit Name: Sacul fine sandy loam, 5-12% slopes (Sc)				sification: N/A				
are climatic/hydrologic conditions on the site typical for this time	of year? Yes	s • No O	If no, explain	-				
	ficantly disturbed?	Are "Normal C	, .		No C)		
	rally problematic?			wers in Remarks.)				
SUMMARY OF FINDINGS - Attach site map showin		,		•	es, etc.			
Hydrophytic Vegetation Present? Yes No	1							
Hydric Soil Present? Yes ● No ○	Is the	Sampled Area	es ○ No ●)				
Wetland Hydrology Present? Yes ○ No ●	withir	n a Wetland?	es U No G					
Remarks:	L							
HYDROLOGY								
Wetland Hydrology Indicators:			C					
Primary Indicators (minimum of one required; check all that a	nnly)	<u> </u>		cators (minimum of 2 i	required)			
Surface Water (A1) Aquatic Fau			_					
	its (B15) (LRR U)	[atterns (B10)	ace (bo)			
	Sulfide Odor (C1)	[Moss Trim L	` '				
	nizospheres along Living	Roots (C3)		Water Table (C2)				
	f Reduced Iron (C4)		Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)					
	Reduction in Tilled Soil	s (C6)						
☐ Algal Mat or Crust (B4) ☐ Thin Muck S	Surface (C7)		Geomorphic Position (D2)					
☐ Iron Deposits (B5) ☐ Other (Expla	ain in Remarks)		Shallow Aqu	ıitard (D3)				
Inundation Visible on Aerial Imagery (B7)			FAC-Neutra	Test (D5)				
Water-Stained Leaves (B9)			Sphagnum i	moss (D8) (LRR T, U)				
Field Observations:								
Surface Water Present? Yes No Depth (inc	ches):							
Water Table Present? Yes O No O Depth (inc	ches):							
Saturation Present? (includes capillary frings) Yes No Depth (includes capillary frings)	ches):	Wetland Hydro	logy Present?	Yes O No	•			
(includes capillary fringe) Tes No Depth (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial	·	nections) if availa	hle					
Describe recorded bata (stream gauge, monitoring well, denai	priotos, previous ins	pections), ii availa	DIC.					
Remarks:								

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

			ominant		Sampling Point: 1
Tree Stratum (Plot size: 30')	Absolute % Cover	R	pecies? _ el.Strat. Cover	Indicator Status	Dominance Test worksheet:
Pinus trade		V			Number of Dominant Species
`	_ <u>25</u> 0			FAC	That are OBL, FACW, or FAC: 9 (A)
			0.0%		Total Number of Dominant
S			0.0%		Species Across All Strata:(B)
·		Н	0.0%		Percent of dominant Species
			0.0%		That Are OBL, FACW, or FAC: 81.8% (A/B)
	_		0.0%		
	-		0.0%		Prevalence Index worksheet:
	0_	Ш	0.0%		Total % Cover of: Multiply by:
50% of Total Cover:5	25	= T	otal Cover		OBL species $0 \times 1 = 0$
Sapling or Sapling/Shrub Stratum (Plot size: 30')				FACW species $8 \times 2 = 16$
Liquidambar styraciflua	10	~	33.3%	FAC	FAC species <u>95</u> x 3 = <u>285</u>
Acer rubrum	10	~	33.3%	FAC	FACU species $30 \times 4 = 120$
Quercus alba	_ 5		16.7%	FACU	UPL species $0 \times 5 = 0$
Ulmus americana	5		16.7%	FAC	Column Totals: 133 (A) 421 (B)
	0		0.0%		
i	0		0.0%		Prevalence Index = B/A = 3.165
			0.0%		Hydrophytic Vegetation Indicators:
s	0		0.0%		1 - Panid Test for Hydrenbutic Vacctation
50% of Total Cover: 15 20% of Total Cover: 6	30	= T4	otal Cover		☐ 1 - Rapid Test for Hydrophytic Vegetation ✓ 2 - Dominance Test is > 50%
Shrub Stratum (Plot size: 15')					☐ 3 - Prevalence Index is ≤3.0 1
Vaccinium elliottii		V	30.0%	FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
Quercus nigra		✓	30.0%	FAC	1
Ilex vomitoria		✓	20.0%	FAC	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Cornus florida	2_	✓	20.0%	FACU	
	0_		0.0%		Definition of Vegetation Strata:
	0_		0.0%		Tree - Woody plants, excluding woody vines,
50% of Total Cover: 2 20% of Total Cover: 2	10	= T	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: 5')					Couling Meaning looks are supported to a construction
1. Chasmanthium latifolium	15	✓	22.1%	FAC	Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
2. Dichanthelium oligosanthes	15	✓	22.1%	FACU	than 3 in. (7.6 cm) DBH.
3. Chasmanthium sessiliflorum	10	✓	14.7%	FAC	
4. Liquidambar styraciflua	10	~	14.7%	FAC	Sapling/Shrub - Woody plants, excluding vines, less
5. Vaccinium elliottii	5		7.4%	FACW	than 3 in. DBH and greater than 3.28 ft (1m) tall.
6. Rudbeckia hirta	5		7.4%	FACU	Shrub - Woody plants, excluding woody vines,
7. Mitchella repens			7.4%	FAC	approximately 3 to 20 ft (1 to 6 m) in height.
8. Callicarpa americana			4.4%	FACU	, , , , ,
9.			0.0%		Herb - All herbaceous (non-woody) plants, including
0			0.0%		herbaceous vines, regardless of size, and woody
1			0.0%		plants, except woody vines, less than approximately 3 ft (1 m) in height.
1 2.			0.0%		
50% of Total Cover: 34 20% of Total Cover: 13.6		' T-=	otal Cover		Woody vine - All woody vines, regardless of height.
Woody Vine Stratum (Plot size: 30')		•			
·	0		0.0%		
			0.0%		
			0.0%		
			0.0%		
					Hydrophytic
5	-	Ш	0.0%		Vegetation
50% of Total Cover: 0 20% of Total Cover: 0		= T	otal Cover	·	Present? Yes No U
Remarks: (If observed, list morphological adaptations below). *Indicator suffix = National status or professional decision assigned because Re					

Dominant

SOIL Sampling Point: 1

Profile Descr	ription: (De	scribe to t	he depth	needed to d	locument	the indic	ator or co	onfirm the	absence of indicators.)	
Depth		Matrix		Redox			res		_	
(inches)	Color (moist)	<u>%</u>	Color (moist)	%_	Tvpe 1	Loc2	Texture	Remarks
0-9	10YR	5/3	53	10YR	5/2	35	D	M	Sandy Loam	
				10YR	5/8	10	С		Sandy Loam	
				2.5Y	3/6	2	C		Sandy Loam	
9-16	10YR	4/1	70	7.5YR	4/6	. 30	C	M	Clay Loam	
ı										
¹ Type: C=Con	centration. D	=Depletion	. RM=Red	uced Matrix, (CS=Covere	d or Coate	d Sand Gr	ains ² Loca	ation: PL=Pore Lining. M=Ma	atrix
Hydric Soil I	Indicators:								Indicators for Proble	ematic Hydric Soils ³ :
Histosol (A1)			Pol	yvalue Belo	w Surface	(S8) (LRR	S, T, U)	1 cm Muck (A9) (L	RR O)
Histic Epipedon (A2)					n Dark Surl	face (S9) (LRR S, T,	J)	2 cm Muck (A10) (
Black Histic (A3)					my Mucky	Mineral (F	1) (LRR 0))	_	(8) (outside MLRA 150A,B)
						Matrix (F2	2)			in Soils (F19) (LRR P, S, T)
Stratified	Layers (A5)			_	oleted Matr					Loamy Soils (F20) (MLRA 153B)
Organic B	odies (A6) (L	_RR P, T, U)	ı		lox Dark Sı				Red Parent Materia	
5 cm Muc	ky Mineral (A	A7) (LRR P,	T, U)		oleted Dark	` ,			Very Shallow Dark	` '
						sions (F8)	.,			
1 cm Muc		1 (F10) (LF				Other (Explain in R	.emarks)			
	Below Dark S		1)		oleted Ochr	-	/I DΔ 151\			
	k Surface (A		-,		n-Mangane					ļ
	irie Redox (A	•	150Δ)							
	ick Mineral (S				bric Surfac)		ļ
			3)		ta Ochric (I			4E0D)	³ Indicators o	f hydrophytic vegetation and
	eyed Matrix (3 4)			luced Verti				wetland hy	ydrology must be present,
Sandy Re								LRA 149A)		disturbed or problematic.
	Matrix (S6)			∟ And	malous Br	ight Loamy	Soils (F20)) (MLRA 14	9A, 153C, 153D)	
☐ Dark Surf	ace (S7) (LR	R P, S, T, U)							· ·
									I	
Restrictive La	ayer (if obs	erved):								
Type:						_			Undela Call Decambo	V (A) N (
Depth (inc	hes):					_			Hydric Soil Present?	Yes No
Remarks:										
										ļ
										ļ
										ļ

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Highway 478 Development Tract	City/County: N	atchitoches		Sampling Date:	24-Mar-	-20		
Applicant/Owner: Louisisna Economic Development	St	ate: LA	Sampling Po	oint: 2				
nvestigator(s): John Collins	Section, Towns	ship, Range: S 20) T 8	BN R 7V	N			
andform (hillslope, terrace, etc.): Hillslope	Local relief (cond	cave, convex, none	e): none	Slope: 3	3.0 % /	1.7°		
ubregion (LRR or MLRA): LRR P Lat.:	· 31 39 23.687	Long.:	-93 06 26.408) Dati	um: WGS	84		
il Map Unit Name: Keithville loam, 1-5% slopes (Ke)			NWI classif	ication: N/A	-			
e climatic/hydrologic conditions on the site typical for this time of y	vear? Yes	● No ○ (If	no, explain in	-				
	ntly disturbed?	Are "Normal Circ	· •	· (a	No O	1		
	y problematic?	(If needed, expl	-					
SUMMARY OF FINDINGS - Attach site map showing s			-	•	, etc.			
Hydrophytic Vegetation Present? Yes No No		•						
Hydric Soil Present? Yes No	Is the Sa	ampled Area	s O No •					
Wetland Hydrology Present? Yes ○ No •	within a	Wetland?						
Remarks:								
icinario.								
HYDROLOGY								
Wetland Hydrology Indicators:		Se	condary Indicat	ors (minimum of 2 red	quired)			
Primary Indicators (minimum of one required; check all that apply	•		Surface Soil C	` ,				
Surface Water (A1) Aquatic Fauna (I	· ·		,	tated Concave Surface	e (B8)			
☐ High Water Table (A2) ☐ Marl Deposits (E☐ Saturation (A3) ☐ Hydrogen Sulfid			Drainage Patte	` ,				
	pheres along Living Ro	oots (C3)	Moss Trim Line					
Sediment Deposits (B2) Presence of Red								
	duction in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)					
☐ Algal Mat or Crust (B4) ☐ Thin Muck Surfa	,		Geomorphic Position (D2)					
☐ Iron Deposits (B5) ☐ Other (Explain ii	• •		Shallow Aquita					
Inundation Visible on Aerial Imagery (B7)	, , , , , , , , , , , , , , , , , , ,		FAC-Neutral T	· ·				
Water-Stained Leaves (B9)			Sphagnum mo	oss (D8) (LRR T, U)				
Field Observations:								
Surface Water Present? Yes O No O Depth (inches)):							
Water Table Present? Yes No Depth (inches)):							
Saturation Present?	·	Wetland Hydrolo	gy Present?	Yes O No 🖲	•)			
(includes capillary fringe)								
Describe Recorded Data (stream gauge, monitoring well, aerial pho	otos, previous inspe	ections), if available	e:					
Remarks:								

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

	0	R	Cover	Indicator Status FAC	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC:5(A)
Pinus taeda	0			FAC	
	0				That are obe, thew, of the.
	0	\equiv			
		1 1	0.0%		Total Number of Dominant
	U		0.0%		Species Across All Strata: 8 (B)
	_	\Box	0.0%		Percent of dominant Species
		\Box	0.0%		That Are OBL, FACW, or FAC: 62.5% (A/B)
		$\overline{\Box}$	0.0%		Prevalence Index worksheet:
	0	$\overline{\Box}$	0.0%		Total % Cover of: Multiply by:
0% of Total Cover: 25 20% of Total Cover: 10	50 :	= To	otal Cover		OBL species 0 x 1 = 0
apling or Sapling/Shrub Stratum (Plot size: 30')				FACW species <u>0</u> x 2 = <u>0</u>
Liquidambar styraciflua	_10_	✓	100.0%	FAC	FAC species $111 \times 3 = 333$
	0		0.0%		FACU species 86 x 4 = 344
	0		0.0%		UPL species $\frac{5}{}$ x 5 = $\frac{25}{}$
			0.0%		Column Totals: 202 (A) 702 (B)
	0		0.0%		2014 (A) 702
			0.0%		Prevalence Index = B/A = 3.475
			0.0%		Hydrophytic Vegetation Indicators:
	0		0.0%		1 - Rapid Test for Hydrophytic Vegetation
0% of Total Cover: 5 20% of Total Cover: 2	10 :	= To	otal Cover		✓ 2 - Dominance Test is > 50%
		-			
nrub Stratum (Plot size: 15')	20		44.40/	FACIL	3 - Prevalence Index is ≤3.0 ¹
Callicarpa americana		✓	44.4%	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
Morella cerifera			44.4%	FAC	¹ Indicators of hydric soil and wetland hydrology must
Ligustrum sinense			11.1%	UPL	be present, unless disturbed or problematic.
			0.0%		Definition of Venetation Streets
	-		0.0%		Definition of Vegetation Strata:
		Ш	0.0%		Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
0% of Total Cover: 22.5 20% of Total Cover: 9	45 :	= To	otal Cover	,	(7.6 cm) or larger in diameter at breast height (DBH).
erb Stratum (Plot size: <u>5'</u>)					Sapling - Woody plants, excluding woody vines,
Dichanthelium oligosanthes	40	V		FACU	approximately 20 ft (6 m) or more in height and less
Rudbeckia hirta	25	✓	27.8%	FACU	than 3 in. (7.6 cm) DBH.
_ Chasmanthium sessiliflorum	10		11.1%	FAC	
_ Rubus trivialis	10		11.1%	FAC	Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.
_ Elephantopus carolinianus	3		3.3%	FAC	Than o in: BBT and ground than 6.20 it (iii) tail.
_ Cirsium horridulum		Щ	1.1%	FAC	Shrub - Woody plants, excluding woody vines,
Oxalis dillenii			1.1%	FACU	approximately 3 to 20 ft (1 to 6 m) in height.
			0.0%		Horb. All borboscous (non-woods) wheats in all disc.
			0.0%		Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
			0.0%		plants, except woody vines, less than approximately
•			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: 30')					
Smilax bona-nox	-	✓		FAC	
Toxicodendron radicans		✓	-	FAC	
			0.0%		
			0.0%		Hadron batta
	0		0.0%		Hydrophytic Vegetation
0% of Total Cover: 3.5 20% of Total Cover: 1.4	:	= To	otal Cover	,	Present? Yes No

SOIL Sampling Point: 2

Profile Descri	iption: (Des	scribe to t	the depth	needed to d	locument	the indic	ator or co	nfirm the	absence of indicators.)				
Depth		Matrix			Red	lox Featu	ires		_				
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Tvpe 1	Loc2	Texture	Remarks			
0-7	10YR	4/2	90	10YR	5/2	10	D	M	Sandy Loam				
7-16	10YR	5/2	75	10YR	5/4	15	С	M	Sandy Loam				
				10YR	4/1	10	D	M	Sandy Loam				
					-								
									-				
							_						
¹ Type: C=Conc	entration. D	=Depletion	n. RM=Red	uced Matrix, (S=Covere	d or Coate	d Sand Gr	ains ² Loca	ation: PL=Pore Lining. M=Ma	atrix			
Hydric Soil I	ndicators:								Indicators for Proble	matic Hydric Soils ³ :			
Histosol (A	A1)			Poly	value Belo	w Surface	(S8) (LRR	S, T, U)	1 cm Muck (A9) (LF	RR O)			
Histic Epip	edon (A2)			Thir	n Dark Surf	face (S9) (LRR S, T, I	J)	2 cm Muck (A10) (I				
Black Histi	c (A3)			Loa	my Mucky	Mineral (F	1) (LRR O)	ı		.8) (outside MLRA 150A,B)			
Hydrogen	Sulfide (A4)			Loa	my Gleyed	Matrix (F2	2)			in Soils (F19) (LRR P, S, T)			
Stratified L	ayers (A5)				leted Matr		•			Loamy Soils (F20) (MLRA 153B)			
Organic Bo	odies (A6) (L	RR P, T, U)		ox Dark Su)		Red Parent Materia	, , , , ,			
5 cm Muck	ky Mineral (A	7) (LRR P,	T, U)		leted Dark	٠,			Very Shallow Dark	` '			
	ence (A8) (L				ox Depres		, ,			· · ·			
	(A9) (LRR F				l (F10) (LF				Other (Explain in R	emarks)			
	Below Dark S		1)				4LRA 151)			ļ			
	Surface (A1		/				(F12) (LRI						
	rie Redox (A	•	1504)										
	ck Mineral (S						RR P, T, U))					
			, 3)			(F17) (MLRA 151) ic (F18) (MLRA 150A, 150B) 3Indicators of hydrophytic vegetation and westland hydrology must be precent							
	yed Matrix (S	o 4)							wetland hydrology must be present,				
☐ Sandy Red						oodplain Soils (F19) (MLRA 149A) unless disturbed or problematic.							
Stripped M				And	malous Br	ight Loamy	/ Soils (F20)) (MLRA 14	9A, 153C, 153D)	ļ			
☐ Dark Surfa	ice (S7) (LRF	R P, S, T, U	J)										
									I				
Restrictive La	yer (if obs	erved):											
Type:						_			Hydric Soil Present?	Yes ● No ○			
Depth (inch	nes):								Hydric Soil Present?	Yes ● No O			
Remarks:													
										ļ			

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Highway 478 Development Tract	City/County: N	Natchitoches	Sampling) Date: 24	4-Mar-20		
Applicant/Owner: Louisisna Economic Development	St	tate: LA	Sampling Point: 3				
Investigator(s): John Collins	Section, Towns	ship, Range: S 20	T 8N	R 7W			
Landform (hillslope, terrace, etc.): Streambank	Local relief (con	cave, convex, none	none Slop	pe: 3.0 %	6 / 1.7°		
Subregion (LRR or MLRA): LRR P La	at.: 31 39 24.263	Long.:	-93 06 21.749	Datum:	WGS 84		
Soil Map Unit Name: Sacul fine sandy loam, 5-12% slopes (Sc)			NWI classification:	N/A			
Are climatic/hydrologic conditions on the site typical for this time o	of vear? Yes	● No ○ (If	no, explain in Remarks.				
	icantly disturbed?	•	cumstances" present?	-	No O		
	ally problematic?		ain any answers in Rem	aarke)			
SUMMARY OF FINDINGS - Attach site map showing		, , ,	,	•	c .		
Hydrophytic Vegetation Present? Yes ● No ○	To the C						
Hydric Soil Present? Yes No •		Sampled Area	s ○ No ●				
Wetland Hydrology Present? Yes ○ No ●	within a	a Wetland? Yes	; C NO S				
Remarks:							
Remarks.							
HYDROLOGY							
Wetland Hydrology Indicators:		Sec	condary Indicators (minimu	um of 2 required	d)		
Primary Indicators (minimum of one required; check all that app	ply)		Surface Soil Cracks (B6)				
Surface Water (A1)	a (B13)		Sparsely Vegetated Conca	ave Surface (B8))		
High Water Table (A2) Marl Deposits	s (B15) (LRR U)		Drainage Patterns (B10)				
Saturation (A3) Hydrogen Sul	lfide Odor (C1)		Moss Trim Lines (B16)				
	zospheres along Living R	oots (C3)	Dry Season Water Table ((C2)			
Sediment Deposits (B2)	Reduced Iron (C4)						
☐ Drift Deposits (B3) ☐ Recent Iron F	Reduction in Tilled Soils	(C6)	Saturation Visible on Aerial Imagery (C9)				
Algal Mat or Crust (B4) Thin Muck Su	ırface (C7)		Geomorphic Position (D2))			
☐ Iron Deposits (B5) ☐ Other (Explain	in in Remarks)		Shallow Aquitard (D3)				
Inundation Visible on Aerial Imagery (B7)			FAC-Neutral Test (D5)				
Water-Stained Leaves (B9)			Sphagnum moss (D8) (LR	≀R T, U)			
Field Observations:							
Surface Water Present? Yes No Depth (inch	ies):						
Water Table Present? Yes No Depth (inch	nes):15		, (
Saturation Present? (includes capillary fringe) Yes • No O Depth (inch	nes):0	Wetland Hydrolog	gy Present? Yes	No ●			
Describe Recorded Data (stream gauge, monitoring well, aerial p	photos, previous insp	ections), if available	 e:				
		,,					
Remarks:							
Saturation due to recent heavy precipitation events.							
Saturation due to recent heavy precipitation events.							

