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Exhibit FF:
Red River Parish Port Site Wetlands Delineation Report

CSRS | BUILDING STRONGER, SMARTER COMMUNITIES TOGETHER.

July 18, 2024

Mrs. Sheena Bryant
North Louisiana Economic Partnership
333 Texas Street, Suite 401
Shreveport, Louisiana 71101

Red River Parish Port Site Wetland Delineation Report

RE: Red River Parish Port Site - Wetland Delineation Executive Summary
CSRS Project No 216269

Dear Mrs. Bryant,

In part of the Louisiana Economic Development (LED) Certified Sites Program, a wetland delineation was completed for the Red River Parish Port Site in Red River Parish. In accordance with the United States Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual and Regional Supplements, a wetland delineation was completed on 29 November 2023 and identified approximately 0.24 acres of potentially jurisdictional wetlands, 0.28 acres of potentially non-jurisdictional isolated wetlands, and 2,621 linear feet of waters of the U.S. within the site boundary. On 11 March 2024, a site visit was conducted with the USACE for the Approved Jurisdictional Determination (AJD) process. The USACE did concur with the findings from the wetland delineation report, but the findings have not been officially verified by the USACE. The AJD process was initiated on 2 February 2024, and the typical amount of time to obtain an AJD is 6 to 12 months. The wetland delineation is based on a previous, slightly larger site boundary. The current site boundary does not include the 0.24 acres of potentially jurisdictional wetlands, but it does include the 0.28 acres of potentially non-jurisdictional wetlands and 2,621 linear feet of potentially jurisdictional waters of the U.S.

Previous Site Boundary

Current Site Boundary

Thank you for the opportunity to assist you with this project. Should you have any questions or require additional information, feel free to contact me.

Respectfully,

Elliott Boudreaux
Project Manager

WETLAND DELINEATION REPORT

RED RIVER PARISH PORT SITE

LOUISIANA HIGHWAY 1 AND RIVERPORT DRIVE
HANNA, LOUISIANA 71019

ECS PROJECT NO. 49:21746

FOR: NORTH LOUISIANA ECONOMIC DEVELOPMENT

MARCH 14, 2024

ECS Southeast, LLC

"One Firm. One Mission."

Geotechnical • Construction Materials • Environmental • Facilities

March 14, 2024

Mrs. Liz Pierre
North Louisiana Economic Development
333 Texas Street
Shreveport, Louisiana, 71101

ECS Project No. 49:21746

Reference: Waters of the U.S. Delineation Report, Red River Parish Port Site, Louisiana Highway 1 and Riverport Drive, Hanna, Red River Parish Louisiana

Dear Mrs. Pierre:

ECS Southeast, LLC (ECS) is pleased submit this report of the Waters of the U.S. (WOUS) services for the above-referenced site. ECS services were provided in general accordance with ECS Proposal No. 49:39825P authorized on September 19, 2023 and generally meets the requirements of the 1987 U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region, Version 2.0 dated November 2010. ***Based on our field reconnaissance, potentially jurisdictional WOUS are present onsite.***

If there are questions regarding this report, or a need for further information, please contact the undersigned.

ECS Southeast, LLC

Curt Schaeffer, CSE
Environmental Project Manager
cschaeffer@ecslimited.com
225-224-2583

Paul M. Stephens IV, P.E., PWS
Associate Principal
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EXECUTIVE SUMMARY

ECS Southeast, LLP was contracted by CSRS, Inc. to provide wetland delineation and United States Army Corps of Engineers (USACE) jurisdictional determination services for an approximate 74.4-acre site located at Louisiana Highway 1 and Riverport Drive, Hanna, Red River Parish, Louisiana. The findings of the potential Waters of the United States (WOTUS) delineation are based on ECS' professional judgment and application of the technical criteria presented in the 1987 USACE Wetlands Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region, Version 2.0 dated November 2010.

One potentially jurisdictional wetland area totaling approximately 0.24 acre, and two potential non-wetland WOTUS features totaling approximately 2,621 linear feet were identified and delineated within the PSA. The locations and boundaries of the potentially jurisdictional wetland and non-wetland WOTUS features are presented on the attached Wetland Delineation Map (Appendix I, Figure 7).

1.0 INTRODUCTION

This report presents the findings of a wetland delineation study conducted by ECS Southeast, LLC (ECS) for North Louisiana Economic Development at the Red River Parish Port Site located at Louisiana Highway 1 and Riverport Drive, Hanna, Red River Parish, Louisiana (31°57'28.60N, 93°20'25.99W). The site consists of one parcel totaling approximately 74 acres. According to the Red River Parish Geographic Information System (GIS) website, the Parcel Identification Number (PIN) is: 7500001800A 74.4 Acres. The site includes approximately 74.4 Acres acres, as shown on the Site Location Map (Appendix I, Figure 1). The site consists of agricultural fields and wooded land. Surrounding areas consist of the Red River, wooded land, and agricultural fields. The purpose of this study was to identify and delineate jurisdictional Waters of the U.S. (WOTUS) within the project study area (PSA). Based on the United States Geological Survey (USGS) Topographic Map, no wetlands or other surface waters are depicted on site.

Wetlands are defined by the United States Army Corps of Engineers (USACE) and the United States Environmental Protection Agency (EPA) as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions." In order for an area to be classified as wetland, hydrophytic vegetation, hydric soils, and wetland hydrology indicators must be present described in the 1987 "Corps of Engineers Wetlands Delineation Manual" and the Appropriate Regional Supplement.

2.0 METHODOLOGY

The findings of the WOTUS delineation is based on ECS' professional judgment and application of the technical criteria presented in the 1987 USACE Wetlands Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region, Version 2.0 dated November 2010.

ECS completed the following tasks to identify and delineate potentially jurisdictional WOTUS boundaries onsite:

2.1 Literature Review

ECS reviewed supporting information from publicly-available databases to identify possible ecological effects the project may have on potential state- and/or federally-jurisdictional water resources. During the desktop review, ECS documented relevant, site-specific details (e.g., topographic characteristics, soil composition, recent precipitation, level of disturbance, plant community structure, etc.) and integrated the obtained information with the onsite delineation effort.

2.2 Methodology for Field Investigation

Wetland boundaries were delineated using the routine onsite determination method described in the USACE Manual and Regional Supplement, in conjunction with the Atlantic and Gulf Coastal Plain 2020 Regional Wetland Plant List and the USDA Soil Survey.

ECS performed onsite wetland delineations as described above. First, site hydrology was observed and the plant community within the data plot was characterized. The dominant plant species within each community were then identified, and it was determined whether or not hydrophytic (wetland) plants dominated the plant community. The USFWS has defined five wetland plant indicator categories including:

- Obligate wetland (OBL) – has >99% probability of occurring in wetlands
- Facultative wetland (FACW) – has 66% to 99% chance of occurring in wetlands
- Facultative (FAC) – has 33% to 66% chance of occurring in wetlands
- Facultative upland (FACU) – has 1 to 33% chance of occurring in wetlands
- Upland (UPL) – has <1% chance of occurring in wetlands
- No Indicator (NI) – no wetland indicator for the specified species, considered UPL

Plants identified as OBL, FACW, or FAC are considered wetland plants (or hydrophytes) by USACE.

In areas determined to be dominated by hydrophytic vegetation and potential wetland hydrology is observed, an approximately 16-inch soil pedon was excavated with a shovel to determine if hydric soils were present. The soil pit was also inspected to determine if indicators of wetland hydrology (inundation, soil saturation, oxidized rhizospheres on living roots, etc.) were present.

Once an area is determined to be a wetland, further testing was performed to locate the wetland/ non-wetland boundary. A second data point was established in an adjacent non-wet area to document non-wetland conditions. Wetland boundaries were documented with a handheld global positioning unit (Trimble Geo 7X™).

Data forms specified in the Regional Supplement were completed for each wetland and non-wetland data point location. Information recorded on the USACE-approved wetland data sheets included vegetation data (species and percent cover in each stratum), soil matrix and redox conditions to a depth of 16 inches, and hydrological indicator observations utilized in making wetland determinations.

2.3 Methodology for Delineating Streams

During the field investigation for wetlands, ECS identified streams onsite that could be considered jurisdictional by state and federal regulatory agencies. ECS used field indicators such as flow, substrate composition, presence/absence of defined bed and banks, origin of hydrologic source, presence/absence of vegetation in the stream channel, and composition and relative abundance of resident benthic macroinvertebrates to classify onsite streams into three stream types: ephemeral, intermittent, and perennial.

RGL No. 05-05 provides guidance on identifying physical indicators of Ordinary High Water Mark (OHWM) as defined in 33 CFR Sections 328.3(e) and 329.11(a)(1) and discusses implementation of other appropriate means that consider the characteristics of the surrounding areas to establish the lateral limits of jurisdiction over tidal and non-tidal waters. Per RGL No. 05-05, “the lateral limits of jurisdiction over non-tidal water bodies extend to the [OHWM], in the absence of adjacent wetlands. When adjacent wetlands are present, CWA jurisdiction extends beyond the OHWM to the limits of the adjacent wetlands”.

3.0 FINDINGS

3.1 Literature Review

ECS professionals reviewed the USGS Topographic Map, U.S. Department of Agriculture - Natural Resource Conservation Service (USDA-NRCS) Web Soil Survey, the USDA Hydric Soils List, the Federal Emergency Management Agency (FEMA) Floodplain Mapping Service, U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Wetlands Mapper, and available aerial photographs to identify potentially jurisdictional Waters of the U.S. (i.e., streams, wetlands, natural ponds, lakes) and available watershed information.

3.1.1 Literature Review Summary

The following is a summary of the available desktop information that was reviewed as part of this study:

- According to the Hanna (Louisiana) USGS Topographic Map Quadrangle dated 1989 (Appendix I, Figure 2), two unnamed tributaries of Wright Creek are depicted along the eastern and western boundaries. The elevation of the PSA ranges from approximately 129 to 131 feet above mean sea level (MSL).

