GREENFIELD
LOUISIANA, LLC

NATURAL RESOURCES

NATURAL RESOURCES AT THE GREENFIELD SITE

Greenfield has surveyed and assessed impacts to natural resources from development of the project. The surveys completed include:

- Wetlands Delineation
- Threatened and Endangered Species Assessment and Consultation
- Coastal Resources Impact Review
- Coastal Protection and Restoration Authority Master Plan Compliance
- Drainage Assessment and Storm Water Modeling

WETLANDS

Wetlands are areas where water covers the soil or is present either at or near the surface of the soil all year or for varying periods of time. Water saturation (hydrology) largely determines how the soil develops and the types of plant and animal communities living in and on the soil. Wetlands may support both aquatic and terrestrial species. The prolonged presence of water creates conditions that favor the growth of specially adapted plants (hydrophytes) and promote the development of characteristic wetland (hydric) soils.

The majority of the wetlands found at the Wallace Grain Export Facility site are classified as Bottomland Hardwoods Swamp. They are deciduous forested wetlands, made up of different species of Gum (*Nyssa sp.*) and Oak (*Quercus sp.*) and Bald Cypress (*Taxodium distichum*), which have the ability to survive in areas that are either seasonally flooded or covered with water much of the year.

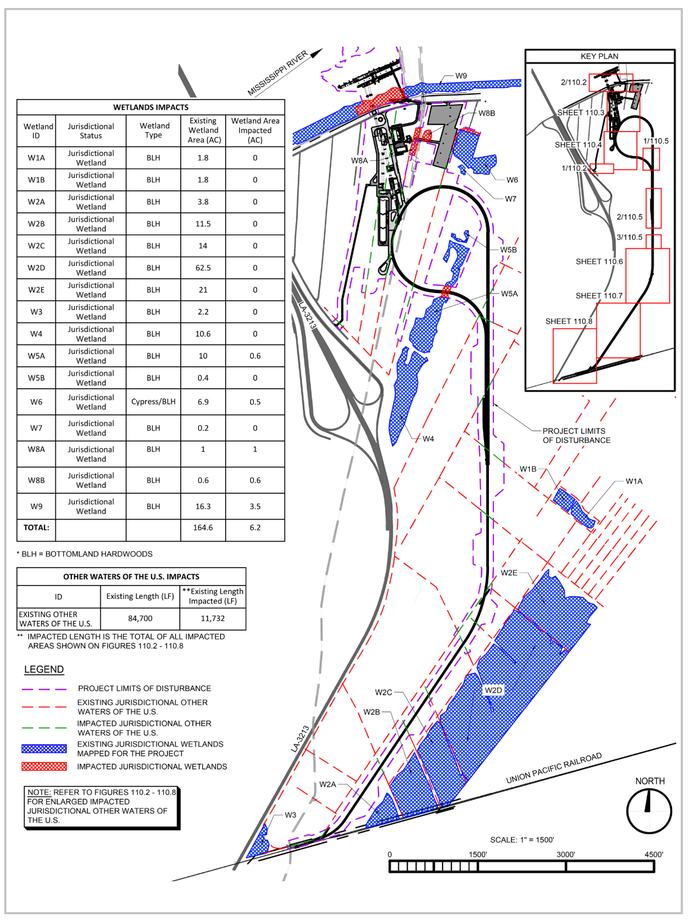
The swamps at the Wallace Facility site are the remnant headwaters of the Lac des Allemands system, which has been disturbed by past agricultural development. While these wetlands were previously connected to this drainage system through overland sheet flow of flood waters, the area has been ditched and drained for several hundred years to allow for agriculture. However, hydrologic connects still exist through the many ditches and drainage pathways maintained by the farmers over the years.

At the Wallace Facility site, 164.6 acres of Bottomland Hardwoods have been identified. These wetland systems are concentrated in three areas of the site, which include the Mississippi Riverfront, the center of the site adjacent Louisiana State Highway 3213, and the backswamp in the southern portion of the site adjacent the Union Pacific Railroad.

Development of the Wallace Facility will impact approximately 6.2 acres of wetlands. The majority of these impacts will occur along the Mississippi Riverfront, within the river batture system, which has been previously impacted by levee construction and revetment installation. The site layout is designed to minimize impacts to wetlands and the project plan has been developed specifically to avoid any impact to the back swamp that flows into Lac des Allemands.

LISTED AND PROTECTED SPECIES

Biologists surveyed the area to identify any listed or protected species. ***Project development is not anticipated to impact any threatened or endangered species.*** While not protected under the endangered species act, the bald eagle (*Haliaeetus leucocephalus*) is afforded protection under the Bald and Golden Eagle Protection Act which requires nesting sites be protected. There are no documented eagle nests within the project vicinity.