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

			ominant		Sampling Point: 3
	Absolute		pecies? _ el.Strat.	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')	% Cover	_	Cover	Status	Number of Dominant Species
	0		0.0%		That are OBL, FACW, or FAC: 7 (A)
2			0.0%		Total Number of Dominant
S			0.0%		Species Across All Strata: 8 (B)
•			0.0%		
			0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: 87.5% (A/B)
)	-		0.0%		Tildt Are Obl., I ACW, Or I Ac.
·			0.0%		Prevalence Index worksheet:
J	0	Ш	0.0%		Total % Cover of: Multiply by:
50% of Total Cover:0 20% of Total Cover:0	=	= To	otal Cover		OBL species
Sapling or Sapling/Shrub Stratum (Plot size: 15'		_			FACW species x 2 =
Pinus taeda	10	V	100.0%	FAC	FAC species <u>95</u> x 3 = <u>285</u>
			0.0%		FACU species $43 \times 4 = 172$
	0		0.0%		UPL species $0 \times 5 = 0$
			0.0%		Column Totals: <u>138</u> (A) <u>457</u> (B)
			0.0%		
			0.0%		Prevalence Index = B/A = 3.312
	0		0.0%		Hydrophytic Vegetation Indicators:
	0		0.0%		1 - Rapid Test for Hydrophytic Vegetation
50% of Total Cover: 5 20% of Total Cover: 2	10 =	= To	otal Cover		✓ 2 - Dominance Test is > 50%
Shrub Stratum (Plot size: 15')					3 - Prevalence Index is ≤3.0 ¹
Ilex vomitoria	15	V	31.9%	FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
Morella cerifera		✓	31.9%	FAC	Fromematic Hydrophytic regetation (Explain)
Acer rubrum		✓	21.3%	FAC	¹ Indicators of hydric soil and wetland hydrology must
Ulmus alata			10.6%	FACU	be present, unless disturbed or problematic.
Quercus falcata			4.3%	FACU	Definition of Vegetation Strata:
			0.0%	17.50	Tree - Woody plants, excluding woody vines,
50% of Total Cover: 23.5 20% of Total Cover: 9.4		= Tc	otal Cover		approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 5')					(7.6 cm) or larger in diameter at breast height (DBH).
1 Dishauthalissa alisaasatkaa	25				Sapling - Woody plants, excluding woody vines,
1. Dichanthelium oligosanthes	15	✓	35.2%	FACU	approximately 20 ft (6 m) or more in height and less
2. Andropogon virginicus			21.1%	FAC	than 3 in. (7.6 cm) DBH.
3. Mitchella repens			21.1%	FACU	Sapling/Shrub - Woody plants, excluding vines, less
4 . Rubus allegheniensis			14.1%	FACU	than 3 in. DBH and greater than 3.28 ft (1m) tall.
5. Rubus trivialis	_ 5		7.0%	FACU	-
6. Juniperus virginiana 7			<u>1.4%</u> 0.0%	FACU	Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
7 8			0.0%		approximately 5 to 20 it (1 to 6 iii) iii neight.
8 o			0.0%		Herb - All herbaceous (non-woody) plants, including
9 n			0.0%		herbaceous vines, regardless of size, and woody
0 1			0.0%		plants, except woody vines, less than approximately 3 ft (1 m) in height.
1 2.			0.0%		3 it (1 iii) iii noight.
50% of Total Cover: 35.5 20% of Total Cover: 14.2			otal Cover		Woody vine - All woody vines, regardless of height.
	=	= 10	otal Cover		
Woody Vine Stratum (Plot size: 30'		_			
Gelsemium sempervirens		V	100.0%	FAC	
		\square	0.0%		
		\sqcup	0.0%		
		\sqcup	0.0%		Hidranbata
	0	Ш	0.0%		Hydrophytic Vegetation
50% of Total Cover: 5 20% of Total Cover: 2	10=	= To	otal Cover		Present? Yes No
emarks: (If observed, list morphological adaptations below).					
emarks: (If observed, list morphological adaptations below).					
*Indicator suffix = National status or professional decision assigned because R	Regional status	not o	defined by FV	VS.	

SOIL Sampling Point: 3

Profile Descri	iption: (De	scribe to	the depth	needed to docume	nt the indi	cator or co	onfirm the	e absence of indicators.)	
Depth Matrix					Redox Feat	ures		_	
(inches)	Color (moist)	%	Color (moist)	%	Tvpe 1	Loc2	Texture Remarks	
0-9	10YR	3/1	100					Sandy Loam	
9-16	10YR	5/3	95	10YR 5/6	5	С	М	Sandy Loam	
								<u>. </u>	
									_
							-		_
									_
									_
¹ Type: C=Conc	entration. D	=Depletion	n. RM=Red	uced Matrix, CS=Cov	ered or Coate	ed Sand Gr	ains ² Loca	cation: PL=Pore Lining. M=Matrix	_
Hydric Soil I	ndicators:	•		· · · · · · · · · · · · · · · · · · ·				Indicators for Problematic Hydric Soils ³ :	_
Histosol (A	\1)			Polyvalue E	elow Surface	e (S8) (LRR	S, T, U)	1 cm Muck (A9) (LRR O)	
Histic Epip	edon (A2)			_	Surface (S9)			2 cm Muck (A10) (LRR S)	
Black Histi				_	ky Mineral (F			Reduced Vertic (F18) (outside MLRA 150A,B)	
Hydrogen	Sulfide (A4)			_	ed Matrix (F		,	Piedmont Floodplain Soils (F19) (LRR P, S, T)	
Stratified L	ayers (A5)			Depleted M		,		Anomalous Bright Loamy Soils (F20) (MLRA 153B)	
Organic Bo	odies (A6) (L	RR P, T, U	1)		Surface (F6)		Red Parent Material (TF2)	
5 cm Muck	ky Mineral (A	7) (LRR P,	, T, U)		ark Surface (•		Very Shallow Dark Surface (TF12)	
Muck Pres	ence (A8) (L	.RR U)			ressions (F8)			Other (Explain in Remarks)	
1 cm Muck	k (A9) (LRR I	P, T)		Marl (F10)				Under (Explain in Remarks)	
Depleted E	Below Dark S	Surface (A1	11)		chric (F11) (MLRA 151)			
☐ Thick Dark	Surface (A1	12)			nese Masses	-			
Coast Prair	rie Redox (A	16) (MLRA	150A)		face (F13) (L				
Sandy Muc	ck Mineral (S	(LRR O	, S)		c (F17) (MLF		•	2	
Sandy Gley	yed Matrix (S	54)			ertic (F18) (N		150B)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present,	
Sandy Red	lox (S5)				loodplain Soi				
Stripped M	latrix (S6)							49A, 153C, 153D)	
☐ Dark Surfa	ice (S7) (LRF	R P, S, T, L	J)		J				
Restrictive La	iyer (if obs	erved):							
Type:	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,							Hydric Soil Present? Yes No •	
Depth (inch	ies):							1,200	
Remarks:									

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Highway 478 Development Tract	City/County: N	atchitoches		Sampling Date:	24-Mar-20	
Applicant/Owner: Louisisna Economic Development	St	ate: LA	Sampling P	oint: 4		
Investigator(s): John Collins	Section, Towns	ship, Range: S 2() T	8N R 7	'W	
Landform (hillslope, terrace, etc.): Streambank	Local relief (cond	cave, convex, none): none	Slope:	1.0 % / 0.6	6°
Subregion (LRR or MLRA): LRR P La		Long.:	-93 06 18.91	7 Da t	tum: WGS 84	
Soil Map Unit Name: Sacul fine sandy loam, 5-12% slopes (Sc)	01 00 10:000		NWI classi	N1/A	-	
Are climatic/hydrologic conditions on the site typical for this time of	fyear? Yes	● No ○ (If	no, explain i			_
	cantly disturbed?	Are "Normal Circ			● No ○	
	illy problematic?			vers in Remarks.)		
SUMMARY OF FINDINGS - Attach site map showing	• •		-	_	s, etc.	
Hydrophytic Vegetation Present? Yes No						
Hydric Soil Present? Yes No	Is the Sa	ampled Area	a o			
Wetland Hydrology Present? Yes No	within a	Wetland? Yes	s ● No ○			
Remarks:						
Remarks:						
HADBOLOCA	 			 		
HYDROLOGY						
Wetland Hydrology Indicators:		Se	condary Indica	ntors (minimum of 2 re	equired)	
Primary Indicators (minimum of one required; check all that app	oly)		Surface Soil (Cracks (B6)		
Surface Water (A1) Aquatic Fauna	` ,		, , , ,	etated Concave Surfac	ce (B8)	
	(B15) (LRR U)		Drainage Patt	. ,		
	fide Odor (C1)		Moss Trim Lin	` ,		
	ospheres along Living Ro Reduced Iron (C4)	oots (C3)	1	Vater Table (C2)		
	Reduced Iron (C4) Reduction in Tilled Soils ((76)	Crayfish Burr	ows (C8) sible on Aerial Imager	·· (CO)	
Algal Mat or Crust (B4) Algal Mat or Crust (B4) Thin Muck Su	,	(00)	Geomorphic I		y (C9)	
	n in Remarks)		Shallow Aquit			
Inundation Visible on Aerial Imagery (B7)	Till Remarks)	<u> </u>	FAC-Neutral			
Water-Stained Leaves (B9)			1	noss (D8) (LRR T, U)		
Field Observations:		I	, op.iag.ia			
Surface Water Present? Yes No Depth (inche	es):					
	·					
	es):	Wetland Hydrolo	gy Present?	Yes No	\supset	
(includes capillary fringe) Yes No Depth (includes Capillary Fringe)	es):	-				
Describe Recorded Data (stream gauge, monitoring well, aerial p	hotos, previous inspe	ections), if available	e:			
Remarks:						

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

			ominant pecies? _		Sampling Point: 4
(Diet size: 201	Absolute	R	el.Strat.	Indicator	Dominance Test worksheet:
ree Stratum (Plot size: 30')	% Cove		Cover	Status	Number of Dominant Species
Quercus nigra	25		71.4%	FAC	That are OBL, FACW, or FAC:6(A)
Pinus taeda	5		14.3%	FAC	Total Number of Dominant
Quercus alba	=		14.3%	FACU	Species Across All Strata:6(B)
			0.0%		
			0.0%		Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)
	0		0.0%		That Are Obl., I ACW, OF I AC.
			0.0%		Prevalence Index worksheet:
			0.0%		Total % Cover of: Multiply by:
0% of Total Cover:7	35	= T	otal Cover		OBL species <u>5</u> x 1 = <u>5</u>
pling or Sapling/Shrub Stratum (Plot size: 15')				FACW species <u>20</u> x 2 = <u>40</u>
Liquidambar styraciflua	20	~	100.0%	FAC	FAC species $100 \times 3 = 300$
	0		0.0%		FACU species $5 \times 4 = 20$
	0		0.0%		UPL species $0 \times 5 = 0$
			0.0%		Column Totals: 130 (A) 365 (B)
			0.0%		
			0.0%		Prevalence Index = B/A = 2.808
			0.0%		Hydrophytic Vegetation Indicators:
	0		0.0%		1 - Panid Tost for Hydronhytic Vacatation
0% of Total Cover: 10 20% of Total Cover: 4	20	= T4	otal Cover		1 - Rapid Test for Hydrophytic Vegetation
		.,			✓ 2 - Dominance Test is > 50%
rub Stratum (Plot size: 15')					У 3 - Prevalence Index is ≤3.0 ¹
Vaccinium elliottii		✓		FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
			0.0%		17.4.
			0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
	0		0.0%		
	0				
	0		0.0%		Definition of Vegetation Strata:
			0.0%		Tree - Woody plants, excluding woody vines,
0% of Total Cover: 10 20% of Total Cover: 4		 = Te			_
0% of Total Cover: 10 20% of Total Cover: 4		 = Te	0.0%		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).
0% of Total Cover: 10 20% of Total Cover: 4 erb Stratum (Plot size: 5')		= To	0.0% otal Cover		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,
0% of Total Cover: 10 20% of Total Cover: 4 erb Stratum (Plot size: 5')) Chasmanthium sessiliflorum	0		0.0% otal Cover		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).
20% of Total Cover: 10 20% of Total Cover: 4 Perb Stratum (Plot size: 5') Chasmanthium sessiliflorum	0		0.0% otal Cover		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
20% of Total Cover: 10 20% of Total Cover: 4			0.0% otal Cover 100.0% 0.0%		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
20% of Total Cover: 10 20% of Total Cover: 4			0.0% otal Cover 100.0% 0.0% 0.0%		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.
20% of Total Cover: 10 20% of Total Cover: 4 erb Stratum (Plot size: 5') Chasmanthium sessiliflorum			0.0% otal Cover 100.0% 0.0% 0.0% 0.0%		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.
0% of Total Cover: 10 20% of Total Cover: 4 erb Stratum (Plot size: 5') Chasmanthium sessiliflorum			0.0% tal Cover 100.0% 0.0% 0.0% 0.0% 0.0%		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
20% of Total Cover: 10 20% of Total Cover: 4 Perb Stratum (Plot size: 5') Chasmanthium sessiliflorum			0.0% 100.0% 0.0% 0.0% 0.0% 0.0% 0.0%		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,
20% of Total Cover: 10 20% of Total Cover: 4 Perb Stratum (Plot size: 5') Chasmanthium sessiliflorum			0.0% 100.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%		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
20% of Total Cover: 10 20% of Total Cover: 4 erb Stratum (Plot size: 5') Chasmanthium sessiliflorum			0.0% 100.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%		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
20% of Total Cover: 10 20% of Total Cover: 4 2rb Stratum (Plot size: 5') Chasmanthium sessiliflorum	25 0 0 0 0 0 0 0		0.0% 100.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%		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
0% of Total Cover: 10 20% of Total Cover: 4 erb Stratum (Plot size: 5') Chasmanthium sessiliflorum	25 0 0 0 0 0 0 0		0.0% 100.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%		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
0% of Total Cover: 10 20% of Total Cover: 4 erb Stratum (Plot size: 5') Chasmanthium sessiliflorum	25 0 0 0 0 0 0 0 0 0		0.0% 100.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%	FAC	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
0% of Total Cover:10 20% of Total Cover:4 erb Stratum (Plot size: 5') Chasmanthium sessiliflorum	25 0 0 0 0 0 0 0 0 0		0.0% 100.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%	FAC	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.
0% of Total Cover: 10 20% of Total Cover: 4 erb Stratum (Plot size: 5') Chasmanthium sessiliflorum	25 0 0 0 0 0 0 0 0 0 0		0.0% 100.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%	FAC	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.
0% of Total Cover: 10 20% of Total Cover: 4 erb Stratum (Plot size: 5') Chasmanthium sessiliflorum	25 0 0 0 0 0 0 0 0 0 0 0 0	✓	0.0% 100.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 33.3%	FAC	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.
20% of Total Cover: 10 20% of Total Cover: 4 2rb Stratum (Plot size: 5') Chasmanthium sessiliflorum Chasmanthium sessiliflorum sessiliflorum Chasmanthium sessiliflorum sessiliflor	25 0 0 0 0 0 0 0 0 0 0 0 0 0 25	✓	0.0% 100.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0	FAC	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.
20% of Total Cover: 10 20% of Total Cover: 4 20h Stratum (Plot size: 5') Chasmanthium sessiliflorum Chasmanthi	25 0 0 0 0 0 0 0 0 0 0 0 0 0 25	✓	0.0% 100.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 100.	FAC FAC FAC	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.
20% of Total Cover: 10 20% of Total Cover: 4 2rb Stratum (Plot size: 5') Chasmanthium sessiliflorum Chasmanthi	25 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	✓	0.0% 100.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 10	FAC	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.
0% of Total Cover: 10 20% of Total Cover: 4 erb Stratum (Plot size: 5') Chasmanthium sessiliflorum	25 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	✓	0.0% 100.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 100.	FAC FAC FAC	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.

SOIL Sampling Point: 4

Profile Descri	ption: (De	scribe to	the depth	needed to				onfirm the	absence of indicators.)	
Depth		Matrix				dox Featı			_	
(inches)	Color (<u>%</u>	Color (%_	Type 1	Loc²	<u>Texture</u>	Remarks
0-12	10YR	4/1	85	7.5YR	4/6	15	C	PL	Silt Loam	
12-15	10YR	6/2	80	10YR	4/2	15	D	M	Silt Loam	i p
				7.5YR	4/6	5	С	PL	Silt Loam	
	-			-						
										-
				-						
							_			
¹ Type: C=Conc	entration. D	=Depletio	n. RM=Redu	uced Matrix, (CS=Covere	ed or Coate	ed Sand Gr	ains ² Loca	ation: PL=Pore Lining. M=M	atrix
Hydric Soil Ir	ndicators:								Indicators for Proble	ematic Hydric Soils ³ :
Histosol (A	1)			Pol	yvalue Belo	ow Surface	(S8) (LRR	l S, T, U)	1 cm Muck (A9) (L	•
Histic Epipe	edon (A2)			Thi	n Dark Sur	face (S9) ((LRR S, T,	U)	2 cm Muck (A10) (
Black Histic	c (A3)			Loa	my Mucky	Mineral (F	1) (LRR O)		18) (outside MLRA 150A,B)
Hydrogen :	Sulfide (A4)			Loa	my Gleyed	d Matrix (F.	2)			in Soils (F19) (LRR P, S, T)
Stratified L	ayers (A5)				oleted Mat					Loamy Soils (F20) (MLRA 153B)
Organic Bo	odies (A6) (L	RR P, T, L	J)	Rec	dox Dark S	urface (F6)		Red Parent Materia	
5 cm Muck	xy Mineral (A	7) (LRR P	, T, U)	☐ Dep	oleted Darl	k Surface (F7)		☐ Very Shallow Dark	` '
☐ Muck Prese	ence (A8) (L	.RR U)		Rec	dox Depres	ssions (F8)			Other (Explain in F	
1 cm Muck	(A9) (LRR I	P, T)		Mai	rl (F10) (LI	RR U)			outer (Explain in)	ternarie)
Depleted B	Below Dark S	Surface (A	11)	☐ Dep	oleted Och	ric (F11) (I	MLRA 151))		
☐ Thick Dark	Surface (A1	12)		Iroi	n-Mangane	ese Masses	(F12) (LR	R O, P, T)		
	rie Redox (A			Um	bric Surfac	ce (F13) (L	RR P, T, U)		
Sandy Muc	ck Mineral (S	61) (LRR O	, S)	☐ Del	ta Ochric ((F17) (MLR	A 151)		3	
Sandy Gley	yed Matrix (S	54)		Rec	duced Vert	ic (F18) (M	1LRA 150A	, 150B)	Indicators o	of hydrophytic vegetation and ydrology must be present,
Sandy Red	lox (S5)			Pie	dmont Floo	odplain Soi	ls (F19) (M	1LRA 149A)		disturbed or problematic.
Stripped M	latrix (S6)			And	omalous Br	right Loam	y Soils (F2	0) (MLRA 14	19A, 153C, 153D)	
☐ Dark Surfa	ce (S7) (LRF	R P, S, T, I	J)							
Restrictive La	ver (if obs	erved):								
Type:	iyei (ii obs	ci vea j.								
Depth (inch	ies):					_			Hydric Soil Present?	Yes No
Remarks:										

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Highway 478 Development Tract	City/County: Natchitoches Sampling Date: 24-Mar-20
Applicant/Owner: Louisisna Economic Development	State: LA Sampling Point: 5
Investigator(s): John Collins	Section, Township, Range: S 20 T 8N R 7W
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, convex, none): _none Slope: 3.0 % / 1.7 °
Subregion (LRR or MLRA): LRR P Lat.:	31 39 26.835 Long.: -93 06 16.043 Datum: WGS 84
Soil Map Unit Name: Sacul fine sandy loam, 5-12% slopes (Sc)	NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of ye	
	ntly disturbed? Are "Normal Circumstances" present? Yes No
	problematic? (If needed, explain any answers in Remarks.)
	ampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No No	
Hydric Soil Present? Yes No	Is the Sampled Area Western a Western a Yes No No No No No No No No
Wetland Hydrology Present? Yes ○ No ●	within a Wetland?
Remarks:	I
Kemara.	
HYDROLOGY	
Wetland Hydrology Indicators:	Coorden, Indicators (minimum of 2 new ined)
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of 2 required) Surface Soil Cracks (B6)
Surface Water (A1) Aquatic Fauna (B	
High Water Table (A2) Marl Deposits (B1)	
Saturation (A3) Hydrogen Sulfide	` ` '
	wheres 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 Surfac	
☐ 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):	:
, , , , , , , , , , , , , , , , , , ,	
	Wetland Hydrology Present? Yes No 💿
(includes capillary fringe) Yes No Depth (inches):	:0
Describe Recorded Data (stream gauge, monitoring well, aerial phot	tos, previous inspections), if available:
Remarks:	
Water table and saturation was the result of recent heavy precipitat	tion events.
, , , , , , , , , , , , , , , , , , ,	