- According to the USDA-NRCS Web Soil Survey of Red River Parish (Appendix I, Figure 3), the PSA consists of the following soil map units: Coushatta silt loam, 0-1% slopes (Cs), Coushatta silty clay loam, 0-1% slopes (Ct), Latanier clay, 0-1% slopes, rarely flooded (La), and Moreland clay, 0-1% slopes, rarely flooded (MoA). None of the aforementioned soils are listed as Hydric for Red River Parish, Louisiana.

- The USFWS NWI map (Appendix I, Figure 4) depicts two wetland areas within the PSA depicted as Palustrine, Forested, Broad-Leaved Deciduous, Temporarily Flooded (PFO6F), and Palustrine, Forested, Broad-Leaved Deciduous, Semi-Permanently Flooded (PFO1C). The site is located within the Bayou Pierre Water Shed and is identified as Hydrologic Unit Code (HUC) 11140206.

- The FEMA Flood Insurance Rate Maps (FIRMs), Panel 22069C0200D (dated July 6, 2015), and 22031C0525C (dated December 16, 2003) (Appendix I, Figure 5) indicate that the PSA is located in unshaded Zone X. These areas are determined to be outside the 0.2% Annual Chance Floodplain.

- ECS reviewed the National Atmospheric and Oceanic Administration (NOAA) Light Detection and Ranging (LiDAR) Digital Elevation Model (DEM) within the PSA (Appendix I, Figure 6). The DEM's, utilizing dark red, yellow and light green shading to depict high to low elevations, respectively, to assist with identifying potential wetland areas and non-wetland waters.

3.2 Field Investigation Findings

ECS personnel conducted the field investigation on November 29, 2023. During the reconnaissance, the PSA was observed for evidence of potential ponds, streams, and wetlands. A total of two potentially jurisdictional non-wetland WOTUS features (streams), totaling approximately 2,621 linear feet (LF), and one potentially jurisdictional wetland area, totaling approximately 0.24 acre, were observed within the PSA. ECS also observed two isolated, potentially non-jurisdictional wetland areas, totaling approximately 0.28 acre within the PSA.

The potentially jurisdictional areas were field-located using a Trimble GeoXH™ hand-held GPS unit capable of sub-meter accuracy, and the data downloaded to produce a Potential Waters of the US Delineation Map (Appendix I, Figure7). The potential features identified by ECS during the wetland delineation study are summarized in the table below:

The findings have not been verified by the USACE are subject to change. Figure 7 should be used for preliminary planning purposes only.

Table 1: Potential WOTUS Summary Table

Feature ID	GPS Coordinates (decimal degrees)	Approximate Acreage	Approximate Square Footage	Approximate Linear Feet (if applicable)
Wetland W1	31°57'36.48"N 93°20'40.05"W	0.24	10,454 SF	N/A
Wetland W2 (Isolated)	31°57'30.95"N 93°20'18.99"W	0.16	6,9696 SF	N/A
Wetland W3 (Isolated)	31°57'29.01"N 93°20'18.85"W	0.12	5,227 SF	N/A
Stream S1	31°57'39.88"N 93°20'40.39"W	N/A	N/A	2,389 LF
Stream S2	31°57'29.50"N 93°20'17.92"W	N/A	N/A	232 LF

3.2.1 Wetland Summary

The potential wetland area W1 (DP 4) exhibited both primary and secondary wetland hydrology indicators, hydric soils, and hydrophytic vegetation during the site visit. Primary hydrology indicators included water marks (B1) and water-stained leaves (B9). while secondary indicators included a positive FAC-Neutral test (D5). Based on characteristics observed during the field visit, the aforementioned potential wetland area is classified as a Palustrine, Forested, Broad-Leaved Deciduous, Temporarily Flooded (PFO1A) wetland habitat totaling approximately 0.24 acre. The wetland areas and data point (DP) locations are depicted on the Potential Waters of the U.S. Delineation Map (Appendix I, Figure 7). Photographs of the potential wetlands and WOTUS features are presented in Appendix II.

3.2.2 Stream Summary

Two potentially jurisdictional non-wetland WOTUS features (streams), totaling approximately 2,621LF, were observed within the PSA. All potential stream features observed exhibited an ordinary high-water mark, bed and bank characteristics, and a silty substrate. The stream features varied from approximately two feet to eight feet in width and approximately one to three feet in depth, and are depicted on the Potential Waters of the U.S. Delineation Map (Appendix I, Figure 7). Photographs of the potential streams are presented in Appendix II.

Potential streams S1 and S2 were determined to be intermittent streams and likely serve to provide drainage within the PSA and the surrounding landscape.

4.0 VERIFICATION SERVICES & JURISDICTIONAL DETERMINATION (JD) FIELD VISIT

ECS conducted a JD site visit with USACE - Vicksburg District staff on March 11, 2024. During the field visit, the USACE reviewed wetland areas W2 and W3 and considered them to be potentially isolated wetlands; therefore, these features are not considered potentially jurisdictional wetlands. However, the determination of wetland areas W2 and W3 being considered formally isolated wetlands and non-jurisdictional features has not been officially verified by the USACE. ECS recommends waiting until the formal USACE JD has been issued prior to site construction and development activities.

The locations and boundaries of the potentially jurisdictional areas are depicted on the attached Waters of the U.S. Delineation Map (Appendix I, Figure 7).

5.0 REGULATORY DISCUSSION

After review of the findings in the report and at the client's request, ECS can coordinate with the USACE to acquire a jurisdictional determination and conduct a field visit, if necessary. The timeline of this process is dependent on the availability of the regulatory agency. ECS recommends receipt of the formal jurisdictional determination letter from the necessary agencies prior to conducting any land-disturbance activities.

Non-wetland WOTUS are regulated by Sections 401 and 404 of the Clean Water Act. State and Federal law dictates that any disturbance to WOTUS must be permitted through the appropriate agencies. If any potential impacts are proposed, we can assist you with permitting options and support to complete the process. As part of the permitting process, we will conduct a preliminary review of state and federal agency records pertaining to Section 7 (Federal Endangered Species Act) and Section 106 (National Historic Preservation Act). If deemed necessary, we can assist you with targeted species surveys and cultural investigations to satisfy the requirements of the Nationwide Permit (NWP), Individual Permit (IP), or General Permit conditions.

Section 404 of the Clean Water Act regulates the discharge of dredge and fill materials into waters of the United States (lakes, rivers, ponds, streams, etc.), including wetlands. Waters of the United States include territorial seas, navigable coastal and inland lakes, rivers, perennial streams, intermittent streams, and wetlands. The EPA and the U.S. Army Corps of Engineers jointly administer the Section 404 program. Section 401 of the Clean Water Act grants each state the authority to approve, condition, or deny any Federal permits that could result in a discharge to State waters. Mitigation and stormwater management plans will be a condition of permits issued for the Site. Buffers may

be required adjacent to streams and water bodies. In general, the mitigation requirements and thresholds for Louisiana are 0.5 acre or more of wetland/WOTUS impacts. The mitigation credits may be estimated by linear feet (LF) and acreage, state specific calculation worksheets, or other methods utilized in that state or USACE district.

For impacts to 0.5-acre or more of wetlands/WOTUS, an IP may be required. An IP may also be required to authorize impacts if wetlands and/or streams are located in a floodplain. An IP requires a habitat analysis, alternative site analysis, project justification, plans to avoid and minimize impacts, and a proposed mitigation plan. Depending on the habitat analysis and the extent of impacts, and Environmental Impact Statement may be required by the USACE. An IP allows for a public comment period and the timeline ranges from 4 to 18 months to obtain depending on the conditions that may arise during the USACE review and public comment period.

6.0 WATERSHED CLASSIFICATION/BUFFER REQUIREMENTS

6.1 State Riparian Buffer Requirements

According to the Louisiana Department of Environmental Quality (LDEQ), the PSA occurs in the East Central Louisiana Coast Watershed. To ECS' knowledge, there are no known state-mandated riparian buffer requirements to warrant the protection of adjacent wetlands and riparian areas beyond the limits of construction. However, it is recommended by LDEQ that best management practices outlined in LDEQ's Stormwater Construction General Permit guidelines be employed during construction activities to limit downstream translocation of sediment into adjacent wetlands and riparian areas.

6.2 Local Buffer Requirements

ECS contacted the Red River Parish Planning Department to determine if mandatory vegetative buffers and/or riparian buffers are required for streams, wetlands, or other waters in Red River Parish. According to the Red River Parish Planning Department, there are no additional riparian buffer requirements in addition to the state recommended practices for general construction and stormwater management.

ECS recommends consultation with a civil engineer to determine if mandatory vegetative buffers and/or regulated development (impervious surfaces) setbacks are required for the site in addition to those mentioned above.