WETLANDS IMPACTS

Wetland ID	Jurisdictional Status	Wetland Type	Existing Wetland Area (AC)	Wetland Area Impacted (AC)
W1A	Jurisdictional Wetland	BLH	1.8	0
W1B	Jurisdictional Wetland	BLH	1.8	0
W2A	Jurisdictional Wetland	BLH	3.8	0
W2B	Jurisdictional Wetland	BLH	11.5	0
W2C	Jurisdictional Wetland	BLH	14	0
W2D	Jurisdictional Wetland	BLH	62.5	0
W2E	Jurisdictional Wetland	BLH	21	0
W3	Jurisdictional Wetland	BLH	2.2	0
W4	Jurisdictional Wetland	BLH	10.6	0
W5A	Jurisdictional Wetland	BLH	10	0.6
W5B	Jurisdictional Wetland	BLH	0.4	0
W6	Jurisdictional Wetland	Cypress/BLH	6.9	0.5
W7	Jurisdictional Wetland	BLH	0.2	0
W8A	Jurisdictional Wetland	BLH	1	1
W8B	Jurisdictional Wetland	BLH	0.6	0.6
W9	Jurisdictional Wetland	BLH	16.3	3.5
TOTAL:			164.6	6.2

* BLH = BOTTOMLAND HARDWOODS

OTHER WATERS OF THE U.S. IMPACTS

ID	Existing Length (LF)	**Existing Length Impacted (LF)
EXISTING OTHER WATERS OF THE U.S.	84,700	11,732

** IMPACTED LENGTH IS THE TOTAL OF ALL IMPACTED AREAS SHOWN ON FIGURES 110.2 - 110.8


Bottomland Hardwoods Swamp

ENVIRONMENTAL PERMITS

Greenfield will obtain all necessary federal, state, and local environmental approvals for the proposed project, including the following key permits:

Agency	Permit/Certification	Details	Status
Louisiana Department of Environmental Quality (LDEQ)	Air Permit	The project is subject to a minor source permit under the Clean Air Act Prevention of Significant Deterioration (PSD)/New Source Review/Title V program.	LDEQ issued the permit on August 3, 2020.
	Clean Water Act Section 401 Water Quality Certification	LDEQ is the state delegate with the authority to issue this certification.	This certification is required for the Department of the Army Permit and is currently under review.
U.S. Environmental Protection Agency (EPA)	Construction and Operational Storm Water Permits	These permits are required to be in compliance with the EPA's National Pollutant Discharge Elimination System program prior to breaking ground and facility operation.	These applications are under development and the project will comply with all storm water discharge permit requirements.
U.S. Army Corps of Engineers (USACE)	Department of the Army Permit	The project is subject to Clean Water Act regulations due to the occurrence of wetlands and waters of the U.S. that may be affected by the proposed development. This includes waters protected under Section 10 of the Rivers and Harbors Act, and wetlands and other waters protected under Section 404 of the Clean Water Act.	This permit is under review.
Louisiana Department of Natural Resources (LDNR)	Coastal Use Permit	The project was reviewed for impacts to the Louisiana Coastal Zone. The LDNR determined that the majority of the project is located at elevations over five feet above sea level and therefore not considered under Coastal Use jurisdiction.	The LDNR issued an exemption from Coastal Use Permitting for the project on December 17, 2021.
St. John the Baptist Parish	Local Commercial and Building Permits		Permits will be obtained from the Parish as necessary.

STORM WATER MANAGEMENT AND DRAINAGE

Mississippi riverfront batture

Herbaceous wetland

Agricultural field

Storm water runoff is generated from rain events that flow over land or impervious surfaces (such as paved streets, parking lots, and buildings) which does not soak into the ground. The runoff picks up pollutants like trash, chemicals, oils, and dirt/sediment that can harm rivers, streams, lakes, and coastal waters. To protect these resources, communities, construction companies, industries, and others, use storm water controls, known as best management practices. Implementation of these practices can filter out pollutants and prevent pollution by controlling it at its source.

As part of the permitting effort and to control pollutants and excess volume of storm water from leaving the site, Greenfield engineers performed a detailed storm water analysis that assessed the existing drainage conditions at the site, as well as how the proposed conditions at the site would affect surficial storm water flow. This analysis involved using a Hydro-Computer Aid Design Storm Water Modeling Tool, a topographic survey performed by a Louisiana licensed surveyor, and geotechnical data collected in the field by licensed professional geologists.

According to the detailed surveys and geological data collected on the site, drainage ultimately flows under the railroad toward Lac des Allemands. The proposed site modification will include the addition of impervious surface. Drainage on the site is proposed to continue to be conveyed by ditches and culverts, but the proposed ditches will be wider than existing, and will be graded to allow for storm water detention upstream of the discharge point culverts.

We used the Hydro-Computer Aid Design Water Modeling Tool to evaluate storm water impact. To ensure that important environmental considerations are taken into account, we use that tool to estimate the impact of a 100-year storm event (a storm of such significance that it only happens every 100 years). This model shows that:

- Site runoff (in cubic feet per second) will be **reduced by as much as 2.2 percent**.
- Total-suspended solids (waterborne particles that exceed 2 microns in size and are an indicator of potential pollution) will be **reduced by as much as 11.9 percent** in the post development condition.

By controlling drainage volume and on-site retention time of storm water, the Greenfield engineering team has developed a storm water plan that will improve downstream water quality from its current condition.