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

Pinus tacks	
Privaction	
0	
0	(A)
0	
0 0,0% Percent of dominant Species That Are OBL, FACKU, or FAC: 77.8% That Are OBL, FACKU, or FACKU,	(B)
Double D	
0	(A/B)
Total Cover 7.5 20% of Total Cover 3 15 = Total Cover 50% of Total Cover 7.5 20% of Total Cover 3 15 = Total Cover 50% of Total Cover 7.5 20% of Total Cover 3 15 = Total Cover 7.5 20% of Total Cover 3 15 = Total Cover 7.5 20% of Total Cover 3 15 = Total Cover 7.5 20% of Total Cover 3 15 = Total Cover 7.5 20% of Total Cover 3 15 = Total Cover 7.5 20% of Total Cover 3 15 = Total Cover 7.5 20% of Total Cover 3.1 3.19% FAC 7.5 2.5	
Saping of Saping / Shrub Stratum (Plot size: 15')	
Septing or Sapling (Shrub Stratum (Plot size: 15')	_
Privist taseds	_
Acer rubrum	_
Ulmus alata	_
O	_
0	-
0	(B)
0 0.0%	
Note	
1	
50% of Total Cover: 23.5	
30 61.2% FAC Problematic Hydrophytic Vegetation ¹ (Explication 15 30.6% FAC National 15 30.6% FAC 1 Problematic Hydrophytic Vegetation ¹ (Explication 15 1 National 15 1 National 15	
Morella cerifera	
New condition 15	ulaiu\
Nyssa sylvatica	Jiain)
Vaccinium elliotiti	av must
	gy muse
. 0	
50% of Total Cover: 24.5 20% of Total Cover: 9.8 49 = Total Cover Herb Stratum (Plot size: 5') 1. Viola primulifolia 30 ▼ 33.3% FACU 2. Rudbeckia hirta 30 ▼ 22.2% FACU 3. Dichanthelium oligosanthes 20 ▼ 22.2% FACU 4. Andropogon virginicus 10 □ 11.1% FAC 5. □ □ 0.0% 6. □ □ 0.0% 7. □ □ 0.0% 8. □ □ 0.0% 8. □ □ 0.0% 9. □ 0.0% 1. □ 0.0% 1. □ 0.0% 1. □ 0.0% 1. □ 0.0% 1. □ 0.0% 2. □ 0.0% 1. □ 0.0% 1. □ 0.0% 2. □ 0.0% 1. □ 0.0% 1. □ 0.0% 1. □ 0.0% 1. □ 0.0% 1. □ 0.0% 1. □ 0.0% 1. □ 0.0% 1. □ 0.0% 1. □ 0.0% 1. □ 0.0% 1. □ 0.0% 1. □ 0.0% 1. □ 0.0% 2. □ 0.0% 3. Total Cover: 45 20% of Total Cover: 18 90 = Total Cover Woody Vine Stratum (Plot size: 30') Gelsemium sempervirens 15 ▼ 100.0% 1. □ 0.0% 1. □	
1 Viola primulifolia 30 33.3% FAC Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and I than 3 in. (7.6 cm) DBH.	l 3 in
1. Viola primulifolia 2. Rudbeckia hirta 3.0	
1. Viola primuliniola 2. Rudbeckia hirta 3. Dichanthelium oligosanthes 2. Q 2. Z 2.2.% FACU 4. Andropogon virginicus 5.	
2. Rudbeckia hirta 30 ✓ 33.3% FACU than 3 in. (7.6 cm) DBH. 3. Dichanthelium oligosanthes 20 ✓ 22.2% FACU 4. Andropogon virginicus 10 11.1% FAC 5. 0 0.0% 50.0% 6. 0 0.0% 50.0% 7. 0 0.0% 50.0% 8. 0 0.0% 50.0% 9. 0 0.0% 50.0% 1. 0 0.0% 50.0% 2. 0 0.0% 50.0% 5.0% of Total Cover: 45 20% of Total Cover: 18 90 90 9. 0 0.0% 50.0% 50.0% 50.0% 50.0% 1. 0 0.0% 50.0%	
4. Andropogon virginicus 5.	1000
5.	
6.	, less
6	ıl.
7	
8	
9.	
0	
1	
2. 0	y
Solve Stratum (Plot size: 30')	
Woody Vine Stratum (Plot size: 30') Gelsemium sempervirens 15	ight.
Gelsemium sempervirens 15 ✓ 100.0% FAC 0 0.0% 0 0.0% 0 0.0%	
0 0.0% 0 0.0% 0 0.0%	
0 0.0% 0 0.0%	
Vegetation	
50% of Total Cover: 7.5 20% of Total Cover: 3 15 = Total Cover Yes No No	
Remarks: (If observed, list morphological adaptations below).	

Dominant

Profile Descr	ription: (Des	scribe to	the depth	needed to docu	ment the ind	icator or c	onfirm the	absence of indicators.)	
Depth		Matrix			Redox Fea	tures		_	
(inches)	Color (moist)	%	Color (moi			Loc2	Texture	Remarks
0-13	10YR	5/2	95	10YR	4/6 5	C	PL	Sandy Loam	
13-19	10YR	6/2	85	10YR	5/8 15	С	М	Sandy Loam	
	-		-				-		
-	-	-							
1 Type: C=Con	centration D	=Denletion	n RM=Rec	luced Matrix, CS=0	Covered or Coa	ted Sand Gr	rains 21 oca	 ation: PL=Pore Lining. M=M	latriy
Hydric Soil		-Берісиоі	1. 101-100	ruccu Matrix, C5–C	covered or cod	ica sana di	uiii Locc	-	_
Histosol (Doharah	io Polow Curfo	-o (CO) (LDE) C T II)		ematic Hydric Soils ³ :
	pedon (A2)				ue Below Surfac			1 cm Muck (A9) (I	
Black Hist					rk Surface (S9)			2 cm Muck (A10)	
	n Sulfide (A4)				Mucky Mineral)		18) (outside MLRA 150A,B)
					Gleyed Matrix (F2)		Piedmont Floodpla	ain Soils (F19) (LRR P, S, T)
	Layers (A5)	DD D T 1			d Matrix (F3)			Anomalous Bright	Loamy Soils (F20) (MLRA 153B)
	Bodies (A6) (L		•		Dark Surface (F	•		Red Parent Materi	ial (TF2)
	cky Mineral (A		, T, U)		d Dark Surface			Very Shallow Dark	Surface (TF12)
	sence (A8) (L				Depressions (F8	3)		Other (Explain in	Remarks)
	ck (A9) (LRR I				10) (LRR U)				
	Below Dark S		l1)	Deplete	d Ochric (F11)	(MLRA 151))		
	rk Surface (A1	•		☐ Iron-Ma	inganese Masse	es (F12) (LR	R O, P, T)		
Coast Pra	airie Redox (A	16) (MLRA	(150A)	Umbric	Surface (F13) ((LRR P, T, U)		
Sandy Mu	uck Mineral (S	61) (LRR O	, S)	Delta O	chric (F17) (ML	.RA 151)		3	
Sandy Gle	eyed Matrix (S	54)		Reduce	d Vertic (F18) (MLRA 150A	, 150B)	Indicators (wetland h	of hydrophytic vegetation and hydrology must be present,
Sandy Re	edox (S5)			Piedmo	nt Floodplain So	oils (F19) (M	1LRA 149A)		disturbed or problematic.
Stripped	Matrix (S6)			Anomal	ous Bright Loar	my Soils (F2	0) (MLRA 14	19A, 153C, 153D)	
☐ Dark Surf	face (S7) (LRF	R P, S, T, l	J)						
Dantulation I	(if ala								
Restrictive L	ayer (it obs	ervea):							
Type:	-h\.							Hydric Soil Present?	Yes No
Depth (inc	nes):								165 5 116 5
Remarks:									

Project/Site: Highway 478 Development Tract	City/County:	Natchitoches		Sampling Date:	24-Mar	r-20
Applicant/Owner: Louisisna Economic Development		State: LA	Sampling	Point: 6		
Investigator(s): John Collins	Section, Tow	nship, Range: S	20 T	8N R	7W	
andform (hillslope, terrace, etc.): Hillslope	Local relief (co	oncave, convex, nor	none	Slope:	2.0 % /	1.1 °
ubregion (LRR or MLRA): LRR P	Lat.: 31 39 32.621	Long.:	-93 06 36.9	46 D a	atum: WGS	84
oil Map Unit Name: Sacul fine sandy loam, 5-12% slopes (Sc)				ification: N/A		
are climatic/hydrologic conditions on the site typical for this tin		s • No O	If no, explain i	_		
	nificantly disturbed?	Are "Normal C	, .		No C)
	turally problematic?			prosent.		
SUMMARY OF FINDINGS - Attach site map show			-	wers in Remarks.) portant feature	es, etc.	
Hydrophytic Vegetation Present? Yes No No		•	<u> </u>			
Hydric Soil Present? Yes ● No ○		Sampled Area	es O No 💿			
Wetland Hydrology Present? Yes No •	within	n a Wetland?				
Remarks:						
Nemana.						
HYDROLOGY						
Wetland Hydrology Indicators:		9	Secondary Indica	ators (minimum of 2 r	required)	
Primary Indicators (minimum of one required; check all that	apply)		Surface Soil	Cracks (B6)		
Surface Water (A1)	Fauna (B13)		Sparsely Veg	getated Concave Surfa	ace (B8)	
	oosits (B15) (LRR U)		Drainage Pa	tterns (B10)		
	n Sulfide Odor (C1)		Moss Trim L			
	Rhizospheres along Living	Roots (C3)		Water Table (C2)		
	e of Reduced Iron (C4)		Crayfish Bur	` ,		
	ron Reduction in Tilled Soi	ls (C6)		isible on Aerial Image	ery (C9)	
	ck Surface (C7)	L	_	Position (D2)		
	xplain in Remarks)	L	Shallow Aqu	· ·		
☐ Inundation Visible on Aerial Imagery (B7)		L	FAC-Neutral	` ,		
Water-Stained Leaves (B9)			Sphagnum n	noss (D8) (LRR T, U)		
Field Observations:						
•	(inches):					
Water Table Present? Yes No Depth ((inches):					
Saturation Present? (includes capillary fringe) Yes No • Depth ((inches):	Wetland Hydro	logy Present?	Yes O No		
Describe Recorded Data (stream gauge, monitoring well, aer	ial photos, previous in	spections), if availal	ble:			
Jessinge Hessing Data (esteam gauge, membering Hesi, de	та: р.тосоо, р. отточо пт	, a valia				
Remarks:						

			ominant pecies? _		Sampling Point: 6
(- 1 - 1	Absolute	R	el.Strat.	Indicator	Dominance Test worksheet:
ree Stratum (Plot size: 30')	% Cover		Cover	Status	Number of Dominant Species
Pinus taeda		✓		FAC	That are OBL, FACW, or FAC:3(A)
		Н	0.0%		Total Number of Dominant
			0.0%		Species Across All Strata:
			0.0%		Percent of dominant Species
	-		0.0%		That Are OBL, FACW, or FAC: 60.0% (A/B)
	•		0.0%		, ,
			0.0%		Prevalence Index worksheet:
		_	0.0%		Total % Cover of: Multiply by:
0% of Total Cover: 35 20% of Total Cover: 14		= T	otal Cover	•	OBL species 3 x 1 = 3
pling or Sapling/Shrub Stratum (Plot size: 15'					FACW species $0 \times 2 = 0$
		Н	0.0%		FAC species $103 \times 3 = 309$
		Н	0.0%		FACU species $\frac{43}{}$ x 4 = $\frac{172}{}$
		Н	0.0%		UPL species $0 \times 5 = 0$
		Н	0.0%		Column Totals: <u>149</u> (A) <u>484</u> (B)
			0.0%		Prevalence Index = B/A = 3.248
			0.0%		· —
			0.0%		Hydrophytic Vegetation Indicators:
		Ш	0.0%		1 - Rapid Test for Hydrophytic Vegetation
% of Total Cover:0 20% of Total Cover:0	0	= T	otal Cover		✓ 2 - Dominance Test is > 50%
rub Stratum (Plot size: 15')					3 - Prevalence Index is ≤3.0 ¹
Liquidambar styraciflua	10	~	100.0%	FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
	0		0.0%		
			0.0%		¹ Indicators of hydric soil and wetland hydrology must
	_		0.0%		be present, unless disturbed or problematic.
			0.0%		Definition of Vegetation Strata:
			0.0%		Tree - Woody plants, excluding woody vines,
0% of Total Cover: 5 20% of Total Cover: 2	10	= T	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).
erb Stratum (Plot size: _5')					
Dichanthelium oligosanthes	20	~	29.0%	FACU	Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
Dictianulellum oligosamiles					
	10	~	14.5%	FAC	than 3 in. (7.6 cm) DBH.
Chasmanthium sessiliflorum		✓		FACU FACU	
Chasmanthium sessiliflorum Eupatorium capillifolium			14.5%		than 3 in. (7.6 cm) DBH. Sapling/Shrub - Woody plants, excluding vines, less
Chasmanthium sessiliflorum Eupatorium capillifolium Liquidambar styraciflua			14.5% 14.5%	FACU	than 3 in. (7.6 cm) DBH.
Chasmanthium sessiliflorum Eupatorium capillifolium Liquidambar styraciflua Ulmus alata	10 5 5		14.5% 14.5% 7.2%	FACU FAC	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.
Chasmanthium sessiliflorum Eupatorium capillifolium Liquidambar styraciflua Ulmus alata Rudbeckia hirta	10 5 5 5		14.5% 14.5% 7.2% 7.2%	FACU FAC FACU	than 3 in. (7.6 cm) DBH. Sapling/Shrub - Woody plants, excluding vines, less
Chasmanthium sessiliflorum Eupatorium capillifolium Liquidambar styraciflua Ulmus alata Rudbeckia hirta Carex blanda	10 5 5 5 5		14.5% 14.5% 7.2% 7.2% 7.2%	FACU FACU FACU	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,
Chasmanthium sessiliflorum Eupatorium capillifolium Liquidambar styraciflua Ulmus alata Rudbeckia hirta Carex blanda Callicarpa americana	10 5 5 5 5		14.5% 14.5% 7.2% 7.2% 7.2% 7.2%	FACU FACU FACU FACU	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
Chasmanthium sessiliflorum Eupatorium capillifolium Liquidambar styraciflua Ulmus alata Rudbeckia hirta Carex blanda Callicarpa americana Acer rubrum	10 5 5 5 5 5 3		14.5% 14.5% 7.2% 7.2% 7.2% 7.2% 4.3%	FACU FACU FACU FACU FACU FACU	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
Chasmanthium sessiliflorum Eupatorium capillifolium Liquidambar styraciflua Ulmus alata Rudbeckia hirta Carex blanda Callicarpa americana Acer rubrum Carex debilis	10 5 5 5 5 5 3 3		14.5% 14.5% 7.2% 7.2% 7.2% 7.2% 4.3% 4.3%	FACU FACU FACU FACU FACU FACC FACU	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
Chasmanthium sessiliflorum Eupatorium capillifolium Liquidambar styraciflua Ulmus alata Rudbeckia hirta Carex blanda Callicarpa americana Acer rubrum Carex debilis	10 5 5 5 5 5 3 3		14.5% 14.5% 7.2% 7.2% 7.2% 7.2% 4.3% 4.3%	FACU FACU FACU FACU FACU FACC FACU	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
Chasmanthium sessiliflorum Eupatorium capillifolium Liquidambar styraciflua Ulmus alata Rudbeckia hirta Carex blanda Callicarpa americana Acer rubrum Carex debilis	10 5 5 5 5 5 3 3 3 0		14.5% 14.5% 7.2% 7.2% 7.2% 4.3% 4.3% 4.3% 0.0%	FACU FACU FACU FACU FACU FACU OBL	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
Chasmanthium sessiliflorum Eupatorium capillifolium Liquidambar styraciflua Ulmus alata Rudbeckia hirta Carex blanda Callicarpa americana Acer rubrum Carex debilis % of Total Cover: 34.5 20% of Total Cover: 13.8	10 5 5 5 5 5 3 3 3 0		14.5% 14.5% 7.2% 7.2% 7.2% 4.3% 4.3% 4.3% 0.0%	FACU FACU FACU FACU FACU FACU OBL	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.
Chasmanthium sessiliflorum Eupatorium capillifolium Liquidambar styraciflua Ulmus alata Rudbeckia hirta Carex blanda Callicarpa americana Acer rubrum Carex debilis 2% of Total Cover: 34.5 20% of Total Cover: 13.8 200 200 200 200 200 200 200 200 200 20	10 5 5 5 5 5 3 3 3 0 0		14.5% 14.5% 7.2% 7.2% 7.2% 4.3% 4.3% 4.3% 0.0% 0.0% obtal Cover	FACU FACU FACU FACU FACU FACU OBL	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.
Chasmanthium sessiliflorum Eupatorium capillifolium Liquidambar styraciflua Ulmus alata Rudbeckia hirta Carex blanda Callicarpa americana Acer rubrum Carex debilis 9% of Total Cover: 34.5 20% of Total Cover: 13.8 200 200 200 200 200 200 200 200 200 20	10 5 5 5 5 5 3 3 3 0 0		14.5% 14.5% 7.2% 7.2% 7.2% 4.3% 4.3% 4.3% 0.0% 0.0% Dotal Cover	FACU FACU FACU FACU FACU FACU OBL	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.
Chasmanthium sessiliflorum Eupatorium capillifolium Liquidambar styraciflua Ulmus alata Rudbeckia hirta Carex blanda Callicarpa americana Acer rubrum Carex debilis % of Total Cover: 34.5 20% of Total Cover: 13.8 cody Vine Stratum (Plot size: 30')	10 5 5 5 5 5 3 3 3 0 0 69		14.5% 14.5% 7.2% 7.2% 7.2% 4.3% 4.3% 4.3% 0.0% 0.0% Otal Cover	FACU FACU FACU FACU FACU FACU OBL	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.
Chasmanthium sessiliflorum Eupatorium capillifolium Liquidambar styraciflua Ulmus alata Rudbeckia hirta Carex blanda Callicarpa americana Acer rubrum Carex debilis 2% of Total Cover: 34.5 20% of Total Cover: 13.8 cody Vine Stratum (Plot size: 30')	10 5 5 5 5 5 3 3 3 0 0 69		14.5% 14.5% 7.2% 7.2% 7.2% 4.3% 4.3% 4.3% 0.0% 0.0% 0.0% 0.0%	FACU FACU FACU FACU FACU FACU OBL	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.
Chasmanthium sessiliflorum Eupatorium capillifolium Liquidambar styraciflua Ulmus alata Rudbeckia hirta Carex blanda Callicarpa americana Acer rubrum Carex debilis	10 5 5 5 5 5 3 3 3 0 0 69		14.5% 14.5% 7.2% 7.2% 7.2% 4.3% 4.3% 0.0% 0.0% 0.0% 0.0% 0.0%	FACU FACU FACU FACU FACU FACU OBL	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.
Chasmanthium sessiliflorum Eupatorium capillifolium Liquidambar styraciflua Ulmus alata Rudbeckia hirta Carex blanda Callicarpa americana Acer rubrum Carex debilis	10 5 5 5 5 5 5 3 3 3 0 0 69	= To	14.5% 14.5% 7.2% 7.2% 7.2% 4.3% 4.3% 4.3% 0.0% 0.0% 0.0% 0.0%	FACU FACU FACU FACU FACU OBL	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.

Dominant

Profile Descri	ption: (Des	scribe to	the depth	needed to d	locument	the indic	ator or c	onfirm the	absence of indicators.)	
Depth		Matrix				dox Featu	ires		-	
(inches)	Color (1		<u>%</u>	Color (%_	Tvpe 1	Loc²	<u>Texture</u>	Remarks
0-7	10YR	5/2	95	10YR	5/4	5	C		Fine Sandy Loam	
7-18	7.5YR	4/6	85	10YR	5/3	15	C	M	Clay Loam	
		-			-	-	-	-		
					-			-	-	
					-	-			-	
¹ Type: C=Conc	entration. D	=Depletio	n. RM=Redı	iced Matrix, C	S=Covere	d or Coate	d Sand Gr	ains ² Loca	ition: PL=Pore Lining. M=M	atrix
Hydric Soil Ir	ndicators:								Indicators for Proble	ematic Hydric Soils ³ :
Histosol (A	1)			Poly	value Belo	w Surface	(S8) (LRR	S, T, U)	1 cm Muck (A9) (L	
Histic Epipe	edon (A2)					face (S9) (2 cm Muck (A10) (
Black Histic	c (A3)					Mineral (F				18) (outside MLRA 150A,B)
Hydrogen	Sulfide (A4)					Matrix (F2		•		in Soils (F19) (LRR P, S, T)
Stratified L	ayers (A5)				leted Matr	-	•			Loamy Soils (F20) (MLRA 153B)
Organic Bo	dies (A6) (L	RR P, T, L	J)			urface (F6))		Red Parent Materia	
5 cm Muck	y Mineral (A	7) (LRR P	, T, U)	☐ Dep	leted Dark	Surface (F7)		☐ Very Shallow Dark	` '
☐ Muck Prese	ence (A8) (L	RR U)			ox Depres		•		Other (Explain in F	
1 cm Muck	(A9) (LRR F	P, T)			I (F10) (LF					Citia (S)
Depleted B	Below Dark S	urface (A	11)			ric (F11) (N	MLRA 151)			
☐ Thick Dark	Surface (A1	.2)				se Masses				
Coast Prair	rie Redox (A	16) (MLRA	4 150A)			e (F13) (L				
Sandy Muc	k Mineral (S	1) (LRR O	, S)			F17) (MLR.			2	
Sandy Gley	ed Matrix (S	64)				c (F18) (M		, 150B)	³ Indicators o	of hydrophytic vegetation and ydrology must be present,
☐ Sandy Red	ox (S5)							ILRA 149A)		disturbed or problematic.
Stripped M	atrix (S6)								9A, 153C, 153D)	
☐ Dark Surfa	ce (S7) (LRR	R P, S, T, l	J)				-			
Destrict the La										
Restrictive La	yer (IT obse	ervea):								
Type:						_			Hydric Soil Present?	Yes No
Depth (inch	es):					_			,	1.00 - 11.0 -
Remarks:										

Project/Site: Highway 478 Development Tract	City/County: Nat	chitoches		Sampling Date:	24-Mar-20
Applicant/Owner: Louisisna Economic Development	Stat	e: LA	Sampling Po	oint: 7	
Investigator(s): John Collins	Section, Townsh	ip, Range: S 20	T 8	8N R 7\	N
Landform (hillslope, terrace, etc.): Streambank	Local relief (conca	ve, convex, none)	: none	Slope: 3	3.0 % / 1.7 °
Subregion (LRR or MLRA): LRR P Lat.:	31 39 32.683	Long.: -	93 06 26.479) Dat	um: WGS 84
Soil Map Unit Name: Sacul fine sandy loam, 5-12% slopes (Sc)	<u> </u>		NWI classif	N1/A	
Are climatic/hydrologic conditions on the site typical for this time of ye	ear? Yes •	No O (If n	o, explain in		
	ntly disturbed?	Are "Normal Circu			No O
	problematic?	(If needed, expla	_	or cocine.	110
SUMMARY OF FINDINGS - Attach site map showing sa	•		-	-	, etc.
Hydrophytic Vegetation Present? Yes ● No ○	Z: Alex Con				
Hydric Soil Present? Yes No		npled Area	○ No ●		
Wetland Hydrology Present? Yes ○ No ●	within a V	Vetland?	∪ No ⊛		
Remarks:					
HYDROLOGY					
Wetland Hydrology Indicators:		Sec	ondary Indicat	cors (minimum of 2 red	quired)
Primary Indicators (minimum of one required; check all that apply)			Surface Soil C	` '	
Surface Water (A1) Aquatic Fauna (B	•			etated Concave Surface	e (B8)
High Water Table (A2) Marl Deposits (B:			Drainage Patte	• •	
Saturation (A3) Hydrogen Sulfide	` ,		Moss Trim Lin	` ,	
	heres along Living Roo	• • =	•	/ater Table (C2)	
	uced fron (C4) uction in Tilled Soils (C		Crayfish Burro	ows (C8) ible on Aerial Imagery	. (CO)
Algal Mat or Crust (B4) Thin Muck Surface	•		Geomorphic P		(C9)
☐ Iron Deposits (B5) ☐ Other (Explain in	• ,		Shallow Aquita		
☐ Inundation Visible on Aerial Imagery (B7)	i Kemario,		FAC-Neutral T		
Water-Stained Leaves (B9)				oss (D8) (LRR T, U)	
Field Observations:					
Surface Water Present? Yes No Depth (inches):	:				
Water Table Present? Yes No Depth (inches):					
		Wetland Hydrolog	y Present?	Yes O No 🤄	•
(includes capillary fringe) Yes No Depth (inches):					
Describe Recorded Data (stream gauge, monitoring well, aerial pho	tos, previous inspec	tions), if available	:		
Remarks:					

0					ominant		Sampling Point: 7			
Prival tede	Tr	ee Stratum (Plot size: _30')		R	el.Strat.		Dominance Test worksheet:			
2	1	Dinus toods	25	V	100.0%	FAC	· ·			
3	า. ว					<u> </u>	That are Obl., FACW, or FAC: 9 (A)			
0										
0							Species Across All Strata: 9 (B)			
1	_		_				Percent of dominant Species			
0										
Total Cover 12.5 20% of Total Cover 5 25 = Total Cover 5 20 6 6 6 6 6 6 6 6 6							Bravalanca Index worksheet:			
50% of Total Cover: 12.5 20% of Total Cover: 5 25 = Total Cover										
Liquidember styraciflue		0% of Total Cover: 12.5 20% of Total Cover: 5		= Te		,				
Liquidambar styraciflua	Sa	upling or Sapling/Shrub Stratum (Plot size: 15')				FACW species5 x 2 =10			
	Ι.	Lieutidonobou ab montfluo	10	~	100.0%	FAC	FAC species $115 \times 3 = 345$			
0)						I			
Column Totals: 130 (A) 380 (Column Totals: 140 (Colu					0.0%		I			
0					0.0%		'			
0	5		0		0.0%		Column locals: 130 (A) 380 (5)			
Note					0.0%		Prevalence Index = B/A = 2.923			
1 - Rapid Test for Hydrophytic Vegetation 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is > 50% 3 - Prevalence Index is ≤3.0 ¹ Problematic Hydrophytic Vegetation ¹ (Explain) 2 - 2.2 ±					0.0%		Hydrophytic Vegetation Indicators:			
50% of Total Cover: 5 20% of Total Cover: 2 10 = Total Cover Shrub Stratum Plot size: 15'					0.0%		1 David Test for Hydraubytic Verstation			
Shrub Stratum (Plot size: 15') Acer rubrum 10			10	= T4	otal Cover	,				
Acer rubrum				•	55.61					
Morella cerifera	Sn 1		10		22.20/	FAC				
1	١.						Problematic Hydrophytic Vegetation (Explain)			
Nyssa sylvatica		Tlav vamitavia					1 Indicators of hydric soil and wetland hydrology must			
Magnolia virginiana										
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)							Definition of Vegetation Strata:			
Some of Total Cover: 22.5 20% of Total Cover: 9 45 = Total Cover										
Herb Stratum (Plot size: 5')	-	-		_						
1. Chasmanthium sessiliflorum 1. S			45	= 10	otai Covei	7	(7.6 cm) or larger in diameter at breast height (DBH).			
1. Chasmanthulum sessimorum 2. Mitchella repens 3. Ilex vomitoria 4. Acer rubrum 5. Dichanthelium oligosanthes 6.	Не	erb Stratum (Plot size: <u>5'</u>)								
2. Mitchella repens 10 ✓ 25.0% FAC than 3 in. (7.6 cm) DBH. 3. Ilex vomitoria 5 12.5% FAC than 3 in. (7.6 cm) DBH. 4. Acer rubrum 5 12.5% FACU Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall. 5. Dichanthelium oligosanthes 0 0.0% Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. 7. 0 0.0% Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. 2. 0 0.0% Woody Vine Stratum (Plot size: 30') Woody Vine Stratum (Plot size: 30') 3. 5 ✓ 33.3% FAC FAC 2. 5 ✓ 33.3% FAC 3. 0 0.0% 4. 0 0.0% 5 ✓ 33.3% FAC 6. 0 0.0% 7. 0 0.0% 8. 40 = Total Cover 8. 0 0.0% 9. 0.0% 10 ✓ 66.7% FAC 10	1	_ Chasmanthium sessiliflorum	15	✓	37.5%	FAC				
4. Acer rubrum 5. □ 12.5% NI 5. Dichanthelium oligosanthes 5. □ 12.5% FACU 6. □ 0 □ 0.0% 7. □ 0 □ 0.0% 8. □ 0 □ 0.0% 9. □ 0 □ 0.0% 1. □ 0 □ 0.0% 1. □ 0 □ 0.0% 1. □ 0 □ 0.0% 1. □ 0 □ 0.0% 2. □ 0 □ 0.0% 50% of Total Cover: 20 20% of Total Cover: 8 40 = Total Cover Woody Vine Stratum (Plot size: 30') 1. □ Gelsemium sempervirens 10 ✓ 66.7% FAC 2. Smilax rotundifolia 5 □ 12.5% NI Sapling/Shrub - Woody plants, excluding woody 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 Stratum (Plot size: 30') 1. □ Gelsemium sempervirens 10 ✓ 66.7% FAC 2. Smilax rotundifolia 5 ✓ 33.3% FAC 3. □ □ 0.0% 4. □ □ 0.0% 4. □ □ 0.0% 5 ✓ Hydrophytic	2	Mitchella repens	10	✓	25.0%	FAC				
5. Dichanthelium oligosanthes 5. Dichanthelium oligosanthes 5. Dichanthelium oligosanthes 5. Dichanthelium oligosanthes 6. O	3	_ Ilex vomitoria	5		12.5%	FAC				
5. Dichanthelium oligosanthes 6. 0 0.0% 7. 0 0.0% 8. 0 0.0% 9. 0 0.0% 1. 0 0.0% 1. 0 0.0% 1. 0 0.0% 2. 0 0.0% 2. 0 0.0% 50% of Total Cover: 20 20% of Total Cover: 8 40 = Total Cover Woody Vine Stratum (Plot size: 30') 1. Gelsemium sempervirens 10	4	_ Acer rubrum	5		12.5%	NI				
7	5	_ Dichanthelium oligosanthes	5		12.5%	FACU	than 3 in. DBH and greater than 3.26 it (1111) tall.			
8.	6		0		0.0%		Shrub - Woody plants, excluding woody vines,			
9.	7		0		0.0%					
O					0.0%					
0					0.0%					
1.	0		0		0.0%		plants, except woody vines, less than approximately			
2. 0 0.0% <td< td=""><td>1</td><td>•</td><td>0</td><td></td><td>0.0%</td><td></td><td>3 ft (1 m) in height.</td></td<>	1	•	0		0.0%		3 ft (1 m) in height.			
Woody Vine Stratum (Plot size: 30')	12		0		0.0%					
1. Gelsemium sempervirens 10 ✓ 66.7% FAC 2. Smilax rotundifolia 5 ✓ 33.3% FAC 3. 0 0 0.0% 4. 0 0.0% 5 0.0% 6 0.0% 7 0.0% 8 0.0% 9 0.0% 10 0.0%	50	0% of Total Cover: 20 20% of Total Cover: 8	40	= Te	otal Cover	•	woody vine - All woody vines, regardless of height.			
1. Gelsemium sempervirens 10 ✓ 66.7% FAC 2. Smilax rotundifolia 5 ✓ 33.3% FAC 3. 0 0.0% 0.0% 4. 0 0.0% 0.0% 5. 0.0% 0.0% 0.0% 6. 0.0% 0.0% 0.0% 7. 0.0% 0.0% 0.0%	W	oody Vine Stratum (Plot size: 30')								
3.	1.	Gelsemium sempervirens	10	V	66.7%	FAC				
1	2.	Smilax rotundifolia	5	V	33.3%	FAC				
1	3.		0		0.0%					
					0.0%					
	5.		0		0.0%		Vegetation			
50% of Total Cover: 7.5 20% of Total Cover: 3 15 = Total Cover Present? Yes No	50	0% of Total Cover:3	15	= Te	otal Cover	•	Vegetation Present? Yes No No			
Remarks: (If observed, list morphological adaptations below).	Ren	narks: (If observed, list morphological adaptations below).					1			

Dominant

Profile Descri	iption: (Des	scribe to t	he depth	needed to	locument	the indic	ator or co	onfirm the	absence of indicators.)
Depth		Matrix				dox Featu	res		_
(inches)	Color (%	Color (moist)	%	Tvpe 1	Loc2	Texture Remarks
0-7	10YR	3/2	80	10YR	5/2	10	D	M	Fine Sandy Loam
				10YR	4/6	10	С	М	Fine Sandy Loam
7-11	10YR	4/1	90	7.5YR	4/6		C	PL	Fine Sandy Loam
11-19	10YR	6/1	90	7.5YR	4/6	10	C	PL	Fine Sandy Loam
¹ Type: C=Conc	entration. D	=Depletion	ı. RM=Rec	duced Matrix, (CS=Covere	d or Coate	d Sand Gr	ains ² Loca	ation: PL=Pore Lining. M=Matrix
Hydric Soil I	ndicators:								Indicators for Problematic Hydric Soils ³ :
Histosol (A	\1)			Pol	yvalue Belo	w Surface	(S8) (LRR	S, T, U)	1 cm Muck (A9) (LRR O)
Histic Epip	edon (A2)			Thi	n Dark Sur	face (S9) (I	LRR S, T,	U)	2 cm Muck (A10) (LRR S)
Black Histi	c (A3)			Loa	my Mucky	Mineral (F	1) (LRR 0))	Reduced Vertic (F18) (outside MLRA 150A,B)
Hydrogen	Sulfide (A4)			Loa	my Gleyed	Matrix (F2	!)		Piedmont Floodplain Soils (F19) (LRR P, S, T)
Stratified L	ayers (A5)				oleted Matr		-		Anomalous Bright Loamy Soils (F20) (MLRA 153B)
Organic Bo	odies (A6) (L	RR P, T, U)			urface (F6)			Red Parent Material (TF2)
	ky Mineral (A			_		Surface (F			
	ence (A8) (L		. ,		dox Depres	•	.,		☐ Very Shallow Dark Surface (TF12)
	(A9) (LRR F				rl (F10) (LF				Uther (Explain in Remarks)
	Below Dark S		.1)			ric (F11) (M	11 DA 151\		
	Surface (A1		-/			se Masses			
	rie Redox (A	•	150Δ)						
	ck Mineral (S					e (F13) (LF)	
			3)			F17) (MLR/		.===>	³ Indicators of hydrophytic vegetation and
	yed Matrix (S	o 4)				c (F18) (M			wetland hydrology must be present,
☐ Sandy Rec								LRA 149A)	unless disturbed or problematic.
Stripped M				∟ And	omalous Br	ight Loamy	Soils (F20)) (MLRA 14	19A, 153C, 153D)
☐ Dark Surfa	ice (S7) (LRF	R P, S, T, U	·)						
Restrictive La	yer (if obs	erved):							
Type:									Hydric Soil Present? Yes No
Depth (inch	nes):					_			nyuric son Present? Yes 😌 No 🔾
Remarks:									

Project/Site: Highway 478 Development Tract	City/County: _	Natchitoches		Sampling Date:	24-Mar-20
Applicant/Owner: Louisisna Economic Development	S	tate: LA	Sampling Po	int: 8	
Investigator(s): _John Collins	Section, Town	ship, Range: S 2	0 T 8	BN R 7V	V
Landform (hillslope, terrace, etc.): Hillslope	Local relief (cor	cave, convex, non	e): none	Slope: 3	3.0 % / 1.7 °
Subregion (LRR or MLRA): LRR P	at.: 31 39 32.702	Long.:	-93 06 18.323	Datı	um: WGS 84
Soil Map Unit Name: Sacul fine sandy loam, 5-12% slopes (Sc)			NWI classifi	cation: N/A	-
Are climatic/hydrologic conditions on the site typical for this time o	of year? Yes	● No ○ (If	f no, explain in		
Are Vegetation , Soil , or Hydrology signification	icantly disturbed?	Are "Normal Cir	rcumstances" p	resent? Yes •	No 🔾
	ally problematic?		•	ers in Remarks.)	
SUMMARY OF FINDINGS - Attach site map showing		` , , .	•	•	, etc.
Hydrophytic Vegetation Present? Yes No No	To the (Samulad Avas			
Hydric Soil Present? Yes No •		Sampled Area	s O No 💿		
Wetland Hydrology Present? Yes No •	within	a Wetland?			
Remarks:					
ixemains.					
HYDROLOGY					
Wetland Hydrology Indicators:		Si	econdary Indicato	ors (minimum of 2 req	quired)
Primary Indicators (minimum of one required; check all that app	ply)		Surface Soil Cr	acks (B6)	
Surface Water (A1) Aquatic Fauna	a (B13)		Sparsely Veget	tated Concave Surface	e (B8)
	s (B15) (LRR U)		Drainage Patte	rns (B10)	
	lfide Odor (C1)	L	Moss Trim Line	` ,	
1 <u> </u>	zospheres along Living F	Roots (C3)	_	ater Table (C2)	
	Reduced Iron (C4)	(05)	Crayfish Burro	` '	
	Reduction in Tilled Soils	(C6)		ble on Aerial Imagery	(C9)
☐ Algal Mat or Crust (B4) ☐ Thin Muck Su☐ Iron Deposits (B5) ☐ Other (Explain	` '		Geomorphic Po		
☐ Inundation Visible on Aerial Imagery (B7)	in in Remarks)		J Shallow AquitaJ FAC-Neutral Text	· ·	
Water-Stained Leaves (B9)			_	ss (D8) (LRR T, U)	
			_ Spriagrium mo	55 (D6) (LRR 1, U)	
Field Observations: Surface Water Present? Yes No Depth (inch	nec).				
Survive Trace II	·				
	ies):	Wetland Hydrolo	nav Present?	Yes O No 🖲	
Saturation Present? (includes capillary fringe) Yes No Depth (inch	ies):	, and any and any	- j, 1100		
Describe Recorded Data (stream gauge, monitoring well, aerial p	photos, previous insp	ections), if availab	le:		
Remarks:					

(District and District And Dist	Absolute Rel.Strat. Indica				Dominance Test worksheet:			
Tree Stratum (Plot size: 30')	% Cover		Cover	Status	Number of Dominant Species			
1. Pinus taeda	35	✓	100.0%	FAC	That are OBL, FACW, or FAC:6(A)			
2	0		0.0%					
3	0		0.0%		Total Number of Dominant Species Across All Strata: 7 (B)			
4			0.0%		Species Across Air Strata.			
	•	\Box	0.0%		Percent of dominant Species			
^					That Are OBL, FACW, or FAC: 85.7% (A/B)			
<u>6</u>	-		0.0%					
7	0_		0.0%		Prevalence Index worksheet:			
8	0	Ш	0.0%		Total % Cover of: Multiply by:			
50% of Total Cover: 17.5 20% of Total Cover: 7	35	= T	otal Cover	•	OBL species <u>0</u> x 1 = <u>0</u>			
Sapling or Sapling/Shrub Stratum (Plot size: 15')				FACW species 10 x 2 = 20			
	•		0.0%		FAC species 130 x 3 = 390			
1		\Box	0.0%					
					x			
3			0.0%		UPL species $0 \times 5 = 0$			
4			0.0%		Column Totals: <u>155</u> (A) <u>470</u> (B)			
5	0	Ш	0.0%		Duninlana Inday D/A 2022			
6	0		0.0%		Prevalence Index = B/A = 3.032			
7			0.0%		Hydrophytic Vegetation Indicators:			
8		\Box	0.0%					
		_			1 - Rapid Test for Hydrophytic Vegetation			
50% of Total Cover: 0 20% of Total Cover: 0	0	= Te	otal Cover	·	✓ 2 - Dominance Test is > 50%			
Shrub Stratum (Plot size: 15')					\Box 3 - Prevalence Index is ≤3.0 1			
1 Ilex vomitoria	35	~	46.7%	FAC	Problematic Hydrophytic Vegetation ¹ (Explain)			
2. Quercus nigra		V	26.7%	FAC				
Alamalla aquifama		✓	20.0%	FAC	¹ Indicators of hydric soil and wetland hydrology must			
1					be present, unless disturbed or problematic.			
4. Acer rubrum	5		6.7%	NI				
5	0	\sqcup	0.0%		Definition of Vegetation Strata:			
6	0		0.0%		Tree - Woody plants, excluding woody vines,			
50% of Total Cover: 37.5 20% of Total Cover: 15	75	= T	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: 5')					(7.0 cm) of larger in diameter at breast height (DDH).			
· _ ·					Sapling - Woody plants, excluding woody vines,			
1. Rubus allegheniensis	15	~	50.0%	FACU	approximately 20 ft (6 m) or more in height and less			
2. Vaccinium elliottii	10	✓	33.3%	FACW	than 3 in. (7.6 cm) DBH.			
3. Liquidambar styraciflua	5		16.7%	FAC				
4.	0		0.0%		Sapling/Shrub - Woody plants, excluding vines, less			
5.			0.0%		than 3 in. DBH and greater than 3.28 ft (1m) tall.			
		\Box	0.0%					
6		\vdash			Shrub - Woody plants, excluding woody vines,			
7			0.0%		approximately 3 to 20 ft (1 to 6 m) in height.			
8			0.0%		Harb All barbasagus (nan waadu) stanta isatudis s			
9		\Box	0.0%		Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody			
10	0		0.0%		plants, except woody vines, less than approximately			
11	0		0.0%	·	3 ft (1 m) in height.			
12.			0.0%					
50% of Total Cover: 15 20% of Total Cover: 6			otal Cover		Woody vine - All woody vines, regardless of height.			
		- 10	Jean Cover		, , , ,			
Woody Vine Stratum (Plot size: 30'								
1. Gelsemium sempervirens	20	~	100.0%	FAC				
2.			0.0%					
3			0.0%					
4			0.0%		Hydrophytic			
5	0	Ш	0.0%		Vegetation			
50% of Total Cover:10 20% of Total Cover:4	20	= T	otal Cover		Present? Yes No			
Remarks: (If observed, list morphological adaptations below).								
*Indicator suffix = National status or professional decision assigned because F	Regional status	not	defined by F	NS.				

Sampling Point: 8

Profile Descr	iption: (De	scribe to	the depth	needed to docu	ment the i	ndicator or	onfirm the	absence of indicators.)	
Depth		Matrix			Redox F	eatures		_	
(inches)	Color (moist)	%	Color (mois	st) 9	% Type	Loc ²	Texture	Remarks
0-13	10YR	3/1	97	10YR	5/2 3	D	М	Fine Sandy Loam	
13-18	10YR	5/8	80	10YR :	3/1 20	С	_ <u>М</u>	Fine Sandy Loam	
					<u> </u>			,	
								-	
			-						
							_		
¹ Type: C=Cond	centration. D	=Depletion	n. RM=Red	uced Matrix, CS=C	Covered or C	Coated Sand G	rains ² Loca	ation: PL=Pore Lining. M=Ma	atrix
Hydric Soil I	ndicators:							Indicators for Proble	ematic Hydric Soils ³ :
Histosol (A1)			Polyvalu	e Below Sur	rface (S8) (LR	R S, T, U)	1 cm Muck (A9) (Ll	
Histic Epip	oedon (A2)			Thin Dar	k Surface (9	S9) (LRR S, T,	U)	2 cm Muck (A10) (•
Black Hist	ic (A3)			_		al (F1) (LRR (.8) (outside MLRA 150A,B)
Hydrogen	Sulfide (A4)				Sleyed Matri		•		in Soils (F19) (LRR P, S, T)
Stratified	Layers (A5)				d Matrix (F3)				Loamy Soils (F20) (MLRA 153B)
Organic B	odies (A6) (L	RR P, T, U	1)		ark Surface			Red Parent Materia	, , , , , ,
5 cm Muc	ky Mineral (A	47) (LRR P	, T, U)		d Dark Surfa	` '			
	sence (A8) (L				epressions			☐ Very Shallow Dark	
	k (A9) (LRR	-			0) (LRR U)	(10)		Other (Explain in R	.emarks)
	Below Dark S		11)			1) (MLRA 151)		
	k Surface (A1	-	,			ısses (F12) (Li			
	irie Redox (A	•	150Δ)						
	ck Mineral (S					3) (LRR P, T, I	J)		
	yed Matrix (, 3)		chric (F17) (4505)	³ Indicators o	f hydrophytic vegetation and
Sandy Red		37)				3) (MLRA 150/		wetland hy	ydrology must be present,
						Soils (F19) (disturbed or problematic.
	Matrix (S6)	D D C T I	15	Anomalo	ous Bright Lo	oamy Soils (F	20) (MLRA 14	19A, 153C, 153D)	
□ Dark Surra	ace (S7) (LRI	K P, S, 1, C	J)						
Restrictive La	ayer (if obs	erved):							
Type:	, ,	•							
Depth (incl	nes):							Hydric Soil Present?	Yes O No 💿
Remarks:									
Remarks.									

Project/Site: Highway 478 Development Tract	City/County:	Natchitoches	Sampling Da	ate: 24-Mar-20
Applicant/Owner: Louisisna Economic Development		State: LA	Sampling Point: 9	
Investigator(s): _John Collins	Section, Tow	nship, Range: S 20	T 8N	R 7W
Landform (hillslope, terrace, etc.): Closed Depression	Local relief (co	oncave, convex, none)	concave Slope:	0.0 % / 0.0°
Subregion (LRR or MLRA): LRR P La	at.: 31 39 32.702	Long.: -	93 06 18.323	Datum: WGS 84
Soil Map Unit Name: Sacul fine sandy loam, 5-12% slopes (Sc)			NWI classification:	
Are climatic/hydrologic conditions on the site typical for this time of	of year? Yes	s ● No ○ (If r	no, explain in Remarks.)	
Are Vegetation , Soil , or Hydrology signifi	icantly disturbed?	Are "Normal Circ	umstances" present?	Yes No
Are Vegetation , Soil , or Hydrology natura	ally problematic?		in any answers in Remark	ks.)
SUMMARY OF FINDINGS - Attach site map showing		, , ,	•	•
Hydrophytic Vegetation Present? Yes No	Tatha	Sampled Area		
Hydric Soil Present? Yes No		Voo	● No ○	
Wetland Hydrology Present? Yes No	withir	n a Wetland?	- 1 10 -	
Remarks: HYDROLOGY				
Wetland Hydrology Indicators:	-1.0	Sec	condary Indicators (minimum	of 2 required)
Primary Indicators (minimum of one required; check all that ap			Surface Soil Cracks (B6)	Curface (BO)
	s (B15) (LRR U)		Sparsely Vegetated Concave Drainage Patterns (B10)	Suпасе (Вв)
	ılfide Odor (C1)		Moss Trim Lines (B16)	
☐ Water Marks (B1) ☐ Oxidized Rhiz	zospheres along Living	Roots (C3)	Dry Season Water Table (C2))
✓ Sediment Deposits (B2)	Reduced Iron (C4)		Crayfish Burrows (C8)	•
✓ Drift Deposits (B3)	Reduction in Tilled Soil	s (C6)	Saturation Visible on Aerial I	magery (C9)
Algal Mat or Crust (B4) Thin Muck Su	urface (C7)	✓	Geomorphic Position (D2)	
1 	in in Remarks)		Shallow Aquitard (D3)	
Inundation Visible on Aerial Imagery (B7)			FAC-Neutral Test (D5)	
☐ Water-Stained Leaves (B9)			Sphagnum moss (D8) (LRR 1	Γ, U)
Field Observations: Surface Water Present? Yes No Depth (inch	2			
Water Table Present? Yes No Depth (inch	nes): 0	Wetland Hydrolog	y Present? Yes •	No O
Saturation Present? (includes capillary fringe) Yes No Depth (includes capillary fringe)	nes): 0	Wedana nyarolog	y i resent.	110
Describe Recorded Data (stream gauge, monitoring well, aerial p	photos, previous ins	spections), if available	:	
Remarks:	_			
Water levels possibly elevated due to recent heavy precipitation	events.			

	Absolute		pecies? _ el.Strat.	Indicator	Dominance Test worksheet:			
Tree Stratum (Plot size: 30')	% Cover		Cover	Status	Number of Dominant Species			
1	_ 0_		0.0%		Number of Dominant Species That are OBL, FACW, or FAC:4 (A)			
2	0		0.0%					
3.			0.0%		Total Number of Dominant Species Across All Strata: 4 (B)			
4.			0.0%		- σροσίου Λαί σου Απί στι αταί <u>- τ</u> (υ)			
5.	_		0.0%		Percent of dominant Species			
6.			0.0%		That Are OBL, FACW, or FAC: 100.0% (A/B)			
7			0.0%		Prevalence Index worksheet:			
8.	0	\Box	0.0%		Total % Cover of: Multiply by:			
50% of Total Cover: 0 20% of Total Cover: 0		 = T/	otal Cover		OBL species 28 x 1 = 28			
Sapling or Sapling/Shrub Stratum (Plot size: 15'		•	otal Corci		FACW species $13 \times 2 = 26$			
	•		0.00/					
1		\Box	0.0%					
2			0.0%		FACU species $0 \times 4 = 0$			
3		\Box	0.0%		UPL species $0 \times 5 = 0$			
4			0.0%		Column Totals: <u>69</u> (A) <u>138</u> (B)			
5			0.0%		Prevalence Index = B/A = 2.000			
6			0.0%		,			
7			0.0%		Hydrophytic Vegetation Indicators:			
8	0		0.0%		1 - Rapid Test for Hydrophytic Vegetation			
50% of Total Cover: 0 20% of Total Cover: 0	0 =	= To	otal Cover	•	✓ 2 - Dominance Test is > 50%			
Shrub Stratum (Plot size: 15')					✓ 3 - Prevalence Index is \leq 3.0 1			
1. Magnolia virginiana	3	V	50.0%	OBL	Problematic Hydrophytic Vegetation ¹ (Explain)			
2. Morella cerifera	_ 3	~	50.0%	FAC				
3	_		0.0%		¹ Indicators of hydric soil and wetland hydrology must			
4.			0.0%		be present, unless disturbed or problematic.			
5.	-		0.0%		Definition of Vegetation Strata:			
6.	0		0.0%		Tree - Woody plants, excluding woody vines,			
50% of Total Cover: 3 20% of Total Cover: 1.2	 6 =	= To	otal Cover		approximately 20 ft (6 m) or more in height and 3 in.			
Herb Stratum (Plot size: 5')					(7.6 cm) or larger in diameter at breast height (DBH).			
·					Sapling - Woody plants, excluding woody vines,			
1. Viola primulifolia		V		FAC	approximately 20 ft (6 m) or more in height and less			
2. Eleocharis parvula		✓		OBL	than 3 in. (7.6 cm) DBH.			
3. Eupatorium perfoliatum			15.9%	FACW	One line /Ohmah. When the allow to a control in a control			
4. Cyperus ochraceus	3	\sqcup	4.8%	FACW	Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.			
5		Ц	0.0%		anan o nn 2211 ana greater than oize it (1111) tain			
6		Ц	0.0%		Shrub - Woody plants, excluding woody vines,			
7			0.0%		approximately 3 to 20 ft (1 to 6 m) in height.			
8			0.0%		Horb All borbosous /was woods) starts including			
9			0.0%		Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody			
10			0.0%		plants, except woody vines, less than approximately			
11			0.0%		3 ft (1 m) in height.			
12	0_		0.0%					
50% of Total Cover: 31.5 20% of Total Cover: 12.6	63=	= To	otal Cover		Woody vine - All woody vines, regardless of height.			
Woody Vine Stratum (Plot size: 30'								
1.	0		0.0%					
2.	-		0.0%					
3.			0.0%					
4	0	\Box	0.0%					
5	0		0.0%		Hydrophytic			
					Vegetation Present? Yes No			
50% of Total Cover: 0 20% of Total Cover: 0		- 10	otal Cover					
Remarks: (If observed, list morphological adaptations below).	_	_	_					
*Indicator suffix = National status or professional decision assigned because Re	ngional status	not a	defined by E	NC				

Sampling Point: 9

Profile Descr	iption: (De	scribe to t	he depth	needed to document	the indic	ator or co	nfirm the a	absence of indicators.)	
Depth		Matrix		Rec	lox Featu	ires		_	
(inches)	Color (moist)	<u></u> %	Color (moist)	%	Tvpe 1	Loc2	Texture	Remarks
0-3	10YR	4/1	100					Sandy Loam	
3-17	10YR	5/1	100					Sandy Loam	
			-					-	•
-	-								
1 Type: C-Cope	contration C	—Depletion	DM-Pod	uced Matrix CS-Covere	d or Coate	d Sand Gra	inc 21 oca	tion: PL=Pore Lining. M=N	Matrix
Hydric Soil I		- Берісцої	i. Kin-keu	uccu Madix, C5=Covere	u or coate	u Sana Gra	iiis Local		
Histosol (A				Dobarakio Pole	Curfoco	(CO) (LDD :	C T 11)		lematic Hydric Soils ³ :
`	pedon (A2)			Polyvalue Beld				1 cm Muck (A9) (•
Black Histi				Thin Dark Sur			')	2 cm Muck (A10)	
	Sulfide (A4)			Loamy Mucky					F18) (outside MLRA 150A,B)
	Layers (A5)			Loamy Gleyed✓ Depleted Matr		<u>2)</u>			ain Soils (F19) (LRR P, S, T)
	odies (A6) (I	RR P T II)	✓ Depleted Matr Redox Dark S					t Loamy Soils (F20) (MLRA 153B)
	ky Mineral (-	Depleted Dark	` '			Red Parent Mater	
	sence (A8) (I		1, 0)			F/)		☐ Very Shallow Dar	
	k (A9) (LRR	-		☐ Redox Depres☐ Marl (F10) (LF				Other (Explain in	Remarks)
	Below Dark :		1)			/I DA 1E1\			
	k Surface (A	-	1)	Depleted Ochi			O D T)		
	irie Redox (A	•	1504)	☐ Iron-Mangane			(O, P, T)		
	ck Mineral (S			Umbric Surfac					
	yed Matrix (. 3)	☐ Delta Ochric (4 E O D \	³ Indicators	of hydrophytic vegetation and
Sandy Red		3 1)		Reduced Verti				wetland l	hydrology must be present,
				☐ Piedmont Floo					disturbed or problematic.
	4atrix (S6) ace (S7) (LR		1)	☐ Anomalous Br	ight Loamy	/ Soils (F20) (MLRA 149	9A, 153C, 153D)	
Dark Surre	ace (37) (LK	K P, 3, 1, U	')						
Restrictive La	ayer (if obs	erved):							
Туре:									
Depth (inch	nes):				_			Hydric Soil Present?	Yes No
Remarks:							*		

Project/Site: Highway 478 Development Tract	City/County: Na	tchitoches	Sampling	g Date: 24-Mar-20			
Applicant/Owner: Louisisna Economic Development	Sta	te: _LA	Sampling Point: 11				
Investigator(s): John Collins	Section, Townsh	nip, Range: S 20	T 8N	R 7W			
Landform (hillslope, terrace, etc.): Hillslope	Local relief (conca	ave, convex, none):	none Slop	pe: 4.0 % / 2.3°			
Subregion (LRR or MLRA): LRR P	Lat.: 31 39 41.022	Long.: -9	3 06 36.055	Datum: WGS 84			
Soil Map Unit Name: Keithville loam, 1-5% slopes (Ke)							
Are climatic/hydrologic conditions on the site typical for this tim	ne of year? Yes	<u> </u>	o, explain in Remarks.				
	nificantly disturbed?	(mstances" present?	Yes No			
	•		•				
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ nat SUMMARY OF FINDINGS - Attach site map showi	turally problematic?		n any answers in Rem	-			
·		——————————————————————————————————————					
Hydrophytic Vegetation Present? Yes No No	Is the Sa	mpled Area					
Hydric Soil Present? Yes No No	within a l	Wetland? Yes	○ No •				
Wetland Hydrology Present? Yes ○ No ●	within a	wedana:					
Remarks:							
HYDROLOGY							
Wetland Hydrology Indicators:		Seco	ondary Indicators (minimu	um of 2 required)			
Primary Indicators (minimum of one required; check all that	apply)	S	Surface Soil Cracks (B6)				
	auna (B13)		Sparsely Vegetated Conc	ave Surface (B8)			
	osits (B15) (LRR U)		☐ Drainage Patterns (B10)				
	Sulfide Odor (C1)		Moss Trim Lines (B16)				
	Rhizospheres along Living Roo	, , , , , , , , , , , , , , , , , , , ,					
	of Reduced Iron (C4)		Crayfish Burrows (C8)				
	on Reduction in Tilled Soils (C		Saturation Visible on Aerial Imagery (C9)				
	k Surface (C7) plain in Remarks)		Geomorphic Position (D2) Shallow Aquitard (D3))			
Inundation Visible on Aerial Imagery (B7)	.piairi iri Remarks)		FAC-Neutral Test (D5)				
Water-Stained Leaves (B9)			Sphagnum moss (D8) (LF	RR T II)			
Field Observations:			phagham moss (Bo) (Er	4(1,0)			
0 0	inches):						
, , , , , , , , , , , , , , , , , , ,	,						
	inches):	Wetland Hydrology	Present? Yes	O No ●			
(includes capillary fringe) Yes No Depth (includes capillary fringe)	inches):						
Describe Recorded Data (stream gauge, monitoring well, aeri	al photos, previous inspec	tions), if available:					
Remarks:							
Temanor							

		Dominant Species?		Sampling Point: 11		
Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Rel.Strat.	Indicator Status			
Pinus taeda	30	✓ 100.0%	FAC	Number of Dominant Species That are OBL, FACW, or FAC: 8 (A)		
		0.0%				
		0.0%		Total Number of Dominant Species Across All Strata: 9 (B)		
		0.0%		Species Across All Strata: 9 (B)		
		0.0%		Percent of dominant Species		
	0	0.0%		That Are OBL, FACW, or FAC: 88.9% (A/B		
		0.0%		Prevalence Index worksheet:		
		0.0%		Total % Cover of: Multiply by:		
	30 =	= Total Cove	-	OBL species 5 x 1 = 5		
apling or Sapling/Shrub Stratum (Plot size: 15'				FACW species 15 x 2 = 30		
		0.0%		FAC species 83 x 3 = 249		
		0.0%		FACU species $3 \times 4 = 12$		
		0.0%		UPL species $\frac{5}{25}$ x 5 = $\frac{25}{25}$		
		0.0%		N S =		
	0	0.0%		Column Totals:111 (A)321 (B		
		0.0%		Prevalence Index = $B/A = \underline{2.892}$		
	0	0.0%		Hydrophytic Vegetation Indicators:		
	0	0.0%		Danid Took for Undershird Versteller		
0% of Total Cover: 0 20% of Total Cover: 0	0 =	= Total Cove		1 - Rapid Test for Hydrophytic Vegetation		
		- Total Core		✓ 2 - Dominance Test is > 50%		
hrub Stratum (Plot size: 15')	10	22.20/	FAC	✓ 3 - Prevalence Index is ≤3.0 ¹		
Liquidambar styraciflua		✓ 33.3% 33.3% 33.3%	FAC	Problematic Hydrophytic Vegetation ¹ (Explain)		
Morella cerifera			FAC	¹ Indicators of hydric soil and wetland hydrology mus		
Magnolia virginiana		16.7%	OBL	be present, unless disturbed or problematic.		
Acer rubrum		16.7%	FAC	Definition of Veretation Strata:		
	-	0.0%		Definition of Vegetation Strata:		
				Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.		
0% of Total Cover: 15 20% of Total Cover: 6	=	= Total Cove	ſ	(7.6 cm) or larger in diameter at breast height (DBH).		
erb Stratum (Plot size: _5')		·		Sapling - Woody plants, excluding woody vines,		
Cyperus ochraceus		38.5%	FACW	approximately 20 ft (6 m) or more in height and less		
Osmunda cinnamomea		19.2%	FACW	than 3 in. (7.6 cm) DBH.		
Daucus carota		19.2%	UPL	Sapling/Shrub - Woody plants, excluding vines, less		
Rubus trivialis	3	11.5%	FAC	than 3 in. DBH and greater than 3.28 ft (1m) tall.		
Hypericum hypericoides ssp. hypericoides	3	11.5%	FACU			
		0.0%		Shrub - Woody plants, excluding woody vines,		
		0.0%		approximately 3 to 20 ft (1 to 6 m) in height.		
		0.0%		Herb - All herbaceous (non-woody) plants, including		
		0.0%		herbaceous vines, regardless of size, and woody		
		0.0%		plants, except woody vines, less than approximately		
				3 ft (1 m) in height.		
0% of Total Cover: 13 20% of Total Cover: 5.2	<u>0</u> 26 =			Woody vine - All woody vines, regardless of height.		
/oody Vine Stratum (Plot size: 30')		- Total Covel				
	15	✓ 60.0%	FAC			
Vitis rotundifolia Gelsemium sempervirens		✓ 20.0%	FAC			
Smilax rotundifolia		✓ 20.0%	FAC			
		0.0%				
	•	0.0%		Hydrophytic		
		= Total Cove		Vegetation Present? Yes No		
50% of Total Cover: 12.5 20% of Total Cover: 5	/5 -					

Profile Descri	ption: (Des	cribe to	the depth	needed to doc	ument the i	ndicator or c	onfirm the	absence of indicators.)			
Depth			Matrix Redox Features					_			
(inches)	Color (ı	moist)	%	Color (mo		%Tvpe_1	Loc2	Texture	Remarks		
0-12	10YR	4/2	98	10YR	5/6 2	С	PL	Silt Loam			
12-19	7.5YR	4/8	85	10YR	5/2 15	D	М	Sandy Clay Loam			
								-			
			-				_				
1 Type: C=Conc	entration Da	=Depletion	RM=Rec	luced Matrix, CS=	Covered or C	Coated Sand G	rains ² l oca	ation: PL=Pore Lining. M=Mat	rrix		
Hydric Soil Ir		-рерісцої	i. Id I—Ideo	racca Flatrix, CS=	COVERCE OF C	coatea Sana G	Tullis Locc	-	_		
Histosol (A				Doharal	ua Palaw Cur	rfaco (CO) (LDI) C T II)	Indicators for Problem	•		
Histic Epip	•					rface (S8) (LRF		1 cm Muck (A9) (LR			
Black Histic						S9) (LRR S, T,		2 cm Muck (A10) (L			
						ral (F1) (LRR C))	_ `	B) (outside MLRA 150A,B)		
	Sulfide (A4)				Gleyed Matri			Piedmont Floodplain	Soils (F19) (LRR P, S, T)		
Stratified L		T			ed Matrix (F3			Anomalous Bright Lo	pamy Soils (F20) (MLRA 153B)		
	odies (A6) (Li				Dark Surface	. ,		Red Parent Material	(TF2)		
	y Mineral (A		T, U)		ed Dark Surfa			Very Shallow Dark S	ourface (TF12)		
	ence (A8) (Li			Redox	Depressions	(F8)		Other (Explain in Re	emarks)		
	(A9) (LRR F			Marl (F	10) (LRR U)						
	Below Dark S		.1)	Deplete	ed Ochric (F1	.1) (MLRA 151)				
	Surface (A1	•		☐ Iron-M	anganese Ma	nsses (F12) (LF	R O, P, T)				
Coast Prair	rie Redox (A:	16) (MLRA	150A)	Umbric	Surface (F13	3) (LRR P, T, L	J)				
Sandy Muc	Sandy Muck Mineral (S1) (LRR O, S) Delta Ochric (F17) (MLRA 151)							3			
Sandy Gley	ed Matrix (S	64)		Reduce	d Vertic (F18	B) (MLRA 150A	, 150B)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present,			
Sandy Red	ox (S5)			Piedmo	nt Floodplain	n Soils (F19) (N	/LRA 149A)		sturbed or problematic.		
Stripped M	atrix (S6)							9A, 153C, 153D)			
☐ Dark Surfa	ce (S7) (LRR	R P, S, T, L	J)		J	, ,	, (, ,			
Restrictive La	yer (if obse	erved):									
Type:								Hydric Soil Present?	Yes No		
Depth (inch	es):							nyunc son Presents	Tes S NO C		
Remarks:											

Project/Site: Highway 478 Development Tract	City/County:	Natchitoches	Samplin	ng Date:	25-Mar-2	20
Applicant/Owner: Louisisna Economic Development	S ¹	tate: LA	Sampling Point: 12			
Investigator(s): _John Collins	Section, Town	ship, Range: S 20	T 8N	R 7W	<u>' </u>	
.andform (hillslope, terrace, etc.): Streambank	Local relief (con	cave, convex, none)): none Sid	ope: 1.	0 % /	0.6°
ubregion (LRR or MLRA): LRR P	Lat.: 31 39 41.260	Long.: -	-93 06 30.456	Datu	m: WGS 8	84
soil Map Unit Name: Sacul fine sandy loam, 5-12% slopes (Sc)			NWI classification:		-	
are climatic/hydrologic conditions on the site typical for this tim		● No ○ (If	no, explain in Remarks	-		
	nificantly disturbed?	ζ=	cumstances" present?	,	No O	
	turally problematic?		•			
SUMMARY OF FINDINGS - Attach site map showi			ain any answers in Rei sects, important 1	-	etc.	
Hydrophytic Vegetation Present? Yes No	- 	·				
Hydric Soil Present? Yes No No No No No No No No	Is the S	Sampled Area				
Wetland Hydrology Present? Yes No •	within a	a Wetland? Yes	; ○ No ●			
Remarks:						
HYDROLOGY						
Wetland Hydrology Indicators:		Sec	condary Indicators (minin	num of 2 requ	uired)	
Primary Indicators (minimum of one required; check all that	apply)		Surface Soil Cracks (B6))		
Surface Water (A1) Aquatic Fa	auna (B13)		Sparsely Vegetated Con-	icave Surface	(B8)	
High Water Table (A2) Marl Depo		Drainage Patterns (B10))			
	Sulfide Odor (C1)		Moss Trim Lines (B16)			
Water Marks (B1) Oxidized F	Rhizospheres along Living R	loots (C3)	Dry Season Water Table	e (C2)		
Sediment Deposits (B2)	of Reduced Iron (C4)		Crayfish Burrows (C8)			
	on Reduction in Tilled Soils	(C6)	Saturation Visible on Ae	rial Imagery ((C9)	
Algal Mat or Crust (B4)	k Surface (C7)		Geomorphic Position (D2)			
_	rplain in Remarks)		Shallow Aquitard (D3)			
Inundation Visible on Aerial Imagery (B7)			FAC-Neutral Test (D5)			
Water-Stained Leaves (B9)			Sphagnum moss (D8) (L	LRR T, U)		
Field Observations:						
Surface Water Present? Yes No • Depth (i	inches):					
Water Table Present? Yes No Depth (i	inches):		,			
Saturation Present? (includes capillary frings) Yes No Depth (i	inches):	Wetland Hydrolog	y Present? Yes	O No 💿		
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aeric	·	antiana) if available				
Describe Recorded Data (stream gauge, monitoring well, aeri	ai priotos, previous insp	ecuons), ii avaliable	: :			
Remarks:						

	Absolute		pecies? _ el.Strat.	Indicator	Dominance Test worksheet:		
Tree Stratum (Plot size: 30')	% Cover	<u> </u>	Cover	Status	Number of Dominant Species		
1 Pinus taeda	10	✓	40.0%	FAC	That are OBL, FACW, or FAC: 8 (A)		
2. Acer rubrum	10	V	40.0%	FAC			
3. Quercus alba	 5	V	20.0%	FACU	Total Number of Dominant Species Across All Strata: 11 (B)		
4.			0.0%		Species Across All Strata:(B)		
5		П	0.0%		Percent of dominant Species		
	_		0.0%		That Are OBL, FACW, or FAC: 72.7% (A/B)		
6 7	0		0.0%		Businelanas Tudan madakasti		
8.	-				Prevalence Index worksheet:		
		_	0.0%		Total % Cover of: Multiply by:		
50% of Total Cover: 12.5 20% of Total Cover: 5		= To	otal Cove		OBL species 0 x 1 = 0		
Sapling or Sapling/Shrub Stratum (Plot size: 30'	_)				FACW species $3 \times 2 = 6$		
1. Fagus grandifolia	40	~	57.1%	FACU	FAC species $\underline{60}$ x 3 = $\underline{180}$		
2. Quercus nigra	15	~	21.4%	FAC	FACU species $\frac{48}{}$ x 4 = $\frac{192}{}$		
3. Acer rubrum	15	V	21.4%	FAC	UPL species $0 \times 5 = 0$		
4	0		0.0%		Column Totals: 111 (A) 378 (B)		
5.			0.0%				
6.			0.0%		Prevalence Index = $B/A = \underline{3.405}$		
7.		\Box	0.0%		Hydrophytic Vegetation Indicators:		
8.			0.0%				
		_			1 - Rapid Test for Hydrophytic Vegetation		
50% of Total Cover:35 20% of Total Cover:14	70	= To	otal Cove	1	✓ 2 - Dominance Test is > 50%		
Shrub Stratum (Plot size: 15')					\Box 3 - Prevalence Index is ≤3.0 1		
1	0		0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)		
2.			0.0%				
3.			0.0%		¹ Indicators of hydric soil and wetland hydrology must		
4.			0.0%		be present, unless disturbed or problematic.		
			0.0%		Definition of Vegetation Strata:		
5 6	0	\Box	0.0%		Tree - Woody plants, excluding woody vines,		
50% of Total Cover: 0 20% of Total Cover: 0					approximately 20 ft (6 m) or more in height and 3 in.		
	0	= 10	otal Cove		(7.6 cm) or larger in diameter at breast height (DBH).		
Herb Stratum (Plot size: 15)							
1. Dichanthelium oligosanthes	3	~	37.5%	FACU	Sapling - Woody plants, excluding woody vines,		
2. Vaccinium elliottii		V	37.5%	FACW	approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.		
3. Mitchella repens	_	V	25.0%	FAC			
4.		$\overline{\Box}$	0.0%		Sapling/Shrub - Woody plants, excluding vines, less		
E		\Box	0.0%		than 3 in. DBH and greater than 3.28 ft (1m) tall.		
		Н	0.0%				
6			0.0%		Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.		
7					approximately 3 to 20 ft (1 to 6 m) in neight.		
8			0.0%		Herb - All herbaceous (non-woody) plants, including		
9	0		0.0%		herbaceous vines, regardless of size, and woody		
10	0_		0.0%		plants, except woody vines, less than approximately		
11	0	Ш	0.0%		3 ft (1 m) in height.		
12	0		0.0%				
50% of Total Cover: 4 20% of Total Cover: 1.6	8	= To	otal Cove		Woody vine - All woody vines, regardless of height.		
Woody Vine Stratum (Plot size: 30')							
	-	V	C2 F0/	FAC			
1. Vitis rotundifolia		_		FAC			
2. Smilax bona-nox		✓		FAC			
3		Ц	0.0%				
4	0_	Ц	0.0%		Hadaaahada		
5	0		0.0%		Hydrophytic Vegetation		
50% of Total Cover: 4 20% of Total Cover: 1.6	8	= To	otal Cove	· _	Present? Yes • No ·		
Remarks: (If observed, list morphological adaptations below).							
*Indicator suffix = National status or professional decision assigned because Re	egional status	not o	defined by F	WS.			

Dominant

Sampling Point: 12

Profile Descri	iption: (Des	cribe to	the depth	needed to d	locument	the indic	ator or co	onfirm the	absence of indicators.)		
Depth	h Matrix		Redox Features					_			
(inches)	Color (ı	moist)	%_	Color (moist)	%_	Type 1	Loc2	Texture	Remarks	
0-3	10YR	4/3	85	10YR	6/4	15	С	М	Sandy Loam		
3-10	10YR	5/4	85	10YR	6/4	15	С	M	Sandy Loam		
10-18	10YR	5/3	85	10YR	6/4	15	С	M	Sandy Loam		
									-		
									-		
¹ Type: C=Cond	entration. D	=Depletior	n. RM=Red	luced Matrix, (S=Covere	d or Coate	d Sand Gra	ains ² Loca	ation: PL=Pore Lining. M=Matrix	x	
Hydric Soil I	ndicators:								Indicators for Problema	atic Hydric Soils ³ :	
Histosol (A	\1)			Poly	value Belo	w Surface	(S8) (LRR	S, T, U)	1 cm Muck (A9) (LRR	0)	
Histic Epip	edon (A2)			Thir	n Dark Surf	face (S9) (LRR S, T, I	J)	2 cm Muck (A10) (LRF		
Black Histi	c (A3)			Loa	my Mucky	Mineral (F	1) (LRR O))		(outside MLRA 150A,B)	
Hydrogen	Sulfide (A4)			Loa	my Gleyed	Matrix (F2	2)			Soils (F19) (LRR P, S, T)	
Stratified L	Layers (A5)				leted Matr					my Soils (F20) (MLRA 153B)	
Organic Bo	odies (A6) (Li	RR P, T, U)		ox Dark Su				Red Parent Material (1		
	ky Mineral (A					٠,				•	
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U) ☐ Depleted Dark Surface (F7) ☐ Muck Presence (A8) (LRR U) ☐ Redox Depressions (F8)									Very Shallow Dark Sur		
	k (A9) (LRR F	-		☐ Redox Depressions (F8) ☐ Other (Explain in Remarks) ☐ Marl (F10) (LRR U)							
	Below Dark S		.1)				ΛΙ DΔ 151\				
☐ Depleted Below Dark Surface (A11) ☐ Depleted Ochric (F11) (MLRA 151) ☐ Thick Dark Surface (A12) ☐ Iron-Manganese Masses (F12) (LRR O, P, T)											
)				
								³ Indicators of hy	ydrophytic vegetation and		
	☐ Sandy Gleyed Matrix (S4) ☐ Reduced Vertic (F18) (MLRA 150A, 150B) ☐ Sandy Redox (S5) ☐ Piedmont Floodplain Soils (F19) (MLRA 149A						wetland hydro	ology must be present,			
				_						urbed or problematic.	
Stripped M				∟ And	malous Br	ight Loamy	/ Soils (F20)) (MLRA 14	9A, 153C, 153D)		
□ Dark Surfa	ace (S7) (LRR	(P, S, 1, t	J)								
Restrictive La	yer (if obse	erved):									
Type:						_			Hydric Soil Present?	Yes O No •	
Depth (inch	nes):								Trydric 3011 Fresent:	Tes UNU U	
Remarks:											

Project/Site: Highway 478 Development Tract	City/County: Natchitoches Sampling Date: 25-Mar-20)
Applicant/Owner: Louisisna Economic Development	State: <u>LA</u> Sampling Point: <u>13</u>	
Investigator(s): John Collins	Section, Township, Range: S 20 T 8N R 7W	
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, convex, none): none Slope: 2.0 % / 1	.1°
Subregion (LRR or MLRA): LRR P Lat.:	31 39 26.283 Long.: -93 06 18.960 Datum: WGS 84	
Soil Map Unit Name: Sacul fine sandy loam, 5-12% slopes (Sc)	NWI classification: N/A	
Are climatic/hydrologic conditions on the site typical for this time of y		
Are Vegetation , Soil , or Hydrology significa	ntly disturbed? Are "Normal Circumstances" present? Yes No O	
	problematic? (If needed, explain any answers in Remarks.)	
- , - ,	campling point locations, transects, important features, etc.	
Hydrophytic Vegetation Present? Yes No	Is the Sampled Area	
Hydric Soil Present? Yes O No •	Vac O No O	
Wetland Hydrology Present? Yes No •	within a Wetland?	
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 (☐ High Water Table (A2) ☐ Marl Deposits (B		
☐ High Water Table (A2) ☐ Marl Deposits (I ☐ Saturation (A3) ☐ Hydrogen Sulfid		
	pheres along Living Roots (C3) Dry Season Water Table (C2)	
Sediment Deposits (B2) Sediment Deposits (B2) Presence of Rec		
	duction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9)	
☐ Algal Mat or Crust (B4) ☐ Thin Muck Surfa		
☐ Iron Deposits (B5) ☐ Other (Explain i		
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);	
Saturation Present? Vas No No Donth (inches	Wetland Hydrology Present? Yes ○ No ●	
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial pho		
Describe Recorded Data (Stream gauge, monitoring well, aeriai pin	otos, previous irispections), ii avaliable.	
Remarks:		
Saturation due to recent heavy precipitation events.		

			ominant pecies? _		Sampling Point: 13
(2)	Absolute	R	el.Strat.	Indicator	Dominance Test worksheet:
Free Stratum (Plot size: 30')	% Cover		Cover	Status	Number of Dominant Species
Quercus alba		✓	40.0%	FACU	That are OBL, FACW, or FAC: 9 (A)
Acer rubrum Liquidambar styraciflua		V	30.0%	FAC	Total Number of Dominant
			30.0%	FAC	Species Across All Strata:(B)
			0.0%		Percent of dominant Species
	_		0.0%		That Are OBL, FACW, or FAC: 90.0% (A/B)
			0.0%		
	-		0.0%		Prevalence Index worksheet:
60% of Total Cover: 25 20% of Total Cover: 10	<u>0</u> 50 :	ш т	0.0% otal Cove		Total % Cover of: Multiply by: OBL species 10 x 1 = 10
		- ''	otai Covei		
apling or Sapling/Shrub Stratum (Plot size: 15'	-		F0 00/	FAC	FACW species 30 x 2 = 60
Liquidambar styraciflua		✓	50.0%	FAC	FAC species $\underline{55}$ x 3 = $\underline{165}$
Acer rubrum			50.0%	FAC	FACU species $20 \times 4 = 80$
			0.0%		UPL species $0 \times 5 = 0$
			0.0%		Column Totals: <u>115</u> (A) <u>315</u> (B)
			0.0%		Prevalence Index = $B/A = 2.739$
			0.0%		Hydrophytic Vegetation Indicators:
			0.0%		
		_			1 - Rapid Test for Hydrophytic Vegetation
0% of Total Cover: 20% of Total Cover:2	10:	= T	otal Cove	•	✓ 2 - Dominance Test is > 50%
nrub Stratum (Plot size: 15')					✓ 3 - Prevalence Index is ≤3.0 ¹
Vaccinium elliottii	25	V	83.3%	FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
Morella cerifera	5		16.7%	FAC	
	0		0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
-			0.0%		be present, unless disturbed or problematic.
-	0		0.0%		Definition of Vegetation Strata:
	0		0.0%		Tree - Woody plants, excluding woody vines,
50% of Total Cover:6	30=	= T	otal Cove	•	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: _5')					
. Osmunda regalis	10	V	50.0%	OBL	Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
. Osmunda cinnamomea	_	V	25.0%	FACW	than 3 in. (7.6 cm) DBH.
Chasmanthium sessiliflorum	5	V	25.0%	FAC	, ,
	0		0.0%		Sapling/Shrub - Woody plants, excluding vines, less
	0		0.0%		than 3 in. DBH and greater than 3.28 ft (1m) tall.
			0.0%		Shrub - Woody plants, excluding woody vines,
			0.0%		approximately 3 to 20 ft (1 to 6 m) in height.
			0.0%		
			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
	0		0.0%		3 ft (1 m) in height.
	0		0.0%		
0% of Total Cover: 10 20% of Total Cover: 4	20 :	= T	otal Cove		Woody vine - All woody vines, regardless of height.
oody Vine Stratum (Plot size: 30')					
Vitis rotundifolia	5	~	100.0%	FAC	
			0.0%		
	-		0.0%		
	0				1
			0.0%		
	0		0.0%		Hydrophytic
50% of Total Cover: 2.5 20% of Total Cover: 1		 = T4			Hydrophytic Vegetation Present? Yes No

Profile Descri	ption: (Des	cribe to	the depth	needed to do	cument	the indic	ator or co	onfirm the	absence of indicators.)		
Depth			Redox Features				_				
(inches)	Color (ı	moist)	<u>%</u>	Color (m	noist)	%_	Tvpe 1	Loc2	Texture	Remarks	
0-11	10YR	4/2	90	10YR	6/2	10	D	М	Silt Loam		
11-20	10YR	4/2	80	10YR	6/2	15	D		Silt Loam		
				10YR	6/4	5	С		Silt Loam		
						-					
									-		
ı							_				
¹ Type: C=Conc	entration. D	=Depletior	n. RM=Red	luced Matrix, CS	S=Covere	d or Coate	d Sand Gr	ains ² Loca	ation: PL=Pore Lining. M=Mat	rix	
Hydric Soil In	ndicators:								Indicators for Problem	natic Hydric Soils ³ :	
Histosol (A	1)			Polyv	alue Belo	w Surface	(S8) (LRR	S, T, U)	1 cm Muck (A9) (LR	R O)	
Histic Epip	edon (A2)			Thin	Dark Surf	ace (S9) (LRR S, T, I	J)	2 cm Muck (A10) (L		
Black Histic	c (A3)			Loam	ny Mucky	Mineral (F	1) (LRR O))		B) (outside MLRA 150A,B)	
Hydrogen	Sulfide (A4)			Loam	y Gleyed	Matrix (F2	2)		`	Soils (F19) (LRR P, S, T)	
Stratified L	ayers (A5)						•				
Organic Bo	odies (A6) (L	RR P, T, U)	□ Depleted Matrix (F3) □ Anomalous Bright Loamy Soils (F20) (MLRA 153 □ Redox Dark Surface (F6) □ Red Parent Material (TF2)							
5 cm Muck	y Mineral (A	7) (LRR P,	T, U)	The distribution (112)							
	ence (A8) (LI			Pada Pagasias (FD)							
	(A9) (LRR F								Other (Explain in Re	marks)	
			1)	☐ Marl (F10) (LRR U) ☐ Depleted Ochric (F11) (MLRA 151)							
	Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151) ck Surface (A12) Iron-Manganese Masses (F12) (LRR O, P, T)										
	ck Mineral (S										
			, 3)	☐ Delta Ochric (F17) (MLRA 151) ☐ Reduced Vertic (F18) (MLRA 150A, 150B) ☐ Reduced Vertic (F18) (MLRA 150A, 150B) ☐ Reduced Vertic (F18) (MLRA 150A, 150B)						hydrophytic vegetation and	
	yed Matrix (S)							wetland hyd	drology must be present,	
Sandy Red								LRA 149A)		sturbed or problematic.	
Stripped M				Anom	nalous Br	ight Loamy	/ Soils (F20)) (MLRA 14	9A, 153C, 153D)		
☐ Dark Surfa	ice (S7) (LRR	R P, S, T, L	J)								
									I		
Restrictive La	yer (if obse	erved):									
Type:						_			Hydric Soil Present?	Yes ○ No ●	
Depth (inch	es):								Hydric Soil Present?	Yes O No O	
Remarks:											

Project/Site: Highway 478 Development Tract	City/County: Natchitoches Sampling Date: 25-Mar-20
Applicant/Owner: Louisisna Economic Development	State: LA Sampling Point: 14
Investigator(s): John Collins	Section, Township, Range: S 20 T 8N R 7W
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, convex, none): none Slope: 3.0 % / 1.7 °
Subregion (LRR or MLRA): LRR P Lat.:	: 31 39 40.348
Soil Map Unit Name: Sacul fine sandy loam, 5-12% slopes (Sc)	NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of y	
Are Vegetation , Soil , or Hydrology significan	ntly disturbed? Are "Normal Circumstances" present? Yes No
	y problematic? (If needed, explain any answers in Remarks.)
	sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No	To the Complet Area
Hydric Soil Present? Yes ○ No •	Is the Sampled Area ithin a Westpard? Yes ○ No ●
Wetland Hydrology Present? Yes No •	within a Wetland?
Remarks:	
Nonuno.	
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 (E	B13) Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Marl Deposits (B	_ ` ` /
Saturation (A3) Hydrogen Sulfide	
<u> </u>	pheres along Living Roots (C3)
Sediment Deposits (B2) Presence of Red	
	duction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9)
☐ Iron Deposits (B5) ☐ Other (Explain in	
☐ Iron Deposits (B5) ☐ Other (Explain ir ☐ Inundation Visible on Aerial Imagery (B7)	n Remarks) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Water-Stained Leaves (B9)	Sphagnum moss (D8) (LRR T, U)
	Spriagrium moss (Do) (ERR 1, 0)
Field Observations: Surface Water Present? Yes No Depth (inches)).
Springs recording to the springs of	
): Wetland Hydrology Present? Yes O No •
Saturation Present? (includes capillary fringe) Yes No Depth (inches)): <u>9</u>
Describe Recorded Data (stream gauge, monitoring well, aerial pho	otos, previous inspections), if available:
Remarks:	
Saturation due to recent heavy precipitation events.	

-		Dominant		Sampling Point: 14
	Absolute	_ Species? Rel.Strat.	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')	% Cover	Cover	Status	Number of Dominant Species
1. Pinus taeda	20	✓ 100.0%	FAC	That are OBL, FACW, or FAC: 4 (A)
2	0	0.0%		
3	_ 0_	0.0%		Total Number of Dominant Species Across All Strata: 6 (B)
4		0.0%		Species / icross / iii strata.
5		0.0%		Percent of dominant Species
6		0.0%		That Are OBL, FACW, or FAC: 66.7% (A/B)
7.	0	0.0%		Prevalence Index worksheet:
8.	0	0.0%		Total % Cover of: Multiply by:
50% of Total Cover: 10 20% of Total Cover: 4		Total Cove		OBL species 5 x 1 = 5
		rotal cort		FACW species $5 \times 2 = 10$
Sapling or Sapling/Shrub Stratum (Plot size: 15' Pinus taeda		100.00/	FAC	
		100.0%	FAC	40 400
2		0.0%		FACU species $40 \times 4 = 160$
3		0.0%		UPL species $0 \times 5 = 0$
4				Column Totals: <u>138</u> (A) <u>439</u> (B)
5				Prevalence Index = B/A =3.181_
6				
7				Hydrophytic Vegetation Indicators:
8	0	0.0%		1 - Rapid Test for Hydrophytic Vegetation
50% of Total Cover:5 20% of Total Cover:2	10 =	Total Cove	er	✓ 2 - Dominance Test is > 50%
Shrub Stratum (Plot size: 15')				3 - Prevalence Index is ≤3.0 ¹
1 Ilex vomitoria	20	✓ 71.4%	FAC	☐ Problematic Hydrophytic Vegetation ¹ (Explain)
2. Magnolia virginiana				
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		10.7%		¹ Indicators of hydric soil and wetland hydrology must
		0.0%	TAC	be present, unless disturbed or problematic.
E				Definition of Vegetation Strata:
5 6	- 0 0	0.0%		Tree - Woody plants, excluding woody vines,
•		0.0%		approximately 20 ft (6 m) or more in height and 3 in.
50% of Total Cover: 14 20% of Total Cover: 5.6	=	Total Cove	er	(7.6 cm) or larger in diameter at breast height (DBH).
Herb Stratum (Plot size: 5')				
1. Dichanthelium oligosanthes	20	✓ 40.0%	FACU	Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
2. Rubus allegheniensis	20	4 0.0%	FACU	than 3 in. (7.6 cm) DBH.
3. Vaccinium elliottii	5	10.0%	FACW	, ,
4. Viola primulifolia	5	10.0%	FAC	Sapling/Shrub - Woody plants, excluding vines, less
5	0	0.0%		than 3 in. DBH and greater than 3.28 ft (1m) tall.
6		0.0%		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%		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%		
				Woody vine - All woody vines, regardless of height.
50% of Total Cover: 25 20% of Total Cover: 10	=	Total Cove	51	
Woody Vine Stratum (Plot size: 30')		_		
1. Gelsemium sempervirens		100.0%	FAC	
2		0.0%		
3	0	0.0%_		
4	0	0.0%		
5	0	0.0%		Hydrophytic Vegetation
50% of Total Cover:6	30 =	Total Cove	er	Present? Yes No
Remarks: (If observed, list morphological adaptations below).				
(,,,,				
			FILIC	

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)												
Depth		Matrix				dox Featu	ıres		_			
(inches)	•		Color (n									
0-13	10YR	3/2	100						Sandy Loam			
13-17	10YR	3/2	80	10YR	5/4	20	С	M	Sandy Loam			
					-, -					P P		
	-											
¹ Type: C=Cond	centration. D	=Depletion	. RM=Red	uced Matrix, C	S=Covere	ed or Coate	ed Sand Gr	ains ² Loca	ation: PL=Pore Lining. M=N	Matrix		
Hydric Soil I	ndicators:								Indicators for Prob	lematic Hydric Soils ³ :		
Histosol (A1)			Poly	value Belo	ow Surface	(S8) (LRR	S, T, U)	1 cm Muck (A9) (
Histic Epip	oedon (A2)			Thin	Dark Sur	face (S9) (ace (S9) (LRR S, T, U)					
☐ Black Hist	ic (A3)						1) (LRR O	-				
Hydrogen	Sulfide (A4)					d Matrix (F			Reduced Vertic (F18) (outside MLRA 150A,B)			
Stratified	Layers (A5)				eted Mati		-,		Piedmont Floodplain Soils (F19) (LRR P, S, T)			
	odies (A6) (L	RR P, T, U)			urface (F6)		Anomalous Bright Loamy Soils (F20) (MLRA 153B)			
	ky Mineral (A					s Surface (Red Parent Material (TF2)			
	sence (A8) (L		., -,			. (50)						
									Other (Explain in	Remarks)		
☐ 1 cm Muck (A9) (LRR P, T) ☐ Marl (F10) (LRR U) ☐ Depleted Below Dark Surface (A11) ☐ Depleted Ochric (F11) (MLRA							MI DA 1E1\					
	k Surface (A1	-	-,					2 O D T)				
	irie Redox (A	•	1504)				(F12) (LR					
	ck Mineral (S		-				RR P, T, U)				
	eyed Matrix (S		3)			F17) (MLR		.===>	³ Indicators of hydrophytic vegetation and wetland hydrology must be present,			
) (PC					ILRA 150A,					
Sandy Red								LRA 149A)		disturbed or problematic.		
	Matrix (S6)			∟ Anor	nalous Br	right Loam	y Soils (F20)) (MLRA 14	9A, 153C, 153D)			
□ Dark Surfa	ace (S7) (LRF	₹ P, S, T, U)									
Restrictive La	ayer (if obse	erved):										
Туре:												
Depth (incl	hes):								Hydric Soil Present?	Yes O No 💿		
Remarks:												
Kemarks.												

Project/Site: Highway 478 Development Tract	City/County: Natchitoch	es Samp	oling Date: 25-Mar-20			
Applicant/Owner: Louisisna Economic Development	State: LA	Sampling Point: 1	15			
Investigator(s): _John Collins	Section, Township, Rar	nge: S 20 T 8N	R 7W			
.andform (hillslope, terrace, etc.): Toeslope	Local relief (concave, con	nvex, none): concave	Slope: 0.0 % / 0.0 °			
Subregion (LRR or MLRA): LRR P	Lat.: 31 39 40.226	Long.: -93 06 17.865	Datum: WGS 84			
oil Map Unit Name: Sacul fine sandy loam, 5-12% slopes (Sc)		NWI classification	n: N/A			
are climatic/hydrologic conditions on the site typical for this time	e of year? Yes No	(If no, explain in Rema	rks.)			
Are Vegetation , Soil , or Hydrology sign	ificantly disturbed? Are "N	Normal Circumstances" present	t? Yes ● No ○			
Are Vegetation, Soil, or Hydrology natu		eded, explain any answers in R				
SUMMARY OF FINDINGS - Attach site map showing	•		•			
Hydrophytic Vegetation Present? Yes No	To the Commission	A				
Hydric Soil Present? Yes No	Is the Sampled	Vac (No (
Wetland Hydrology Present? Yes No	within a Wetlan	d? les 🔾 NO 🔾				
Remarks:						
Kemane.						
HYDROLOGY			_			
Wetland Hydrology Indicators:		Secondary Indicators (mir	nimum of 2 required)			
Primary Indicators (minimum of one required; check all that a	(vlaga	Surface Soil Cracks (B				
Surface Water (A1) Aquatic Fa		Sparsely Vegetated Co	•			
High Water Table (A2) Marl Depos	sits (B15) (LRR U)	Drainage Patterns (B1				
✓ Saturation (A3)	Sulfide Odor (C1)	Moss Trim Lines (B16	5)			
☐ Water Marks (B1) ✓ Oxidized R	thizospheres along Living Roots (C3)	ots (C3) Dry Season Water Table (C2)				
Sediment Deposits (B2)	of Reduced Iron (C4)	Crayfish Burrows (C8))			
✓ Drift Deposits (B3)	n Reduction in Tilled Soils (C6)	Saturation Visible on A	Aerial Imagery (C9)			
Algal Mat or Crust (B4)	Surface (C7)	✓ Geomorphic Position (✓ Geomorphic Position (D2)			
☐ Iron Deposits (B5) ☐ Other (Exp	olain in Remarks)	Shallow Aquitard (D3))			
Inundation Visible on Aerial Imagery (B7)		✓ FAC-Neutral Test (D5)	FAC-Neutral Test (D5)			
Water-Stained Leaves (B9)		Sphagnum moss (D8)) (LRR T, U)			
Field Observations:						
Surface Water Present? Yes No Depth (ir	nches):1					
Water Table Present? Yes No Depth (ir						
Saturation Present? (includes capillary fringe) Yes No Depth (in	nches): 0	nd Hydrology Present? Yes	s • No O			
Describe Recorded Data (stream gauge, monitoring well, aeria	al photos, previous inspections),	if available:				
, , , , , , , , , , , , , , , , , , , ,	, ,, ,,					
Remarks:						
Remarks:						

			ominant pecies? _		Sampling Point: 15
	Absolute % Cover	R	•	Indicator Status	
	0		0.0%		Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)
	0		0.0%		
			0.0%		Total Number of Dominant Species Across All Strata: 5 (B)
			0.0%		Species Across Air Strata.
	•		0.0%		Percent of dominant Species That Are OBL FACW or FAC: 100.0% (A/B)
	0		0.0%		That Are OBL, FACW, or FAC: 100.0% (A/B)
	0		0.0%		Prevalence Index worksheet:
	0		0.0%		Total % Cover of: Multiply by:
60% of Total Cover: 0 20% of Total Cover: 0	0 =	= To	otal Cover		OBL species <u>70</u> x 1 = <u>70</u>
apling or Sapling/Shrub Stratum (Plot size: 15'	.)				FACW species $\underline{5}$ x 2 = $\underline{10}$
			0.0%		FAC species $17 \times 3 = 51$
			0.0%		FACU species $10 \times 4 = 40$
		Ц	0.0%		UPL species $0 \times 5 = 0$
		Ц	0.0%		Column Totals: <u>102</u> (A) <u>171</u> (B)
		Ц	0.0%		Prevalence Index = B/A = 1.676
		Ц	0.0%		·
		Ц	0.0%		Hydrophytic Vegetation Indicators:
		Ш	0.0%		☐ 1 - Rapid Test for Hydrophytic Vegetation
0% of Total Cover:0 20% of Total Cover:0	0=	= To	otal Cover		✓ 2 - Dominance Test is > 50%
hrub Stratum (Plot size: 15')					✓ 3 - Prevalence Index is ≤3.0 ¹
Pinus taeda	5	V	50.0%	FAC	\square Problematic Hydrophytic Vegetation 1 (Explain)
Baccharis halimifolia	3	V	30.0%	FACW	
Morella cerifera	2	V	20.0%	FAC	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
	0		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: 5 20% of Total Cover: 2	10=	= 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).
erb Stratum (Plot size: 5')					Capling Mandy plants avaluating was divising a
_ Eleocharis parvula	_70_	✓	85.4%	OBL	Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
Rubus allegheniensis	10		12.2%	FACU	than 3 in. (7.6 cm) DBH.
_ Eupatorium perfoliatum	2	Ц	2.4%	FACW	
	0	Ц	0.0%		Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.
		Ц	0.0%		and the second s
	0		0.00/		
		\equiv	0.0%		Shrub - Woody plants, excluding woody vines,
	0		0.0%		Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
	0 0		0.0%	<u> </u>	approximately 3 to 20 ft (1 to 6 m) in height.
·	0 0 0		0.0% 0.0% 0.0%		
	0 0 0 0		0.0% 0.0% 0.0% 0.0%		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
,	0 0 0 0		0.0% 0.0% 0.0% 0.0% 0.0%		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
7. 	0 0 0 0 0		0.0% 0.0% 0.0% 0.0% 0.0% 0.0%		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.
0% of Total Cover: 41 20% of Total Cover: 16.4	0 0 0 0 0		0.0% 0.0% 0.0% 0.0% 0.0%		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
7	0 0 0 0 0 0 0 82 =		0.0% 0.0% 0.0% 0.0% 0.0% 0.0%		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.
0% of Total Cover: 41 20% of Total Cover: 16.4 cody Vine Stratum (Plot size: 30') Gelsemium sempervirens	0 0 0 0 0 0 0 82 =		0.0% 0.0% 0.0% 0.0% 0.0% 0.0% otal Cover		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.
	0 0 0 0 0 0 0 82 =		0.0% 0.0% 0.0% 0.0% 0.0% 0.0% otal Cover		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.
7	0 0 0 0 0 0 82 =		0.0% 0.0% 0.0% 0.0% 0.0% 0.0% otal Cover 100.0% 0.0%		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.
7. 3. 3. 9. 9. 1. 2. 50% of Total Cover: 41 20% of Total Cover: 16.4 Voody Vine Stratum (Plot size: 30') Gelsemium sempervirens	0 0 0 0 0 0 82 =		0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%		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
7	0 0 0 0 0 0 82 =		0.0% 0.0% 0.0% 0.0% 0.0% 0.0% otal Cover 100.0% 0.0%	FAC	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.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)											
Depth Matrix		Redox Features					_				
(inches)				Color (mo	%	Type 1	Loc2	<u>Texture</u> <u>Remarks</u>			
0-6	10YR	5/1	100						Sandy Loam		
6-16	10YR	4/1	95	10YR	4/6	5	С	PL	Sandy Loam		
							-				
									_		
¹ Type: C=Conc	entration. D	=Depletior	n. RM=Red	uced Matrix, CS=	:Covered	or Coate	d Sand Gr	ains ² Loca	cation: PL=Pore Lining. M=Matrix		
Hydric Soil I	ndicators:	•		· · · · · · · · · · · · · · · · · · ·					Indicators for Problematic Hydric Soils ³ :		
Histosol (A	\1)			Polvval	lue Belov	w Surface	(S8) (LRR	S, T, U)	Indicators for Problematic Trydric Solls: I cm Muck (A9) (LRR O)		
Histic Epip	edon (A2)						LRR S, T, I		2 cm Muck (A10) (LRR S)		
Black Histi							1) (LRR O)		Reduced Vertic (F18) (outside MLRA 150A,B)		
Hydrogen	Sulfide (A4)					Matrix (F2			Piedmont Floodplain Soils (F19) (LRR P, S, T)		
Stratified L	ayers (A5)			✓ Deplete			,		Anomalous Bright Loamy Soils (F20) (MLRA 153B)		
Organic Bo	odies (A6) (L	RR P, T, U	l)			rface (F6)			Red Parent Material (TF2)		
5 cm Muck	ky Mineral (A	7) (LRR P	, T, U)			Surface (F			Very Shallow Dark Surface (TF12)		
Muck Pres	ence (A8) (L	.RR U)				ions (F8)	,		Other (Explain in Remarks)		
☐ 1 cm Muck (A9) (LRR P, T) ☐ Marl (F10) (LRR U)											
Depleted E	Below Dark S	Surface (A1	11)				1LRA 151)				
☐ Thick Dark	Surface (A1	2)					(F12) (LRI	R O, P, T)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
Coast Prair	rie Redox (A	16) (MLRA	150A)				RR P, T, U				
Sandy Muc	ck Mineral (S	1) (LRR O	, S)			17) (MLRA					
Sandy Gley	yed Matrix (S	54)					LRA 150A,	150B)			
Sandy Red	lox (S5)							LRA 149A)			
Stripped M	latrix (S6)										
☐ Dark Surfa	ice (S7) (LRF	R P, S, T, L	J)			,	•	, ,			
Daniel di coloni											
Restrictive La	iyer (if obse	erved):									
Type:	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					_			Hydric Soil Present? Yes No		
Depth (inch	ies):								165 0 116 0		
Remarks:											

Project/Site: Highway 478 Development Tract	City/County: Natchit	toches	Sampling Date:	25-Mar-20
Applicant/Owner: Louisisna Economic Development	State:	LA Samp	pling Point: 16	
Investigator(s): John Collins	Section, Township,	Range: S 20	T 8N R 7	W
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave,	, convex, none): nor	ne Slope:	2.0 % / 1.1°
Subregion (LRR or MLRA): LRR P Lat.	31 39 40.667	Long.: -93 06	17.580 Dat	tum: WGS 84
Soil Map Unit Name: Sacul fine sandy loam, 5-12% slopes (Sc)		NWI	classification: N/A	-
Are climatic/hydrologic conditions on the site typical for this time of y	vear? Yes 💿 N		plain in Remarks.)	
		re "Normal Circumsta		No 🔾
	•		answers in Remarks.)	
SUMMARY OF FINDINGS - Attach site map showing s		, ,	,	s, etc.
Hydrophytic Vegetation Present? Yes No				
Hydric Soil Present? Yes No	Is the Sampl	led Area Handa Yes O N	ı. (A)	
Wetland Hydrology Present? Yes ○ No ●	within a Wet	tland? Yes \cup N	10 🕒	
Remarks:	I			
Kemans.				
HYDROLOGY				
Wetland Hydrology Indicators:		Casandam	. In diagram (minimum of 2 m	
Primary Indicators (minimum of one required; check all that apply	1)		 Indicators (minimum of 2 re se Soil Cracks (B6) 	quirea)
Surface Water (A1) Aquatic Fauna (•		ely Vegetated Concave Surfac	re (B8)
High Water Table (A2) Marl Deposits (•		age Patterns (B10)	E (B0)
Saturation (A3) Hydrogen Sulfice			Trim Lines (B16)	
	pheres along Living Roots (eason Water Table (C2)	
Sediment Deposits (B2) Presence of Rei			sh Burrows (C8)	
	duction in Tilled Soils (C6)	_ `	ation Visible on Aerial Imagery	v (C9)
☐ Algal Mat or Crust (B4) ☐ Thin Muck Surfa	* *		orphic Position (D2)	, (63)
☐ Iron Deposits (B5) ☐ Other (Explain	` '		w Aquitard (D3)	
Inundation Visible on Aerial Imagery (B7)	Tremane)		leutral Test (D5)	
Water-Stained Leaves (B9)			num moss (D8) (LRR T, U)	
Field Observations:				
Surface Water Present? Yes No Depth (inches):			
50.1005 11005 1100 1100 1100 1100 1100 1				
): _{We}	etland Hydrology Pres	sent? Yes O No	•
Saturation Present? (includes capillary fringe) Yes No Depth (inches):9	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Describe Recorded Data (stream gauge, monitoring well, aerial ph	otos, previous inspection	ns), if available:		
Remarks:				
Saturation due to recent heavy precipitation events.				
Saturation due to recent heavy precipitation events.				

Tree Stratum (Plot size: 30') % 6 Pinus taeda 2 Pinus taeda 2 <tr< th=""><th>Cover </th><th></th><th>100.0% 100.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0</th><th>Indicator Status FAC</th><th> Number of Dominant Species</th></tr<>	Cover		100.0% 100.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0	Indicator Status FAC	Number of Dominant Species		
Pinus taeda 2	25 0 0 0 0 0 0 0 0 0		100.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0		That are OBL, FACW, or FAC: 3 (A) Total Number of Dominant Species Across All Strata: 4 (B) Percent of dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B) Prevalence Index worksheet:		
Sapling or Sapling/Shrub Stratum (Plot size: 15') () () () () () () () () () () () () (0 0 0 0 0 0 0 0 0 0		0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0% 0.0%	FAC	Total Number of Dominant Species Across All Strata: 4 (B) Percent of dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B) Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 0 FAC species 50 x 3 = 150 FACU species 75 x 4 = 300 X 4 = 300 X 5 X 6 X 75 X 4 = 300 X 75 X 75		
	0 0 0 0 0 0 0 0 0 0		0.0% 0.0% 0.0% 0.0% 0.0% 0.0% otal Cover 0.0% 0.0%		Species Across All Strata: 4 (B) Percent of dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B) Prevalence Index worksheet:		
Sapling or Sapling/Shrub Stratum (Plot size: 15') (In the stratum of the stratum	0 0 0 0 0 0 0 0 0 0		0.0% 0.0% 0.0% 0.0% 0.0% otal Cover 0.0% 0.0% 0.0%		Percent of dominant Species 75.0% (A/B) Prevalence Index worksheet:		
Solve of Total Cover: 12.5 20% of Total Cover: 5 2 Sapling or Sapling/Shrub Stratum (Plot size: 15')	0 0 0 0 0 0 0 0 0 0		0.0% 0.0% 0.0% 0.0% otal Cover 0.0% 0.0% 0.0%		That Are OBL, FACW, or FAC: 75.0% (A/B) Prevalence Index worksheet:		
50% of Total Cover: 12.5 20% of Total Cover: 5 2 Sapling or Sapling/Shrub Stratum (Plot size: 15')	0 0 0 0 0 0 0 0 0 0		0.0% 0.0% 0.0% otal Cover 0.0% 0.0% 0.0%		That Are OBL, FACW, or FAC: 75.0% (A/B) Prevalence Index worksheet:		
50% of Total Cover: 12.5 20% of Total Cover: 5 2 Sapling or Sapling/Shrub Stratum (Plot size: 15')	0 0 0 0 0 0 0 0 0 0		0.0% 0.0% vtal Cover 0.0% 0.0% 0.0%		Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 50 x 3 = $\frac{150}{50}$ FACU species 75 x 4 = $\frac{300}{50}$		
Some of Total Cover: 12.5 20% of Total Cover: 5 2 Sapling or Sapling/Shrub Stratum (Plot size: 15') () () () () () () () () () () () () (0 0 0 0 0 0 0 0 0 0		0.0% tal Cover 0.0% 0.0% 0.0% 0.0%		Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 50 x 3 = $\frac{150}{50}$ FACU species 75 x 4 = $\frac{300}{50}$		
50% of Total Cover: 12.5 20% of Total Cover: 5 2 Sapling or Sapling/Shrub Stratum (Plot size: 15')	25 = 0 0 0 0 0 0 0 0 0 0 0		0.0% 0.0% 0.0% 0.0%		OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 50 x 3 = 150 FACU species 75 x 4 = 300		
Sapling or Sapling/Shrub Stratum (Plot size: 15')	0 0 0 0 0 0 0 0 0 0 0 0		0.0% 0.0% 0.0% 0.0%		FACW species 0 x 2 = 0 FAC species 50 x 3 = 150 FACU species 75 x 4 = 300		
	0 0 0 0 0 0 0 0 0 0		0.0% 0.0% 0.0%		FAC species 50 x 3 = 150 FACU species 75 x 4 = 300		
	0 0 0 0 0 0 0 0 0 0		0.0% 0.0% 0.0%		FACU species $75 \times 4 = 300$		
	0 0 0 0 0 0		0.0%				
	0 0 0 0 0		0.0%		UPL species x 5 =		
	0 0 0 0 0				1		
	0 0 0 0		0.070		Column Totals: <u>125</u> (A) <u>450</u> (B)		
	0	Ш. П	0.0%		Prevalence Index = B/A = <u>3.600</u>		
	0		0.0%		Hydrophytic Vegetation Indicators:		
		 	0.0%				
50% of Total Cover: 0 20% of Total Cover: 0 0		<u> </u>			1 - Rapid Test for Hydrophytic Vegetation		
	0=	: 10	tal Cover		✓ 2 - Dominance Test is > 50%		
Shrub Stratum (Plot size: 15')					3 - Prevalence Index is ≤3.0 ¹		
	0	<u>.</u>	0.0%		Problematic Hydrophytic Vegetation ¹ (Explain)		
	<u>0</u> !	<u>.</u>	0.0%				
	<u>0</u> !	<u>.</u>	0.0%		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
	<u>0</u>	Ш.	0.0%				
	0	<u></u> .	0.0%		Definition of Vegetation Strata:		
	0	Ш.	0.0%		Tree - Woody plants, excluding woody vines,		
	0=	То	tal Cover		approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).		
lerb Stratum (Plot size: 5')							
	75	✔.	100.0%	FACU	Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less		
2	0	\Box	0.0%		than 3 in. (7.6 cm) DBH.		
3	0	□.	0.0%				
1. <u> </u>	0	\Box	0.0%		Sapling/Shrub - Woody plants, excluding vines, less		
5	0		0.0%		than 3 in. DBH and greater than 3.28 ft (1m) tall.		
	0	\Box	0.0%		Shrub - Woody plants, excluding woody vines,		
7	0	□.	0.0%		approximately 3 to 20 ft (1 to 6 m) in height.		
-	<u>0</u> [╝.	0.0%				
	<u>0</u>	╝.	0.0%		Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody		
)	<u>o</u> [\Box	0.0%		plants, except woody vines, less than approximately		
1	0	\Box	0.0%		3 ft (1 m) in height.		
2	0	\Box	0.0%				
50% of Total Cover: 37.5 20% of Total Cover: 15 7	'5 =	= Total Cover			Woody vine - All woody vines, regardless of height.		
Noody Vine Stratum (Plot size: 30')							
	15	V	60.0%	FAC			
	10	v	40.0%	FAC			
	0		0.0%				
	0		0.0%				
	0		0.0%		Hydrophytic		
					Vegetation Present? Yes No		
emarks: (If observed, list morphological adaptations below).					<u> </u>		

Profile Descri	ption: (Describe to	the depth	needed to	document	the indic	cator or co	onfirm the	absence of indicators.)		
Depth	Matrix				dox Featu	ıres 1		-		
(inches)	Color (moist)	<u> </u>		moist)	%_	_Tvpe 1	Loc²	<u>Texture</u>	Remarks	
0-16	10YR 3/2	85	10YR	6/3	10	C		Sandy Loam		
			10YR	3/4	5	С	М	Sandy Loam		
									-	
				-	_		-			
			-				-	-		
¹ Type: C=Conc	entration. D=Depletion	n. RM=Redu	ced Matrix,	CS=Covere	ed or Coate	ed Sand Gr	ains ² Loca	ition: PL=Pore Lining. M=M	latrix	
Hydric Soil Ir	ndicators:							Indicators for Probl	ematic Hydric Soils ³ :	
Histosol (A	1)		Pol	yvalue Beld	ow Surface	(S8) (LRR	S, T, U)		•	
Histic Epipe	edon (A2)		☐ Thin Dark Surface (S9) (LRR S, T, U)					☐ 1 cm Muck (A9) (LRR O) ☐ 2 cm Muck (A10) (LRR S)		
Black Histic	c (A3)		Loamy Mucky Mineral (F1) (LRR O)							
Hydrogen	Sulfide (A4)			amy Gleyed			•	Reduced Vertic (F18) (outside MLRA 150A,B) Piedmont Floodplain Soils (F19) (LRR P, S, T) Anomalous Bright Loamy Soils (F20) (MLRA 153B)		
Stratified L	ayers (A5)			pleted Mati		,				
Organic Bo	odies (A6) (LRR P, T, L	J)		dox Dark S	. ,)				
	y Mineral (A7) (LRR P			pleted Dark				☐ Red Parent Material (TF2) ☐ Very Shallow Dark Surface (TF12)		
	ence (A8) (LRR U)			dox Depres				Other (Explain in Remarks)		
	(A9) (LRR P, T)			rl (F10) (LF				Other (Explain in	Remarks)	
	Below Dark Surface (A	11)	Depleted Ochric (F11) (MLRA 151)							
Thick Dark	Surface (A12)	,		n-Mangane						
	rie Redox (A16) (MLRA	\ 150A)		nbric Surfac						
	ck Mineral (S1) (LRR O			lta Ochric (,			
	ed Matrix (S4)	, -,					150R)	³ Indicators of hydrophytic vegetation and		
Sandy Red				Reduced Vertic (F18) (MLRA 150A, 150B) Piedmont Floodplain Soils (F19) (MLRA 149A) Reduced Vertic (F18) (MLRA 150A, 150B) wetland hydrology must be present, unless disturbed or problematic.						
Stripped M								9A, 153C, 153D)	disturbed of problematic.	
	ce (S7) (LRR P, S, T, I	LD.		ornalous Di	ignt Loann	y 30115 (1 21	J) (IILIXA 14	5A, 133C, 133D)		
	00 (07) (2)	-,								
	yer (if observed):									
Type:					_			Hydric Soil Present?	Yes No	
Depth (inch	es):							nyulic son Presents	res © No C	
Remarks:										



Photo 1 – Plot 1, Soil Sample



Photo 2 – Plot 1, Vegetation Characteristics Facing North



Photo 3 – Plot 1, Vegetation Characteristics Facing East



Photo 4 – Plot 1, Vegetation Characteristics Facing South



Photo 5 – Plot 2, Soil Sample



Photo 6 – Plot 2, Vegetation Characteristics Facing North



Photo 7 – Plot 2, Vegetation Characteristics Facing East



Photo 8 – Plot 2, Vegetation Characteristics Facing South



Photo 9 – Plot 3, Soil Sample



Photo 10 – Plot 3, Vegetation Characteristics Facing North



Photo 11 – Plot 3, Vegetation Characteristics Facing East



Photo 12 – Plot 3, Vegetation Characteristics Facing South



Photo 13 – Plot 4, Soil Sample



Photo 14 – Plot 4, Vegetation Characteristics Facing North



Photo 15 – Plot 4, Vegetation Characteristics Facing East



Photo 16 – Plot 4, Vegetation Characteristics Facing South



Photo 17 – Plot 5, Soil Sample



Photo 18 – Plot 5, Vegetation Characteristics Facing North



Photo 19 – Plot 5, Vegetation Characteristics Facing East



Photo 20 – Plot 5, Vegetation Characteristics Facing South



Photo 21 – Plot 6, Soil Sample



Photo 22– Plot 6, Vegetation Characteristics Facing North



Photo 23 – Plot 6, Vegetation Characteristics Facing East



Photo 24 – Plot 6, Vegetation Characteristics Facing South



Photo 25 – Plot 7, Soil Sample



Photo 26 – Plot 7, Vegetation Characteristics Facing North



Photo 27 – Plot 7, Vegetation Characteristics Facing East



Photo 28 – Plot 7, Vegetation Characteristics Facing South



Photo 29 – Plot 8, Soil Sample



Photo 30 – Plot 8, Vegetation Characteristics Facing North



Photo 31 – Plot 8, Vegetation Characteristics Facing East



Photo 32 – Plot 8, Vegetation Characteristics Facing South



Photo 33 – Plot 9, Soil Sample



Photo 34 – Plot 9, Vegetation Characteristics Facing North



Photo 35 – Plot 9, Vegetation Characteristics Facing East



Photo 36 – Plot 9, Vegetation Characteristics Facing South



Photo 37 – Plot 11, Soil Sample



Photo 38 – Plot 11, Vegetation Characteristics Facing North



Photo 39 – Plot 11, Vegetation Characteristics Facing East



Photo 40 – Plot 11, Vegetation Characteristics Facing South



Photo 41 – Plot 12, Soil Sample



Photo 42 – Plot 12, Vegetation Characteristics Facing North



Photo 43 – Plot 12, Vegetation Characteristics Facing East



Photo 44 – Plot 12, Vegetation Characteristics Facing South



Photo 45 – Plot 13, Soil Sample



Photo 46 – Plot 13, Vegetation Characteristics Facing North



Photo 47 – Plot 13, Vegetation Characteristics Facing East



Photo 48 – Plot 13, Vegetation Characteristics Facing South



Photo 49 – Plot 14, Soil Sample



Photo 50 – Plot 14, Vegetation Characteristics Facing North



Photo 51 – Plot 14, Vegetation Characteristics Facing East



Photo 52 – Plot 14, Vegetation Characteristics Facing South



Photo 53 – Plot 15, Soil Sample



Photo 54 – Plot 15, Vegetation Characteristics Facing North



Photo 55 – Plot 15, Vegetation Characteristics Facing East



Photo 56 – Plot 15, Vegetation Characteristics Facing South



Photo 57 – Plot 16, Soil Sample



Photo 58 – Plot 16, Vegetation Characteristics Facing North



Photo 59 – Plot 16, Vegetation Characteristics Facing East



Photo 60 – Plot 16, Vegetation Characteristics Facing South



Photo 61 – Stream 1 (at convergence with Stream 2), Looking Northerly



Photo 62 – Stream 1 (at convergence with Stream 2), Looking Southerly



Photo 63 – Stream 1 (near convergence with Stream 3), Looking Easterly



Photo 64 – Stream 1 (near convergence with Stream 3), Looking Westerly



Photo 65 – Stream 1 (immediately south of Bayou Blue Rd.), Looking Northerly



Photo 66 – Stream 1 (immediately south of Bayou Blue Rd.), Looking Northerly



Photo 67 – Logging Slash Damming Up Stream 1, Immediately North of Bayou Blue Rd. Looking Northerly



Photo 68 – Logging Slash Damming Up Stream 1, Immediately North of Bayou Blue Rd. Looking Southerly



Photo 69 – Stream 2 (near Wetland 3), Looking Northerly



Photo 70 – Stream 2 (Near Wetland 3), Looking Southerly



Photo 71 – Stream 3 (near Plot 7), Looking Northerly



Photo 72 – Stream 3 (near Plot 7), Looking Southerly



Photo 73 – Stream 3 (at confluence with Stream 1), Looking Northerly



Photo 74 – Stream 3 (at confluence with Stream 1), Looking Southerly



Photo 75 – Stream 4 (near Plot 3), Looking Northerly



Photo 76 – Stream 4 (near Plot 3), Looking Southerly



Photo 77 – Stream 6 (near Plot 1), Looking Easterly



Photo 78 – Stream 6 (at confluence with Stream 7), Looking Easterly



Photo 79 – Stream 7 (at confluence with Stream 6), Looking Northerly



Photo 80 – Stream 7 (at confluence with Stream 6), Looking Southerly



Photo 81 – Stream 8 (near confluence with Stream 1), Looking Westerly



Photo 82 – Stream 8 (at confluence with Stream 1), Looking Southerly



Photo 83 – Stream 9, Looking Northerly



Photo 84 – Stream 9, Looking Southerly



Photo 85 – Wetland 1 (near southern Project border), Looking Northerly



Photo 86 – Wetland 1 (near southern Project border), Looking Southerly



Photo 87 – Wetland 1, Looking Northerly



Photo 88 – Wetland 1, Looking Southerly



Photo 89 – Wetland 2, Looking Northerly



Photo 90 – Wetland 2, Looking Southerly



Photo 90 – Wetland 3, Looking Northerly



Photo 92 – Wetland 3, Looking Southerly



Photo 93 – Wetland 4, Looking Easterly (far end of wetland boundary)



Photo 94 – Wetland 4, Looking Westerly

Appendix C – USFWS Consistency Letters



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Louisiana Ecological Services Field Office 200 Dulles Drive Lafayette, LA 70506

Phone: (337) 291-3100 Fax: (337) 291-3139



IPaC Record Locator: 287-21232891 April 13, 2020

Subject: Consistency letter for the project named 'LED Tract' for specified threatened and endangered species that may occur in your proposed project location pursuant to the

Louisiana Endangered Species Act project review and guidance for other federal trust

resources determination key (Louisiana DKey).

Dear John Collins:

The U.S. Fish and Wildlife Service (Service) received on April 13, 2020 your effects determination(s) for the 'LED Tract' (the Action) using the Louisiana DKey within the Information for Planning and Consultation (IPaC) system. The system was developed in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based on the answers provided, the proposed Action is consistent with a determination of "no effect" or "may affect, but not likely to adversely affect (NLAA)" for the following species as outlined in the Service's Louisiana Endangered Species Act project review and guidance for other federal trust resources key.

Endangered Red-cockaded woodpecker (*Picoides borealis*)

No Effect
Threatened Louisiana pine snake (*Pituophis ruthveni*)

NLAA

The "may affect - not likely to adversely affect" determination(s) becomes effective when the lead Federal action agency or designated non-federal representative uses it to ask the Service to rely on the Louisiana Endangered Species Act project review and guidance for other federal trust resources key to satisfy the agency's consultation requirements for this project.

Please provide this consistency letter to the lead Federal action agency or its designated non-federal representative with a request for its review, and as the agency deems appropriate, to submit for concurrence verification through the IPaC system. The lead Federal action agency or designated non-federal representative should log into IPaC using their agency email account and click "Search by record locator". They will need to enter the record locator **287-21232891**

If the action agency is unable to generate a concusing below verifying your species determination (Louisiana Field Office for concurrence.	8 71
Project Representative	Date
Based on the information provided in this report, documentation saved to the project file at our off determination(s) for the species listed above for t	ice (if applicable), the Service agrees with your
Louisiana Ecological Services Office U.S. Fish and Wildlife Service	Date

Consultation on the proposed action is concluded when you receive signature from this office.

The Service recommends that your agency contact the Service for additional consultation if: 1) the scope or location of the proposed project is changed significantly, 2) new information reveals that the action may affect listed species or designated critical habitat; 3) the action is modified in a manner that causes effects to listed species or designated critical habitat; or 4) a new species is listed or critical habitat designated. Additional consultation as a result of any of the above conditions or for changes not covered in this consultation should occur before changes are made and or finalized.

This IPaC-assisted determination allows you to rely on this process for compliance with ESA Section 7(a)(2) for only the species listed above. It **does** not apply to the following ESA-protected species that also may occur in the Action area:

• Northern Long-eared Bat, *Myotis septentrionalis* (Threatened)

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

LED Tract

2. Description

The following description was provided for the project 'LED Tract':

155-acre tract of land for potential future development.

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/31.659040291866113N93.10688419868066W



Qualification Interview

1. Is this a Federal project?

No

2. Are you with the U.S. Army Corps of Engineers Regulatory Division? *No*

3. Are you with the U.S. Army Corps of Engineers Planning Division? *No*

4. [Hidden Semantic] Does the project intersect the red-cockaded woodpecker AOI?

Automatically answered

Yes

5. Will the project involve removal of suitable RCW foraging habitat (pine or pine/hardwood stands in which 50 percent or more of the dominant trees are pines and the dominant pine trees are 30 years of age or older)?

No

6. Will the project occur within suitable RCW nesting habitat (pine or pine/hardwood stands that contain pines 60 years of age or older)?

No

7. [Hidden Semantic] Does the project intersect the Louisiana pinesnake AOI?

Automatically answered

Yes

8. Does the project occur on land that is forested or on land that is either undeveloped or non-farmed and is located within 1,920ft of adjacent forested lands?

Yes

9. [Semantic] Is the project located within a Louisiana pinesnake Estimated Occupied Habitat Area (EOHA)?

Automatically answered

No

10. (Semantic) Does the project intersect the Louisiana black bear Range?

Automatically answered

No



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Louisiana Ecological Services Field Office 200 Dulles Drive Lafayette, LA 70506 Phone: (337) 291-3100 Fax: (337) 291-3139



IPaC Record Locator: 287-21233373 April 13, 2020

Subject: Consistency letter for the 'LED Tract' project indicating that any take of the northern

long-eared bat that may occur as a result of the Action is not prohibited under the ESA

Section 4(d) rule adopted for this species at 50 CFR §17.40(o).

Dear John Collins:

The U.S. Fish and Wildlife Service (Service) received on April 13, 2020 your effects determination for the 'LED Tract' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. You indicated that no Federal agencies are involved in funding or authorizing this Action. This IPaC key assists users in determining whether a non-Federal action may cause "take" of the northern long-eared bat that is prohibited under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Please report to our office any changes to the information about the Action that you entered into IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation.

If your Action proceeds as described and no additional information about the Action's effects on species protected under the ESA becomes available, no further coordination with the Service is required with respect to the northern long-eared bat.

The IPaC-assisted determination for the northern long-eared bat **does not** apply to the following ESA-protected species that also may occur in your Action area:

- Louisiana Pinesnake, *Pituophis ruthveni* (Threatened)
- Red-cockaded Woodpecker, Picoides borealis (Endangered)

You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species listed above.

[1] Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

LED Tract

2. Description

The following description was provided for the project 'LED Tract':

155-acre tract of land for potential future development.

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/31.659040291866113N93.10688419868066W



Determination Key Result

This non-Federal Action may affect the northern long-eared bat; however, any take of this species that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o).

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on **May 15, 2017**. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for non-Federal actions is to assist determinations as to whether proposed actions are excepted from take prohibitions under the northern long-eared bat 4(d) rule.

If a non-Federal action may cause prohibited take of northern long-eared bats or other ESA-listed animal species, we recommend that you coordinate with the Service.

Determination Key Result

Based upon your IPaC submission, any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o).

Qualification Interview

- Is the action authorized, funded, or being carried out by a Federal agency?

 No
- 2. Will your activity purposefully **Take** northern long-eared bats? *No*
- Is the project action area located wholly outside the White-nose Syndrome Zone?
 Automatically answered
 No
- 4. Is the project action area located within 0.25 miles of a known northern long-eared bat hibernaculum?

Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency

Automatically answered

No

5. Is the project action area located within 150 feet of a known occupied northern long-eared bat maternity roost tree?

Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency

Automatically answered

No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.

Estimated total acres of forest conversion:
 If known, estimated acres of forest conversion from April 1 to October 31
 If known, estimated acres of forest conversion from June 1 to July 31

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.

- **4.** Estimated total acres of timber harvest *0*
- 5. If known, estimated acres of timber harvest from April 1 to October 31 $\it 0$
- 6. If known, estimated acres of timber harvest from June 1 to July 31 *0*

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.

7. Estimated total acres of prescribed fire

0

- 8. If known, estimated acres of prescribed fire from April 1 to October 31 $\it o$
- 9. If known, estimated acres of prescribed fire from June 1 to July 31 \boldsymbol{o}

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)? θ