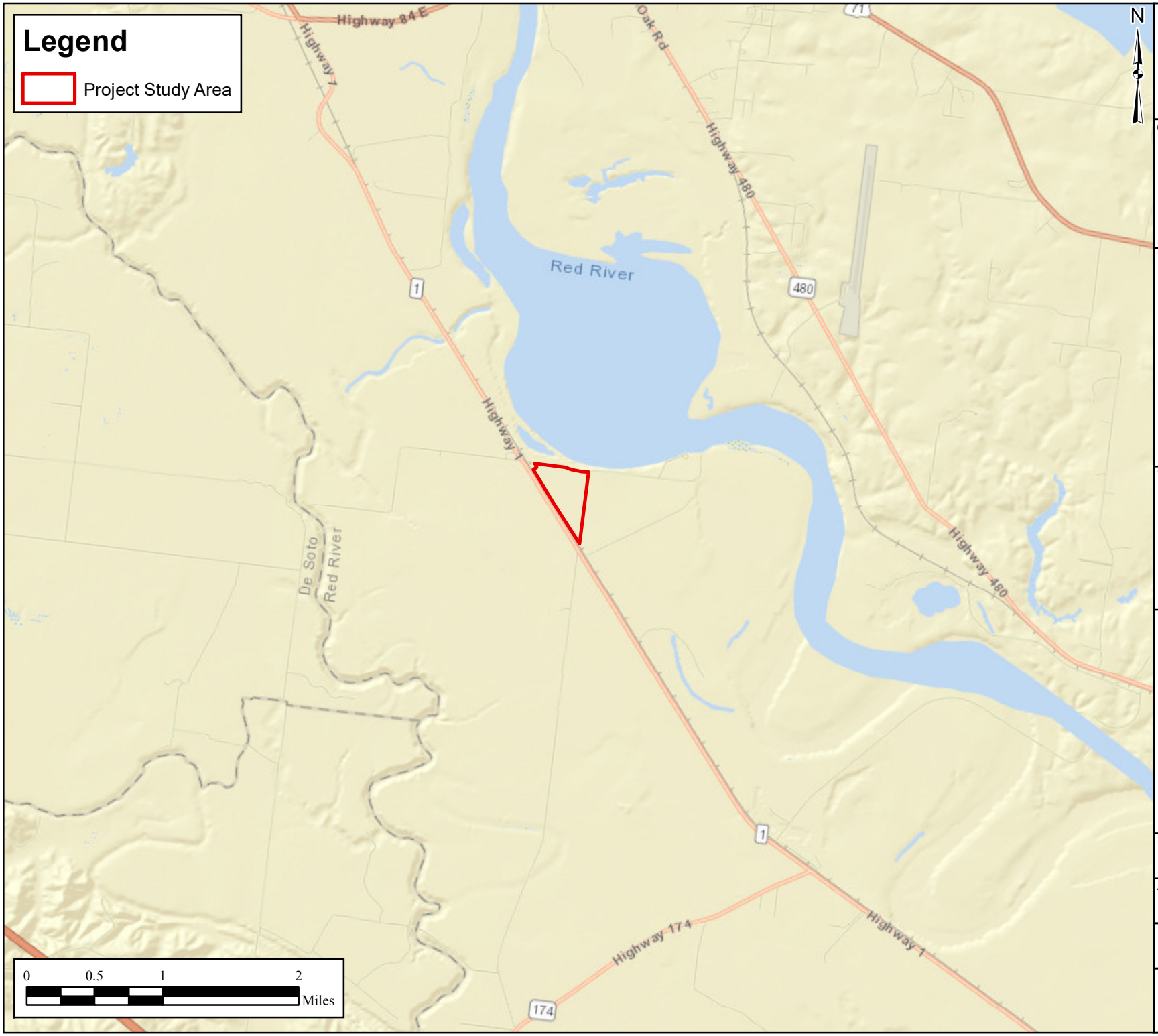
7.0 CONCLUSIONS

One potentially jurisdictional wetland area, totaling approximately 0.24 acre, and two potentially jurisdictional streams, totaling approximately 2,621 LF, were identified and delineated within the PSA. ECS also observed two isolated, potentially non-jurisdictional wetland areas (W2 and W3), totaling approximately 0.28 acre within the PSA. The locations and boundaries of the potentially jurisdictional areas are depicted on the attached Waters of the U.S. Delineation Map (Appendix I, Figure 7).

The findings summarized in this report represent our best professional judgment concerning the presence of potential jurisdictional aquatic resources in the PSA at the time of the study. These findings are only to be considered preliminary and are for planning purposes only. ECS cannot guarantee that field conditions and/or WOTUS boundaries will not change over time.

At the time of issuance of this report, ECS has submitted the findings to the USACE for review of an Approved Jurisdictional Determination and performed the subsequent field visit with the USACE to satisfy the requirements of Section 404 of The Clean Water Act (33 U.S.C. 1344). No earth-disturbing activities should be conducted within the PSA until a USACE Determination has been issued.

Appendix I: Figures



ECS

Client:

north louisiana economic partnership

Project:

RED RIVER PARISH PORT SITE, RIVERPORT DRIVE, HANNA, RED RIVER PARISH, LOUISIANA

Title:

SITE LOCATION MAP

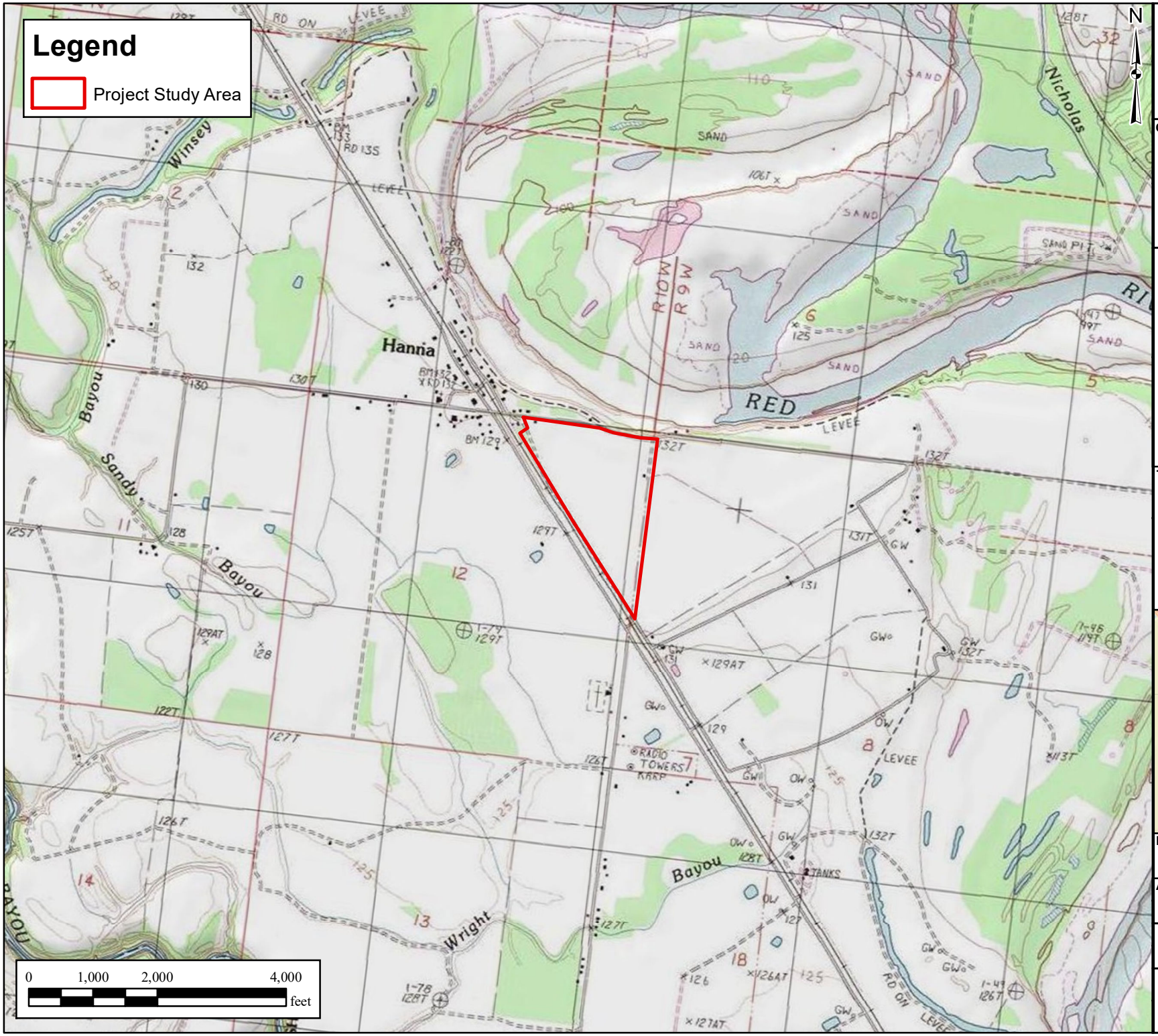
RED RIVER PARISH

Drawn By:	Scale:
BMB	1 " = 1 mile
Approved By:	**Date:**
PMS	12/6/2023

ECS Project No.

49: 21746

FIGURE 1



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Client:

north louisiana economic partnership

Project:

RED RIVER PARISH
PORT SITE
RIVERPORT DRIVE
HANNA, RED RIVER PARISH,
LOUISIANA

Title:

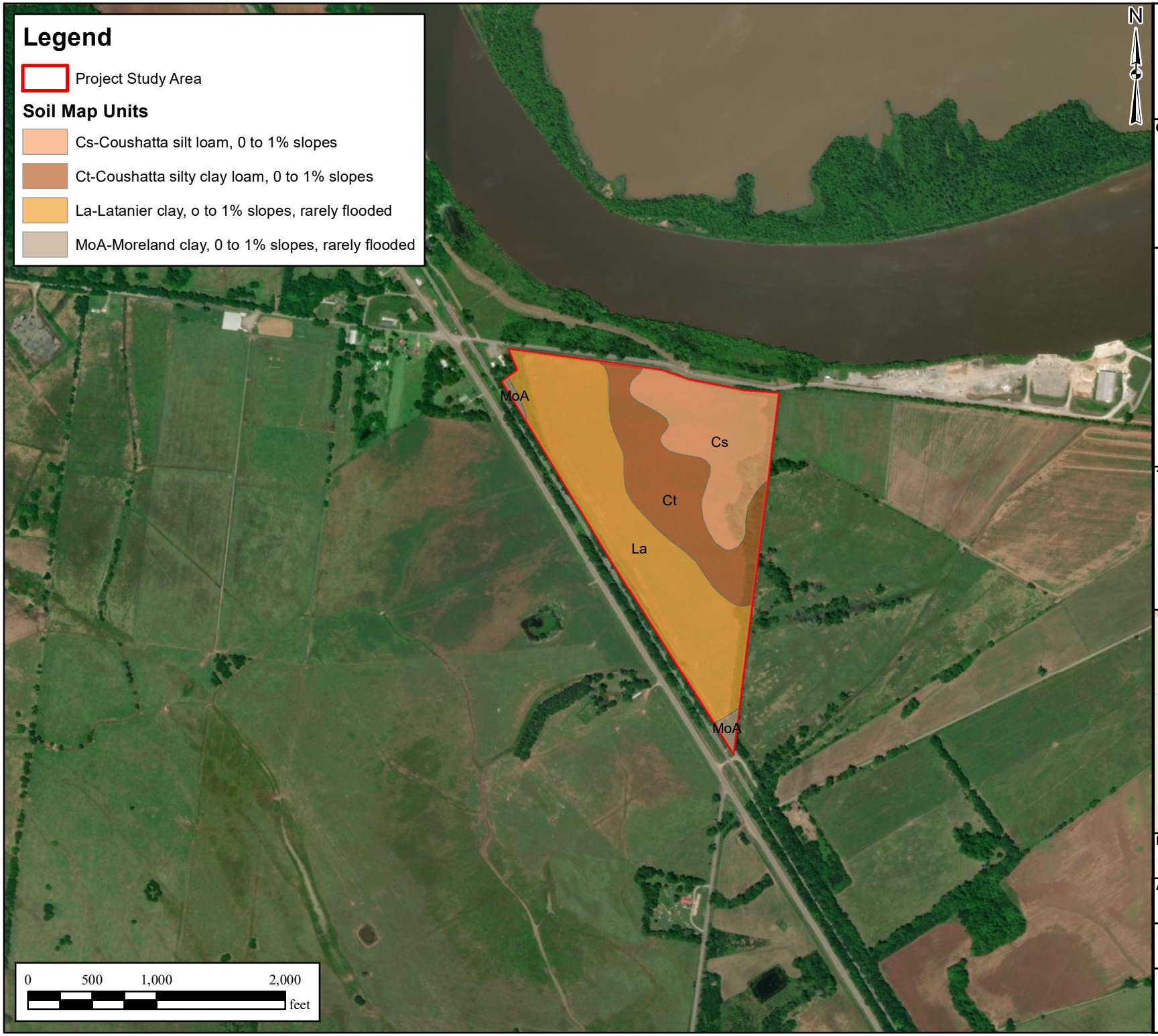
USGS TOPOGRAPHIC MAP
HANNA, LOUISIANA QUADRANGLE
DATED: 1989

PROJECT STUDY AREA

Drawn By:	Scale:
LPJ	1 " = 2,000 '
Approved By:	**Date:**
PMS	11/17/2023

ECS Project No.
49: 21746

FIGURE 2



ECS

Client:

north louisiana economic partnership

Project:

RED RIVER PARISH
PORT SITE
RIVERPORT DRIVE
HANNA, RED RIVER PARISH,
LOUISIANA

Title:

USDA-NRCS SOIL SURVEY MAP

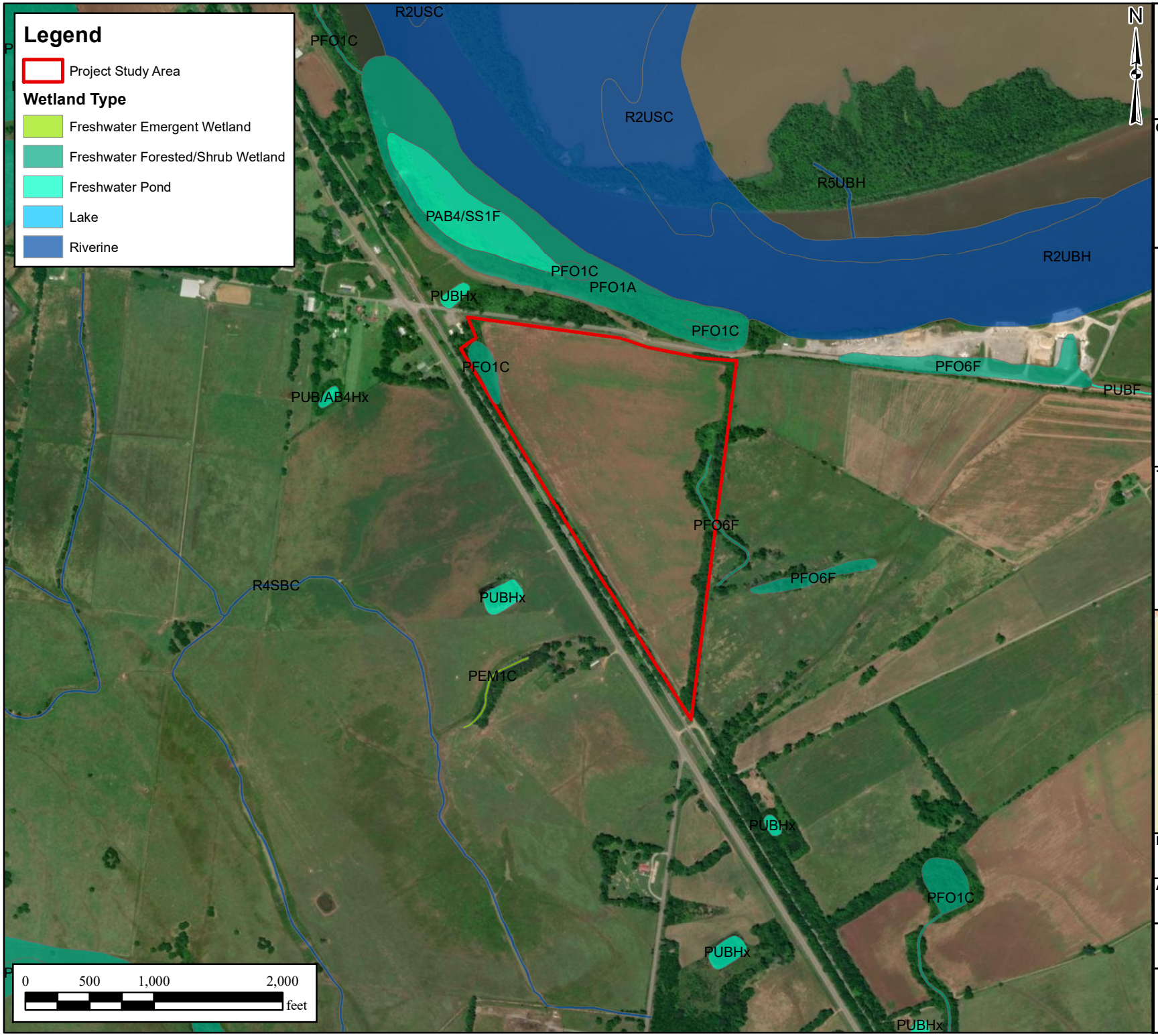
PROJECT STUDY AREA

Drawn By:	Scale:
BMB	1 " = 1,000 '
Approved By:	**Date:**
PMS	12/6/2023

ECS Project No.

49: 21746

FIGURE 3



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north louisiana economic partnership

Project:

RED RIVER PARISH PORT SITE
RIVERPORT DRIVE
HANNA, RED RIVER PARISH,
LOUISIANA

Title:

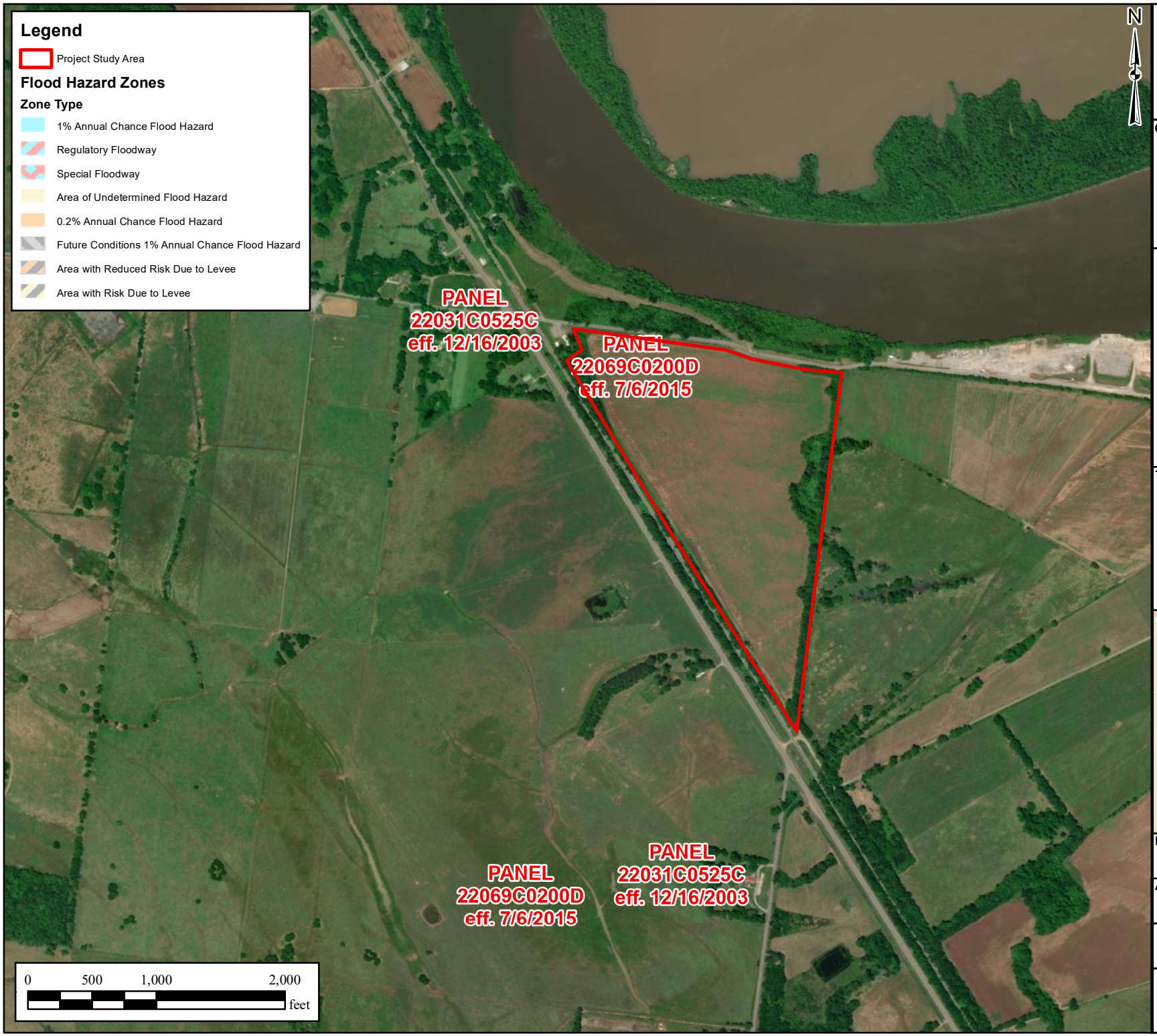
USFWS NATIONAL WETLANDS INVENTORY MAP

Drawn By:	Scale:
BMB	1 " = 1,000 '
Approved By:	**Date:**
PMS	11/17/2023

ECS Project No.

49: 21746

FIGURE 4



ECS

Client:

north louisiana economic partnership

Project:

RED RIVER PARISH
PORT SITE
RIVERPORT DRIVE
HANNA, RED RIVER PARISH,
LOUISIANA

Title:

FEMA FLOOD ZONE HAZARD MAP

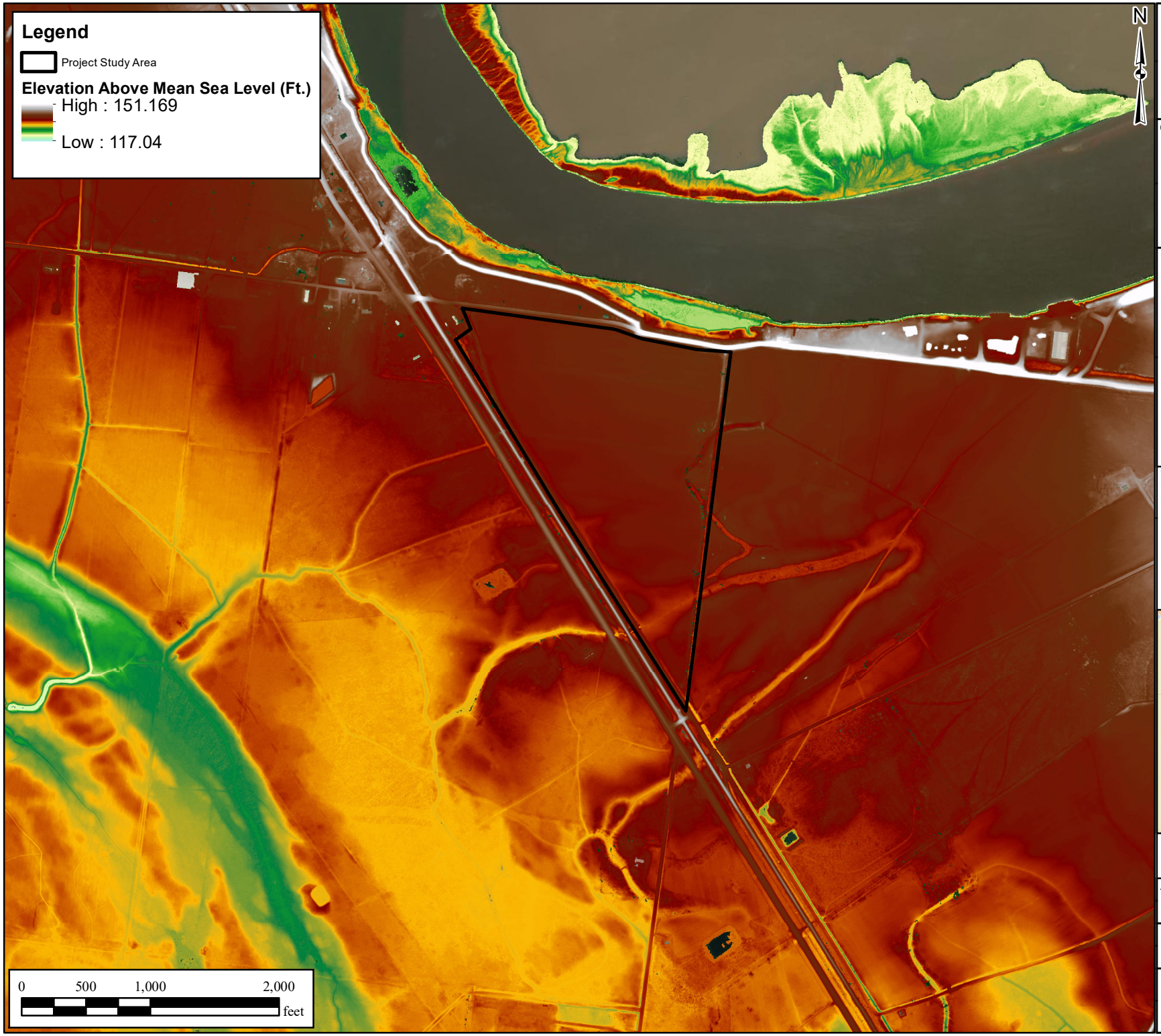
PROJECT STUDY AREA

Drawn By:	Scale:
BMB	1 " = 1,000 '
Approved By:	**Date:**
PMS	12/6/2023

ECS Project No.

49: 21746

FIGURE 5



Client:

north louisiana economic partnership

Project:

RED RIVER PARISH PORT SITE
RIVERPORT DRIVE
HANNA, RED RIVER PARISH,
LOUISIANA

Title:

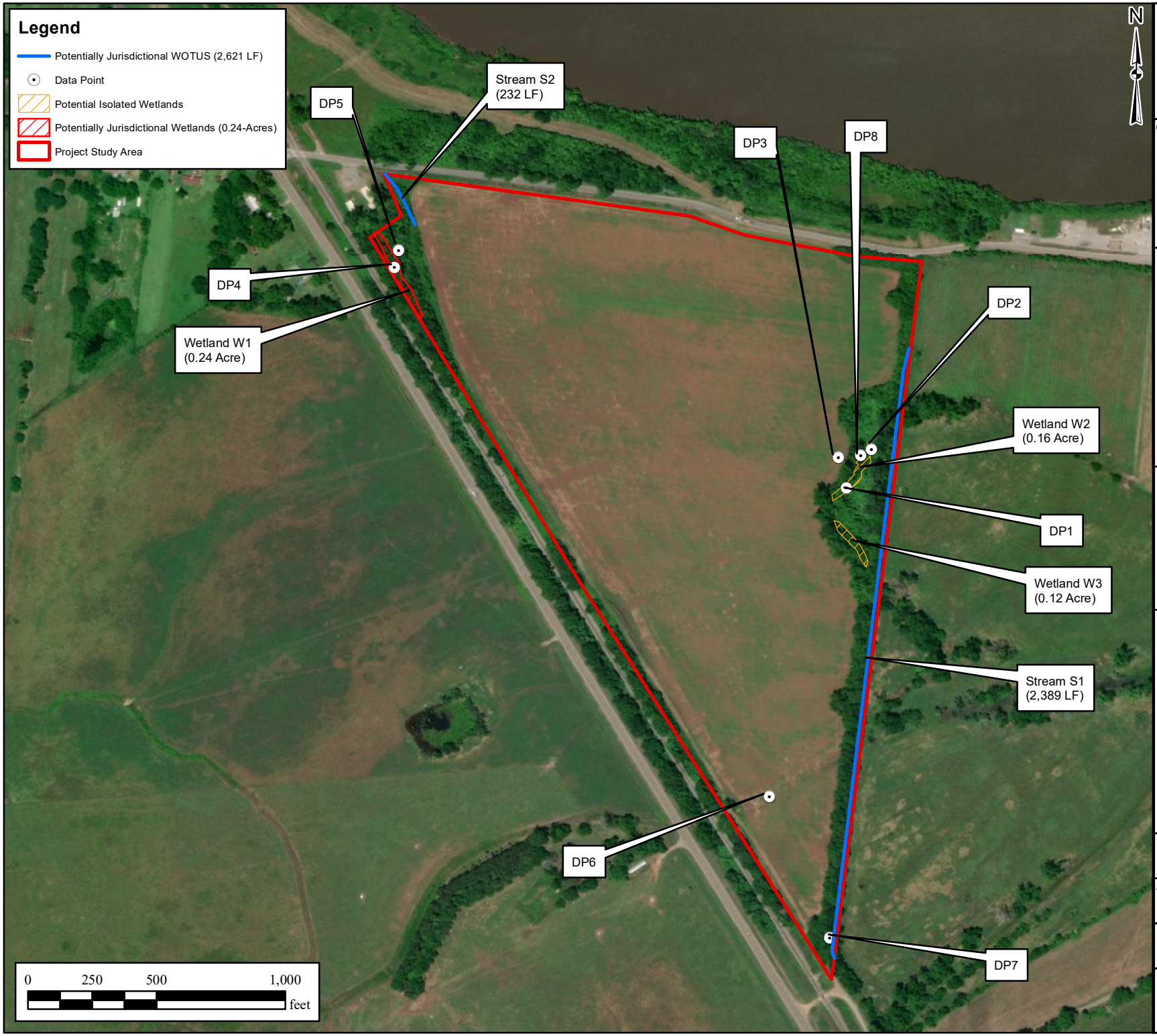
POTENTIAL WATERS OF THE U.S. DELINEATION MAP

Drawn By:	Scale:
BMB	1 " = 1,000 '
Approved By:	**Date:**
PMS	12/6/2023

ECS Project No.

49: 21746

FIGURE 6



Client:

north louisiana economic partnership

Project:

RED RIVER PARISH
PORT SITE
RIVERPORT DRIVE
HANNA, RED RIVER PARISH,
LOUISIANA

Title:

POTENTIAL WATERS OF THE U.S. MAP

NOTES:

1. POTENTIALLY JURISDICITIONAL WATERS OF THE U.S. WERE OBSERVED BY ECS ON NOVEMBER 29, 2023.

2. FINDINGS DEPICTED ON THIS MAP HAVE NOT BEEN VERIFIED BY THE USACE OR LDEQ AND ARE SUBJECT TO CHANGE.

3. THIS MAP SHOULD BE USED FOR PRELIMENARY PLANNING PURPOSES.

Drawn By:	Scale:
BMB	1 " = 500 '
Approved By:	**Date:**
PMS	3/13/2024

ECS Project No.

49: 21746

FIGURE 7

Appendix II: Photographic Log

1 - Soil profile at DP1.

2 - Overview at DP1, facing north.

3 - Overview at DP1, facing east.

4 - Overview at DP1, facing south.

5 - Overview at DP1, facing west.

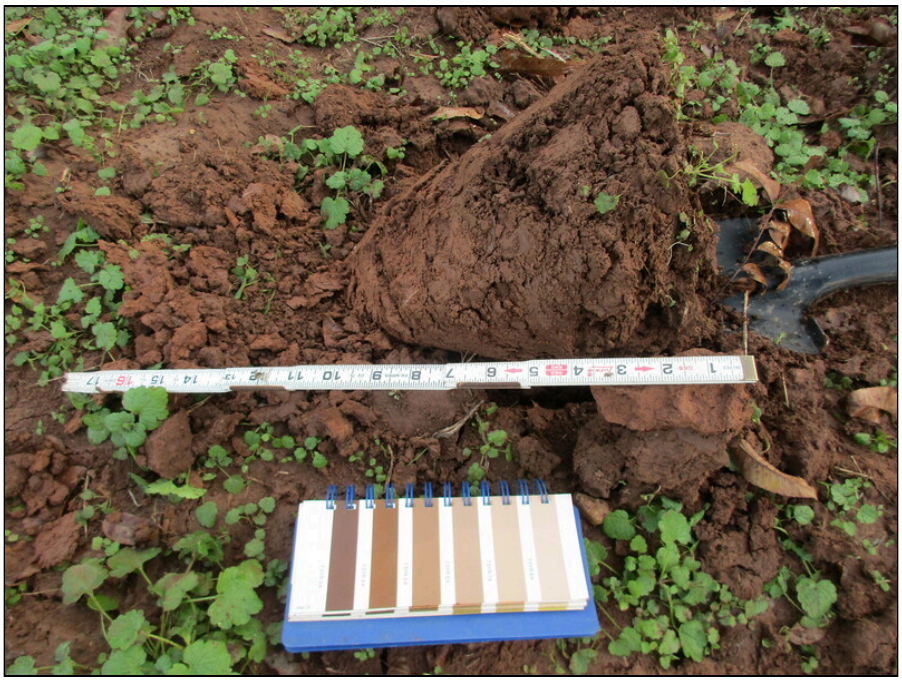
6 - Soil profile at DP2.

7 - Overview of DP2, facing north.

8 - Overview of DP2, facing east.

9 - Overview of DP2, facing south.

10 - Overview of DP2, facing west.



11 - Soil profile at DP3.

12 - Overview of DP3, facing north.

13 - Overview of D3, facing east.

14 - Overview of DP3, facing south.

15 - Overview of DP3, facing west.

16 - Soil profile at DP4.

17 - Overview of DP4, facing north.

18 - Overview of DP4, facing east.

19 - Overview of DP4, facing south.

20 - Overview of DP4, facing west.

21 - Soil profile at DP5.

22 - Overview of DP5, facing north.

23 - Overview of DP5, facing east.

24 - Overview of DP5, facing south.

25 - Overview of DP5, facing west.

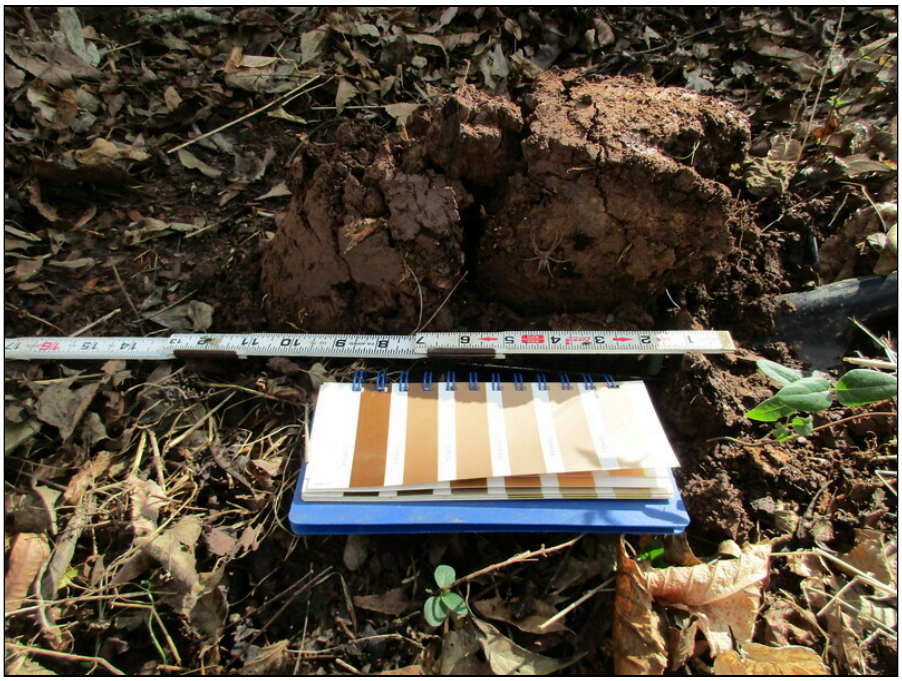
26 - Soil profile at DP6.

27 - Overview of DP6, facing north.

28 - Overview of DP6, facing east.

29 - Overview of DP6, facing south.

30 - Overview of DP6, facing west.



31 - Soil profile at DP7.

32 - Overview of DP7, facing north.

33 - Overview of DP7, facing east.

34 - Overview of DP7, facing south.

35 - Overview of DP7, facing west.

36 - Soil profile at DP8

37 - Overview of DP8, facing north.

38 - Overview of DP8, facing east.

39 - Overview of DP8, facing south.

40 - Overview of DP8, facing west.

41 - Wetland W3, facing southeast

42 - Wetland W3, facing northwest

43 - Overview of Stream S1 on eastern boundary, facing north.

44 - Overview of Stream S1 on eastern boundary, facing south.

Appendix III: USACE Wetland Data Forms and Stream Data Forms

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET - Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-07; the proponent agency is CECW-CO-R

Project/Site: Red River Parish Port | City/County: Hanna / Red River | Sampling Date: 11/29/2023

Applicant/Owner: Louisiana Economic Development | State: LA | Sampling Point: DP1

Investigator(s): C. Schaeffer, B. Bosenberg | Section, Township, Range: Sec12, T11-North, R10

Landform (hillslope, terrace, etc.): hardwoods | Local relief (concave, convex, none): None | Slope (%): <1%

Subregion (LRR or MLRA): LRR-P | Lat: 31°57'30.41"N | Long: 93°20'19.32"W | Datum: NAD83

Soil Map Unit Nam: Cs-Coushatta silt loam, 0-1% slopes | NWI Classification: N/A

Are climatic/hydrologic conditions of the site typical for this time of the year? **No**

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? present? **Yes**

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

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

Hydrophytic vegetation present? Yes Hydric soil present? Yes Indicators of wetland hydrology present? Yes	**Is the Sampled Area within a Wetland? Yes**

Remarks:

Regional drought.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Moss Trim Lines (B16)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Wetland Hydrology Present? Yes

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Photos - Soil:3642, N: 3643, E: 3644, S:3645 W:3646

FAC-Neutral test - 4:1

VEGETATION -- Use scientific names of plants. Sampling Point: DP1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Celtis laevigata*	40	Y	FACW
2 *Carya glabra*	5	N	FACU
3			
4			
5			
6			
7			
8			
	45	= Total Cover	
50% of total cover: 22.5	20% of total cover:	9	

Sapling/Shrub Stratu (Plot size: 30)			
1 *Cornus foemina*	20	Y	FACW
2 *Celtis laevigata*	12	Y	FACW
3 *Ulmus americana*	10	Y	FAC
4 *Carya laciniosa*	8	N	FACW
5			
6			
7			
8			
	50	= Total Cover	
50% of total cover: 25	20% of total cover:	10	

Herb stratum (Plot size: 30)			
1 *Symphyotrichum lateriflorum*	25	Y	FAC
2 *Sanicula canadensis*	15	Y	FACU
3 *Elymus canadensis*	10	N	FAC
4 *Symphyotrichum drummondii*	3	N	FAC
5			
6			
7			
8			
9			
10			
11			
12			
	53	= Total Cover	
50% of total cover: 26.5	20% of total cover:	10.6	

Woody vine stratum (Plot size: 30)			
1 *Campsis radicans*	8	Y	FAC
2 *Toxicodendron radicans*	5	Y	FAC
3 *Brunnichia ovata*	5	Y	FACW
4 *Smilax bona-nox*	3	N	FAC
5			
	21	= Total Cover	
50% of total cover: 10.5	20% of total cover:	4.2	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across all Strata: 9 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 88.89% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	80	x 2 =	160
FAC species	56	x 3 =	168
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column totals	156 (A)		408 (B)

Prevalence Index = B/A = 2.62

Hydrophytic Vegetation Indicators:

- [ ] Rapid test for hydrophytic vegetation
- [X] Dominance test is >50%
- [X] Prevalence index is ≤3.0*
- [ ] Problematic hydrophytic vegetation* (explain)

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

Definitions of Five Vegetation Strata

Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) 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 3.26 ft (1m) tall

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

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes**

Remarks: (If observed, list morphological adaptations

SOIL Sampling Point: DP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-2	7.5 YR 4/4	100					Silty Clay	
2-16	7.5 YR 4/4	90	7.5 YR 4/2	10	D	M	Clay	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomolous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils:

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

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes**

Remarks:

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET - Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-07; the proponent agency is CECW-CO-R

Project/Site: Red River Parish Port | City/County: Hanna / Red River | Sampling Date: 11/29/2023

Applicant/Owner: Louisiana Economic Development | State: LA | Sampling Point: DP2

Investigator(s): C. Schaeffer, B. Bosenberg | Section, Township, Range: Sec12, T11-North, R10

Landform (hillslope, terrace, etc.): hardwoods | Local relief (concave, convex, none): None | Slope (%): <1%

Subregion (LRR or MLRA): LRR-P | Lat: 31°57'32.73"N | Long: 93°20'18.39"W | Datum: NAD83

Soil Map Unit Nam: Cs-Coushatta silt loam, 0-1% slopes | NWI Classification: N/A

Are climatic/hydrologic conditions of the site typical for this time of the year? **No**

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? **Yes**

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

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

Hydrophytic vegetation present? Yes Hydric soil present? No Indicators of wetland hydrology present? No	**Is the Sampled Area within a Wetland? No**

Remarks:

Regional drought.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Moss Trim Lines (B16)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface water present?	Yes ___	No X	Depth (inches):	
Water table present?	Yes ___	No X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes ___	No X	Depth (inches):	

Wetland Hydrology Present? No

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Photos - Soil:3648, N:3649 , E:3650, S:3651 W:3652

FAC-Neutral test - 4:0

VEGETATION -- Use scientific names of plants. Sampling Point: DP2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Carya tomentosa*	25	Y	FAC
2 *Platanus occidentalis*	12	Y	FACW
3 *Acer negundo*	8	N	FAC
4			
5			
6			
7			
8			
	45	= Total Cover	
50% of total cover: 22.5	20% of total cover: 9		

Sapling/Shrub Stratu (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Ligustrum sinense*	8	Y	FAC
2 *Ilex cassine*	8	Y	FACW
3 *Celtis laevigata*	5	Y	FACW
4 *Acer negundo*	4	N	FAC
5			
6			
7			
8			
	25	= Total Cover	
50% of total cover: 12.5	20% of total cover: 5		

Herb stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Carex cherokeensis*	5	Y	FACW
2 *Dichanthelium commutatum*	4	Y	FAC
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
	9	= Total Cover	
50% of total cover: 4.5	20% of total cover: 1.8		

Woody vine stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Toxicodendron radicans*	10	Y	FAC
2 *Campsis radicans*	10	Y	FAC
3 *Smilax bona-nox*	5	N	FAC
4 *Smilax glauca*	5	N	FAC
5 *Smilax rotundifolia*	5	N	FAC
	35	= Total Cover	
50% of total cover: 17.5	20% of total cover: 7		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across all Strata: 9 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	59	x 3 =	177
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	89 (A)		237 (B)

Prevalence Index = B/A = 2.66

Hydrophytic Vegetation Indicators:

- [ ] Rapid test for hydrophytic vegetation
- [X] Dominance test is >50%
- [X] Prevalence index is ≤3.0*
- [ ] Problematic hydrophytic vegetation* (explain)

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

Definitions of Five Vegetation Strata

Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) 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 3.26 ft (1m) tall

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

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes**

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

SOIL Sampling Point: DP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-3	7.5 YR 2.5/2	100					Silty Clay	
3-16	7.5 YR 4/4	95	7.5 YR 4/2	5	D	M	Clay	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomolous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils:

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

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **No**

Remarks:

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET - Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-07; the proponent agency is CECW-CO-R

Project/Site: Red River Parish Port | City/County: Hanna / Red River | Sampling Date: 11/29/2023

Applicant/Owner: Louisiana Economic Development | State: LA | Sampling Point: DP3

Investigator(s): C. Schaeffer, B. Bosenberg | Section, Township, Range: Sec12, T11-North, R10

Landform (hillslope, terrace, etc.): terrace | Local relief (concave, convex, none): None | Slope (%): <1%

Subregion (LRR or MLRA): LRR-P | Lat: 31°57'32.34"N | Long: 93°20'19.97"W | Datum: NAD83

Soil Map Unit Nam: Cs-Coushatta silt loam, 0-1% slopes | NWI Classification: N/A

Are climatic/hydrologic conditions of the site typical for this time of the year? **No**

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? **Yes**

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

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

Hydrophytic vegetation present? No Hydric soil present? No Indicators of wetland hydrology present? No	**Is the Sampled Area within a Wetland? No**

Remarks:

Regional drought.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Moss Trim Lines (B16)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface water present?	Yes ____	No X	Depth (inches):	
Water table present?	Yes ____	No X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes ____	No X	Depth (inches):	

Wetland Hydrology Present? No

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Photos - Soil:3655, N:3656 , E:3657, S:3658 W:3659

FAC-Neutral test - 0:0

VEGETATION -- Use scientific names of plants.

Sampling Point: DP3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Sapling/Shrub Stratu (Plot size: 30)			
1			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Herb stratum (Plot size: 30)			
1 *Lamium amplexicaule*	75	Y	FAC
2 *Glycine max*	2	N	FACU
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
	77 = Total Cover		
50% of total cover: 38.5	20% of total cover: 15.4		

Woody vine stratum (Plot size: 30)			
1			
2			
3			
4			
5			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	75	x 3 =	225
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column totals	77 (A)		233 (B)

Prevalence Index = B/A = 3.03

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- ___ Prevalence index is ≤3.0*
- ___ Problematic hydrophytic vegetation* (explain)

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

Definitions of Five Vegetation Strata

Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) 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 3.26 ft (1m) tall

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

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes**

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

SOIL Sampling Point: DP3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-16	7.5 YR 4/4	100					Clay	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomolous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils:

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

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **No**

Remarks:

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET - Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-07; the proponent agency is CECW-CO-R

Project/Site: Red River Parish Port | City/County: Hanna / Red River | Sampling Date: 11/29/2023

Applicant/Owner: Louisiana Economic Development | State: LA | Sampling Point: DP4

Investigator(s): C. Schaeffer, B. Bosenberg | Section, Township, Range: Sec12, T11-North, R10

Landform (hillslope, terrace, etc.): hardwoods | Local relief (concave, convex, none): concave | Slope (%): <1%

Subregion (LRR or MLRA): LRR-P | Lat: 31°57'36.31"N | Long: 93°20'39.81"W | Datum: NAD83

Soil Map Unit Nam: MoA-Moreland clay, 0-1% slopes, rarely flooded | NWI Classification: PFO1A

Are climatic/hydrologic conditions of the site typical for this time of the year? **No**

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? **Yes**

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

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

Hydrophytic vegetation present? Yes Hydric soil present? Yes Indicators of wetland hydrology present? Yes	**Is the Sampled Area within a Wetland? Yes**

Remarks:

Regional drought.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Moss Trim Lines (B16)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches):
Water table present?	Yes	___	No	X	Depth (inches):
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):

Wetland Hydrology Present? Yes

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Photos - Soil:3663, N:3664 , E:3665, S:3666 W:3667

FAC-Neutral test - 3:1

VEGETATION -- Use scientific names of plants. Sampling Point: DP4

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Celtis laevigata*	50	Y	FACW
2 *Carya illinoinensis*	35	Y	FACU
3			
4			
5			
6			
7			
8			
	85	= Total Cover	
50% of total cover: 42.5	20% of total cover:	17	

Sapling/Shrub Stratu (Plot size: 30)			
1 *Cornus foemina*	25	Y	FACW
2 *Celtis laevigata*	15	Y	FACW
3 *Fraxinus pennsylvanica*	5	N	FACW
4			
5			
6			
7			
8			
	45	= Total Cover	
50% of total cover: 22.5	20% of total cover:	9	

Herb stratum (Plot size: 30)			
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
	0	= Total Cover	
50% of total cover: 0	20% of total cover:	0	

Woody vine stratum (Plot size: 30)			
1 *Smilax bona-nox*	6	Y	FAC
2 *Smilax glauca*	4	Y	FAC
3			
4			
5			
	10	= Total Cover	
50% of total cover: 5	20% of total cover:	2	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across all Strata: 6 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 83.33% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	95	x 2 =	190
FAC species	6	x 3 =	18
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column totals	136 (A)		348 (B)

Prevalence Index = B/A = 2.56

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Problematic hydrophytic vegetation* (explain)

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

Definitions of Five Vegetation Strata

Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) 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 3.26 ft (1m) tall

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

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes**

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

SOIL Sampling Point: DP4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-3	7.5 YR 2.5/1	100					Silty Loam	
3-7	7.5 YR 4/2	80	5 YR 4/6	20	D	M	Clay	
7-16	7.5 YR 3/4	75	5 YR 4/6	25	C	M	Clay	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomolous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils:

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

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes**

Remarks:

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET - Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-07; the proponent agency is CECW-CO-R

Project/Site: Red River Parish Port | City/County: Hanna / Red River | Sampling Date: 11/29/2023

Applicant/Owner: Louisiana Economic Development | State: LA | Sampling Point: DP5

Investigator(s): C. Schaeffer, B. Bosenberg | Section, Township, Range: Sec12, T11-North, R10

Landform (hillslope, terrace, etc.): hardwoods | Local relief (concave, convex, none): None | Slope (%): <1%

Subregion (LRR or MLRA): LRR-P | Lat: 31°57'37.98"N | Long: 93°20'39.41"W | Datum: NAD83

Soil Map Unit Nam: La-Latanier clay, 0-1% slopes, rarely flooded | NWI Classification: N/A

Are climatic/hydrologic conditions of the site typical for this time of the year? **No**

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? **Yes**

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

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

Hydrophytic vegetation present? Yes Hydric soil present? No Indicators of wetland hydrology present? No	**Is the Sampled Area within a Wetland? No**

Remarks:

Regional drought.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Moss Trim Lines (B16)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface water present?	Yes	____	No	X	Depth (inches): ____
Water table present?	Yes	____	No	X	Depth (inches): ____
Saturation present? (includes capillary fringe)	Yes	____	No	X	Depth (inches): ____

Wetland Hydrology Present? No

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Photos - Soil:3668, N:3669 , E:3670, S:3671 W:3672

FAC-Neutral test - 4:0

VEGETATION -- Use scientific names of plants. Sampling Point: DP5

Tree Stratum (Plot size: 30)		Absolute % Cover	Dominant Species	Indicator Staus
1	*Ulmus americana*	35	Y	FAC
2	*Celtis laevigata*	35	Y	FACW
3				
4				
5				
6				
7				
8				
		70	= Total Cover	
	50% of total cover: 35		20% of total cover: 14	

Sapling/Shrub Stratu (Plot size: 30)				
1	*Cornus foemina*	20	Y	FACW
2	*Celtis laevigata*	12	Y	FACW
3	*Acer negundo*	8	N	FAC
4	*Ulmus americana*	5	N	FAC
5				
6				
7				
8				
		45	= Total Cover	
	50% of total cover: 22.5		20% of total cover: 9	

Herb stratum (Plot size: 30)				
1	*Chasmanthium laxum*	25	Y	FACW
2	*Symphyotrichum drummondii*	8	Y	FAC
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
		33	= Total Cover	
	50% of total cover: 16.5		20% of total cover: 6.6	

Woody vine stratum (Plot size: 30)				
1				
2				
3				
4				
5				
		0	= Total Cover	
	50% of total cover: 0		20% of total cover: 0	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across all Strata: 6 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	92	x 2 =	184	
FAC species	56	x 3 =	168	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column totals	148	(A)	352	(B)

Prevalence Index = B/A = 2.38

Hydrophytic Vegetation Indicators:

- [ ] Rapid test for hydrophytic vegetation
- [X] Dominance test is >50%
- [X] Prevalence index is ≤3.0*
- [ ] Problematic hydrophytic vegetation* (explain)

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

Definitions of Five Vegetation Strata

Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) 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 3.26 ft (1m) tall

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

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes**

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

SOIL Sampling Point: DP5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-2	7.5 YR 2.5/2	100					Silty Loam	
2-16	5 YR 5/6	80	5 YR 2.5/2	20	C	M	Clay	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomolous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils:

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

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **No**

Remarks:

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET - Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-07; the proponent agency is CECW-CO-R

Project/Site: Red River Parish Port | City/County: Hanna / Red River | Sampling Date: 11/29/2023

Applicant/Owner: Louisiana Economic Development | State: LA | Sampling Point: DP6

Investigator(s): C. Schaeffer, B. Bosenberg | Section, Township, Range: Sec12, T11-North, R10

Landform (hillslope, terrace, etc.): shallow depression | Local relief (concave, convex, none): None | Slope (%): <1%

Subregion (LRR or MLRA): LRR-P | Lat: 93°20'39.41"W | Long: 93°20'20.89"W | Datum: NAD83

Soil Map Unit Nam: La-Latanier clay, 0-1% slopes, rarely flooded | NWI Classification: N/A

Are climatic/hydrologic conditions of the site typical for this time of the year? **No**

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? **Yes**

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

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

Hydrophytic vegetation present? No Hydric soil present? No Indicators of wetland hydrology present? No	**Is the Sampled Area within a Wetland? No**

Remarks:

Regional drought.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Moss Trim Lines (B16)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface water present?	Yes	____	No	X	Depth (inches): ____
Water table present?	Yes	____	No	X	Depth (inches): ____
Saturation present? (includes capillary fringe)	Yes	____	No	X	Depth (inches): ____

Wetland Hydrology Present? No

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Photos - Soil:3673, N:3674 , E:3675, S:3676 W:3677

FAC-Neutral test - 0:1

VEGETATION -- Use scientific names of plants. Sampling Point: DP6

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Sapling/Shrub Stratu (Plot size: 30)			
1			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Herb stratum (Plot size: 30)			
1 *Lamium amplexicaule*	25	Y	FAC
2 *Glycine max*	10	Y	FACU
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		

Woody vine stratum (Plot size: 30)			
1			
2			
3			
4			
5			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	25	x 3 =	75	
FACU species	10	x 4 =	40	
UPL species	0	x 5 =	0	
Column totals	35	(A)	115	(B)

Prevalence Index = B/A = 3.29

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- ___ Dominance test is >50%
- ___ Prevalence index is ≤3.0*
- ___ Problematic hydrophytic vegetation* (explain)

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

Definitions of Five Vegetation Strata

Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) 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 3.26 ft (1m) tall

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

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? **No**

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

SOIL Sampling Point: DP6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-16	7.5 YR 4/4	100					Clay	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomolous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils:

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

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **No**

Remarks:

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET - Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-07; the proponent agency is CECW-CO-R

Project/Site: Red River Parish Port | City/County: Hanna / Red River | Sampling Date: 11/29/2023

Applicant/Owner: Louisiana Economic Development | State: LA | Sampling Point: DP7

Investigator(s): C. Schaeffer, B. Bosenberg | Section, Township, Range: Sec12, T11-North, R10

Landform (hillslope, terrace, etc.): hardwoods | Local relief (concave, convex, none): None | Slope (%): <1%

Subregion (LRR or MLRA): LRR-P | Lat: 31°57'13.65"N | Long: 93°20'17.33"W | Datum: NAD83

Soil Map Unit Nam: MoA-Moreland clay, 0-1% slopes, rarely flooded | NWI Classification: N/A

Are climatic/hydrologic conditions of the site typical for this time of the year? **No**

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? **Yes**

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

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

Hydrophytic vegetation present? Yes Hydric soil present? No Indicators of wetland hydrology present? No	**Is the Sampled Area within a Wetland? No**

Remarks:

Regional drought.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Moss Trim Lines (B16)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface water present?	Yes ___	No X	Depth (inches):	
Water table present?	Yes ___	No X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes ___	No X	Depth (inches):	

Wetland Hydrology Present? No

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Photos - Soil:3678, N:3679 , E:3680, S:3681 W:3682

FAC-Neutral test - 3:1

VEGETATION -- Use scientific names of plants. Sampling Point: DP7

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Celtis laevigata*	40	Y	FACW
2 *Carya illinoinensis*	35	Y	FACU
3 *Acer negundo*	15	N	FAC
4			
5			
6			
7			
8			
	90	= Total Cover	
50% of total cover: 45	20% of total cover: 18		

Sapling/Shrub Stratu (Plot size: 30)			
1 *Celtis laevigata*	25	Y	FACW
2 *Cornus foemina*	12	Y	FACW
3 *Ilex cassine*	10	N	FACW
4 *Ligustrum sinense*	5	N	FAC
5 *Carya illinoinensis*	5	N	FACU
6			
7			
8			
	57	= Total Cover	
50% of total cover: 28.5	20% of total cover: 11.4		

Herb stratum (Plot size: 30)			
1 *Elymus virginicus*	35	Y	FAC
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
	35	= Total Cover	
50% of total cover: 17.5	20% of total cover: 7		

Woody vine stratum (Plot size: 30)			
1 *Smilax bona-nox*	20	Y	FAC
2 *Lonicera japonica*	8	Y	FAC
3 *Smilax rotundifolia*	5	N	FAC
4 *Rubus trivialis*	5	N	FACU
5			
	38	= Total Cover	
50% of total cover: 19	20% of total cover: 7.6		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across all Strata: 7 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 85.71% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	87	x 2 =	174
FAC species	75	x 3 =	225
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column totals	202 (A)		559 (B)

Prevalence Index = B/A = 2.77

Hydrophytic Vegetation Indicators:

- ___ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- X Prevalence index is ≤3.0*
- ___ Problematic hydrophytic vegetation* (explain)

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

Definitions of Five Vegetation Strata

Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) 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 3.26 ft (1m) tall

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

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes**

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

SOIL Sampling Point: DP7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-4	7.5 YR 2.5/2	100						
4-16	7.5 YR 4/4	90	7.5 YR 4/2	10	D	M	Clay	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomolous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils:

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

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **No**

Remarks:

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET - Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-07; the proponent agency is CECW-CO-R

Project/Site: Red River Parish Port | City/County: Hanna / Red River | Sampling Date: 3/12/2024

Applicant/Owner: Louisiana Economic Development | State: LA | Sampling Point: DP8

Investigator(s): C. Schaeffer, B. Bosenberg | Section, Township, Range: Sec12, T11-North, R10W

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): None | Slope (%): <1%

Subregion (LRR or MLRA): LRR-P | Lat: 31.958537° | Long: -93.338758° | Datum: NAD83

Soil Map Unit Nam: | NWI Classification: N/A

Are climatic/hydrologic conditions of the site typical for this time of the year? **No**

Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? present? **Yes**

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

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

Hydrophytic vegetation present? Yes Hydric soil present? No Indicators of wetland hydrology present? No	**Is the Sampled Area within a Wetland? No**

Remarks:

Regional drought.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Moss Trim Lines (B16)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface water present?	Yes ___	No X	Depth (inches):	
Water table present?	Yes ___	No X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes ___	No X	Depth (inches):	

Wetland Hydrology Present? No

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Photos - Soil:, N: , E:, S: W:
FAC-Neutral test -

VEGETATION -- Use scientific names of plants. Sampling Point: DP8

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Celtis laevigata*	30	Y	FACW
2 *Populus deltoides*	20	Y	FAC
3 *Acer negundo*	18	Y	FAC
4			
5			
6			
7			
8			
	68	= Total Cover	
50% of total cover: 34	20% of total cover:	13.6	

Sapling/Shrub Stratu (Plot size: 30)			
1 *Acer negundo*	10	Y	FAC
2 *Celtis laevigata*	10	Y	FACW
3 *cornus amomum*	5	Y	FACW
4			
5			
6			
7			
8			
	25	= Total Cover	
50% of total cover: 12.5	20% of total cover:	5	

Herb stratum (Plot size: 30)			
1 *Sanicula canadensis*	30	Y	FACU
2 *Sambucus nigra*	25	Y	FACW
3 *Chaerophyllum tainturieri*	25	Y	FAC
4 *Chasmanthium laxum*	20	N	FACW
5 *Carex cherokeensis*	15	N	FACW
6 *Ambrosia trifida*	10	N	FAC
7 *Taraxacum officinale*	8	N	FACU
8 *galium tinctorium*	5	N	FACW
9			
10			
11			
12			
	138	= Total Cover	
50% of total cover: 69	20% of total cover:	27.6	

Woody vine stratum (Plot size: 30)			
1 *Vicia sativa*	20	Y	FACU
2 *Smilax rotundifolia*	8	Y	FAC
3 *Toxicodendron radicans*	8	Y	FAC
4			
5			
	36	= Total Cover	
50% of total cover: 18	20% of total cover:	7.2	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 10 (A)

Total Number of Dominant Species Across all Strata: 12 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 83.33% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	110	x 2 =	220
FAC species	83	x 3 =	249
FACU species	58	x 4 =	232
UPL species	0	x 5 =	0
Column totals	251 (A)		701 (B)

Prevalence Index = B/A = 2.79

Hydrophytic Vegetation Indicators:

- [ ] Rapid test for hydrophytic vegetation
- [X] Dominance test is >50%
- [X] Prevalence index is ≤3.0*
- [ ] Problematic hydrophytic vegetation* (explain)

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

Definitions of Five Vegetation Strata

Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) 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 3.26 ft (1m) tall

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

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes**

Remarks: (If observed, list morphological adaptations

SOIL Sampling Point: DP8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-4	5YR 3/4	100					Silty loam	
4-16	5YR 4/4	100					Silty clay	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomolous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils:

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

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **No**

Remarks: