

3.9 Traffic

3.9.1 Regulatory

The Louisiana Department of Transportation and Development, as an exercise of the police power of this state, shall supervise and regulate all traffic on all highways within the state highway system and shall have the authority in its discretion to supervise and regulate all traffic on all highways within this state; promulgate rules and regulations and the general laws relative to highways and their construction, maintenance, and use, and the operation of vehicles and pedestrians thereon; and investigate the highways by utilizing surveys, traffic counts, etc., and effect methods and practices thereto, as in its judgment and experience it deems advisable (Louisiana Department of Transportation and Development, 2012).

The driver of a vehicle upon a two-lane highway or street shall not overtake and pass another vehicle during posted hours within a school zone (Louisiana Department of Transportation and Development, 2012).

3.9.1 Existing Conditions

The proposed project site is located on Grand Caillou Road and south of the intersection of east Woodlawn Street in Houma, LA. Entrance onto the site is from Grand Caillou Road, which provides direct vehicular site access and egress. The original location is located on Grand Caillou Road north of Badou Drive and South of Murray Court in Dulac, LA. Entrance onto the site is from Grand Caillou Road, which provides direct vehicular site access and egress.

3.9.2 Environmental Impacts

Alternative 1 – No Action: Implementation of the no action alternative would not adversely impact traffic in the area.

Alternative 2 – Reconstruction in Original Location with Elevation: Reconstruction of Building C in substantially its original footprint would influence traffic by increasing the number of heavy vehicles on the adjoining roadways during construction. Construction traffic shall be monitored for potential traffic incidents and suitable traffic control measures must be taken by the City of Dulac and the onsite workers as needed. Grand Caillou Road would experience a permanent increase in traffic during peak school traffic hours. Traffic would return to near Gustav/Ike density within proximity of the original site.

Alternative 3 – Reconstruction at an Alternate Location - Preferred Alternative: The proposed action would influence traffic by increasing the number of heavy vehicles on the adjoining roadways during construction. Construction traffic shall be monitored for potential traffic incidents and suitable traffic control measures must be taken by the City of Houma and the onsite workers as needed. Grand Caillou Road would experience a permanent increase in traffic during peak school traffic hours.

3.10 Hazardous Materials and Waste

3.10.1 Regulatory

The management of hazardous materials is regulated under various federal and state environmental and transportation laws and regulations, including the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Emergency Planning and Community Right-to-Know Act, the Hazardous Materials Transportation Act (HMTA), and the Louisiana Voluntary Investigation and Remedial Action (LVIRA) statute. The purpose of the regulatory requirements set forth under these laws is to ensure the protection of human health and the environment through proper management (identification, use, storage, treatment, transport, and disposal) of these materials. Some of these laws provide for the investigation and cleanup of sites that have already been contaminated by releases of hazardous materials, wastes, or substances.

3.10.2 Existing Conditions

A Louisiana Department of Environmental Quality (LDEQ) Environmental Document Management System (EDMS) database search prepared for the proposed project site and the original location revealed that there are no Louisiana Volunteer Remedial Program (VRP)/Brownfield sites located on or near either site (EDMS 2012). EDMS indicated that K&B Machine Works (adjoins the southwest proposed location across Grand Caillou Road) was issued a Conveyance Notification in 1997 for petroleum and heavy metals. This was in place because these Chemicals of Concern exceeded Risk Evaluation and Corrective Action Program (RECAP) exposure standards protective of exposure in a non-industrial scenario. The Conveyance Notification shows that the exposure was confined to the adjoining property and compliance was achieved on 12/30/98 (Leaaf I 2010). There is significant oil and gas activity near the original and proposed site locations. However, no oil and gas wells appear to be close enough to the proposed location to have any impact on the proposed property (Leaaf I 2010). A search of the Louisiana Department of Environmental Quality (LDEQ) Leaking Underground Storage Tank (LUST) online database revealed no recorded LUST sites within 0.25 miles of either site (LDEQ 2012).

According to a 2010 Phase I Environmental Site Assessment (ESA) Report, herbicides were used on the proposed project site within the last year; however, only 10% of the chemicals remain in soil after 60 days when applied properly (Leaaf 2010). A 2005 Phase I ESA identified the use of Agent Orange (toxic herbicide) as a Recognized Environmental Concern due to use as an herbicide during the 1970's; however, according to a 2010 interview with the Assistant Director of Environment at the Louisiana Department of Agriculture and Forestry, the product used was Silvex, and was probably mistaken for Agent Orange because Agent Orange is labeled 2,4,5-T, and Silvex is labeled 2,4,5-TP (Leaaf I 2010). The 2010 Phase I ESA concluded that there is no evidence of Recognized Environmental Conditions (REC's) connected to the proposed location (Leaaf I 2010).

Despite the lack of any REC's identified in a 2010 Phase I ESA report, further analysis at the proposed location in the form of a Phase II ESA was considered appropriate due to the proposed

location's history of agricultural chemicals and the possibility of future use as a school facility (Leaaf II 2010). The purpose of the Phase II ESA was to investigate the possible continuing impact of the historic use of agricultural chemicals and to quantify those chemicals that are of concern to regulatory agencies (Leaaf II 2010). The Phase II ESA report concluded that no herbicides and pesticides analyzed were above the (LDEQ RECAP) Screening Standards (SS) or the USEPA Regional Screening Levels (RSL) protective of exposure in a non-industrial setting and no pesticides or herbicides analyzed pose a risk to future occupants of the site Leaaf II 2010). Two herbicides, 2-methyl-4-chlorophenoxyacetic acid (MCPA) and methylchlorophenoxypropionic acid (MCPP) exceed the SS or RSL protective of groundwater (Leaaf II 2010). However, Synthetic Precipitation Leaching Procedure (SPLP) analysis of the sample exhibiting the highest total concentrations showed that leachable concentrations were not detected, and are of no further concern (Leaaf II 2010).

3.10.3 Environmental Impacts

Alternative 1 – No Action: Implementation of the no action alternative would not generate hazardous materials and waste.

Alternative 2 – Reconstruction in Original Location with Elevation: Findings indicate that no hazardous materials, wastes, or substances have been identified at the original site. If hazardous constituents are unexpectedly encountered in the project area during the proposed construction operations, appropriate measures for the proper assessment, remediation and management of the contamination shall be initiated in accordance with applicable federal, state, and local rules and regulations.

Construction may involve the use of hazardous materials (*e.g.*, petroleum products, cement, caustics, acids, solvents, paints, electronic components, pesticides/herbicides and fertilizers, treated timber) and may result in the generation of small volumes of hazardous wastes. Best management practices and appropriate measures to prevent, minimize, and control spills of hazardous materials shall be taken, and any hazardous and non-hazardous wastes generated shall be disposed of in accordance with applicable federal, state, and local requirements.

Alternative 3 – Reconstruction at an Alternate Location - Proposed Action: A Phase II ESA was conducted due to the proposed location's history of agricultural chemicals and the possibility of future use as a school facility (Leaaf II 2010). Per the Phase II ESA no release was detected that would endanger future occupants of the property (Leaaf II 2010).

If other hazardous constituents are unexpectedly encountered in the project area during the proposed construction operations, appropriate measures for the proper assessment, remediation and management of the contamination shall be initiated in accordance with applicable federal, state, and local rules and regulations.

Project construction may involve the use of hazardous materials and may result in the generation of small volumes of hazardous wastes. Appropriate measures to prevent, minimize, and control spills of hazardous materials shall be taken, and any hazardous and non-hazardous wastes

generated shall be disposed of in accordance with applicable federal, state, and local requirements.

4.0 CUMULATIVE IMPACTS

According to the Council on Environmental Quality (CEQ) regulations, cumulative impacts represent the “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

The impact of Hurricanes Gustav and Ike floodwaters devastated the southeastern coastal region of Louisiana. There are numerous other projects to repair buildings, roads, recreational facilities, and public utilities to pre-disaster conditions that include upgrades to codes and standards surrounding the contributing projects site. The area is also undergoing restorations and/or repairs using non-FEMA funding.

The cumulative impact to the natural resources and socio-economics from the proposed action is unknown at this time. However, the proposed relocation may reduce environmental risk since the Grand Caillou Middle School will be relocated to an area further inland, less flood-prone, and closer to the shifting population which it serves.

5.0 CONDITIONS AND MITIGATION MEASURES

Based upon the studies, reviews and consultations undertaken in this environmental assessment, several conditions and mitigation measures must be taken by the applicant prior to and during proposed project implementation.

- The applicant must follow all applicable local, state, and federal laws, regulations and requirements and obtain and comply with all required permits and approvals prior to initiating work.
- The Applicant is responsible for coordinating with and obtaining any required Section 401 and Section 404 Permit(s) from The United States Army Corps of Engineers (USACE) prior to initiating work. All coordination pertaining to these activities should be documented and copies forwarded to the State and FEMA as part of the permanent project files.
- FEMA Public Assistance grant funded projects carried out in the floodplain or affecting the floodplain must be coordinated with the local floodplain administrator for a floodplain development permit and the action must be undertaken in compliance with relevant, applicable and required local codes and standards and thereby, will reduce the risk of future flood loss, minimize the impacts of floods on safety, health, and welfare, and preserve and possibly restore beneficial floodplain values as required by Executive

Order 11988. The original location is within an “AE” Zone, EL 13, per Preliminary Digital Flood Insurance Rate Map (DFIRM) Panel #22109C0450 E, dated, 06/30/08. The proposed project site is located within an “AE” Zone, EL 10, per Preliminary Digital Flood Insurance Rate Map (DFIRM) Panel #22109C0275 E, dated, 06/30/08. As per 44 CFR 9.11 (d)(9), mitigation or minimization standards must be applied, where possible. The replacement of building contents, materials, and equipment (mechanical & electrical) should be, where possible, wet or dry-proofed, elevated, or relocated to or above the Preliminary DFIRM Elevation Maps.

- If during the course of work, archaeological artifacts (prehistoric or historic) or human remains are discovered, the applicant shall stop work in the vicinity of the discovery and take all reasonable measures to avoid or minimize harm to the finds. The applicant shall inform their Public Assistance (PA) contacts at FEMA, who will in turn contact FEMA Historic Preservation (HP) staff. The applicant will not proceed with work until FEMA HP completes consultation with the SHPO. In addition, if unmarked graves are present, compliance with the Louisiana Unmarked Human Burial Sites Preservation Act (R.S. 8:671 et seq.) is required. The applicant shall notify the law enforcement agency of the jurisdiction where the remains are located within twenty-four hours of the discovery. The applicant shall also notify FEMA and the Louisiana Division of Archaeology at 225-342-8170 within seventy-two hours of the discovery. Failure to comply with these stipulations may jeopardize receipt of FEMA funding.
- Fill or borrow material used must be sourced from sites that do not contain any buried cultural materials (*i.e.*, wells, cisterns, foundations, basements, prehistoric Indian artifacts, human burials, and the like). If during the course of work, archaeological artifacts (prehistoric or historic) or human remains are discovered, Terrebonne Parish School District and/or its contractors must immediately stop work in the vicinity of the discovery and take all reasonable measures to avoid or minimize harm to the finds. The Applicant and GOHSEP must inform the FEMA Public Assistance program, who would in turn contact the FEMA Historic Preservation staff. The Applicant must not proceed with work until FEMA completes consultation with the SHPO. In addition, if unmarked graves are present, compliance with the Louisiana Unmarked Human Burial Sites Preservation Act is required. In that situation, the Applicant must notify the local law enforcement agency within 24 hours of the discovery, and notify FEMA and the Louisiana Division of Archaeology at (225) 342-8170 within 72 hours of the discovery. Failure to comply with these stipulations may jeopardize FEMA funding of the project.
- Project construction would involve the use of potentially hazardous materials (*e.g.*, petroleum products, cement, caustics, acids, solvents, paint, electronic components, pesticides, herbicides, fertilizers, treated timber) and may result in the generation of small volumes of hazardous wastes. Appropriate measures to prevent, minimize, and control spills of hazardous materials must be taken and generated hazardous and non-hazardous wastes are required to be disposed in accordance with applicable federal, state and local regulations.

- If any solid or hazardous wastes, or soils and/or groundwater contaminated with hazardous constituents are encountered during the project, notification to LDEQ's Single-Point-of-Contact at (225) 219-3640 is required. Additionally, precautions should be taken to protect workers from these hazardous conditions.

6.0 PUBLIC INVOLVEMENT AND AGENCY CONSULTATIONS

FEMA is the lead federal agency for conducting the NEPA compliance process for this Environmental Assessment and FEMA Public Assistance grant funded project. It is the responsibility of the lead agency to conduct the preparation and review of NEPA documents in a way that is responsive to the needs of the parish communities while meeting the spirit and intent of NEPA and complying with mandated provisions. As part of the development of early interagency coordination related to the proposed action, state and federal resource protection agencies were contacted and FEMA distributed an informal scoping notification through a Solicitation of Views.

These agencies include the State Historical Preservation Officer, U. S. Fish and Wildlife Service, the Governor's Office of Homeland Security and Emergency Preparedness, Louisiana Department of Environmental Quality, U. S. Environmental Protection Agency, Louisiana Department of Natural Resources, U. S. Army Corps of Engineers, and National Oceanic & Atmospheric Administration National Marine Fisheries Service. FEMA has received no objections to the project as proposed subsequent to these notifications and comments and conditions received have been incorporated into this NEPA document. In accordance with applicable local, state, and federal regulations, the applicant would be responsible for acquiring any necessary permits prior to commencing construction at the proposed project site. FEMA is inviting the public to comment on the proposed action during a fifteen (15) day comment period. A public notice will be published for 5 days in the local newspaper, *The Courier*, announcing the availability of this EA for review at the Terrebonne Parish Library located at 151 Library Boulevard, Houma, LA. A copy of the Public Notice is attached in Appendix D.

7.0 LIST OF PREPARERS

Joel Caldwell – Environmental Protection Specialist, FEMA LRO

Adam Borden – Lead Environmental Protection Specialist, FEMA LRO

Tiffany Spann Winfield – Deputy Environmental Liaison Officer, FEMA LRO

June Griffin – Floodplain Specialist, FEMA LRO

Daphne Owens – Historical Preservation Specialist, FEMA LRO

8.0 REFERENCES

Endangered Species Act of 1973

Website: <http://epw.senate.gov/esa73.pdf>.

Executive Order 11988, Floodplain Management, 1977.

Website: <http://www.fema.gov/plan/ehp/ehplaws/eo11988.shtm>.

Executive Order 12898, Environmental Justice for Low Income and Minority Populations, 1994.

Website: <http://www.fema.gov/plan/ehp/ehplaws/ejeo.shtm>.

Federal Emergency Management Agency. 2006. *Advisory Base Flood Elevation Map, Terrebonne Parish, Louisiana. Map LA P-104*. Website:

http://www.fema.gov/pdf/hazard/flood/recoverydata/rita/maps/rita_la_tb-p104.pdf

Accessed May 7, 2012.

Federal Emergency Management Agency. 2006. *Advisory Base Flood Elevation Map, Terrebonne Parish, Louisiana. Map LA P-104*. Website:

http://www.fema.gov/pdf/hazard/flood/recoverydata/rita/maps/rita_la_tb-1103.pdf

Accessed May 7, 2012.

Federal Emergency Management Agency. 2008. Preliminary Digital Flood Insurance Rate Map (DFIRM) Preliminary Revised Map No. 22109C0275E. Accessed May 7, 2012.

Federal Emergency Management Agency. 2008. Preliminary Digital Flood Insurance Rate Map (DFIRM) Preliminary Revised Map No. 22109C0450E. Accessed May 7, 2012.

Leaf Environmental llc. 2010. Phase I Environmental Site Assessment Report. New Grand Caillou Middle School. www.leaf.com.

Leaf Environmental llc. 2010. Phase II Environmental Site Assessment Report. New Grand Caillou Middle School. www.leaf.com.

Louisiana Department of Natural Resources (LDNR). 2011. Permits/Mitigation Support Division. Website: <http://dnr.louisiana.gov/crm/coastmgt/coastmgt.asp>.

Louisiana Department of Environmental Quality. Air quality data.

Website: <http://www.deq.louisiana.gov/portal/tabid/37/Default.aspx?Search=non-attainment+areas>.

Louisiana Department of Environmental Quality. Volunteer Remedial Program List.

Website: [http://www.deq.louisiana.gov/portal/Portals/0/Remediation Services/VRP](http://www.deq.louisiana.gov/portal/Portals/0/Remediation%20Services/VRP).

Louisiana Department of Environmental Quality. State Brownfield list.

Online Available: <http://www.deq.louisiana.gov/portal/tabid/2620/Default.aspx>.

Louisiana Department of Environmental Quality. Leaking Underground Storage Tank list.
Website: <http://www.deq.louisiana.gov>.

Louisiana Department of Environmental Quality (LDEQ). 2012. Electronic Document Management System.

Louisiana Department of Natural Resources (LDNR). 2012. Permits/Mitigation Support Division. Website: <http://dnr.louisiana.gov/crm/coastmgt/coastmgt.asp>.

Louisiana Department of Natural Resources. Coastal Zone Management Act.
Website: <http://dnr.louisiana.gov/crm/coastmgt/coastmgt.asp>.

Louisiana State Legislature. Motor Vehicles and Traffic Regulation.
<http://www.legis.state.la.us/lss/lss.asp?doc=630871> .

Louisiana Department of Natural Resources, Office of Coastal Management.
Letter Correspondence 04/11/2012 from Karl L. Morgan, Acting Administrator.

Louisiana Department of Transportation and Development. 2012. Motor Vehicles and Traffic Regulation. <http://www.legis.state.la.us/lss/lss.asp?folder=106>.

National Center for Education Statistics. School Detail for Grand Caillou Elementary School.
Website: <http://nces.ed.gov/globallocator/>.

NOAA Office of Protected Fisheries – Loggerhead Turtle Website, Accessed 7/17/2012.
<http://www.nmfs.noaa.gov/pr/species/turtles/loggerhead.htm#habitat>.

Principal Environmental & Historic Preservation Laws.
Website: <http://www.fema.gov/plan/ehp/ehplaws/>. Accessed April 2012.

Terrebonne Parish School District. Proceedings of the Terrebonne Parish School Board.
Website: <http://www.tpsd.org/home/index.php/home>. Accessed August 7, 2012.

U.S. Census Bureau. [Online] Available: www.factfinder2.census.gov.

U.S. Department of the Army, Corps of Engineers, New Orleans District. Letter dated July 17, 2012. Account number MVN-2012-014-99-SA.

U.S. Environmental Protection Agency. 2006. Nonattainment Status for each Parish by year.
[Online] Available: <http://www.epa.gov/oar/oaqps/greenbk/anay.html>.

U.S. Environmental Protection Agency. 2012. NEPAssist. [Online] Available:
<http://134.67.99.123/nepassist/entry.aspx>.

U.S. Environmental Protection Agency (USEPA). 2010. Currently Designated Nonattainment Areas for All Criteria Pollutants.

Website: <http://www.epa.gov/oar/oaqps/greenbk/ancl.html>.

U.S. Fish and Wildlife Service. Endangered Species Data.

Website: <http://www.fws.gov/endangered/wildlife/htm>.

U.S. Fish and Wildlife Service, Louisiana Field Office. Letter dated April 10, 2012, Deborah A. Fuller. U.S. Fish and Wildlife Service. 2012. IPaC Web Portal.

<http://ecos.fws.gov/ipac/>.

Appendix A

Wetland Delineation with Site Photos

Note: The wetland delineation with site photos is included in the PDF version of this document

Wetland Delineation Report

Grand Caillou Elementary School Site Terrebonne Parish School Board FEMA-1786-DR-LA, FEMA-1792-DR-LA

Terrebonne Parish, Louisiana
May 2012

**U.S. Department of Homeland Security
Federal Emergency Management Agency, Region VI
Louisiana Recovery Office
New Orleans, Louisiana 70114**



FEMA

<u>SECTION</u>	<u>PAGE</u>
TABLE OF CONTENTS	i
LIST OF ACRONYMS	ii
1.0 INTRODUCTION	1
1.1 Project Authority	1
1.2 Background	1
2.0 METHODOLOGY	2
3.0 RESULTS	2
3.1 Sample Plot 1 (P-001)	3
3.2 Sample Plot 2 (P-002)	3
4.0 CONCLUSIONS	4
5.0 DISCLAIMER	4
6.0 LIST OF PREPARERS	5
7.0 REFERENCES	5
APPENDICES	
Appendix A. Figures	
Appendix B. Data Forms	
Appendix C. Photographs	

LIST OF ACRONYMS

CFR	Code of Federal Regulations
FAC	Facultative
FACU	Facultative upland
FACW	Facultative wetland
FEMA	Federal Emergency Management Agency
LRR	Land Resource Regions
NRCS	Natural Resources Conservation Service
OBL	Obligate wetland
PA	Public Assistance Program
PFO	Palustrine System Forested Wetland Class
UPL	Obligate upland
US	United States
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 INTRODUCTION

1.1 Project Authority

Hurricane Gustav made landfall on September 1, 2008 near Cocodrie, Louisiana with sustained winds of 105 mph and damaging floodwaters. President George W. Bush declared a major disaster for the State of Louisiana (FEMA-1786-DR-LA) on September 2, 2008, authorizing the Department of Homeland Security's Federal Emergency Management Agency (FEMA) to provide Federal assistance in designated areas of Louisiana.

Hurricane Ike made landfall on September 13, 2008 near Galveston, Texas with sustained winds of 110 mph and damaging floodwaters. President George W. Bush declared a major disaster for the State of Louisiana (FEMA-1792-DR-LA) on September 13, 2008, authorizing the Department of Homeland Security's Federal Emergency Management Agency (FEMA) to provide Federal assistance in designated areas of Louisiana.

This is pursuant to the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), PL 93-288, as amended. Section 406 of the Stafford Act authorizes FEMA's Public Assistance Program (PA) to assist in funding the repair, restoration, reconstruction, or replacement of public facilities damaged as a result of the declared disaster.

This wetland delineation report has been prepared in accordance with Section 404 of the Clean Water Act, Executive Order 11990 "Protection of Wetlands", and FEMA's regulations implementing Executive Order 11990. Executive Order 11990 requires federal agencies to "minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands." To meet these objectives, the Order requires federal agencies, in planning their actions, to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided.

The purpose of this wetland delineation is to provide sufficient field data concerning vegetation, soils and hydrology which document any wetlands or jurisdictional waters of the U.S. that are located within or adjacent to the proposed site boundaries, and to submit these findings to the U.S. Army Corps of Engineers (USACE) for concurrence.

1.2 Background

FEMA recently conducted a routine wetland delineation on behalf of the Terrebonne Parish School Board for the proposed location of Grand Caillou Elementary School. The proposed location is a 19 acre site located near the intersection of East Woodlawn Ranch Road and LA Highway 57 in Houma, Louisiana. It is bordered by LA Highway 57 on the west, a forested property line on the north, Bayou Grand Caillou on the east, and a drainage canal on the south (Figure 1).

2.0 METHODOLOGY

FEMA conducted the wetland delineation in accordance with Section D, Subsection 2 of Technical Report Y-87-1, Corps of Engineers Wetlands Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0, 2010). Aerial photography, Natural Resources Conservation Service (NRCS) Terrebonne Parish soil survey map (Figure 2), and U.S. Geological Survey (USGS) topographic quadrangle maps were reviewed prior to the initiation of field work to identify the potential of extent of wetlands present on the property.

The proposed site surveyed is comprised of a mixture of a forested area, a sugarcane agricultural field, a natural bayou, a drainage canal, two ephemeral streams, and several ephemeral agricultural field drains. A total of two plots were taken to characterize the different wetland and upland areas observed on the site.

Routine Wetland Determination Data Forms – Atlantic and Gulf Coast Plan Region (Appendix A), as approved by Headquarters, USACE 11/2010, were completed for each vegetation community encountered throughout the site. These data forms contain sufficient information regarding the presence or absence of hydric soils, hydrophytic vegetation, and wetland hydrology to support the demarcation of a wetland boundary. The location of each sample site is shown on Figure 3.

Dominant vegetation was recorded on the data forms, along with their respective indicator status as listed in the National List of Plant Species Occurring in Wetlands (Region 2) published by the U.S. Fish and Wildlife Service. Once dominant vegetation was recorded and evaluated, if more than 50 percent of the dominant vegetation had an indicator status of facultative (FAC), facultative wet (FACW), or obligate (OBL), the hydrophytic vegetation criterion was recorded as being met.

A soil pit was excavated to a depth of approximately 18 inches at each sample site. The pit remained open for at least 15 minutes to allow it to fill with water, if present. Soils were sampled from 0 to 15 inches. Information recorded on the data forms included soil colors (hue, value, and chroma as per the 1992 revised edition of the Munsell Color Chart), size, color, abundance, and depth of mottles, as well as soil texture and any hydric soil indicators. Soil texture was determined using the “texture by feel” analysis.

Wetland hydrology indicators were also recorded at each sample site as per the USACE requirements. If at least one primary or two secondary hydrology indicators were present, the sample site was classified as having wetland hydrology. Photographs were taken at each sample site where a data form was completed. These photographs show a representative soil profile as well as an overview of the sample site (Appendix C).

3.0 RESULTS

The following subsections describe the different plant communities, soil, and hydrologic conditions observed during the investigation.

3.1 Sample Plot 1 (P-001)

Plot 1 (P-001) was located in a forested habitat. The tree stratum was dominated by roughleaf dogwood (*Cornus drummondii*), boxelder (*Acer negundo*), and hackberry (*Celtis laevigata*). Non-dominant species observed in the tree stratum included overcup oak (*Quercus lyrata*), Chinese tallow (*Triadica sebifera*), and black willow (*Salix nigra*). Wax myrtle (*Morella cerifera*) was observed in the shrub stratum, but was not found to be a dominant species. The sapling stratum was dominated by roughleaf dogwood (*Cornus drummondii*) and boxelder (*Acer negundo*). Poison ivy (*Toxicodendron radicans*) dominated the woody vine stratum and was very prevalent throughout the forested area, both on the ground and integrated with shrubs and trees. Based on a positive result of the FAC-Neutral test, the hydrophytic vegetation criteria were met within this sample site.

The soil at this site is mapped as the Schriever clay, 0 to 1 percent slopes. Field investigations confirmed that the soil closely matched the Schriever series, and consisted of low soil matrix chroma colors (see Photo 1). Primary hydric soil indicators such as Dark Surface (S7), Thin Dark Surface (S9), and Depleted Matrix (F3) were observed at the sample site. This series is listed on both the National and Louisiana State Hydric Soils list. Based on field observation, hydric soils were confirmed to be present at this location.

Primary wetland hydrology indicators present at the sample site included Sediment Deposits (B2), Drift Deposits (B3), Water-Stained Leaves (B9), and Oxidized Rhizospheres on Living Roots (C3). Secondary wetland hydrology indicators present at the site included Drainage Patterns (B10), Saturation Visible on Aerial Imagery (C9), and a positive FAC-Neutral Test (D5). Although standing water or saturation was not present at the time of the field investigation, it was visibly evident that ponding regularly occurs in this forested area due to a depression of the ground level as compared to its surrounding boundaries on the north, east, and south sides. It is FEMA's opinion that this sample site is within a wetland based on all three parameters being met (see Data Form P-001).

3.2 Sample Plot 2 (P-002)

Plot 2 (P-002) was located in an agricultural field currently being used for sugarcane. The vegetation observed at the sample location would all be classified under the herb stratum and was dominated by sugarcane (*Saccharum officinarum*) and Canada goldenrod (*Solidago altissima*). Also observed at this sample location but were not found to be dominant species were bahiagrass (*Paspalum notatum*), sawtooth blackberry (*Rubus argutus*), and Bermuda grass (*Cynodon dactylon*). The hydrophytic vegetation criteria were not met within this sample site as none of the dominant species were OBL, FACW, or FAC, which resulted in a negative FAC-Neutral test.

The soil at this site is mapped as the Schriever clay, 0 to 1 percent slopes. The integrity of the soils at this sample site has been heavily altered by agricultural practices such as the creation of rows, overturning of the soil by tilling, and the altering of water and saturation by the creation of several field drains. Field investigations found that the soil did not closely match the Schriever

series, and did not consist of low soil matrix chroma colors (see Photo 3). There were no hydric soil indicators observed at this sample site. Based on field observation, hydric soils were not confirmed to be present at this location.

As aforementioned, the hydrology of the sample area P-002 has been heavily altered by the installation of agricultural drainage ditches. There were no primary or secondary wetland hydrology indicators observed at the sample site at the time of the field investigation. It is FEMA's opinion that this sample site is not within a wetland based on none of the required parameters being met (see Data Form P-002).

4.0 CONCLUSIONS

The study area for the Terrebonne Parish School Board, proposed Grand Caillou Elementary School location is an approximately 19 acre area comprised of several different habitats including a forested area, an agricultural field, Bayou Grand Caillou, a drainage canal, and several ephemeral streams and field drainage ditches. Two sample plots were taken to characterize the different habitats found within the survey area, and only one was found to be classified as a wetland (P-001). The total acreage of this wetland area is approximately 1.9 acres, and would most likely be classified as a Palustrine System Forested (PFO).

During field investigations of the study area, Bayou Grand Caillou (S-002) was mapped as *other waters*. Bayou Grand Caillou serves as the eastern border of the study area, would most likely be classified as a perennial stream, and is approximately 25 to 30 feet wide. The flow rate at the time of the site visit was observed to be low, and the water quality would most likely be classified as poor due to its close proximity to agricultural activities. Feature S-001 was also mapped as other waters. S-001 serves as the southern border of the study area and was observed to be an intermittent man-made drainage canal. It is approximately 8 to 10 feet wide, and at the time of the site visit had a low flow rate and poor water quality.

S-003 and S-004 appeared to be ephemeral streams varying in width from 1 to 5 feet, located within the forested wetland area, and draining into Bayou Grand Caillou. Several additional water features were mapped (S-005 through S-008). These were small man-made agricultural field drains, approximately 1.5 feet wide, allowing for drainage into Bayou Grand Caillou. As each of these reach close proximity to Bayou Grand Caillou, they increase in depth and width to approximately 3 to 5 feet. Streams of this nature would not typically be classified as jurisdictional waters of the U.S., however, that determination along with the others (S-001 through S-008) should ultimately be officially classified by the USACE.

5.0 DISCLAIMER

Although FEMA uses the same criteria and methodology as that of the USACE, due to the degree of subjectivity associated with studies of this type, there may be some degree of variance in the demarcation of the wetland boundary. Consequently, FEMA's opinion may not necessarily reflect that of the USACE, nor does it relieve the applicant of any legal obligations to consult with the USACE for wetland verification and, if necessary, obtain a Department of the

Army Section 404 permit prior to performing any dredging, filling, construction, and/or mechanized clearing operations in waters of the United States, including wetlands.

6.0 LIST OF PREPARERS

Tommy Tregle	Environmental Protection Specialist
Adam Borden	Lead Environmental Specialist
Joel Caldwell	Environmental Specialist
Aimee Preau	Lead GIS Analyst

7.0 REFERENCES

Executive Order 11990, Wetlands Management, 1977.

Website: <http://www.fema.gov/plan/ehp/ehplaws/eo11990.shtm>.

Bing Maps. 2010. Aerial Imagery.

Natural Resources Conservation Service. 2012. Web Soil Survey.

Website: <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>

U.S. Department of Agriculture, Natural Resources Conservation Service. 2012. Plants Database.

Website: <http://plants.usda.gov>

U.S. Department of the Army, Corps of Engineers. 1987. Wetlands Delineation Manual.

Website: http://www.mvn.usace.army.mil/ops/regulatory/reg_forms.asp

U.S. Department of the Army, Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coast Plain Region (Version 2.0).

Website: http://www.mvn.usace.army.mil/ops/regulatory/reg_forms.asp

U.S. Department of the Army, Corps of Engineers. 2010. Wetland Determination Data Forms - Atlantic and Gulf Coast Plain Region

Website: http://www.mvn.usace.army.mil/ops/regulatory/reg_forms.asp

U.S. Fish and Wildlife Service. 2010. National Wetlands Inventory Maps.

<http://www.fws.gov/wetlands/Data/mapper.html>.

Appendix A

Figures



FEMA

PROJECT LOCATION MAP

Terrebonne Parish School Board
Grand Caillou Elementary School



Survey Limits



0 25 50 100 Feet



Legend

 Survey Limits

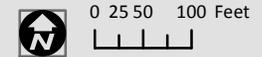
Soil Type*

-  Cancienne silt loam, 0 to 1 percent slopes
-  Cancienne silty clay loam, 0 to 1 percent slopes
-  Schriever clay, 0 to 1 percent slopes

* Soil type source: Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Soil Survey Geographic (SSURGO) Database for Terrebonne Parish, Louisiana. Available online at <http://soildatamart.nrcs.usda.gov>.



SOIL SURVEY MAP
Terrebonne Parish School Board
Grand Caillou Elementary School





FEMA

WETLAND LOCATION MAP
 Terrebonne Parish School Board
 Grand Caillou Elementary School



0 25 50 100 Feet

Figure 3

Appendix B
Data Forms

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Grand Caillou Elementary School City/County: Terrebonne Sampling Date: 5-15-2012
 Applicant/Owner: Terrebonne Parish School Board State: LA Sampling Point: P001
 Investigator(s): T. Tregle, J. Caldwell, A. Borden Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Forested flat Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRR or MLRA): LRR Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Schriever clay NWI classification: _____

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

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

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

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input checked="" type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Attached project vicinity map clearly shows saturation in general area of wetland.

VEGETATION – Use scientific names of plants.

Sampling Point: P001

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot sizes: _____)					
1. <u>Cornus drummondii</u>	<u>25</u>	<u>yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)	
2. <u>Acer negundo</u>	<u>25</u>	<u>yes</u>	<u>FACW</u>		
3. <u>Celtis laevigata</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>		
4. <u>Quercus lyrata</u>	<u>5</u>	<u>no</u>	<u>OBL</u>		
5. <u>Triadica sebifera</u>	<u>5</u>	<u>no</u>	<u>FAC</u>		
6. <u>Salix nigra</u>	<u>5</u>	<u>no</u>	<u>OBL</u>		
7. _____					
	<u>75</u>	= Total Cover		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
Sapling Stratum (_____)					
1. <u>Cornus drummondii</u>	<u>15</u>	<u>yes</u>	<u>FAC</u>		
2. <u>Acer negundo</u>	<u>15</u>	<u>yes</u>	<u>FACW</u>		
3. <u>Quercus lyrata</u>	<u>5</u>	<u>no</u>	<u>OBL</u>		
4. <u>Triadica sebifera</u>	<u>5</u>	<u>no</u>	<u>FAC</u>		
5. _____					
6. _____					
7. _____					
	<u>40</u>	= Total Cover			
Shrub Stratum (_____)					
1. <u>Morella cerifera</u>	<u>10</u>	<u>no</u>		Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
	<u>10</u>	= Total Cover			
Herb Stratum (_____)					
1. _____				Definitions of Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
12. _____					
Woody Vine Stratum (_____)					
1. <u>Toxicodendron radicans</u>	<u>40</u>	<u>yes</u>	<u>FAC</u>	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
2. _____					
3. _____					
4. _____					
5. _____					
	<u>40</u>	= Total Cover			

¹Indicators of hydric soil and wetland hydrology must be present.

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

SOIL

Sampling Point: P001

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 ¹	Loc ²		
0-4	10YR 4/1	99	10YR 4/4	1	RM	M	Clay	
4-15	10YR 5/1	100			▼	▼	Clay	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils³:

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

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: