Louisiana November 2008 Riverine High Water Mark Collection

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FEMA Reviewers, please NOTE:

The attached document is a <u>Draft</u>: This document is intended to be a working document for FEMA review. We anticipate comments and encourage your feedback on all aspects of the report.

Depending on the comments received from FEMA, there may be another iteration of this level of report to ensure that we are adequately addressing the needs of the task order.

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CORS	Continuously Operating Reference Stations
ESP	ESP Associates, P.A.
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GPS	Global Positioning System
HMTAP	Hazard Mitigation Technical Assistance Program
HWM	High Water Mark
HWM ID	High Water Mark Identification Number
mb	Millibar
mph	Miles per hour
NAD 83	North American Datum of 1983
NAVD 88	North American Vertical Datum of 1988
NGS	National Geodetic Survey
NGVD 29	National Geodetic Vertical Datum of 1929
NHC	National Hurricane Center
NOAA	National Oceanic and Atmospheric Administration
OPUS	On-line Positioning User Service
PELICAN	Pelican Land Surveying, LLC.
QA	Quality Assurance
RTK	Real Time Kinematic
SLOSH	Sea, Lake, and Overland Surges from Hurricanes
SOW	Scope of Work
U-DIMS	URS Disaster Information Management System
URS	URS Group, Inc.
USGS	U.S. Geological Survey

Term	Definition
Debris line	Defines the extent of flooding where debris, such as parts of houses, docks, cars, or other non-natural materials, are carried by flood waters with some velocity and then dropped as the flood waters lose velocity and begin to recede.
Flagging	Marking or otherwise documenting the horizontal and vertical location of a high water mark so that the high water mark data are preserved for future surveying. These data will then be available even if the homeowner cleans the property or it rains, thereby eliminating the visible high water mark.
Hazard Mitigation Grant Program	A FEMA program that provides grants to States and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The program may be used to fund projects that will reduce or eliminate losses from future disasters by providing a long-term solution to a problem.
High Water	The maximum elevation that flood waters reach as a result of a storm event.
High Water Mark	A physical mark, such as a mud line, that designates the location and elevation of flood waters from a storm event.
Individual Assistance	Federal assistance provided to families or individuals following a major disaster or emergency declaration, which includes cash grants for housing (hotel or motel expenses reimbursement, rental assistance, home repair and replacement cash grants, and permanent housing construction assistance in rare circumstances) and other needs (medical, dental, and funeral costs, transportation costs, and other disaster-related needs).
Inundation maps	Maps that delineate the areas flooded during a storm.
Mitigation	Any measure that reduces or eliminates the long-term risk to life and property from a disaster event.
National Flood Insurance Program	The Federal program created by Congress, in passing the National Flood Insurance Act of 1968, that makes flood insurance available in communities that enact and enforce satisfactory floodplain management regulations. The program provides insurance claim information, floodplain management, and flood hazard identification.
NGVD 29 (National Geodetic Vertical Datum of 1929)	Within the United States most past vertical control has been linked to NGVD 29, which is the result of a national vertical adjustment performed by constraining the heights of 26 tidal stations in the United States and Canada. Over time this vertical datum was replaced by NAVD 88.
NAVD 88 (North American Vertical Datum of 1988)	The most widely used vertical control datum in the United States today. It was established by the minimum-constraint adjustment

Term	Definition
	of the Canadian-Mexican-U.S. leveling observations. The general adjustment of NAVD 88 was completed in June 1991
Public Assistance	Federal assistance provided to State and local governments, Native American tribes, and certain non-profit organizations after a Presidential disaster declaration. Public Assistance includes supplemental Federal disaster grant assistance for the repair, replacement, or restoration of disaster-damaged publicly owned facilities, and the facilities of certain private non-profit organizations. This includes emergency work and permanent work.
Water mark	A mark, usually on structures, left by flood waters.
Wrack line	Defines the extent of flooding where organic-type debris such as grass and weeds are carried by flood waters and left behind as the flood waters recede.

INTRODUCTION AND PURPOSE OF THE STUDY

Hurricane Gustav made landfall on the United States approximately 72 miles southwest of New Orleans, LA on 1 September, 2008. The storm produced considerable damage from heavy rainfall, winds, severe weather along the eastern coast of Louisiana and further inland. The Federal Emergency Management Agency (FEMA) contracted URS Group, Inc. (URS) under the Task Order HSFEHQ-09-J-0002 of the Hazard Mitigation Technical Assistance Program (HMTAP) contract to assist in the collection of the Riverine High Water Marks (HWMs) from the effects of the Rainfall Event of Hurricane Gustav, Louisiana.

URS received a Notice to Proceed from FEMA on November 13, 2008. The teams were mobilized to Louisiana beginning on November 13, 2008 at which time URS arranged for travel and lodging for field staff. An orientation meeting for the field staff to distribute equipment and to assign field coverage areas was previously held in Metairie, Louisiana on October 29, 2008 during the Coastal HWM collection (FEMA Task Order HSFEHQ-09-J-0001) which included training for Riverine HWM collection as well as Coastal HWM collection.

URS collected HWMs along specific rivers and within cities and towns in Acadia, Allen, Avoyelles, Beauregard, Calcasieu, Catahoula, Concordia, East Baton Rouge, East Feliciana, Evangeline, Franklin, Grant, Iberville, Jefferson Davis, Lafayette, La Salle, Livingston, Natchitoches, Pointe Coupee, Rapides, Saint Helena, Saint Landry, Saint Martin, Saint Tammany, Tangipahoa, Vernon, Washington, West Baton Rouge, West Feliciana Parishes based on review of USGS stream gage information, discussions with local government representatives, and media reports of significant flood event. Additionally, the search for HWMs extended into Jackson, Sabine and Winn Parishes; however, no HWMs were located in these parishes. Before and during deployment, URS also contacted the respective parish Emergency Managers to find out if there were any additional priority areas that should be visited.

Because the study area was affected by both Hurricane Gustav (landfall on September 1, 2008) and Hurricane Ike (landfall on September 13, 2008), there is the potential for confusion as to which storm created a particular HWM. Based on National Oceanic and Atmospheric Administration (NOAA) and U.S. Geological Survey (USGS) gage data, higher peak stages were seen during Hurricane Gustav for those gages located in the inland riverine systems of Louisiana. Hurricane Ike had a more pronounced effect on the gages along the coast, especially along the western half of the Louisiana coastline. While exceptions to these generalities exist, FEMA determined that HWM data collected south of the I-10/I-12 corridor would be attributed to Hurricane Ike, while those HWMs north of the I-10/I-12 corridor would be attributed to Hurricane Gustav (see separate HWM report on Hurricane Gustav, FEMA-1786-DR-LA).

One notable exception to this generality is the area north of Lake Charles along the Calcasieu River in Calcasieu parish. This river is tidally influenced well north of I-10 and ultimately discharges to an estuary on the Gulf of Mexico. In this area some of the points did exhibit coastal flooding and could be attributed more to Hurricane Ike rather than Hurricane Gustav.

HWM data collection helps document a flooding event and assists in response, recovery, and mitigation for future disasters. These HWMs help place the event within a historical context, improve estimates of current flood risk, and support governments to make cost-effective decisions about mitigation efforts.

METHODOLOGY

HWMs are perishable; therefore, it was important to quickly capture HWM information before the HWMs were cleaned, removed, or generally lost. Consequently, the traditional two-person flagger teams and two-person survey teams were used. The two-person flagger teams can proceed quickly, which allows documentation of the HWM information before it is lost. The flaggers identified the location and flagged the HWM to be surveyed. Several days later, the survey teams visited the locations identified by the flagger teams and surveyed the HWM elevation. The other option would have been employing embedded flagger teams in which the surveyor travels with the flagger. This method was not chosen for this task order because surveying after a parish was thoroughly marked; which avoids unnecessary back and fourth travel, was more cost-effective.

The flagger teams identified and flagged HWMs, as indicated by mud lines, water lines, and, if possible, areas with debris lines (i.e., from man-made materials) or wrack lines (i.e., from plant materials). In order to provide better flood elevation data, several HWMs were obtained in many areas since the height of flood waters can be affected by flood levees, conveying and impeding structures, drainage systems, geology etc.

At each location, the flaggers entered the collected information (e.g., measured height, pictures, location of the mark, GPS coordinates, type of mark) into a computer program called URS Disaster Information Management System (U-DIMS). Once the data collection was complete, the details of the mark were transferred through wireless Internet from the field to a central server, and were then accessible to the project manager for review and management of the field work.

URS teams flagged the HWMs, and URS' subcontractors, ESP Associates, P.A. (ESP), and Pelican Land Surveying, L.L.C. (PELICAN), performed the surveying. The HWMs were surveyed horizontally in the North American Datum of 1983 (NAD 83) and in the Louisiana South State Plane Coordinate System, and vertically in the North American Vertical Datum of 1988 (NAVD 88). The surveys were conducted in U.S. survey feet. The HWMs were surveyed to the accuracy of 0.25 foot vertically and 10 feet horizontally, with a 95 percent level of accuracy.

1.1 GENERAL

Section 1 of this report summarizes the purpose of the Task Order and provides an overview of the storm event that produced the High Water Marks (HWMs) described in the report. Section 2 discusses the methodology used to collect the HWMs, Section 3 explains the types of flooding that produced the HWMs, and Section 4 summarizes the results from the HWM collection efforts. The appendices include the detailed results from the HWM survey.

The Federal Emergency Management Agency (FEMA) contracted URS Group, Inc. (URS) under the Task Order HSFEHQ-09-J-0002 of the Hazard Mitigation Technical Assistance Program (HMTAP) contract to assist in the collection of the riverine High Water Marks (HWMs) from the effects of the Hurricane Gustav September 2008 in Louisiana. URS collected over 200 HWMs along specific rivers and within cities and towns in Acadia, Allen, Avoyelles, Beauregard, Calcasieu, Catahoula, Concordia, East Baton Rouge, East Feliciana, Evangeline, Franklin, Grant, Iberville, Jefferson Davis, Lafayette, La Salle, Livingston, Natchitoches, Pointe Coupee, Rapides, Saint Helena, Saint Landry, Saint Martin, Saint Tammany, Tangipahoa, Vernon, Washington, West Baton Rouge, and West Feliciana Parishes. Additionally, the search for HWMs extended into Jackson, Sabine and Winn Parishes; however, no HWMs were located in these parishes. Figure 1-1 highlights the area north of the I-10/I-12 corridor where HWMs were investigated and/or collected, and it defines the project area. Maps showing the locations where HWMs were actually collected on a parish-wide basis are provided in Appendix B.

Before and during deployment, URS also contacted the respective parish Emergency Managers to find out if there were any additional priority areas that should be visited. Once the flaggers were in the field, they held meetings with several parish and municipality officials, where they discussed the severity of the flooding, identified flooded areas, and received assistance on local flood elevation data collection.

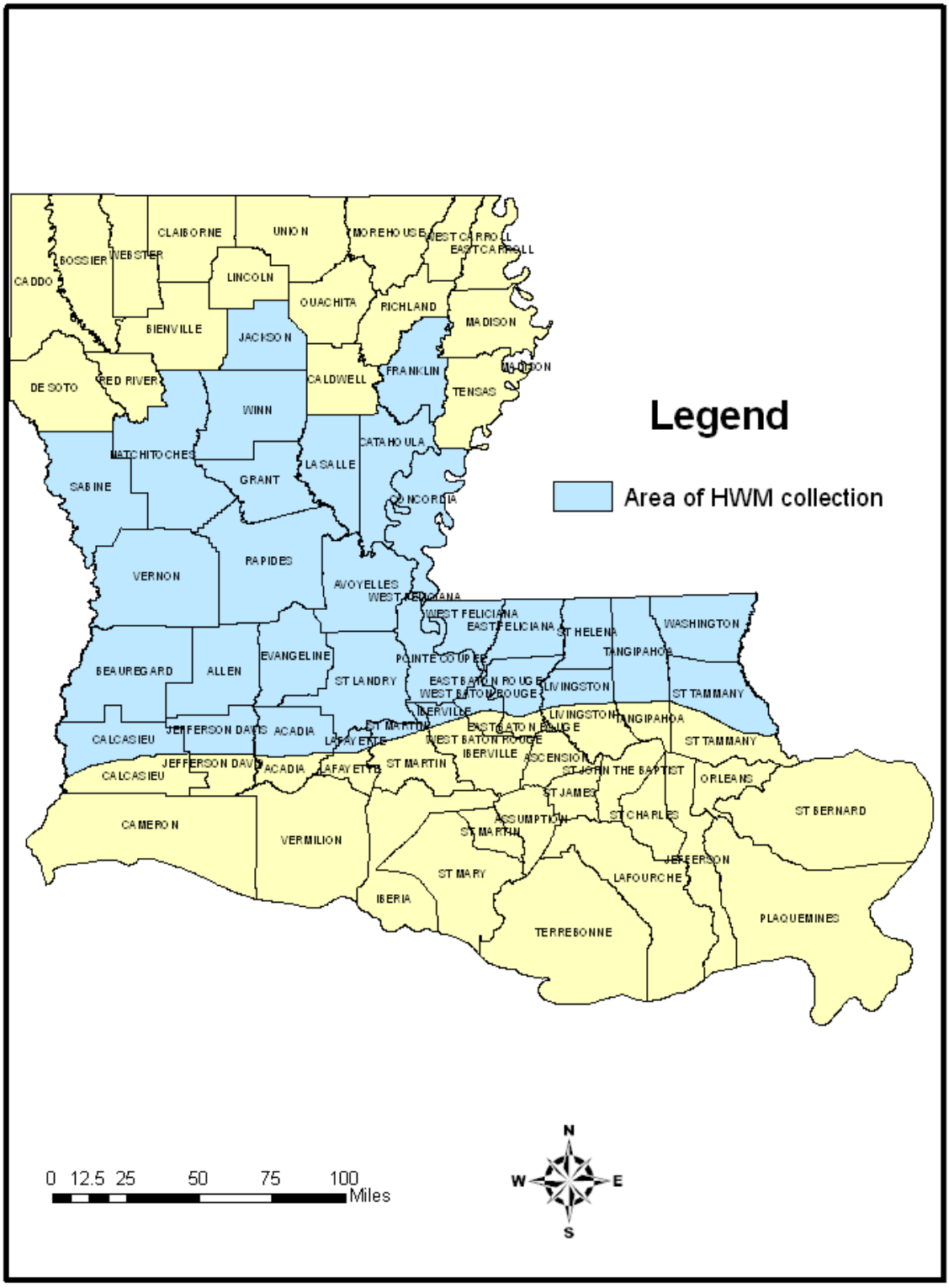


Figure 1-1: Project Area

1.2 PURPOSE

After significant flooding from heavy rains generated by a hurricane, it is imperative to collect data rapidly to document the event, assist in response, recovery, and mitigation, and improve disaster preparedness and prevention for future disasters. HWM data collection is an initial step in accurately documenting an event. These data help place the event within a historical context, improve estimates of current flood risk, and assist governments to make cost-effective decisions about mitigation efforts.

Riverine flooding occurs when heavy rainfall causes river levels to rise. Riverine flood conditions are less varied than coastal flooding, as riverine conditions do not undergo the coastal forces of wind and waves. High water levels from riverine flooding are mainly driven by the amount of rainfall and are based on the intensity, speed, and progression of a significant rainfall event as it moves across the affected areas. Flooding occurs as the rainfall impacts the watershed and makes its way through downstream rivers. The peak water elevations from riverine flooding along major rivers may occur one or more days after the maximum rainfall in the area of flooding.

Collection of site-specific HWM data has numerous applications. The purpose of this study was to document the maximum flooding elevations that occurred as a result of Hurricane Gustav which generated heavy rainfall in Louisiana in beginning of September 2008. There are a number of applications that the HWM elevation data can be used for, including:

- Estimation of storm frequency and severity
- Assessment of accuracy of the Flood Insurance Rate Maps (FIRMs)
- Preparation of inundation maps
- Sharing information for Building Performance Assessments
- Sharing information for calibrating models that simulate the storm
- Assisting in prioritizing mitigation projects and preparing their benefit-cost analyses
- Determining depth of flooding of structures

Specific FEMA programs that directly benefit from post-disaster flood data collection include Individual Assistance, Public Assistance, and the Hazard Mitigation Grant Program and National Flood Insurance Program.

1.3 OVERVIEW OF HURRICANE GUSTAV

Hurricane Gustav formed in the Caribbean Sea on the morning of August 25, 2008, southeast of Port-au-Prince, Haiti and rapidly strengthened into a tropical storm that afternoon and into a hurricane early on August 26, 2008. Hurricane Gustav came ashore in Louisiana on September 1, 2008 approximately 72 miles southwest of New Orleans[1]. The storm was rated 2 on the Saffir-Simpson scale of hurricanes which puts winds in the 83 to 95kts range and central pressure in the 965-979 hPa range. The rainfall centered over Louisiana from 000 UTC 31 August to 1200 UTC 2 September 2008. Maximum rainfall in these data was approximately 8 to

[1] http://www.nhc.noaa.gov/archive/2008/al07/al072008.posest.09011359.shtml

10 inches (200 to 250 mm), locally heavier amounts from point data were likely observed as it is indicated on Figure 1-2.[2]

The storm produced considerable damage from winds, severe, weather and heavy rainfall. On September 2, 2008 the President declared a major disaster for the State of Louisiana (FEMA-1786-DR).

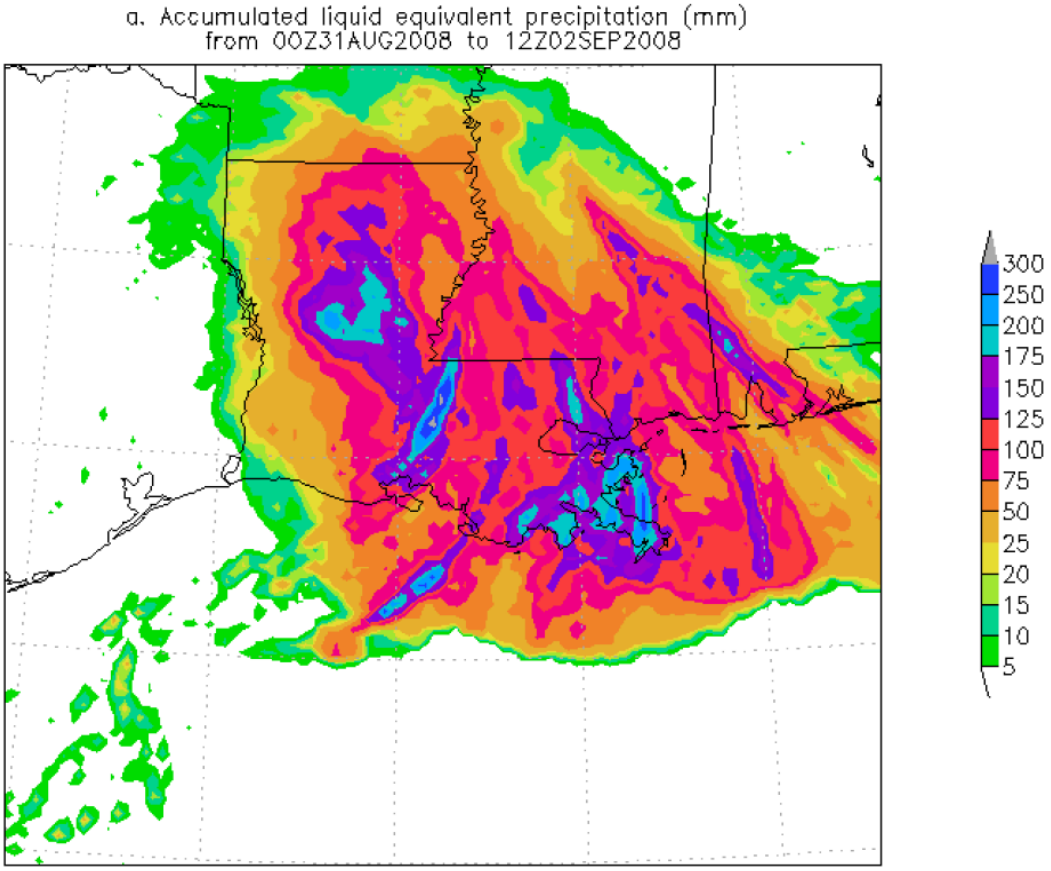


Figure 1-2: Stage-IV 4 km rainfall summed over the periods 0000 UTC 31 August 2008 through 1200 UTC 02 September 2008. [data given in mm][4]

[1] Grumm H. R (2008) Heavy Rainfall associated with Hurricane Gustav August-September 2008, http://nws.met.psu.edu/ Retrieved on January 7, 2009

2.1 GENERAL

This section summarizes the methodology used to flag and survey the HWMs. After significant flooding from a hurricane, it is important to quickly mark or flag HWMs to capture the data before residents clean up, or before subsequent rains eliminate the HWMs. Therefore, every effort was made to quickly flag the HWMs for survey to determine the HWM elevations.

2.2 PRE-FIELD DEPLOYMENT

URS received Notice to Proceed on the HWM Task Order from FEMA on November 13, 2008. On November 13, 2008, URS arranged travel and lodging for some field staff to relocate to Metairie, Louisiana. Other field staff was already located in Metairie. URS then made sure equipment was available for the flaggers (e.g., hand-held Global Positioning System [GPS] units, laptops, cameras, and health and safety equipment) to conduct the HWM collection.

An orientation meeting was held for the field staff and the survey crew in Metairie, Louisiana on October 29, 2008 prior to the coastal HWM collection for Hurricane Ike (FEMA-1792-DR-Louisiana - FEMA Task Order HSFEHQ-09-J-0001). Flaggers, data collectors, quality assurance staff, and managers attended the meeting. The orientation included, review of field processes (including data capture, documentation, and information transfer), distribution of equipment, and a health and safety briefing.

Prior to the deployment, the URS Task Order Coordinator and Project Quality Assurance Officer held telephone conversations with the FEMA Project Monitor to discuss specific areas of concern, known problem areas, and priorities to ensure that HWMs were collected in the best possible locations. URS also conducted telephone inquiries with the various Louisiana Parish Emergency Preparedness contacts to facilitate HWM collection efforts.

2.3 DATA SOURCES

On November 13, 2008, URS began to collect available information on the extent of flooding to assist in identifying locations for the HWM collection. This included planning efforts based on discussions with FEMA and calls to the Acadia, Allen, Avoyelles, Beauregard, Calcasieu, Catahoula, Concordia, East Baton Rouge, East Feliciana, Evangeline, Franklin, Grant, Iberville, Jefferson Davis, Jackson, Lafayette, La Salle, Livingston, Natchitoches, Pointe Coupee, Rapides, Sabine, Saint Helena, Saint Landry, Saint Martin, Saint Tammany, Tangipahoa, Vernon, Washington, West Baton Rouge, West Feliciana, Winn Parish emergency managers to find out if there were any additional priority areas for collecting HWMs.

Besides parish emergency managers, several local officials were also contacted. Town of Colfax, Town of Montgomery, Town of Campti, Village of Clarence, Village of Goldonna, Natchitoches Parish, Town of Boyce, Town of Many, City of Leesville, Town of New Llano, Town of Rosepine all reported no damage due to flooding. Staff from the following municipalities were particularly helpful in helping our flaggers identify locations of flooding in their respective municipalities: City of Lake Charles, Saint James Parish, Iberville Parish, and City of Alexandria.

2.4 IDENTIFICATION OF THE STUDY AREA

URS prepared a Work Plan for the Louisiana Hurricane Gustav Riverine HWM collection efforts, which was submitted to FEMA on October 21, 2008. The purpose of the Work Plan was to outline the locations where HWMs would be collected. This plan was based on discussions with FEMA and also from available information indicating locations that experienced significant storm surge flooding.

Based on the Scope of Work (SOW) requirements, URS focused the HWM collection efforts in the Parishes identified in Section 1.1 above. Figure 1-1 highlights the area north of the I-10/I-12 corridor where HWMs were investigated and/or collected, and it defines the project area. Discussion and justification as to why the project area was delineated in this way follows.

The study area was affected by both Hurricane Gustav (landfall on September 1, 2008) and Hurricane Ike (landfall on September 13, 2008). Based on NOAA and U.S. Geological Survey (USGS) gage data, Hurricane Ike had a more pronounced effect on the gages along the coast, especially along the western half of the Louisiana coastline, while Hurricane Gustav affected the internal riverine systems of Louisiana, with some areas experiencing 8-10 inches over a 2 ½ day period. [5] Of the 24 active USGS and one NOAA gages in the project area reviewed for this analysis, 20 gages showed the higher peak resulting from Hurricane Gustav north of I-10. Two (2) USGS gages showed a higher peak for Hurricane Gustav one of them located in Calcasieu Parish and the other in Allen Parish. The remaining 2 gages were inconclusive as to which peak was higher.

One notable exception to this generality is the area north of Lake Charles along the Calcasieu River in Calcasieu parish, which is tidally influenced well north of I-10. In this area some of the HWMs did exhibit coastal flooding characteristics and could be attributed more to Hurricane Ike rather than Hurricane Gustav. Additional details are presented in Section 4 of this report.

2.5 FLAGGING AND FIELD DATA COLLECTION PROCEDURES

The field work for the Hurricane Gustav Riverine HWM flagging began on November 14, 2008 and ended on November 24, 2008. Six field teams were deployed for this task order to quickly obtain HWM data. For these HWM data collection efforts, the traditional two-person flagger teams and two-person survey teams were used. The flaggers identified the location and flagged the HWM to be surveyed.

At each location, the flaggers entered the collected information (i.e., measured height, pictures, location of the mark, GPS coordinates, type of mark, etc.) into a computer program called URS Disaster Information Management System (U-DIMS). Once the data collection was completed the details of the mark was transferred through wireless internet from the field to a central server.

The technical manager reviewed the compiled data daily, discussed the issues with each area, and directed the flagger teams to the general areas of HWM collection. The technical manager also produced a keyhole markup language (.klm) file showing the location of the HWMs that were collected. These files were sent to the flaggers each day, to provide information on the progress that the teams were making.

The teams visited the identified parishes and searched for structures with mud or water lines and areas with debris lines (i.e., man-made materials) or wrack lines (i.e., plant materials). Upon

visiting the assigned geographic area, the flaggers would first determine whether the area appeared to be impacted by flooding. If the area did not appear to be impacted by flooding, then the flaggers noted this for their daily briefing for the technical manager, and proceeded to the next area. If the area appeared to have been impacted by flooding, then the flaggers searched for a visible HWM to be flagged. Often the water levels were confirmed by the local residents, and parish, municipality officers. Considering the time that passed since the flood event, local knowledge played an important role in the high water mark collection.

A structure is the preferred location for a HWM to be flagged. When structures impacted by flooding were still standing, the flagger searched for visible HWMs. The preferred HWM location is inside the structure; therefore, the flaggers searched the structure's interior for a visible HWM when access was available. If no interior HWM could be obtained, an exterior HWM that best represented the flooding conditions was flagged. In areas where there were no visible HWMs on buildings, the flaggers searched for other signs of high water, such as debris lines or wrack lines on the ground, vegetation, bridge embankments, or fences.

During the Hurricane Gustav Riverine HWM collection several marks were taken on or near bridges. These HWM are typically within the stream banks and were obtained when the flaggers could not find signs flooding in the area.

Examples of typical HWMs from this and previous HWM data collection efforts are shown in Figures 2 through 5. The spacing of the flagged HWMs was irregular. The HWMs were selected for flagging based on the flagging team's evaluation of site conditions and best judgment regarding the height of flood waters and which HWMs would provide the highest quality data. Fewer HWMs were flagged in areas that received less flooding or where there were fewer buildings.



Figure 2-2: Wash Line



Figure 2-3: Mud Line under bridge





Figure 2-4: Interior Transferred to Exterior **Figure 2-5: Wrack Line**

2.6 SURVEY PROCEDURES

In order to comply with the current Robert T. Stafford Disaster Relief and Emergency Assistance requirements, URS initiated an effort to include a local surveying company. In addition to our HMTAP surveying partner, ESP Associates, P.A. (ESP), URS also contracted with Pelican Land Surveying, L.L.C. (PELICAN) based in Sulphur, LA, performed the surveying.

To quickly obtain surveyed HWM information, URS subcontractor ESP began the survey field work shortly after the HWMs were flagged. ESP began to establish the benchmark/control network on December 11, 2008. ESP completed the initial survey of the HWMs on December 20, 2008.

URS subcontractor PELICAN also began the survey field work shortly after the HWMs were flagged. PELICAN began to establish the benchmark/control network on December 22, 2008. PELICAN completed the initial survey of their HWMs on December 30, 2008.

To establish elevation control points, ESP survey crews used Static or Fast Static GPS methods. Each new HWM control point was established using a minimum of two post-processed independent baselines from existing National Geodetic Survey (NGS) monuments or NGS Continuously Operating Reference Stations (CORS). All Real Time Kinematic (RTK) GPS bases were established using direct Fast Static GPS ties to two separate existing NGS monuments. All HWMs that could not be directly surveyed (horizontally and vertically) using either of the GPS methods were surveyed using conventional leveling techniques (vertical) and located using mapping grade (sub-meter) GPS receivers (horizontal). The HWMs were surveyed horizontally in the North American Datum of 1983 (NAD 83) using the 2006.81 adjusted monuments (per the recommendation of the NGS Louisiana State Advisor) and in the Louisiana State Plane Coordinate System (South 1702 Zone), and vertically in the North American Vertical Datum of 1988 (NAVD 88). Corpscon Ver. 5.11.08 software was used to convert the NAVD 88 vertical datum elevations to National Geodetic Vertical Datum of 1929 (NGVD 29) vertical datum elevations. ESP used Static or Fast Static GPS procedures for establishing HWM control within Acadia, Allen, Avoyelles, Beauregard, Catahoula, Concordia, East Baton Rouge, East

Feliciana, Evangeline, Franklin, Grant, Iberville, Jefferson Davis, Lafayette, La Salle, Livingston, Natchitoches, Pointe Coupee, Rapides, Saint Helena, Saint Landry, Saint Martin, Saint Tammany, Tangipahoa, Vernon, Washington, West Baton Rouge, West Feliciana parishes.

PELICAN used published NGS monuments for horizontal and vertical control to survey the HWMs within Calcasieu Parish. The horizontal datum of each monument is NAD 83 (2007) and the vertical datum is NAVD88 (2006.81). A GPS static session was performed at each monument and processed through On-line Positioning User Service (OPUS). The OPUS solutions were compared to the published values to verify the monument's coordinates and elevation. A combination of RTK and Fast Static methods were used to survey the HWMs. The data was processed through Trimble Geomatics Office. As quality control checks in the field, levels were run through points at each HWM to verify GPS data. Also, other NGS monuments were surveyed during the GPS sessions and the results compared to the NGS published values.

The surveys were conducted in U.S. survey feet. The HWMs were surveyed to the accuracy of 0.25 foot vertically and 10 feet horizontally, relative to the primary control used, with a 95 percent level of confidence.

2.7 QUALITY ASSURANCE REVIEW

Upon receipt of the data from the surveyor, URS began the quality assurance (QA) process. The QA process involved checking each data field in the database, including HWM elevation. The URS QA review of the data also included checking the surveyed elevation for reasonableness based on other nearby HWMs, gage data and available topography. Other QA checks included reviewing the flooding source, nearest municipality, parish, photographs, consistency of data, and similar factors. If a discrepancy was found, it was sent back to the surveyor for review. If the discrepancy could not be resolved or if there was still question about the validity of the HWM after the review with the surveyor, the HWM is excluded from the database.

3.1 GENERAL

Some of the coastal parishes reported flooding during Hurricane Gustav due to levee overtopping. These include the towns of Isle de Jean Charles, Montegut, Pointe Aux Chenes, Cocodrie and Dulac in Terrebone Parish, and near the town of Gordy in lower Saint Mary Parish. Also, the Industrial Canal levee in the Upper Ninth Ward in New Orleans was overtopped during the Hurricane Gustav storm surge; however, only minor flooding was reported. No levee related flooding was reported in the project area, i.e., north of the I-10 / I-12 corridor, resulting from Hurricane Gustav.

Whenever identification of flooding types was possible, HWMs were collected for two types of flooding: riverine and levee-related. Consequently, each HWM was classified as riverine flooding-related (caused by rainfall) or levee-related (caused by levee breaks or by levee interior flooding). The conditions that compose these flood types are described in the following sections.

This project was a Task Order and required that the HWMs be flagged, surveyed, and reported quickly. Flooding types were designated based on observations made during the field work. A detailed analysis of land conditions, such as topography, all levee-locations, or levee performance was not performed; this level of analysis was not part of the scope of work and not possible due to the time limitations. Therefore, all classifications are estimates based on the best available data at the time of HWM collection.

3.2 RIVERINE FLOODING

Riverine flooding occurs when heavy rainfall causes river levels to rise. The nature of riverine flood conditions is less variable than coastal flooding, as riverine conditions do not undergo the coastal forces of wind and waves. High water levels from riverine flooding are mainly driven by the amount of rainfall based on the intensity, speed, and progression of a storm as it moves inland or across a region. Often the peak water elevations from riverine flooding along major rivers occur one or more days after the peak of the storm event has passed. Flooding occurs as rainfall from the storm affects the watershed and makes its way through downstream rivers.

3.3 LEVEE-RELATED FLOODING

The second type of flooding is levee-related flooding. Levee-related flooding involves high water conditions in areas protected by systems of levees, floodwalls, floodgates, etc., further distinguished as levee-break flooding and interior flooding. The levee-related flooding types are discussed below and presented graphically in Figures 3-1 through 3-3.

3.3.1 Levee-Break Flooding

Flooding from levee breaks include both areas where the protection system was structurally breached and areas where the structure was overtopped. In these situations, the water levels will equalize within the associated basin, although higher water levels will occur riverside of the levee. Figure 3-1 shows a levee being overtopped, and Figure 3-2 shows a levee breach. Both show elevated flood waters on the river side of the levee and flooded, yet lower, waters on, land side of the levee.

3.3.2 Levee-Interior Flooding

Interior flooding occurs inside the levee when the interior drainage pumps fail, were shut down, or were inadequate. Figure 3-3 shows a levee system with flooding in the interior areas. In most areas identified as levee-interior flooding, a basin with a reasonably consistent water level can be defined. Variations in flood levels will likely occur due to activity in the basin (e.g., local flow blockages, boat wakes). Levee-interior flood levels will generally, depending on timing, have minimal relation with the water levels outside of the levee and may show increased variation due to more localized conditions.

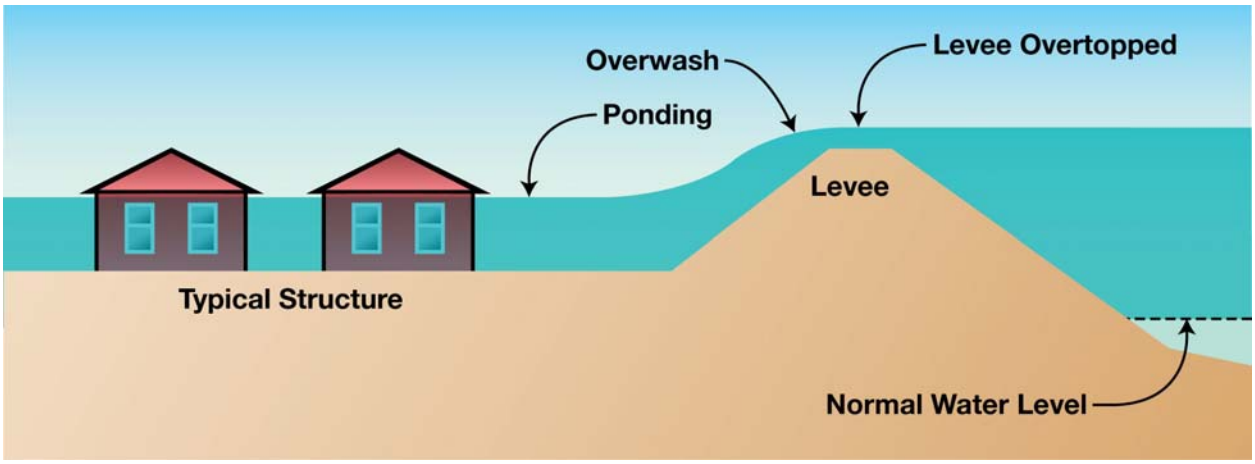


Figure 3-1: Levee Break Flooding Due to Levee Overtopping

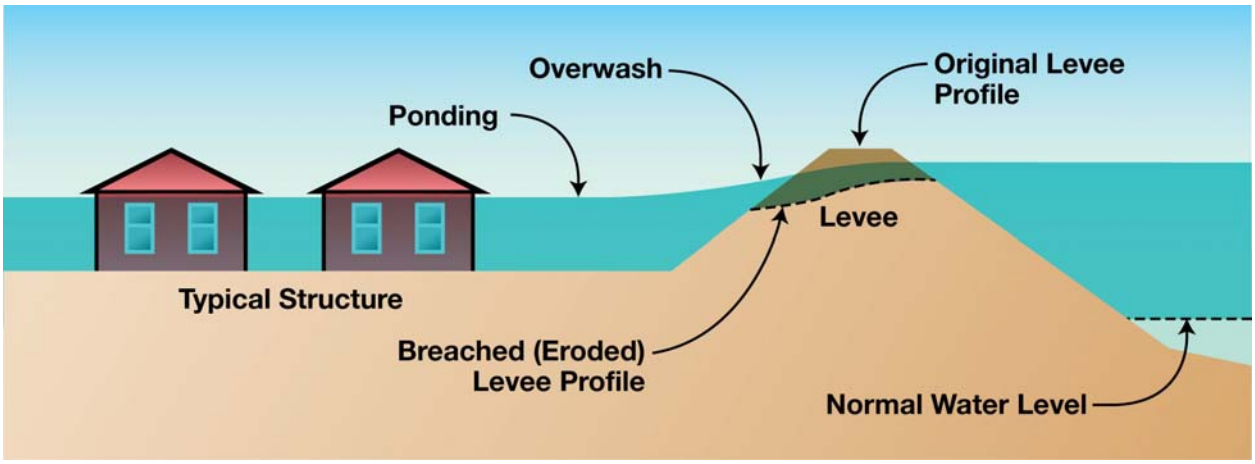


Figure 3-2: Levee Break Flooding Due to Levee Breach

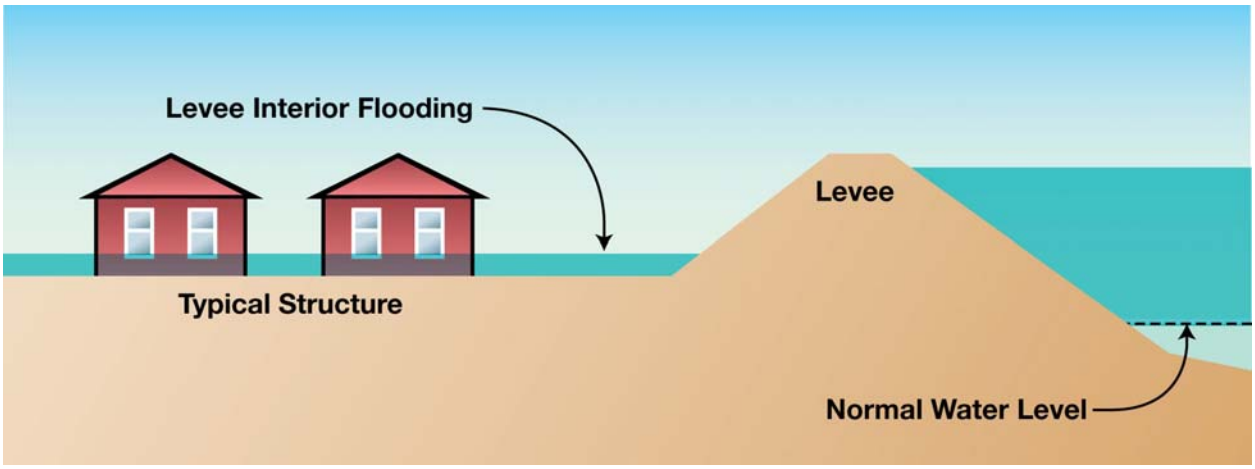


Figure 3-3: Levee Interior Flooding

A summary of results for all HWMs collected is given in Appendix B. Data collected for the HWMs is presented on a parish-wide basis on one-page forms in Appendix C. Maps showing the location of the HWMs are also included in Appendix C. The HWMs are identified with a unique point number, the High Water Mark Identifier (HWM ID), as shown on the one-page HWM form. The HWM forms include data for the storm event, flood type, location, point description, surveyed point coordinates (latitude [LAT]/longitude [LON]), and elevations.

As discussed in Section 3, when the flagger was able to easily determine that the flooding was associated with a levee, it is noted on the HWM form. However, due to the nature of task orders and challenges identifying levee-related high water marks, there may be additional high water marks that are influenced by levees but are not noted as such. Reportedly there was levee overtopping at New Roads, and Pointe Coupee Parish from Portage Canal

Flooding within the City of Alexandria was not as a result of the Red River. The Red River in Alexandria did not get over its banks. The flooding in this area is primarily due to poor drainage conditions. Although there are no USGS gages in or near the City of Alexandria, based on HWM evidence it appears that the river in this area only came up about 3 feet.

As was stated in Section 2.4, the area north of Lake Charles along the Calcasieu River in Calcasieu parish did exhibit coastal flooding. Flooding in this area could be attributed more to Hurricane Ike rather than Hurricane Gustav. The NOAA gage *8767816 at Lake Charles, LA* and the USGS gage *08017044 Calcasieu River at I-10 at Lake Charles, LA*, are presented together in Figure 4-1a and 4-1b because, 1) they are located close to each other and 2) they compensate for each others data gaps. Together, the figures show a higher peak stage during Hurricane Ike (September 13, 2008) which was the result of surge flooding.

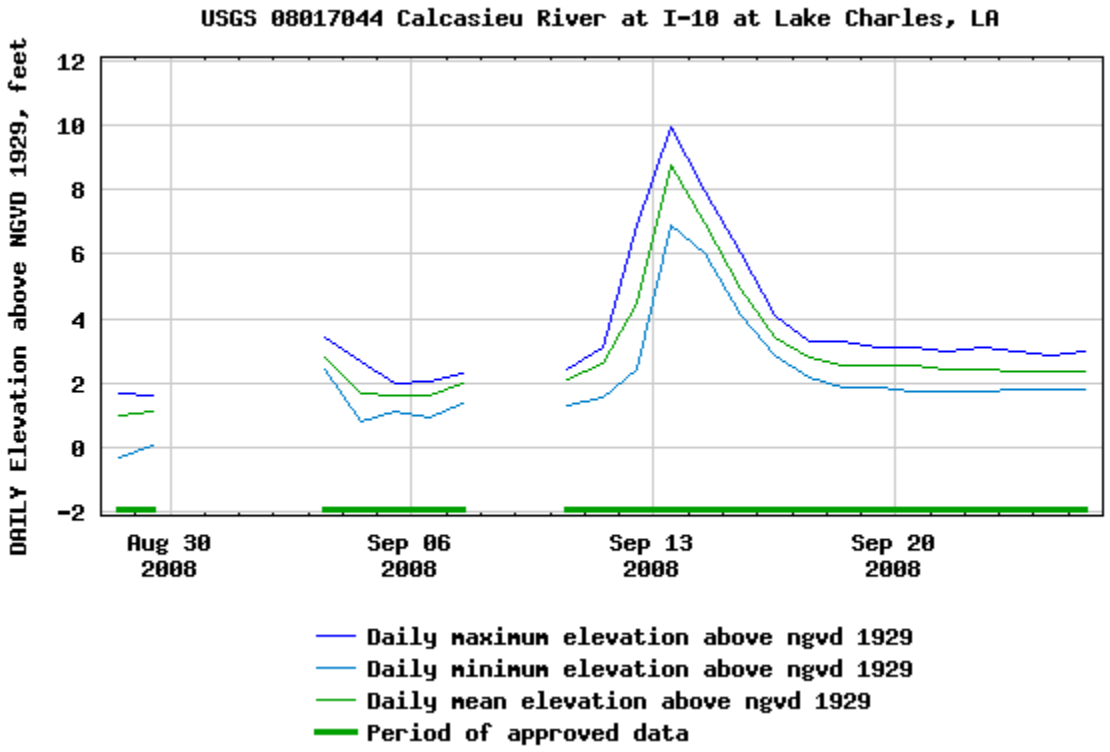


Figure 4-1a: USGS 08017044 Calcasieu River at Lake Charles, LA

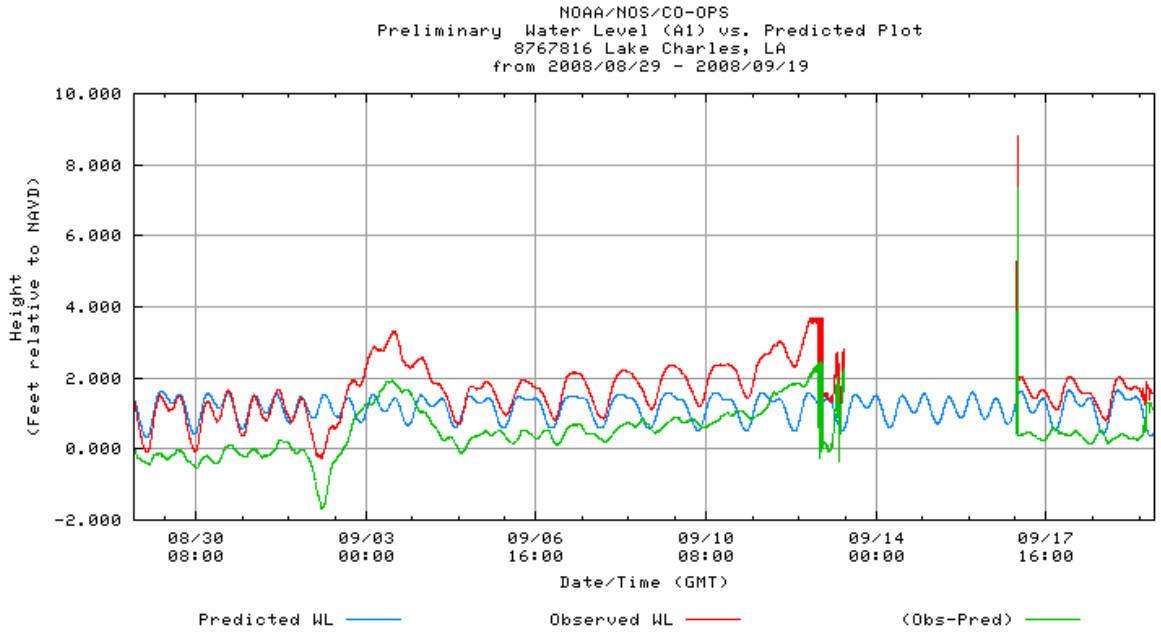


Figure 4-1b: NOAA Gage 8767816 at Lake Charles, LA

Appendix A
Field Data Collection Forms

UDIMS 2008 FLAGGER HIGH WATER MARK DATA COLLECTION

Location/Address			
Storm Name ***REQUIRED***			
Task Order # ***REQUIRED***			
Team # ***REQUIRED***			
HWM ID & HWM Number ***REQUIRED***			
HWM Street Address			
Apt., Suite, Etc.			
Municipality		State ***REQUIRED***	
County ***REQUIRED***			
Location of High Water Mark Object **if No Street Address Available**			
Wind-Water Line?	(circle one)	Yes	No
Fast Track HWM	(circle one)	Yes	No
Is Point Requested?	(circle one)	Yes	No
Team Lead Approved	Only to be completed by Team Lead.		
Directions for Surveyor			

UDIMS 2008 FLAGGER HIGH WATER MARK DATA COLLECTION

HWM ID (repeat in case forms are separated			
Event & Flagger Information			
Date of Flood Event		Date of Peak	
Source for Date of Peak			
Date of Flagging/Interview ***REQUIRED***			
Name of Flagger/Interviewer 1 ***REQUIRED***		Flagger 1 Company ***REQUIRED***	
Name of Flagger/Interviewer 2		Flagger 2 Company Name	
HWM Info			
Type of High Water Evidence (select only one) ***REQUIRED***	• Mud line • Debris line • Debris in Tree • Personal Account* *If personal account is selected, you **MUST** provide fill in the information in the "Eyewitness" section.	• Seed Line • Stain Line • Wash Line • Water Line • Wrack line • Other Comment:	
HWM Object, Surface (Select one) ***REQUIRED***			
Direction HWM Object Faces	Select one: • North • Northeast • Northwest • South • Southeast • Southwest	• East • West • NA (use if HWM Object, Surface field is: Interior Wall Transferred to Exterior Wall or Interior Wall).	
HWM Quality (Select one)	Good	Fair	Poor
Flagger HWM Latitude ***REQUIRED***			
Flagger HWM Longitude ***REQUIRED***			

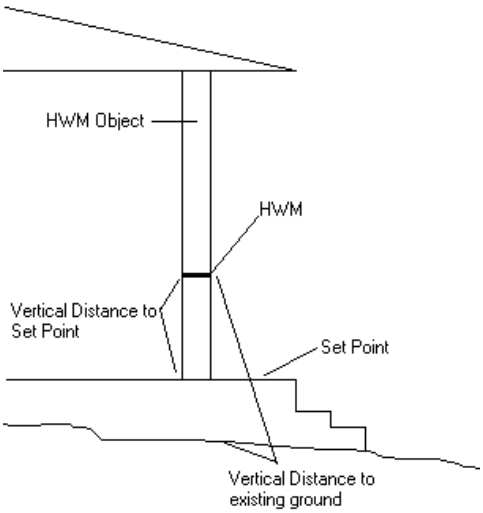
UDIMS 2008 FLAGGER HIGH WATER MARK DATA COLLECTION

HWM ID (repeat in case forms are separated			
Flooding Type (Select one)	Riverine Choices: • Riverine- Heavy Rain • Riverine - Hurricane	Coastal Choices: • Coastal- Stillwater Only • Coastal- Wave Height • Coastal – Wave Run Up	Levee Choices: • Levee- Break/Overtopping • Levee- Interior Drainage/Pump
Stream Name/Flood Source			
Flagger Comments Note items such as if appears downstream bridge/culvert was obstructed			
Marker (Select one) ***REQUIRED***	Choices are: • Base of wooden stake at ground • Bottom of paint line • Bottom of tape • Nail with flagging • No mark left, vertical offset used • Paint in street with horizontal offset (describe offset) • Stake with horizontal offset (describe offset) • Other – Explain:		
Description of Marker & Horizontal Offset			
Permission to Survey (Select one)	Choices are: • Yes • No	• NA since Public Property • Resident/Owner not available	
Vertical Offset Distance (feet) ***REQUIRED***			
Vertical Offset Set Point ***REQUIRED***			
Vertical Distance HWM to ground (feet) ***REQUIRED***			
Flagger's Visual Estimate of HWM Elevation (feet)			
Basis of Flagger's Visual Estimate of HWM Elevation			
Survey of HWM Needed	Yes No		
Sketch Completed? ***SKETCH REQUIRED***	Yes No		

Photo Information	
Photo ID	
Photo Description	
Photo ID	
Photo Description	
Photo ID	
Photo Description	
Photo ID	
Photo Description	

Eyewitness Information			
Name of Witness to High Water Mark			
Witness Street Address			
Apt., Suite, Etc.			
Municipality:	State:	Zip:	County:
Phone			
Length of Residence			
Witness Information			

Example Measurements



Appendix B

HWM Summary Table and Location Maps

Summary of High Water Mark Survey Results

HWM ID	Parish	Surveyed Elevation (feet) NAVD 88	Surveyed Latitude	Surveyed Longitude	Flood Type
402-ILA-30-019	Acadia	4.9	30.2682	-92.5603	Riverine - Hurricane
402-ILA-30-021	Acadia	10.6	30.3331	-92.5430	Riverine - Hurricane
402-ILA-30-022	Acadia	28.3	30.4464	-92.4103	Riverine - Hurricane
402-ILA-30-023	Acadia	13.3	30.3945	-92.4975	Riverine - Hurricane
402-ILA-30-024	Acadia	10.7	30.2527	-92.3622	Riverine - Hurricane
402-ILA-30-025	Acadia	17.1	30.3018	-92.3439	Riverine - Hurricane
402-ILA-30-026	Acadia	28.6	30.3550	-92.2992	Riverine - Hurricane
402-ILA-30-027	Acadia	31.8	30.3495	-92.2161	Riverine - Hurricane
402-ILA-30-028	Acadia	22.1	30.2847	-92.2626	Riverine - Hurricane
402-ILA-40-045	Allen	30.7	30.5196	-93.0529	Riverine - Hurricane
402-ILA-40-046	Allen	15.9	30.4543	-93.0431	Riverine - Hurricane
402-ILA-40-047	Allen	110.2	30.8367	-92.8744	Riverine - Hurricane
402-ILA-40-048	Allen	89.6	30.7701	-92.8258	Riverine - Hurricane
402-ILA-40-049	Allen	70.4	30.7052	-92.7520	Riverine - Hurricane
402-ILA-40-050	Allen	65.3	30.6984	-92.8930	Riverine - Hurricane
402-ILA-40-051	Allen	56.8	30.6400	-92.8152	Riverine - Hurricane
402-ILA-40-052	Allen	31.5	30.5358	-92.6714	Riverine - Hurricane
402-ILA-40-053	Allen	32.5	30.5206	-92.8272	Riverine - Hurricane
402-ILA-40-054	Allen	26.8	30.4506	-92.8700	Riverine - Hurricane
402-ILA-20-019	Avoyelles	60.2	30.9833	-92.2113	Riverine - Hurricane
402-ILA-70-001	Avoyelles	52.9	31.3008	-92.1570	Riverine - Hurricane
402-ILA-70-002	Avoyelles	84.6	31.2529	-92.1932	Riverine - Hurricane
402-ILA-70-004	Avoyelles	45.4	31.1400	-92.0365	Riverine - Hurricane
402-ILA-70-005	Avoyelles	45.3	31.1418	-92.0094	Riverine - Hurricane
402-ILA-70-006	Avoyelles	45.1	31.1329	-92.0145	Riverine - Hurricane
402-ILA-70-008	Avoyelles	45.2	31.0707	-92.0018	Riverine - Hurricane
402-ILA-70-009	Avoyelles	43.0	31.0352	-92.0340	Riverine - Hurricane

Summary of High Water Mark Survey Results

HWM ID	Parish	Surveyed Elevation (feet) NAVD 88	Surveyed Latitude	Surveyed Longitude	Flood Type
402-ILA-70-010	Avoyelles	44.2	31.0242	-92.0149	Riverine - Hurricane
402-ILA-70-011	Avoyelles	50.8	31.0077	-92.0510	Riverine - Hurricane
402-ILA-70-012	Avoyelles	46.5	31.0191	-92.0514	Riverine - Hurricane
402-ILA-70-014	Avoyelles	57.5	30.9502	-92.2232	Riverine - Hurricane
402-ILA-70-015	Avoyelles	54.9	30.9182	-92.2034	Riverine - Hurricane
402-ILA-70-016	Avoyelles	53.9	30.9088	-92.2073	Riverine - Hurricane
402-ILA-70-017	Avoyelles	49.9	30.8671	-92.2183	Riverine - Hurricane
402-ILA-70-019	Avoyelles	50.0	30.8570	-92.2144	Riverine - Hurricane
402-ILA-70-021	Avoyelles	55.1	30.9522	-92.1090	Riverine - Hurricane
402-ILA-70-022	Avoyelles	48.1	31.0193	-92.0288	Riverine - Hurricane
402-ILA-70-023	Avoyelles	44.3	31.0466	-91.9870	Riverine - Hurricane
402-ILA-70-025	Avoyelles	44.5	31.0913	-91.9368	Riverine - Hurricane
402-ILA-70-083	Avoyelles	41.7	30.9722	-91.8512	Riverine - Hurricane
402-ILA-70-084	Avoyelles	38.7	30.9482	-91.9024	Riverine - Hurricane
402-ILA-70-085	Avoyelles	42.1	30.9796	-91.9659	Riverine - Hurricane
402-ILA-40-025	Beauregard	81.7	30.5214	-93.5800	Riverine - Hurricane
402-ILA-40-026	Beauregard	38.6	30.4366	-93.6875	Riverine - Hurricane
402-ILA-40-027	Beauregard	50.0	30.6279	-93.6399	Riverine - Hurricane
402-ILA-40-028	Beauregard	127.4	30.6833	-93.4541	Riverine - Hurricane
402-ILA-40-029	Beauregard	104.1	30.7279	-93.5119	Riverine - Hurricane
402-ILA-40-030	Beauregard	95.9	30.5933	-93.4787	Riverine - Hurricane
402-ILA-40-031	Beauregard	68.9	30.5383	-93.4364	Riverine - Hurricane
402-ILA-40-032	Beauregard	48.1	30.4203	-93.4880	Riverine - Hurricane
402-ILA-40-033	Beauregard	136.4	30.7447	-93.3489	Riverine - Hurricane
402-ILA-40-034	Beauregard	154.5	30.8255	-93.2952	Riverine - Hurricane
402-ILA-40-035	Beauregard	162.5	30.8593	-93.2883	Riverine - Hurricane
402-ILA-40-036	Beauregard	135.5	30.8645	-93.0736	Riverine - Hurricane

Summary of High Water Mark Survey Results

HWM ID	Parish	Surveyed Elevation (feet) NAVD 88	Surveyed Latitude	Surveyed Longitude	Flood Type
402-ILA-40-037	Beauregard	104.7	30.7928	-93.0146	Riverine - Hurricane
402-ILA-40-038	Beauregard	37.4	30.4704	-93.3613	Riverine - Hurricane
402-ILA-40-039	Beauregard	43.6	30.5014	-93.2794	Riverine - Hurricane
402-ILA-40-040	Beauregard	81.8	30.6072	-93.1957	Riverine - Hurricane
402-ILA-40-041	Beauregard	98.8	30.6327	-93.1117	Riverine - Hurricane
402-ILA-40-042	Beauregard	70.0	30.6855	-93.0431	Riverine - Hurricane
402-ILA-40-043	Beauregard	43.4	30.5176	-93.1406	Riverine - Hurricane
402-ILA-40-044	Beauregard	41.7	30.4416	-93.2324	Riverine - Hurricane
402-ILA-40-001	Calcasieu	9.0	30.2497	-93.2236	Coastal - Stillwater Only
402-ILA-40-002	Calcasieu	8.8	30.2522	-93.2464	Coastal - Stillwater Only
402-ILA-40-003	Calcasieu	7.9	30.2831	-93.2288	Riverine - Hurricane
402-ILA-40-004	Calcasieu	8.6	30.3044	-93.1520	Riverine - Hurricane
402-ILA-40-006	Calcasieu	8.8	30.3304	-93.0720	Riverine - Hurricane
402-ILA-40-007	Calcasieu	8.1	30.3085	-93.0654	Riverine - Hurricane
402-ILA-40-008	Calcasieu	8.4	30.3034	-93.2494	Riverine - Hurricane
402-ILA-40-011	Calcasieu	8.4	30.2370	-93.3288	Coastal - Stillwater Only
402-ILA-40-013	Calcasieu	9.3	30.2194	-93.3589	Coastal - Stillwater Only
402-ILA-40-014	Calcasieu	10.9	30.2274	-93.4395	Coastal - Stillwater Only
402-ILA-40-015	Calcasieu	8.8	30.2026	-93.5605	Coastal - Stillwater Only
402-ILA-40-016	Calcasieu	8.7	30.1977	-93.6797	Coastal - Stillwater Only
402-ILA-40-017	Calcasieu	8.1	30.2910	-93.3556	Riverine - Hurricane
402-ILA-40-019	Calcasieu	8.6	30.3188	-93.2966	Riverine - Hurricane
402-ILA-40-020	Calcasieu	31.1	30.3931	-93.3822	Riverine - Hurricane
402-ILA-40-021	Calcasieu	49.4	30.4583	-93.4299	Riverine - Hurricane
402-ILA-40-023	Calcasieu	41.9	30.4233	-93.4247	Riverine - Hurricane
402-ILA-40-024	Calcasieu	21.7	30.3568	-93.4533	Riverine - Hurricane
402-ILA-50-015	Catahoula	50.6	31.8242	-91.6438	Riverine - Hurricane

Summary of High Water Mark Survey Results

HWM ID	Parish	Surveyed Elevation (feet) NAVD 88	Surveyed Latitude	Surveyed Longitude	Flood Type
402-ILA-50-017	Catahoula	51.2	31.7826	-91.7745	Riverine - Hurricane
402-ILA-50-024	Catahoula	54.4	31.5742	-91.9909	Riverine - Hurricane
402-ILA-70-007	Catahoula	29.2	31.2531	-91.9560	Riverine - Hurricane
402-ILA-50-029	Concordia	57.5	31.6812	-91.4351	Riverine - Hurricane
402-ILA-50-031	Concordia	57.2	31.7315	-91.4540	Riverine - Hurricane
402-ILA-50-032	Concordia	57.4	31.7315	-91.4418	Riverine - Hurricane
402-ILA-50-033	Concordia	51.0	31.6698	-91.5070	Riverine - Hurricane
402-ILA-50-034	Concordia	50.8	31.6403	-91.5412	Riverine - Hurricane
402-ILA-50-037	Concordia	44.7	31.4726	-91.7426	Riverine - Hurricane
402-ILA-50-038	Concordia	44.8	31.4817	-91.7158	Riverine - Hurricane
402-ILA-50-040	Concordia	44.2	31.4960	-91.6672	Riverine - Hurricane
402-ILA-50-041	Concordia	44.3	31.4600	-91.6518	Riverine - Hurricane
402-ILA-50-042	Concordia	38.0	31.4302	-91.6188	Riverine - Hurricane
402-ILA-50-044	Concordia	44.7	31.4327	-91.7678	Riverine - Hurricane
402-ILA-50-045	Concordia	38.1	31.3557	-91.7391	Riverine - Hurricane
402-ILA-50-046	Concordia	43.3	31.3397	-91.8524	Riverine - Hurricane
402-ILA-60-012	East Baton Rouge	66.7	30.5743	-91.0115	Riverine - Hurricane
402-ILA-60-014	East Baton Rouge	91.8	30.6494	-91.1267	Riverine - Hurricane
402-ILA-60-015	East Baton Rouge	59.8	30.5492	-91.0985	Riverine - Hurricane
402-ILA-60-023	East Feliciana	103.0	30.7353	-90.8438	Riverine - Hurricane
402-ILA-60-024	East Feliciana	152.8	30.8884	-90.8477	Riverine - Hurricane
402-ILA-70-030	Evangeline	32.7	30.5438	-92.5370	Riverine - Hurricane
402-ILA-70-031	Evangeline	33.4	30.5817	-92.5806	Riverine - Hurricane
402-ILA-70-034	Evangeline	60.1	30.7283	-92.4281	Riverine - Hurricane
402-ILA-70-035	Evangeline	94.3	30.8959	-92.4102	Riverine - Hurricane
402-ILA-70-036	Evangeline	59.4	31.0001	-92.3803	Riverine - Hurricane
402-ILA-70-037	Evangeline	60.2	30.9585	-92.4524	Riverine - Hurricane

Summary of High Water Mark Survey Results

HWM ID	Parish	Surveyed Elevation (feet) NAVD 88	Surveyed Latitude	Surveyed Longitude	Flood Type
402-ILA-70-038	Evangeline	48.3	30.8286	-92.2745	Riverine - Hurricane
402-ILA-70-039	Evangeline	46.0	30.8562	-92.2821	Riverine - Hurricane
402-ILA-70-040	Evangeline	51.2	30.9193	-92.3145	Riverine - Hurricane
402-ILA-70-041	Evangeline	82.9	30.7853	-92.5421	Riverine - Hurricane
402-ILA-70-043	Evangeline	57.3	30.6411	-92.3953	Riverine - Hurricane
402-ILA-70-055	Evangeline	49.4	30.7601	-92.2830	Riverine - Hurricane
402-ILA-70-056	Evangeline	34.3	30.7662	-92.1965	Riverine - Hurricane
402-ILA-70-061	Evangeline	71.0	30.6789	-92.2527	Riverine - Hurricane
402-ILA-50-002	Franklin	66.8	32.1542	-91.7114	Riverine - Hurricane
402-ILA-50-003	Franklin	64.9	32.1390	-91.7148	Riverine - Hurricane
402-ILA-50-004	Franklin	64.7	32.1465	-91.7130	Riverine - Hurricane
402-ILA-50-005	Franklin	64.8	32.1420	-91.7097	Riverine - Hurricane
402-ILA-50-007	Franklin	68.9	32.1677	-91.7216	Riverine - Hurricane
402-ILA-50-008	Franklin	76.0	32.2687	-91.7382	Riverine - Hurricane
402-ILA-20-037	Grant	54.7	31.7358	-92.4002	Riverine - Hurricane
402-ILA-20-038	Grant	86.1	31.5253	-92.6843	Riverine - Hurricane
402-ILA-30-029	Iberville	12.9	30.4192	-91.4344	Riverine - Hurricane
402-ILA-30-030	Iberville	13.5	30.4421	-91.4522	Riverine - Hurricane
402-ILA-30-031	Iberville	16.1	30.4943	-91.5151	Riverine - Hurricane
402-ILA-30-032	Iberville	17.7	30.4889	-91.5229	Riverine - Hurricane
402-ILA-30-033	Iberville	17.6	30.4725	-91.5233	Riverine - Hurricane
402-ILA-30-034	Iberville	11.5	30.4160	-91.5031	Riverine - Hurricane
402-ILA-30-035	Iberville	8.6	30.4002	-91.5095	Riverine - Hurricane
402-ILA-30-036	Iberville	11.2	30.3996	-91.5118	Riverine - Hurricane
402-ILA-40-055	Jefferson Davis	22.7	30.3903	-92.9039	Riverine - Hurricane
402-ILA-40-056	Jefferson Davis	8.2	30.3199	-93.0140	Riverine - Hurricane
402-ILA-30-010	Lafayette	35.0	30.2642	-92.0694	Riverine - Hurricane

Summary of High Water Mark Survey Results

HWM ID	Parish	Surveyed Elevation (feet) NAVD 88	Surveyed Latitude	Surveyed Longitude	Flood Type
402-ILA-30-012	Lafayette	18.0	30.2706	-92.0082	Riverine - Hurricane
402-ILA-30-014	Lafayette	13.0	30.2937	-91.9829	Riverine - Hurricane
402-ILA-70-049	Lafayette	28.0	30.3788	-92.0533	Riverine - Hurricane
402-ILA-50-023	LaSalle	47.0	31.6087	-92.0335	Riverine - Hurricane
402-ILA-50-025	LaSalle	46.0	31.5100	-92.0573	Riverine - Hurricane
402-ILA-50-028	LaSalle	46.1	31.5559	-92.0317	Riverine - Hurricane
402-ILA-60-021	Livingston	41.2	30.5100	-90.9656	Riverine - Hurricane
402-ILA-60-022	Livingston	46.0	30.5870	-90.9796	Riverine - Hurricane
402-ILA-60-026	Livingston	33.7	30.5039	-90.6782	Riverine - Hurricane
402-ILA-60-027	Livingston	55.3	30.5610	-90.6594	Riverine - Hurricane
402-ILA-20-001	Natchitoches	98.6	31.7540	-93.0861	Riverine - Hurricane
402-ILA-30-043	Pointe Coupee	25.0	30.6224	-91.6409	Riverine - Hurricane
402-ILA-30-045	Pointe Coupee	27.9	30.7100	-91.4373	Riverine - Hurricane
402-ILA-30-046	Pointe Coupee	27.3	30.7016	-91.4540	Riverine - Hurricane
402-ILA-30-047	Pointe Coupee	32.9	30.7117	-91.4804	Riverine - Hurricane
402-ILA-30-048	Pointe Coupee	21.8	30.5221	-91.5371	Riverine - Hurricane
402-ILA-30-049	Pointe Coupee	22.6	30.5471	-91.5902	Riverine - Hurricane
402-ILA-30-050	Pointe Coupee	22.8	30.5542	-91.6475	Riverine - Hurricane
402-ILA-30-051	Pointe Coupee	22.2	30.5799	-91.5247	Riverine - Hurricane
402-ILA-30-052	Pointe Coupee	19.0	30.6133	-91.4276	Riverine - Hurricane
402-ILA-30-053	Pointe Coupee	19.2	30.6138	-91.4250	Riverine - Hurricane
402-ILA-30-054	Pointe Coupee	36.1	30.9241	-91.7641	Riverine - Hurricane
402-ILA-30-055	Pointe Coupee	33.9	30.8698	-91.7689	Riverine - Hurricane
402-ILA-20-004	Rapides	75.4	31.0813	-92.4156	Riverine - Hurricane
402-ILA-20-006	Rapides	69.6	31.3119	-92.4421	Riverine - Hurricane
402-ILA-20-010	Rapides	73.1	31.2733	-92.4291	Riverine - Hurricane
402-ILA-20-011	Rapides	75.0	31.2808	-92.4138	Riverine - Hurricane

Summary of High Water Mark Survey Results

HWM ID	Parish	Surveyed Elevation (feet) NAVD 88	Surveyed Latitude	Surveyed Longitude	Flood Type
402-ILA-20-012	Rapides	73.6	31.2853	-92.4147	Riverine - Hurricane
402-ILA-20-013	Rapides	74.3	31.2902	-92.4194	Riverine - Hurricane
402-ILA-20-015	Rapides	60.8	31.1558	-92.3007	Riverine - Hurricane
402-ILA-20-017	Rapides	61.7	31.0165	-92.2863	Riverine - Hurricane
402-ILA-20-018	Rapides	64.4	31.0357	-92.2987	Riverine - Hurricane
402-ILA-20-021	Rapides	75.3	31.3087	-92.4454	Riverine - Hurricane
402-ILA-20-024	Rapides	83.7	31.1558	-92.5000	Riverine - Hurricane
402-ILA-20-032	Rapides	91.2	31.0592	-92.4478	Riverine - Hurricane
402-ILA-20-034	Rapides	141.3	30.9731	-92.5941	Riverine - Hurricane
402-ILA-20-035	Rapides	137.1	30.9765	-92.5833	Riverine - Hurricane
402-ILA-20-042	Rapides	71.6	31.3139	-92.4660	Riverine - Hurricane
402-ILA-20-043	Rapides	72.0	31.3078	-92.4760	Riverine - Hurricane
402-ILA-20-044	Rapides	73.5	31.2960	-92.4942	Riverine - Hurricane
402-ILA-20-046	Rapides	74.5	31.2878	-92.4905	Riverine - Hurricane
402-ILA-20-049	Rapides	77.7	31.2649	-92.4558	Riverine - Hurricane
402-ILA-20-051	Rapides	73.7	31.2700	-92.4426	Riverine - Hurricane
402-ILA-20-052	Rapides	73.8	31.2979	-92.4330	Riverine - Hurricane
402-ILA-20-056	Rapides	126.0	30.9743	-92.5836	Riverine - Hurricane
402-ILA-60-025	St. Helena	177.9	30.9458	-90.8593	Riverine - Hurricane
402-ILA-60-028	St. Helena	97.6	30.6847	-90.6447	Riverine - Hurricane
402-ILA-60-029	St. Helena	128.0	30.7506	-90.6322	Riverine - Hurricane
402-ILA-60-031	St. Helena	158.7	30.8245	-90.6377	Riverine - Hurricane
402-ILA-60-032	St. Helena	211.6	30.9308	-90.6729	Riverine - Hurricane
402-ILA-70-020	St. Landry	48.3	30.8476	-92.2098	Riverine - Hurricane
402-ILA-70-028	St. Landry	39.1	30.4019	-92.0642	Riverine - Hurricane
402-ILA-70-033	St. Landry	44.0	30.5049	-92.4152	Riverine - Hurricane
402-ILA-70-044	St. Landry	33.4	30.4833	-92.4904	Riverine - Hurricane

Summary of High Water Mark Survey Results

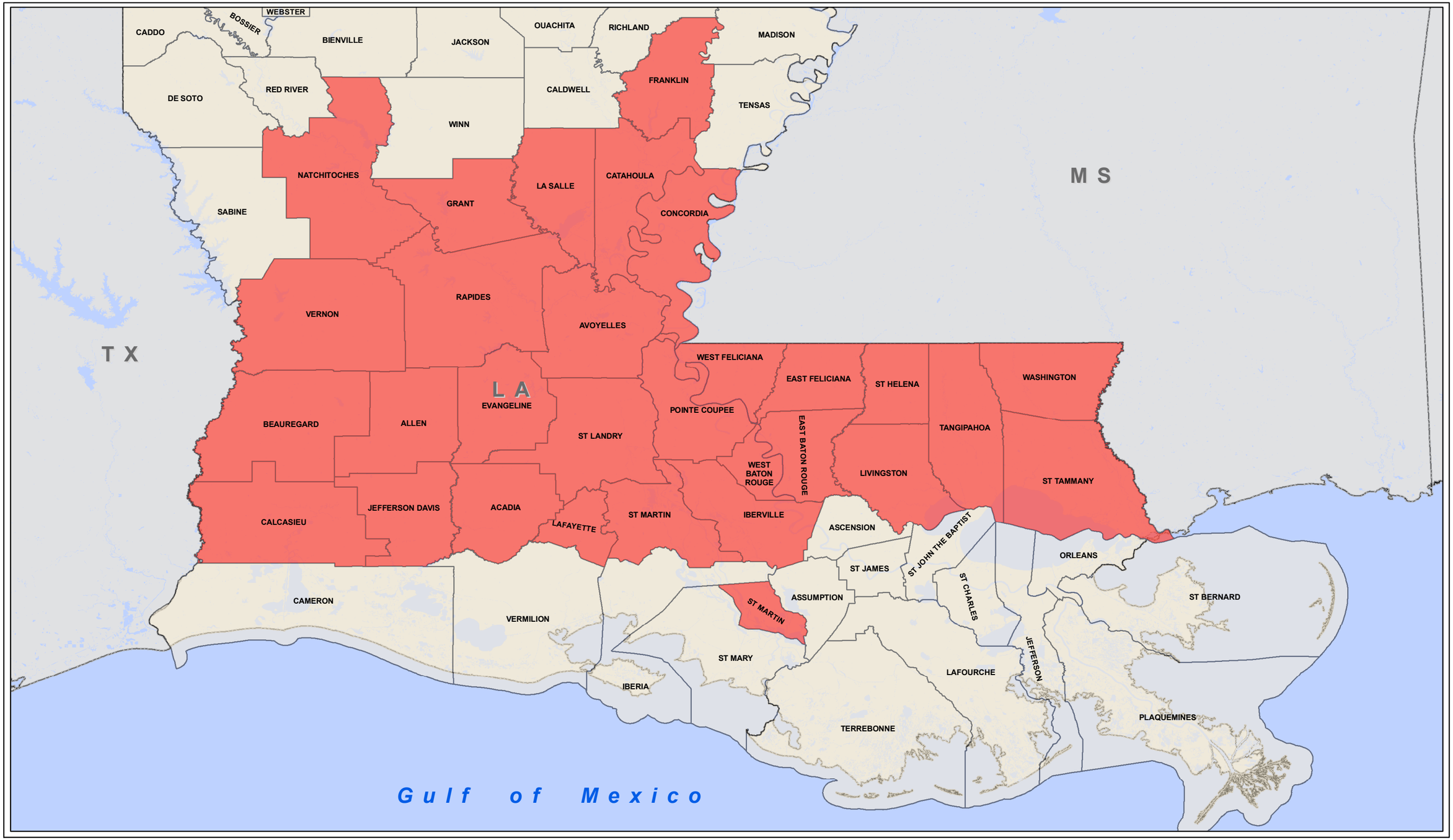
HWM ID	Parish	Surveyed Elevation (feet) NAVD 88	Surveyed Latitude	Surveyed Longitude	Flood Type
402-ILA-70-045	St. Landry	46.6	30.5060	-92.3260	Riverine - Hurricane
402-ILA-70-046	St. Landry	49.7	30.5096	-92.2604	Riverine - Hurricane
402-ILA-70-047	St. Landry	41.5	30.3715	-92.1454	Riverine - Hurricane
402-ILA-70-048	St. Landry	39.7	30.4170	-92.0883	Riverine - Hurricane
402-ILA-70-050	St. Landry	19.8	30.4053	-91.9943	Riverine - Hurricane
402-ILA-70-051	St. Landry	19.5	30.4074	-91.9785	Riverine - Hurricane
402-ILA-70-052	St. Landry	19.7	30.3968	-91.9317	Riverine - Hurricane
402-ILA-70-053	St. Landry	19.8	30.3974	-91.9304	Riverine - Hurricane
402-ILA-70-054	St. Landry	20.4	30.4479	-91.9248	Riverine - Hurricane
402-ILA-70-057	St. Landry	34.2	30.7785	-92.1910	Riverine - Hurricane
402-ILA-70-058	St. Landry	42.9	30.8102	-92.1873	Riverine - Hurricane
402-ILA-70-059	St. Landry	41.9	30.7851	-92.1478	Riverine - Hurricane
402-ILA-70-062	St. Landry	47.5	30.6585	-92.1627	Riverine - Hurricane
402-ILA-70-063	St. Landry	58.1	30.6170	-92.1306	Riverine - Hurricane
402-ILA-70-064	St. Landry	25.9	30.6102	-92.0640	Riverine - Hurricane
402-ILA-70-065	St. Landry	25.8	30.6178	-92.0553	Riverine - Hurricane
402-ILA-70-066	St. Landry	29.0	30.6854	-92.0340	Riverine - Hurricane
402-ILA-70-067	St. Landry	29.3	30.7014	-92.0137	Riverine - Hurricane
402-ILA-70-068	St. Landry	25.1	30.6209	-92.0190	Riverine - Hurricane
402-ILA-70-069	St. Landry	25.7	30.6153	-92.0354	Riverine - Hurricane
402-ILA-70-070	St. Landry	24.9	30.5697	-92.0221	Riverine - Hurricane
402-ILA-70-071	St. Landry	25.1	30.5459	-92.0104	Riverine - Hurricane
402-ILA-70-072	St. Landry	21.9	30.5341	-91.9991	Riverine - Hurricane
402-ILA-70-073	St. Landry	22.3	30.5468	-91.9682	Riverine - Hurricane
402-ILA-70-074	St. Landry	19.2	30.5474	-91.8749	Riverine - Hurricane
402-ILA-70-075	St. Landry	18.4	30.5610	-91.8265	Riverine - Hurricane
402-ILA-70-076	St. Landry	19.5	30.6146	-91.8736	Riverine - Hurricane

Summary of High Water Mark Survey Results

HWM ID	Parish	Surveyed Elevation (feet) NAVD 88	Surveyed Latitude	Surveyed Longitude	Flood Type
402-ILA-70-078	St. Landry	24.0	30.6563	-91.9102	Riverine - Hurricane
402-ILA-70-079	St. Landry	29.4	30.8256	-92.0272	Riverine - Hurricane
402-ILA-70-080	St. Landry	21.6	30.6928	-91.7680	Riverine - Hurricane
402-ILA-70-082	St. Landry	25.8	30.7593	-91.8511	Riverine - Hurricane
402-ILA-30-001	St. Martin	10.1	30.4060	-91.6923	Riverine - Hurricane
402-ILA-30-002	St. Martin	17.6	30.3404	-91.7291	Riverine - Hurricane
402-ILA-30-003	St. Martin	14.7	30.3109	-91.9057	Riverine - Hurricane
402-ILA-30-004	St. Martin	11.8	30.3610	-91.8080	Riverine - Hurricane
402-ILA-30-005	St. Martin	11.5	30.3638	-91.8120	Riverine - Hurricane
402-ILA-30-006	St. Martin	18.7	30.3731	-91.9223	Riverine - Hurricane
402-ILA-30-007	St. Martin	19.0	30.3557	-91.8968	Riverine - Hurricane
402-ILA-30-008	St. Martin	16.3	30.3269	-91.8511	Riverine - Hurricane
402-ILA-30-017	St. Martin	17.0	30.3361	-91.8555	Riverine - Hurricane
402-ILA-30-018	St. Martin	8.6	30.3431	-91.7889	Riverine - Hurricane
402-ILA-60-004	St. Tammany	32.8	30.5617	-89.8570	Riverine - Hurricane
402-ILA-60-007	St. Tammany	11.5	30.4712	-90.0944	Riverine - Hurricane
402-ILA-60-008	St. Tammany	5.7	30.4567	-90.1134	Riverine - Hurricane
402-ILA-60-009	St. Tammany	25.0	30.4851	-90.1539	Riverine - Hurricane
402-ILA-60-010	St. Tammany	60.0	30.5750	-90.2393	Riverine - Hurricane
402-ILA-60-011	St. Tammany	42.7	30.5329	-90.2024	Riverine - Hurricane
402-ILA-60-016	Tangipahoa	22.5	30.5057	-90.3648	Riverine - Hurricane
402-ILA-60-017	Tangipahoa	37.6	30.5697	-90.4005	Riverine - Hurricane
402-ILA-60-018	Tangipahoa	58.1	30.6121	-90.4622	Riverine - Hurricane
402-ILA-60-019	Tangipahoa	89.5	30.7290	-90.4846	Riverine - Hurricane
402-ILA-60-020	Tangipahoa	150.9	30.8719	-90.4923	Riverine - Hurricane
402-ILA-60-033	Tangipahoa	190.5	30.9381	-90.4899	Riverine - Hurricane
402-ILA-60-046	Tangipahoa	137.4	30.7568	-90.2650	Riverine - Hurricane

Summary of High Water Mark Survey Results

HWM ID	Parish	Surveyed Elevation (feet) NAVD 88	Surveyed Latitude	Surveyed Longitude	Flood Type
402-ILA-20-025	Vernon	268.2	31.1646	-93.0470	Riverine - Hurricane
402-ILA-20-027	Vernon	229.0	31.3552	-92.9897	Riverine - Hurricane
402-ILA-20-028	Vernon	297.3	31.2950	-93.2867	Riverine - Hurricane
402-ILA-60-034	Washington	161.1	30.9225	-90.2046	Riverine - Hurricane
402-ILA-60-035	Washington	135.1	30.8434	-90.1625	Riverine - Hurricane
402-ILA-60-036	Washington	99.3	30.7209	-90.0835	Riverine - Hurricane
402-ILA-30-039	West Baton Rouge	18.8	30.5338	-91.4081	Riverine - Hurricane
402-ILA-30-041	West Baton Rouge	22.7	30.5359	-91.3223	Riverine - Hurricane
402-ILA-60-037	West Feliciana	51.1	30.7477	-91.2863	Riverine - Hurricane
402-ILA-60-038	West Feliciana	128.1	30.7896	-91.3248	Riverine - Hurricane
402-ILA-60-039	West Feliciana	75.5	30.7853	-91.3632	Riverine - Hurricane
402-ILA-60-040	West Feliciana	84.2	30.8402	-91.2270	Riverine - Hurricane
402-ILA-60-041	West Feliciana	159.8	30.9182	-91.2994	Riverine - Hurricane
402-ILA-60-042	West Feliciana	68.9	30.8439	-91.4016	Riverine - Hurricane
402-ILA-60-043	West Feliciana	148.2	30.9469	-91.4608	Riverine - Hurricane



Parish with High Water Mark

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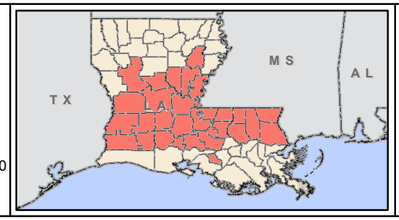
Kilometers



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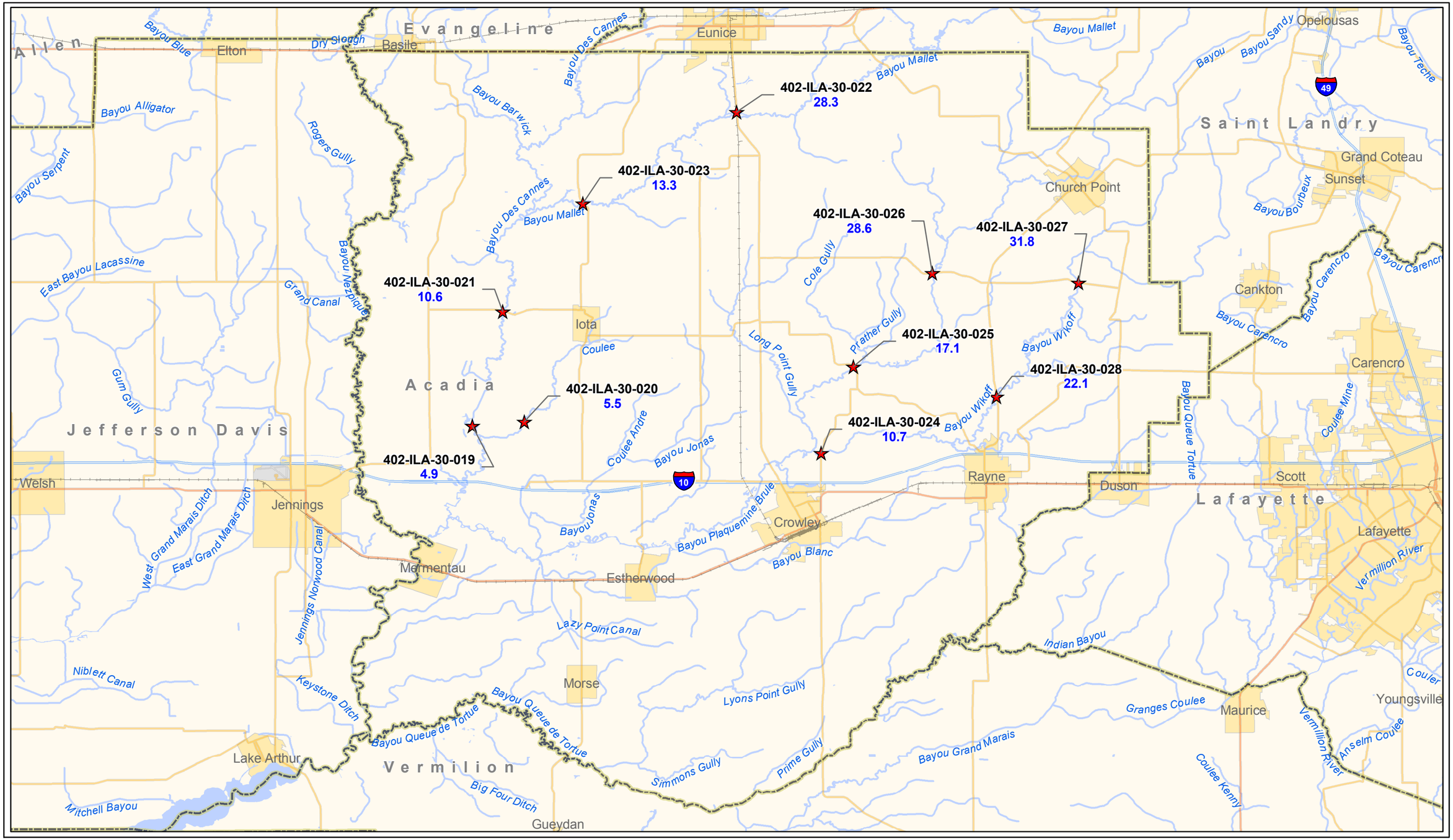
Index Map

Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks



County Boundary
State Boundary

402-ILA-30-024
10.7
High Water Mark ID
High Water Mark Elevation NAVD88 (ft)

VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83

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Miles

0 5 10
Kilometers



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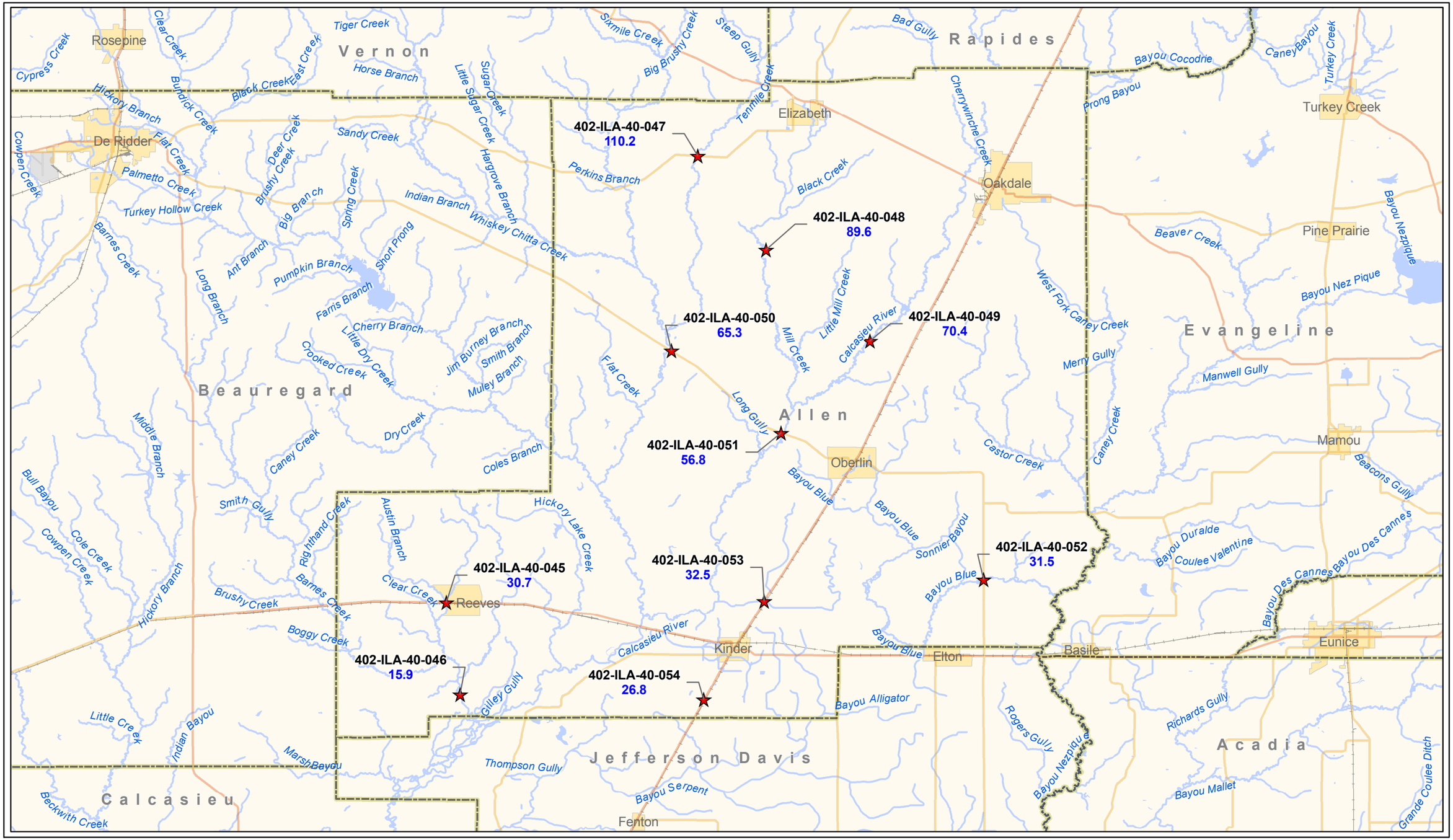
Acadia Parish

Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks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Elizabeth
Oakdale
Turkey Creek
Pine Prairie
Evangeline
Mamou
Oberlin
Reeves
Kinder
Elton
Basile
Eunice
Fenton
Vernon
Rapides
Beauregard
Allen
Jefferson Davis
Calcasieu
Acadia
402-ILA-40-047
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70.4
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56.8
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31.5
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32.5
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26.8
402-ILA-40-045
30.7
402-ILA-40-046
15.9
Tiger Creek
Sixmile Creek
Big Brushy Creek
Steep Gully
Bad Gully
Bayou Cocodrie
CaneyBayou
Turkey Creek
Clear Creek
Cypress Creek
Hickory Branch
Burdick Creek
Black Creek
East Creek
Horse Branch
Little Sugar Creek
Sugar Creek
Tennile Creek
Prong Bayou
Cowpen Creek
Flat Creek
Deer Creek
Sandy Creek
Perkins Branch
Cherrywinche Creek
Palmetto Creek
Brushy Creek
Big Branch
Spring Creek
Hargrove Branch
Indian Branch
Whiskey Chitta Creek
Black Creek
Turkey Hollow Creek
Barnes Creek
Ant Branch
Pumpkin Branch
Short Prong
Long Branch
Farris Branch
Cherry Branch
Little Dry Creek
Crooked Creek
Jim Burney Branch
Smith Branch
Muley Branch
Flat Creek
Mill Creek
Little Mill Creek
Calcasieu River
West Fork Caney Creek
Merry Gully
Beaver Creek
Bayou Nezpique
Bayou Nez Pique
Manwell Gully
Long Gully
Middle Branch
Dry Creek
Caney Creek
Coles Branch
Castor Creek
Caney Creek
Beacons Gully
Bull Bayou
Cole Creek
Cowpen Creek
Smith Gully
Rightthand Creek
Austin Branch
Hickory Lake Creek
Bayou Blue
Bayou Blue
Sonnier Bayou
Bayou Blue
Bayou Duralde
Coulee Valentine
Bayou Des Cannes
Bayou Des Cannes
Hickory Branch
Brushy Creek
Barnes Creek
Clear Creek
Boggy Creek
Calcasieu River
Bayou Blue
Bayou Alligator
Little Creek
Indian Bayou
Marsh Bayou
Gilley Gully
Thompson Gully
Bayou Serpent
Rogers Gully
Bayou Nezpique
Richards Gully
Bayou Mallet
Grande Coulee Ditch
Beckwith Creek
County Boundary
State Boundary
402-ILA-30-024
10.7
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High Water Mark Elevation NAVD88 (ft)
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HORIZONTAL DATUM: NAD83
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Kilometers
MS
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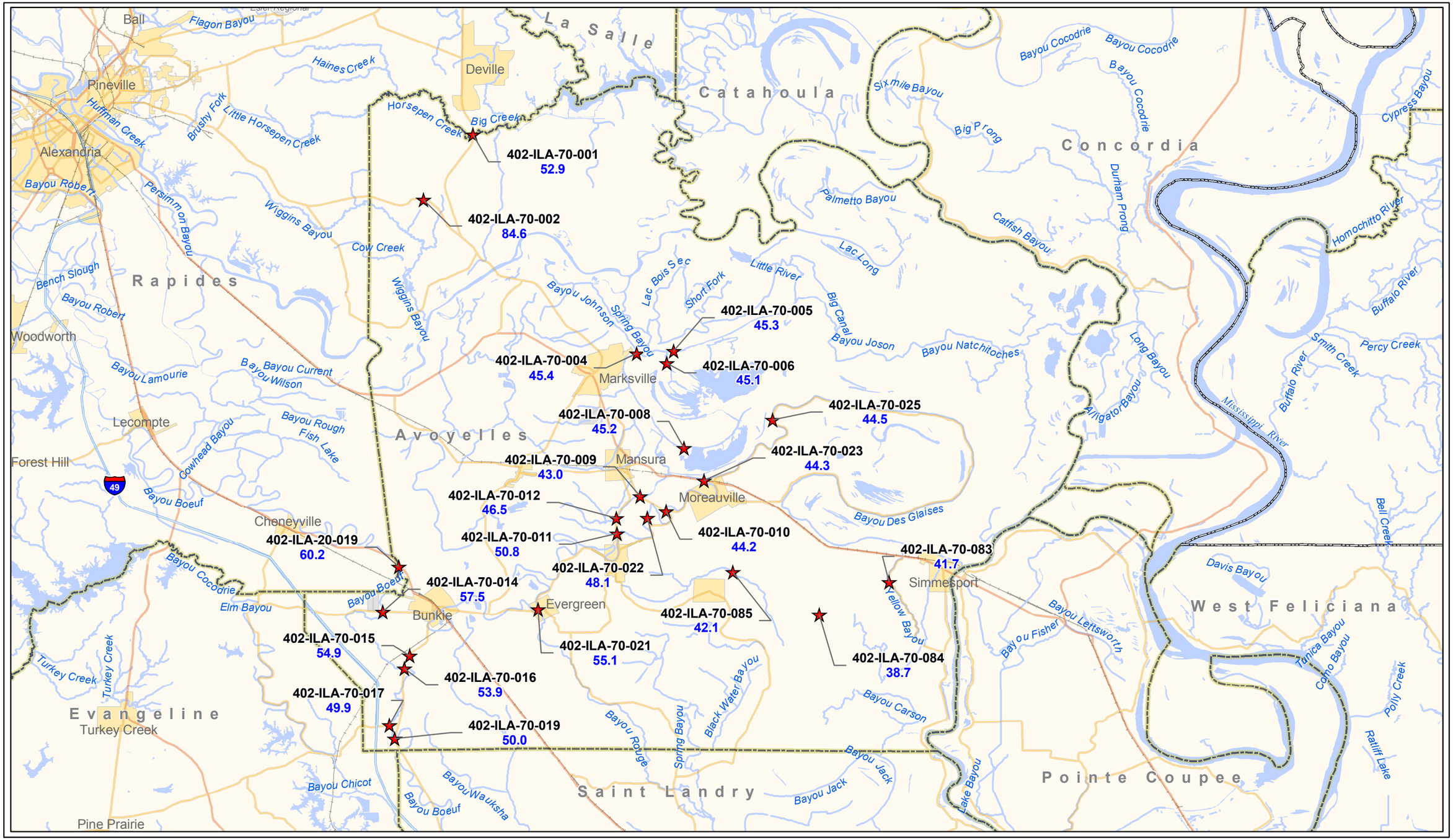
FEMA
Draft
Allen Parish
Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks



County Boundary
State Boundary

402-ILA-30-024
10.7
High Water Mark ID
High Water Mark Elevation NAVD88 (ft)

VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83

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Miles

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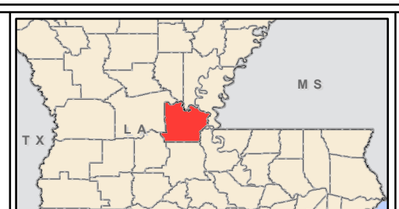

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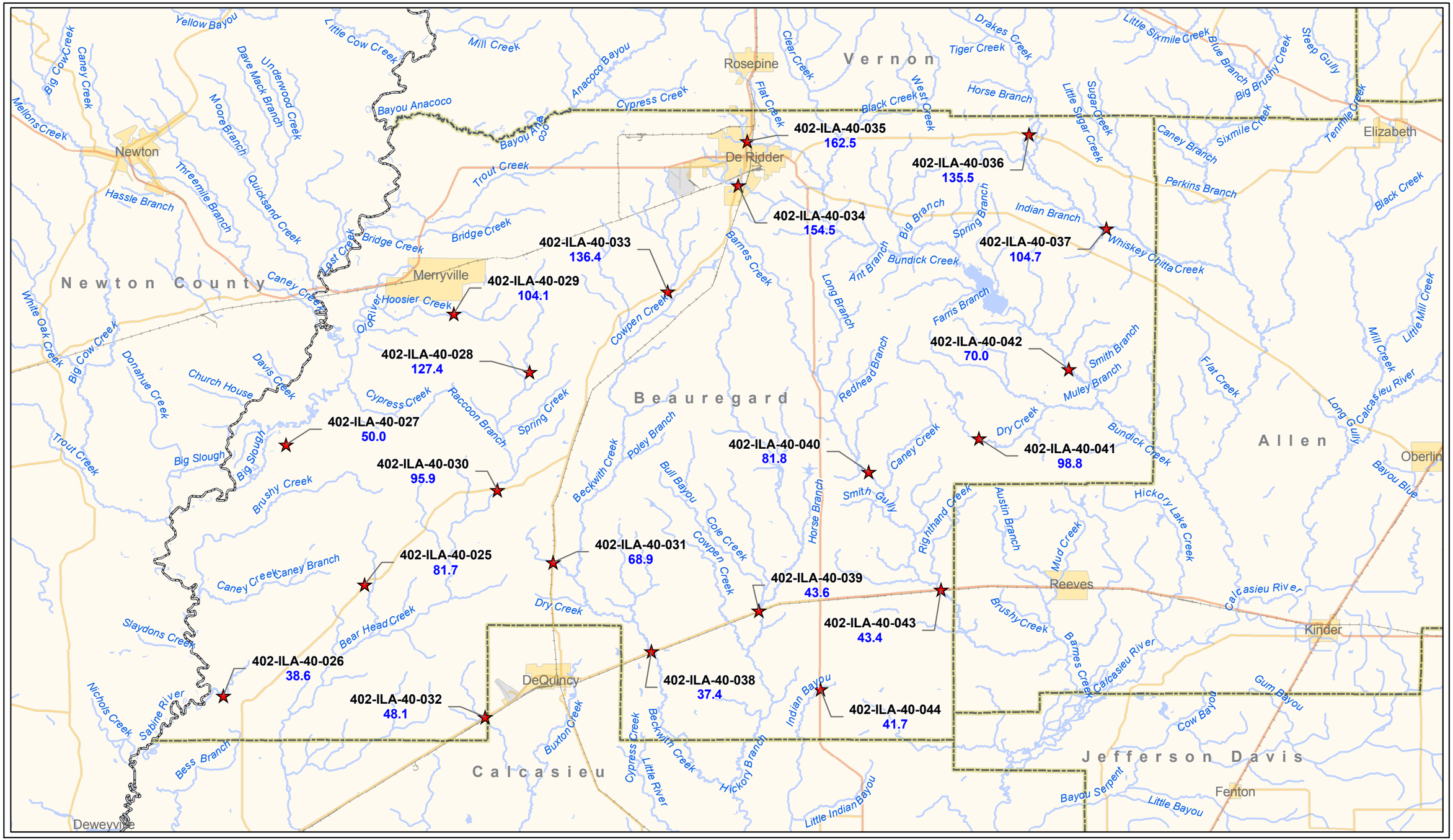
Avoyelles Parish

Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks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Rosepine
De Ridder
Merryville
DeQuincy
Reeves
Kinder
Fenton
Elizabeth
Oberlin
Newton
Deweyville
Vernon
Beauregard
Calcasieu
Allen
Jefferson Davis
Newton County
Yellow Bayou
Little Cow Creek
Mill Creek
Anacoco Bayou
Bayou Anacoco
Cypress Creek
Clear Creek
Flat Creek
Drakes Creek
Tiger Creek
Little Sixmile Creek
Blue Branch
Big Brushy Creek
Steep Gully
Tenmile Creek
Sixmile Creek
Caney Branch
Perkins Branch
Black Creek
Horse Branch
Little Sugar Creek
Sugar Creek
West Creek
Black Creek
Big Cow Creek
Caney Creek
Mellons Creek
Moore Branch
Dave Mack Branch
Underwood Creek
Threemile Branch
Quicksand Creek
Hassle Branch
Trout Creek
Bridge Creek
Lost Creek
Old River
Hoosier Creek
Caney Creek
White Oak Creek
Big Cow Creek
Donahue Creek
Church House
Davis Creek
Cypress Creek
Raccoon Branch
Spring Creek
Big Slough
Brushy Creek
Trout Creek
Beckwith Creek
Poley Branch
Bull Bayou
Cowpen Creek
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Long Branch
Ant Branch
Bundick Creek
Big Branch
Spring Branch
Indian Branch
Whiskey Chitta Creek
Farris Branch
Redhead Branch
Smith Branch
Muley Branch
Dry Creek
Caney Creek
Smith Gully
Righthand Creek
Austin Branch
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Little Mill Creek
Long Gully
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Caney Branch
Bear Head Creek
Slaydons Creek
Dry Creek
Cowpen Creek
Cole Creek
Horse Branch
Righthand Creek
Brushy Creek
Barnes Creek
Calcasieu River
Gum Bayou
Cow Bayou
Bayou Serpent
Little Bayou
Nichols Creek
Sabine River
Bess Branch
Buxton Creek
Cypress Creek
Little River
Beckwith Creek
Hickory Branch
Indian Bayou
Little Indian Bayou
County Boundary
State Boundary
402-ILA-30-024
10.7
High Water Mark ID
High Water Mark Elevation NAVD88 (ft)
VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83
N
0 2 4 6 8 10
Miles
0 5 10 15
Kilometers
MS
TX
LA
FEMA
Draft
Beauregard Parish
Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks



Flooding Type

- Coastal - Stillwater Only
- Riverine - Hurricane
- County Boundary
- State Boundary

402-ILA-30-024 High Water Mark ID
10.7 High Water Mark Elevation NAVD88 (ft)

VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83

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Miles

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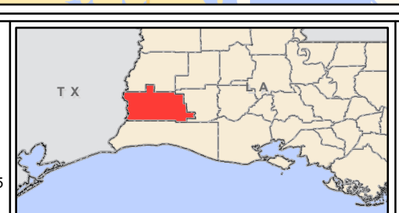
Kilometers



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Calcasieu Parish

Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks



County Boundary
State Boundary

402-ILA-30-024
10.7
High Water Mark ID
High Water Mark Elevation NAVD88 (ft)

VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83

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Miles

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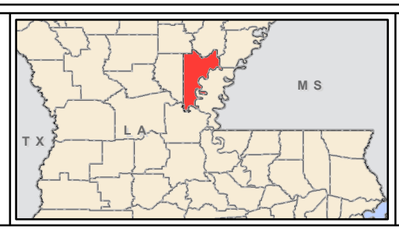
Kilometers



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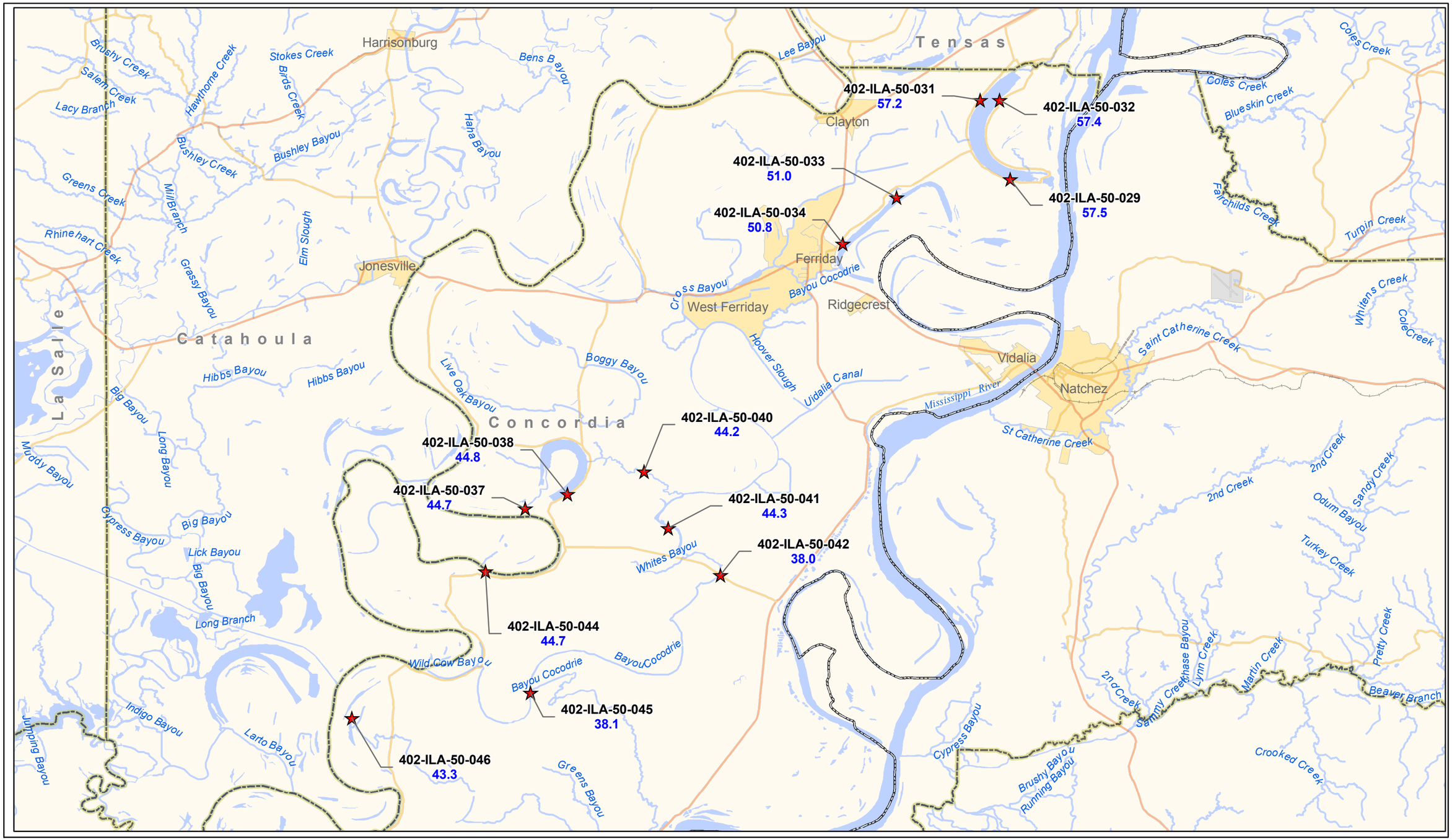
Catahoula Parish

Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks



County Boundary
State Boundary

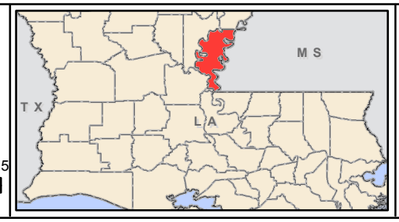
402-ILA-30-024
10.7
High Water Mark ID
High Water Mark Elevation NAVD88 (ft)

VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83

N

0 2 4 6 8
Miles

0 5 10 15
Kilometers



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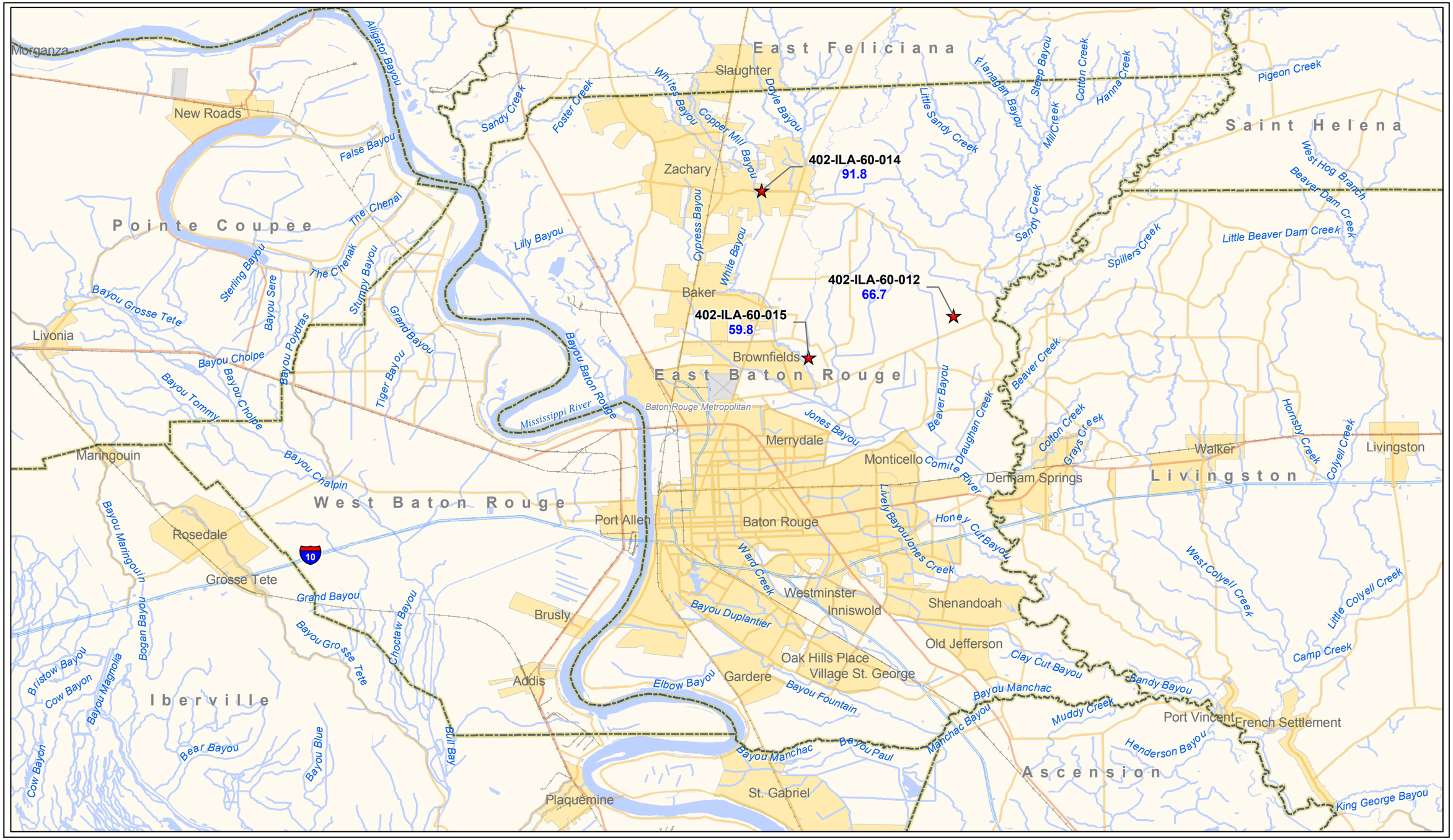
Concordia Parish

Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks



County Boundary
State Boundary

402-ILA-30-024
10.7
High Water Mark ID
High Water Mark Elevation NAVD88 (ft)

VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83

N

0 2 4 6 8
Miles

0 5 10
Kilometers

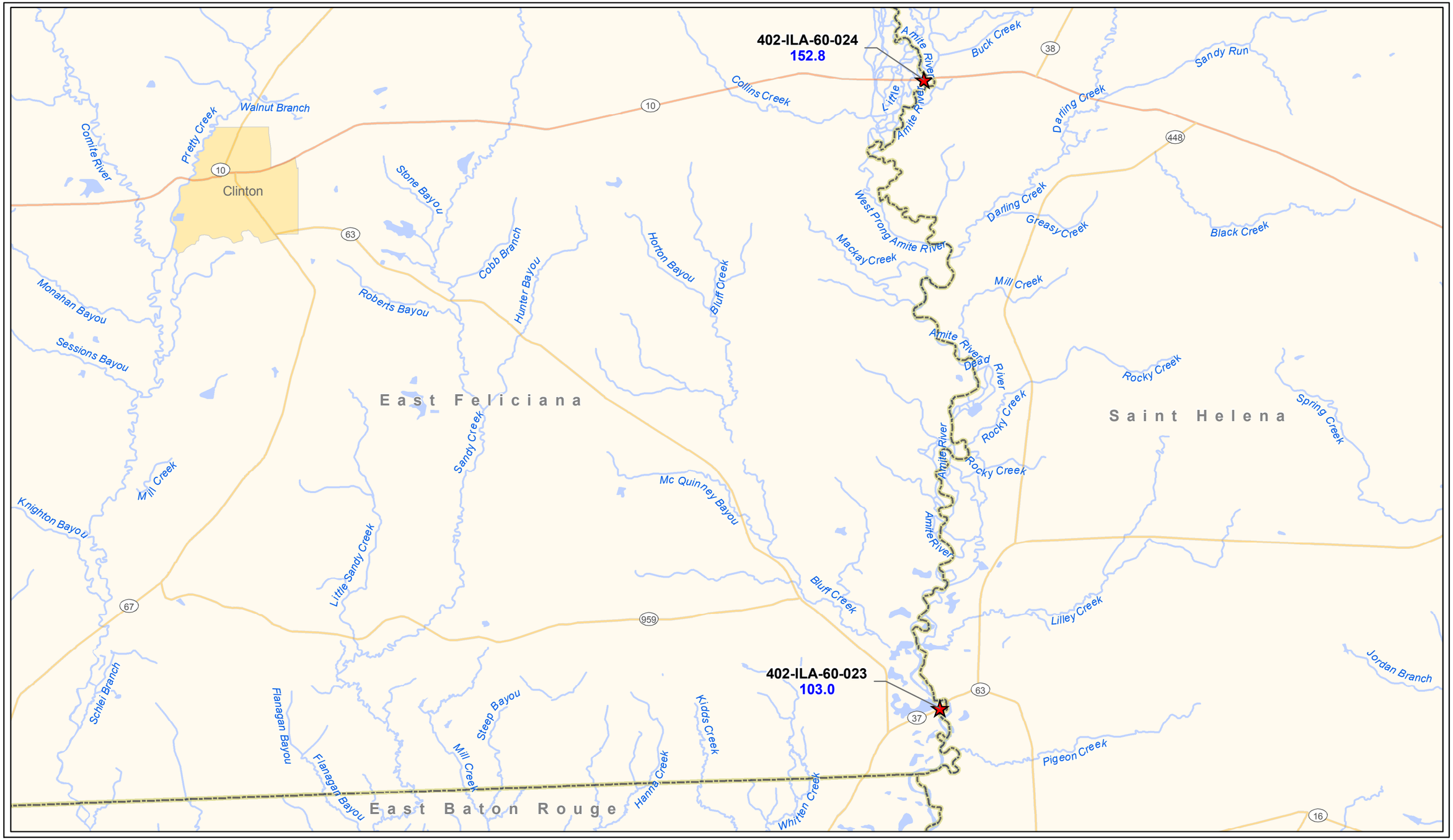


FEMA

Draft

East Baton Rouge Parish

Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks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152.8
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103.0
Clinton
East Feliciana
Saint Helena
East Baton Rouge
Amite River
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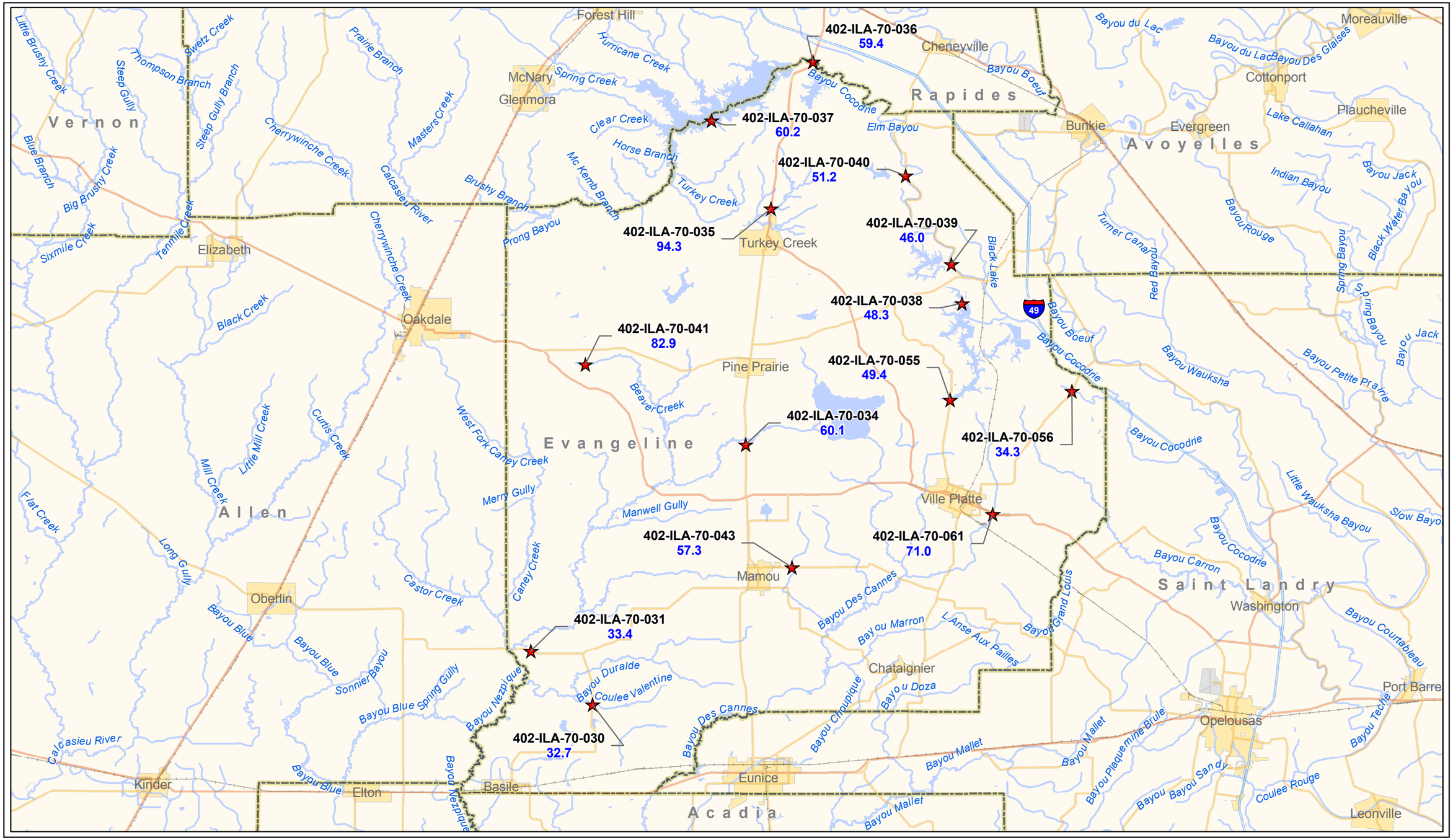
West Prong Amite River
Dead River
Amite River
Comite River
Pretty Creek
Walnut Branch
Collins Creek
Buck Creek
Sandy Run
Darling Creek
Greasy Creek
Black Creek
Mackay Creek
Mill Creek
Rocky Creek
Spring Creek
Stone Bayou
Cobb Branch
Hunter Bayou
Horton Bayou
Bluff Creek
Roberts Bayou
Monahan Bayou
Sessions Bayou
Knighton Bayou
Sandy Creek
Mc Quinney Bayou
Little Sandy Creek
Lilley Creek
Jordan Branch
Schlei Branch
Flanagan Bayou
Steep Bayou
Kidds Creek
Hanna Creek
Whitten Creek
Pigeon Creek
10
38
448
63
67
959
37
16
County Boundary
State Boundary
402-ILA-30-024
10.7
High Water Mark ID
High Water Mark Elevation NAVD88 (ft)
VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83
N
0 1 2 3
Miles
0 1 2 3 4 5
Kilometers
MS
LA
TX
FEMA
Draft
East Feliciana Parish
Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks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94.3
402-ILA-70-038
48.3
402-ILA-70-041
82.9
402-ILA-70-055
49.4
402-ILA-70-034
60.1
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34.3
402-ILA-70-043
57.3
402-ILA-70-061
71.0
402-ILA-70-031
33.4
402-ILA-70-030
32.7
Forest Hill
McNary
Glenmora
Cheneyville
Moreauville
Cottonport
Plaucheville
Bunkie
Evergreen
Elizabeth
Oakdale
Turkey Creek
Pine Prairie
Mamou
Ville Platte
Oberlin
Chataignier
Eunice
Basile
Elton
Kinder
Washington
Opelousas
Port Barre
Leonville
Vernon
Rapides
Avoyelles
Allen
Evangeline
Acadia
Saint Landry
Little Brushy Creek
Thompson Branch
Swetz Creek
Steep Gully
Steep Gully Branch
Blue Branch
Big Brushy Creek
Sixmile Creek
Tennhile Creek
Prairie Branch
Cherrywinche Creek
Masters Creek
Calcasieu River
Brushy Branch
Prong Bayou
Hurricane Creek
Spring Creek
Clear Creek
Horse Branch
Mc Kemb Branch
Turkey Creek
Elm Bayou
Bayou Cocodrie
Bayou Boeuf
Bayou du Lac
Bayou Des Glaises
Lake Callahan
Indian Bayou
Bayou Jack
Black Water Bayou
Bayou Rouge
Turner Canal
Red Bayou
Spring Bayou
S pring Bayou
Black Lake
Bayou Wauksha
Bayou Petite Prairie
Black Creek
Mill Creek
Little Mill Creek
Curtis Creek
West Fork Caney Creek
Beaver Creek
Merry Gully
Manwell Gully
Caney Creek
Castor Creek
Flat Creek
Long Gully
Bayou Blue
Sonnier Bayou
Bayou Blue Spring Gully
Bayou Nezpique
Bayou Duralde
Coulee Valentine
Bayou Des Cannes
Bayou Chicot
Bayou Chicoupique
Bayou Mallet
Bayou Plaquemine Brule
Bayou Grand Louis
Bayou Marron
L Anse Aux Pailles
Bayou Carron
Bayou Courtableau
Bayou Teche
Coulee Rouge
Little Waukshaw Bayou
Slow Bayo
Bayou Sandy
Bayou Cocodrie
Bayou Mallet
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Calcasieu River
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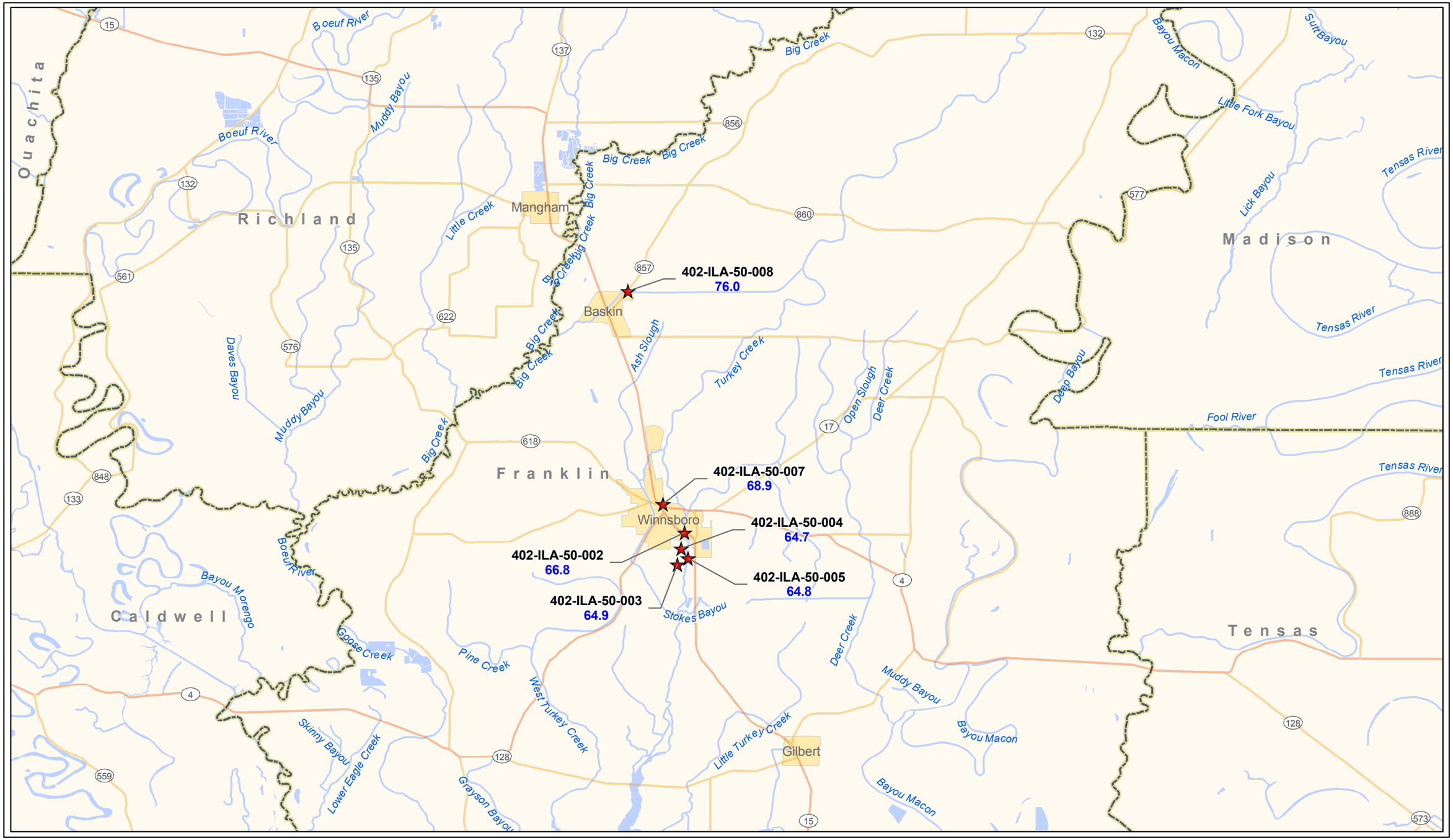
Bayou Blue
Bayou Cocodrie
Bayou Cocodrie
Bayou Cocodrie



County Boundary
State Boundary

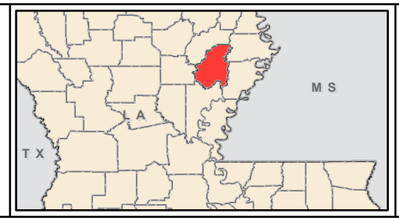
402-ILA-30-024
10.7
High Water Mark ID
High Water Mark Elevation NAVD88 (ft)

VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83

N

0 2 4 6
Miles

0 2 4 6 8 10
Kilometers



FEMA

Draft

Franklin Parish

Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks



County Boundary
State Boundary

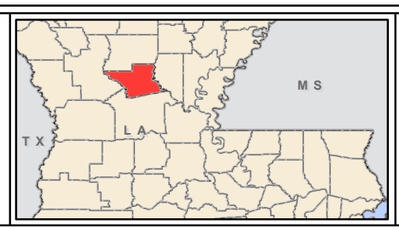
402-ILA-30-024
10.7
High Water Mark ID
High Water Mark Elevation NAVD88 (ft)

VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83

N

0 2 4 6 8
Miles

0 4 8 12
Kilometers



FEMA

Draft

Grant Parish

Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks

Pointe Coupee

Maringouin

402-ILA-30-031
16.1

402-ILA-30-032
17.7

402-ILA-30-033
17.6

77

Bayou Grosse Tete

Iberville

Rosedale

West Baton Rouge

Cholpe Bayou

Bayou Chalpin

Bayou Tommy

413

76

Caney Bayou

402-ILA-30-030
13.5

10

402-ILA-30-029
12.9

Grosse Tete

Bayou Grosse Tete

Grand Bayou

Bayou Maringouin

402-ILA-30-034
11.5

3000

Bayou Brown

Bristow Bayou

402-ILA-30-036
11.2

Ramah Canal

402-ILA-30-035
8.6

10

County Boundary
State Boundary

402-ILA-30-024
10.7
High Water Mark ID
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VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83

N

0 1
Miles

0 1 2
Kilometers

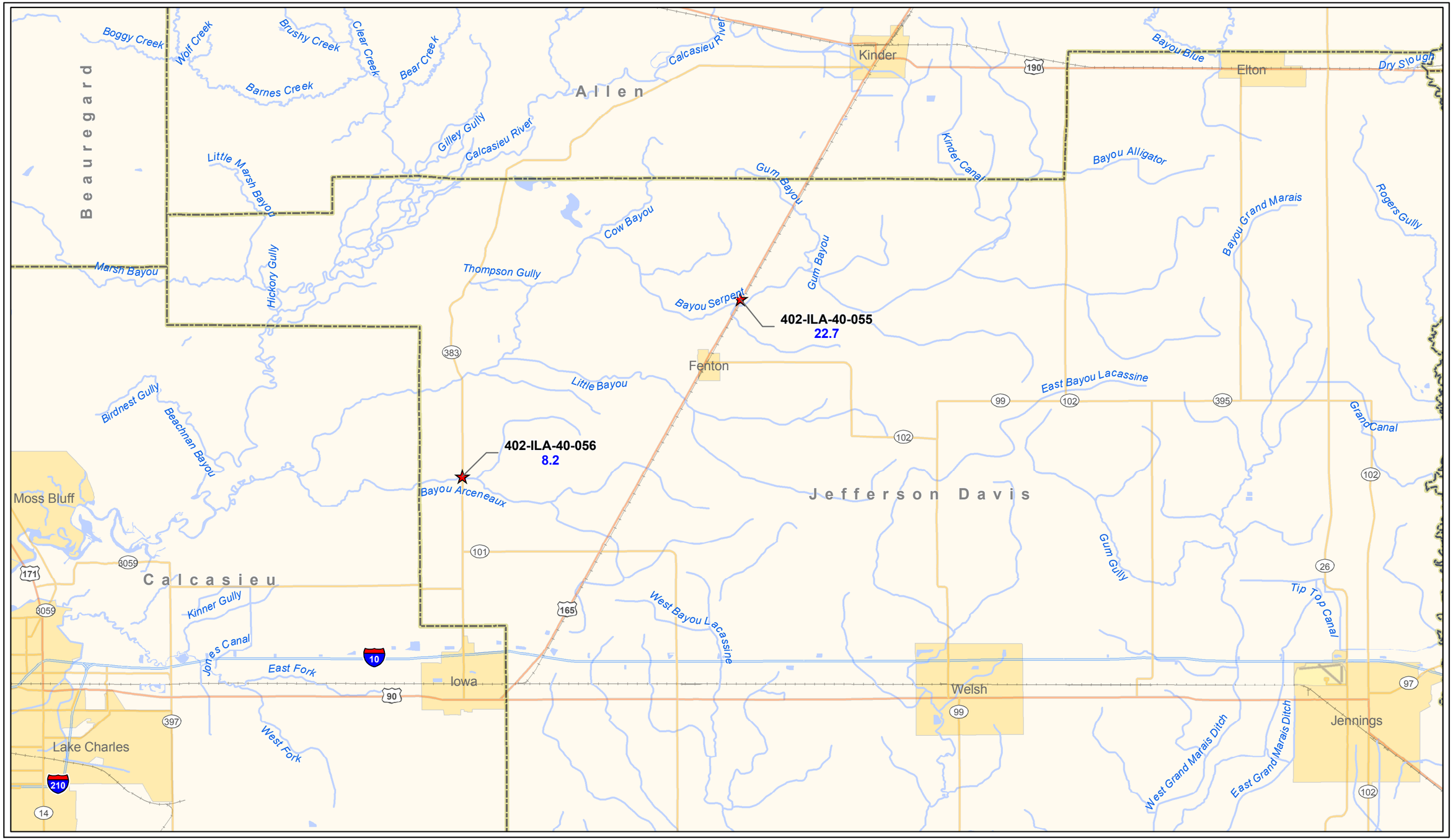
MS

FEMA

Draft

Iberville Parish

Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks



County Boundary
State Boundary

402-ILA-30-024
10.7
High Water Mark ID
High Water Mark Elevation NAVD88 (ft)

VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83

N

0 1 2 3 4 5
Miles

0 2 4 6 8
Kilometers



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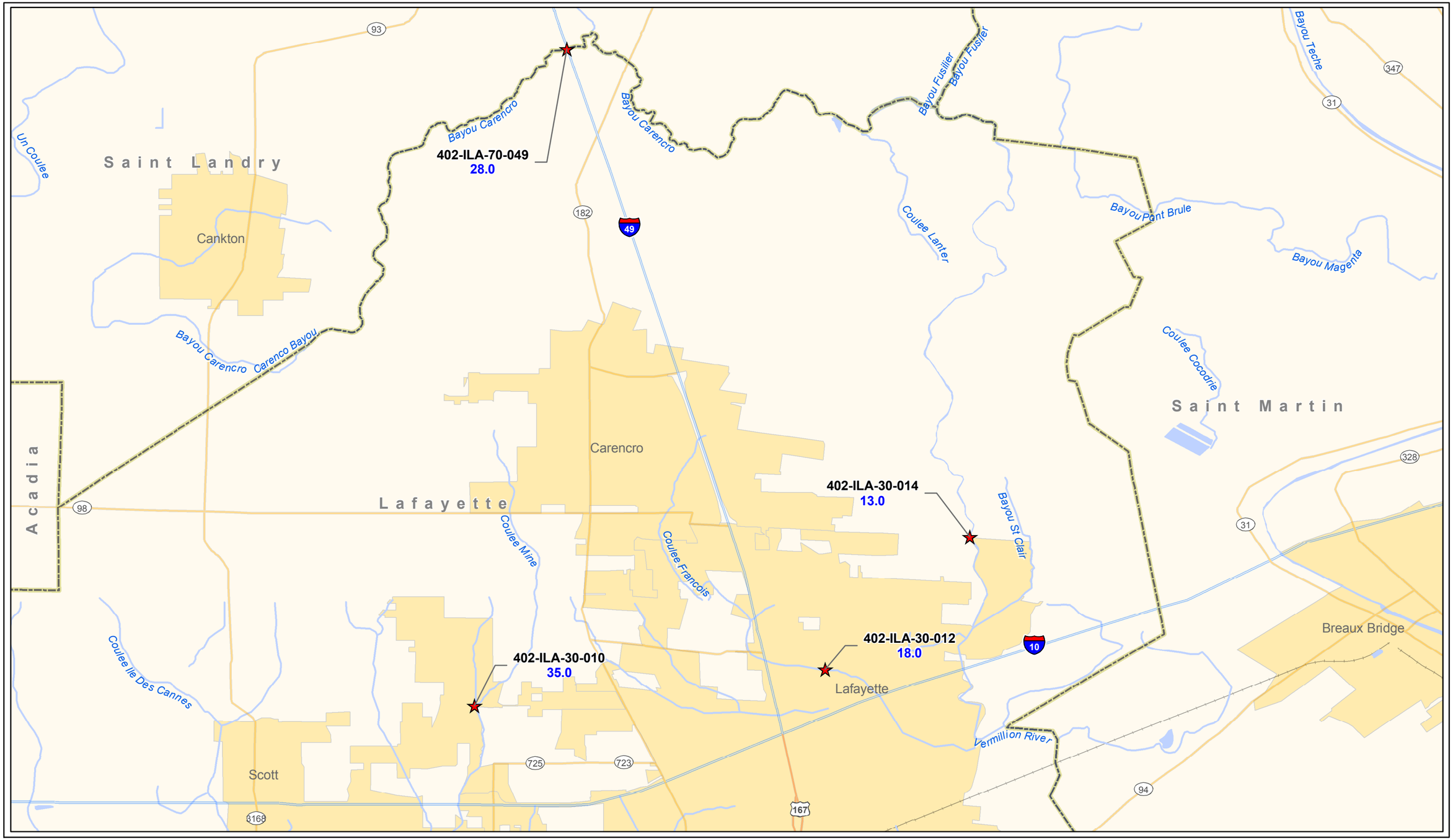
Jefferson Davis Parish

Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks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Bayou Carencro
Un Coulee
Saint Landry
Cankton
402-ILA-70-049
28.0
Bayou Carencro
182
49
Bayou Fusilier
Bayou Fusilier
Bayou Teche
347
31
Coulee Lanter
Bayou Pont Brule
Bayou Magenta
Bayou Carencro
Carenco Bayou
Coulee Cocodrie
Saint Martin
Acadia
Carencro
328
98
Lafayette
Coulee Mine
Coulee Francois
Bayou St Clair
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31
Coulee Ile Des Cannes
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35.0
402-ILA-30-012
18.0
10
Breaux Bridge
Lafayette
Vermillion River
Scott
725
723
94
167
3168
County Boundary
State Boundary
402-ILA-30-024
10.7
High Water Mark ID
High Water Mark Elevation NAVD88 (ft)
VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83
N
0 1 2
Miles
0 1 2 3 4
Kilometers
T X
FEMA
Draft
Lafayette Parish
Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks



County Boundary
State Boundary

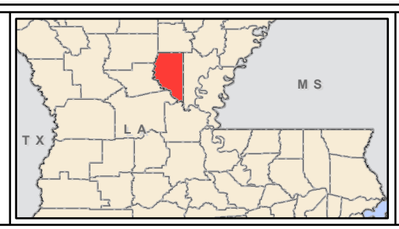
402-ILA-30-024
10.7
High Water Mark ID
High Water Mark Elevation NAVD88 (ft)

VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83

N

0 2 4 6
Miles

0 2 4 6 8 10
Kilometers



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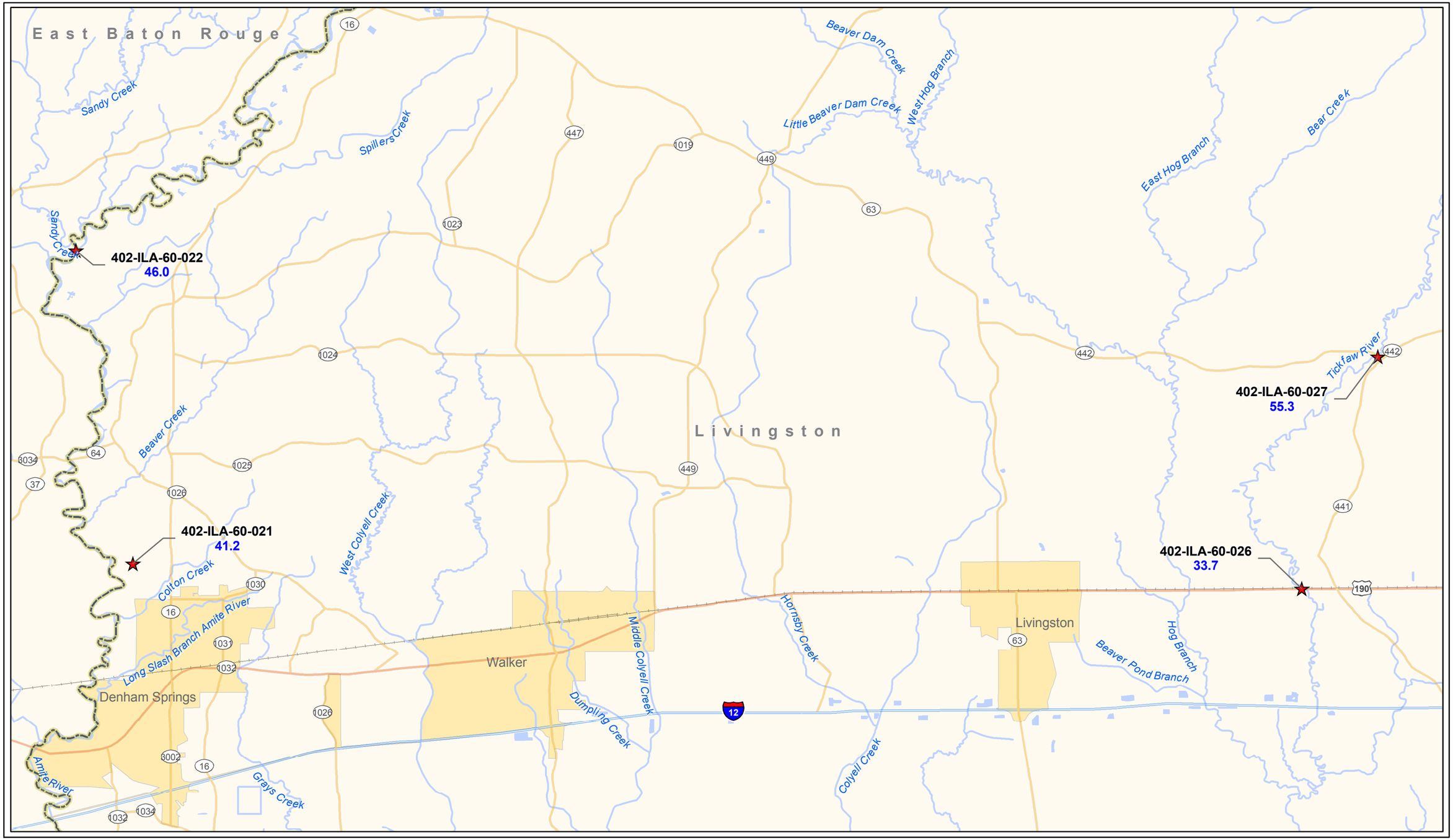
La Salle Parish

Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks



County Boundary
State Boundary

402-ILA-30-024
10.7
High Water Mark ID
High Water Mark Elevation NAVD88 (ft)

VERTICAL DATUM: NAVD88
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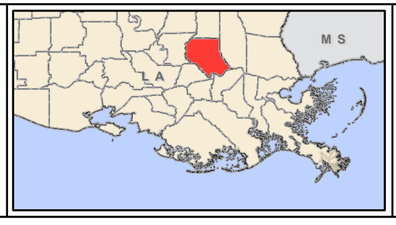
N

0 1 2 3
Miles

0 1 2 3 4 5
Kilometers



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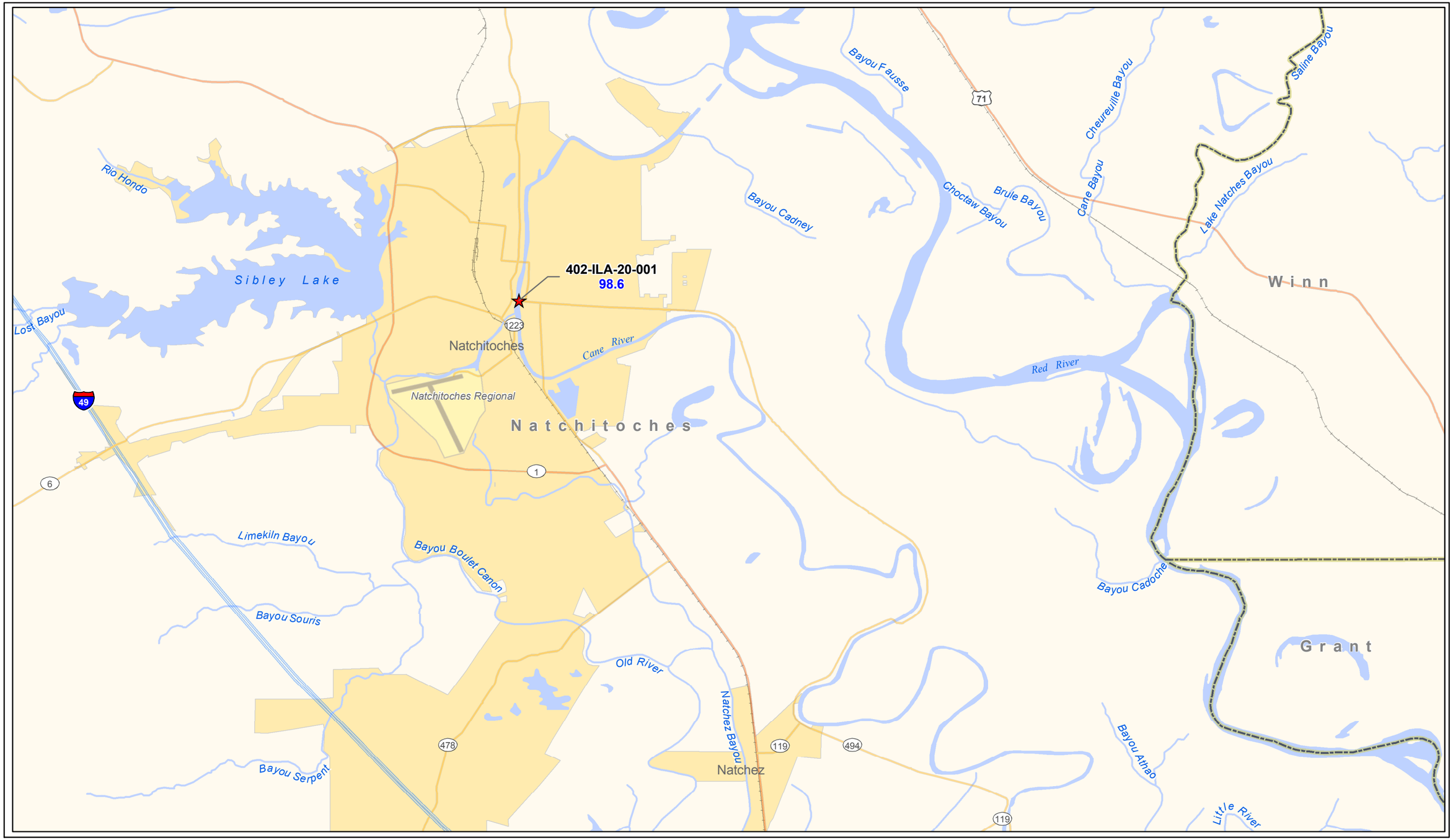
Livingston Parish

Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks



County Boundary
State Boundary

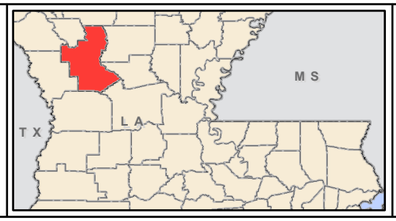
402-ILA-30-024
10.7
High Water Mark ID
High Water Mark Elevation NAVD88 (ft)

VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83

N

0 1 2
Miles

0 1 2 3 4
Kilometers



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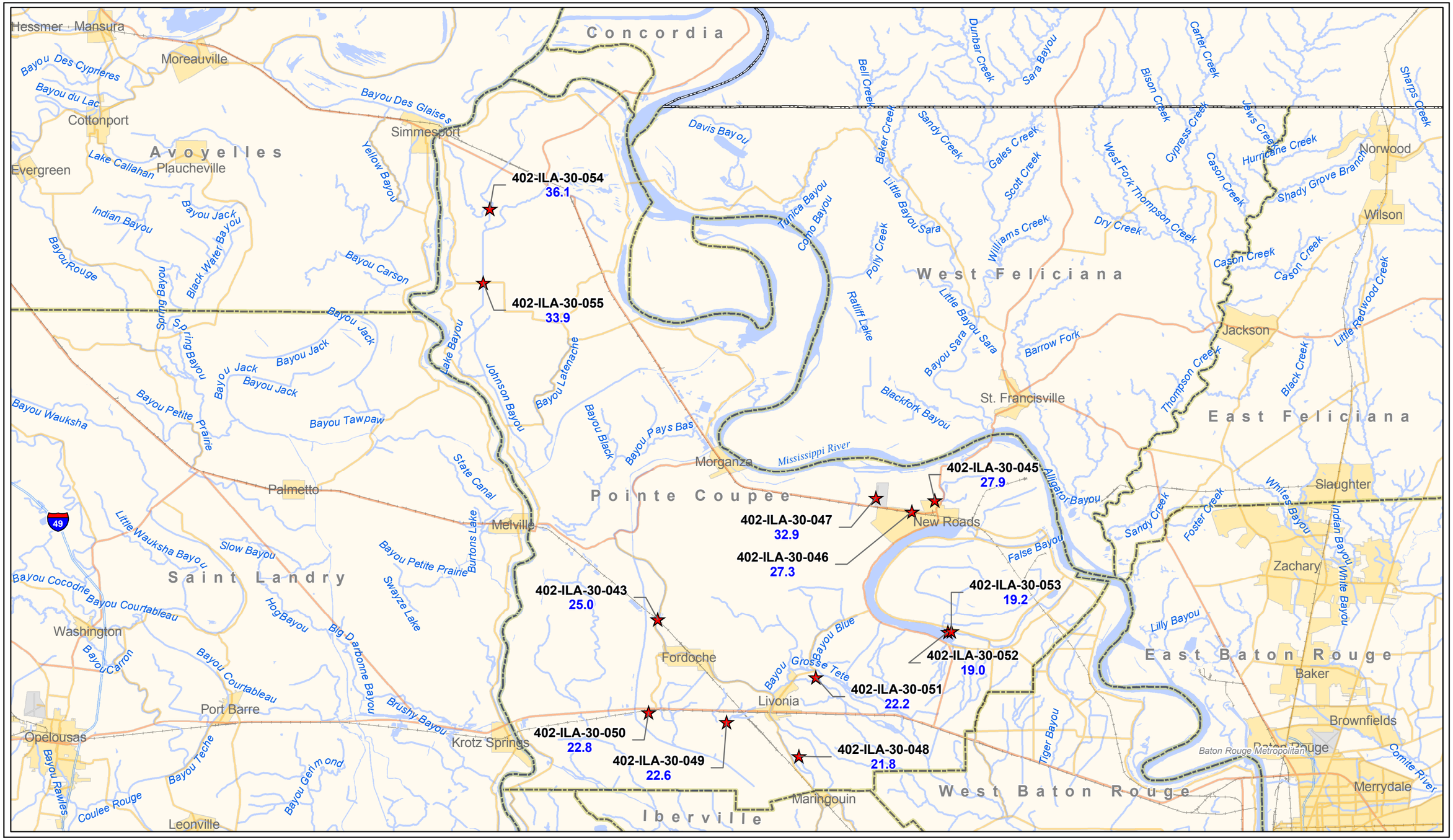
Natchitoches Parish

Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks



County Boundary
State Boundary

402-ILA-30-024
10.7
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High Water Mark Elevation NAVD88 (ft)

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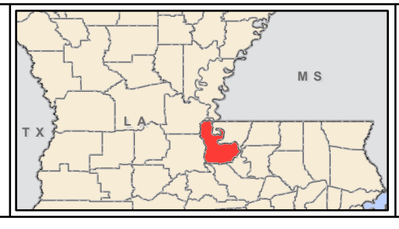
HORIZONTAL DATUM: NAD83

N

0 2 4 6 8 10
Miles

0 5 10 15
Kilometers



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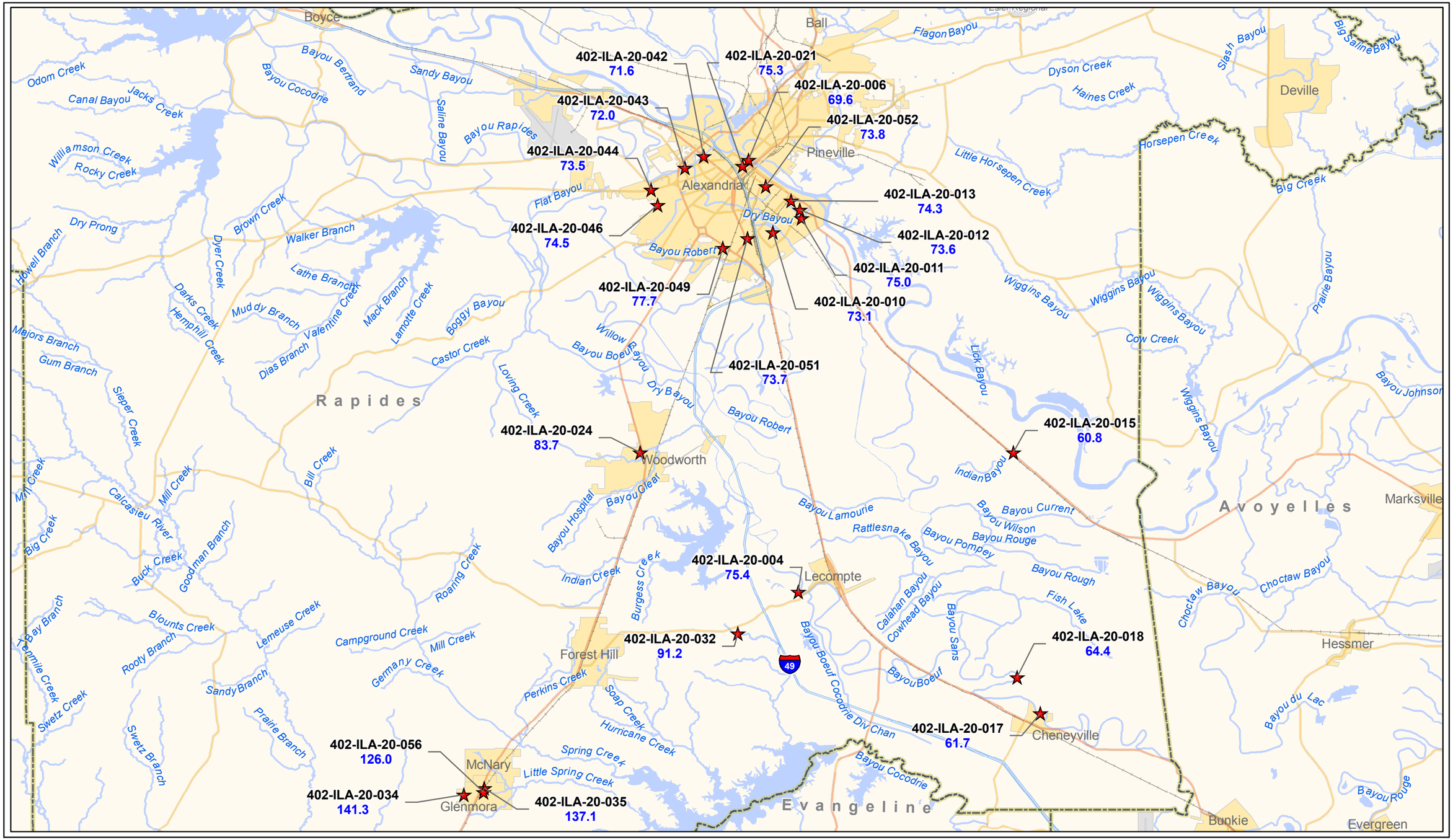
Draft

Pointe Coupee Parish

Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks



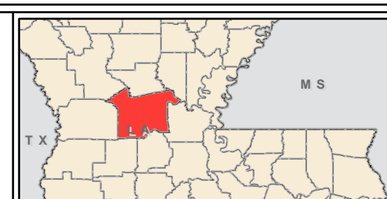
County Boundary
State Boundary

402-ILA-30-024 High Water Mark ID
10.7 High Water Mark Elevation NAVD88 (ft)

VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83

N

0 2 4 6
Miles
0 2 4 6 8 10
Kilometers



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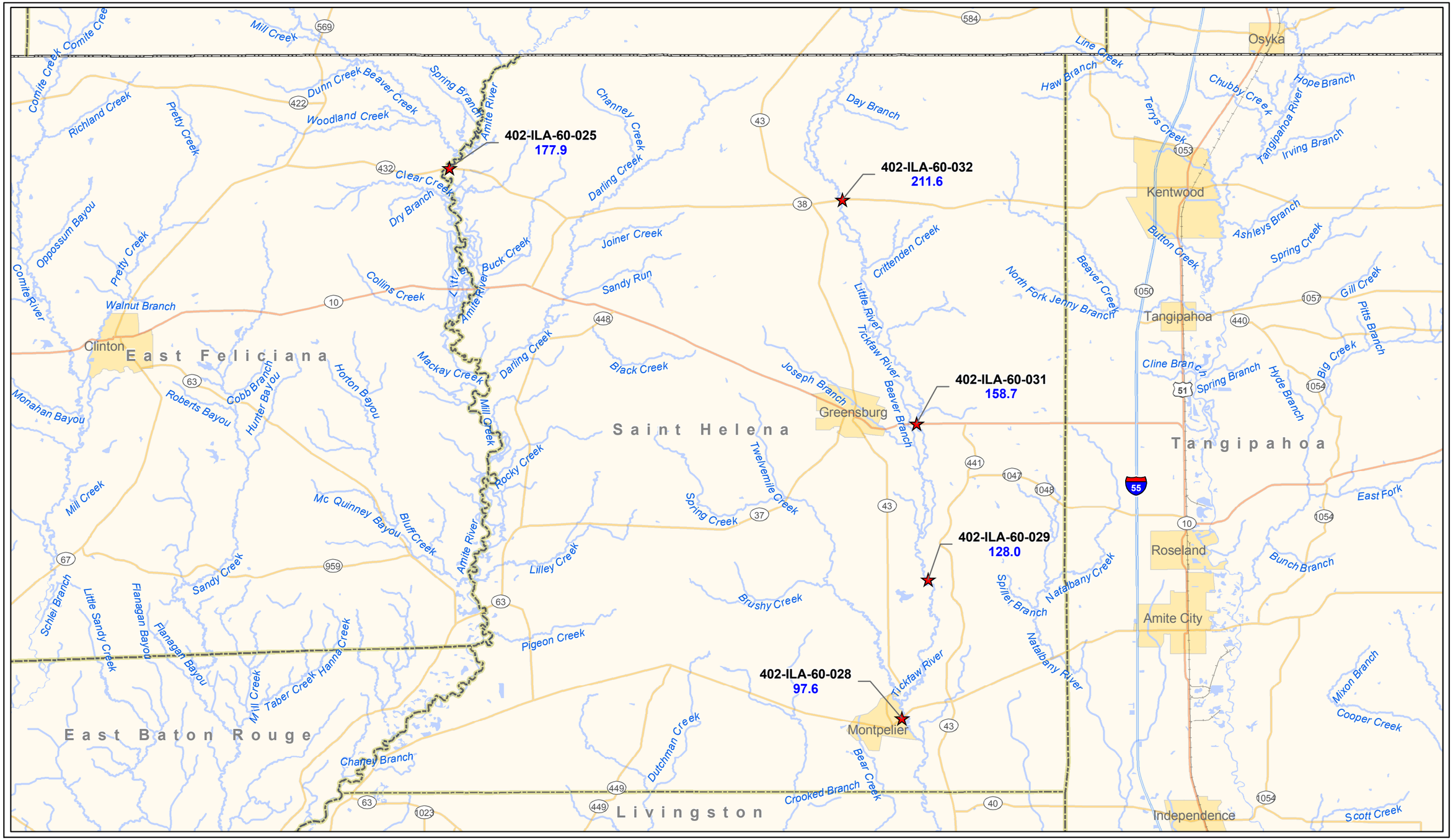
Rapides Parish

Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks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211.6
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158.7
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128.0
402-ILA-60-028
97.6
Clinton
Greensburg
Montpelier
Osyka
Kentwood
Tangipahoa
Roseland
Amite City
Independence
East Feliciana
Saint Helena
East Baton Rouge
Livingston
Tangipahoa
Comite River
Amite River
Tickfaw River
Beaver Creek
Natalbany River
Comite Creek
Mill Creek
Dunn Creek
Beaver Creek
Spring Branch
Woodland Creek
Richland Creek
Pretty Creek
Clear Creek
Dry Branch
Channey Creek
Darling Creek
Day Branch
Haw Branch
Line Creek
Terrys Creek
Chubby Creek
Tangipahoa River
Hope Branch
Irving Branch
Ashleys Branch
Spring Creek
Button Creek
Gill Creek
Pitts Branch
Big Creek
Hyde Branch
Cline Branch
Spring Branch
Oppossum Bayou
Pretty Creek
Walnut Branch
Collins Creek
Little Buck Creek
Joiner Creek
Sandy Run
Crittenden Creek
Little River
North Fork Jenny Branch
Tickfaw River
Beaver Branch
Joseph Branch
Black Creek
Darling Creek
Mackay Creek
Mill Creek
Rocky Creek
Twelvemile Creek
Spring Creek
Monahan Bayou
Roberts Bayou
Cobb Branch
Hunter Bayou
Horton Bayou
Mill Creek
Mc Quinney Bayou
Bluff Creek
Amite River
Lilley Creek
Brushy Creek
Pigeon Creek
Schiel Branch
Little Sandy Creek
Flanagan Bayou
Sandy Creek
Mill Creek
Taber Creek
Hanna Creek
Chaney Branch
Dutchman Creek
Crooked Branch
Bear Creek
Spiller Branch
Natalbany Creek
Natalbany River
Tickfaw River
Mixon Branch
Cooper Creek
Bunch Branch
East Fork
Scott Creek
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432
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959
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37
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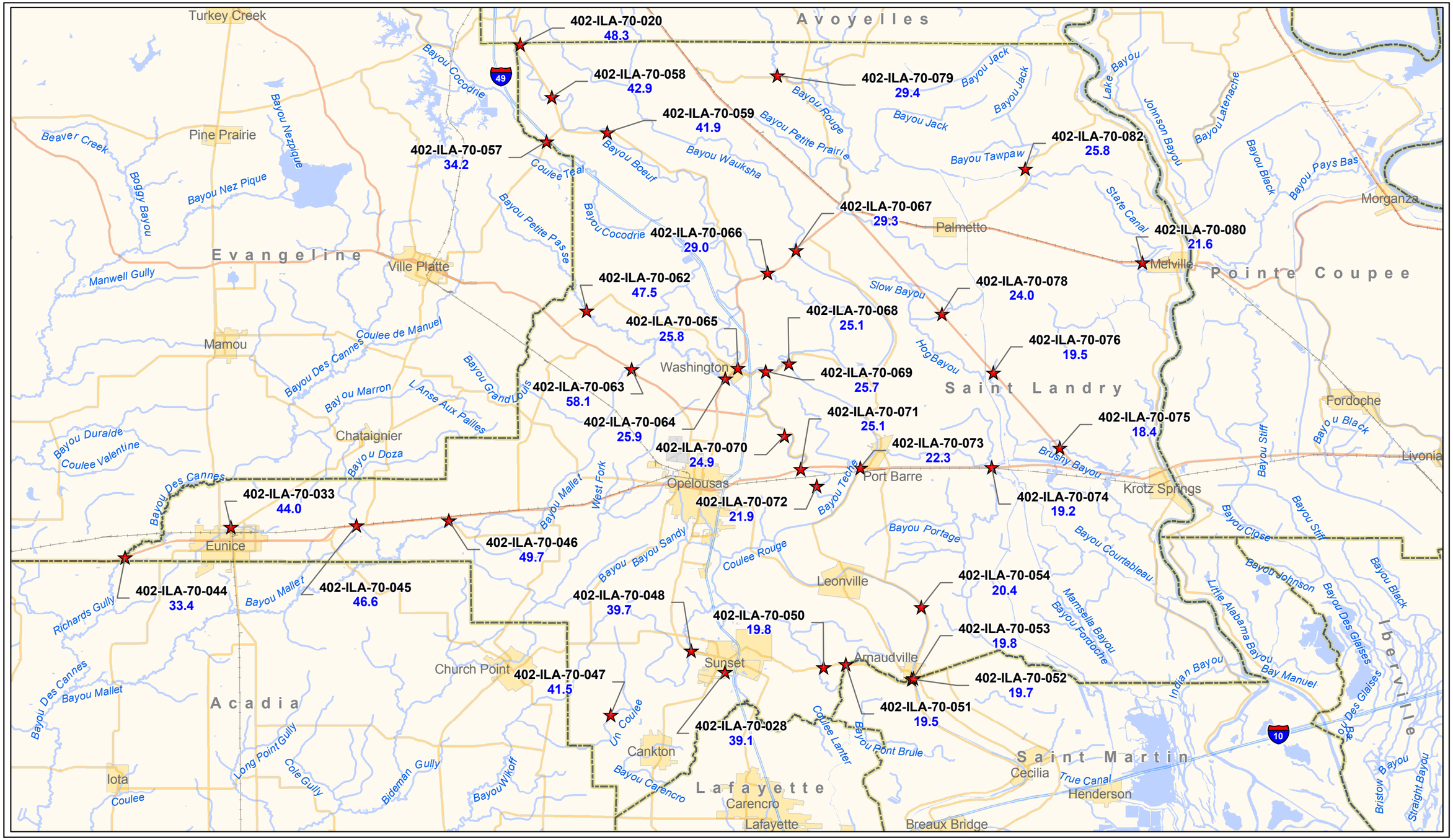
449
40
County Boundary
State Boundary
402-ILA-30-024
10.7
High Water Mark ID
High Water Mark Elevation NAVD88 (ft)
VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83
N
0 2 4 6
Miles
0 5 10
Kilometers
MS
TX
LA
FEMA
Draft
Saint Helena Parish
Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks



County Boundary
State Boundary

402-ILA-30-024
10.7
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High Water Mark Elevation NAVD88 (ft)

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HORIZONTAL DATUM: NAD83

N

0 2 4 6 8
Miles

0 5 10 15
Kilometers

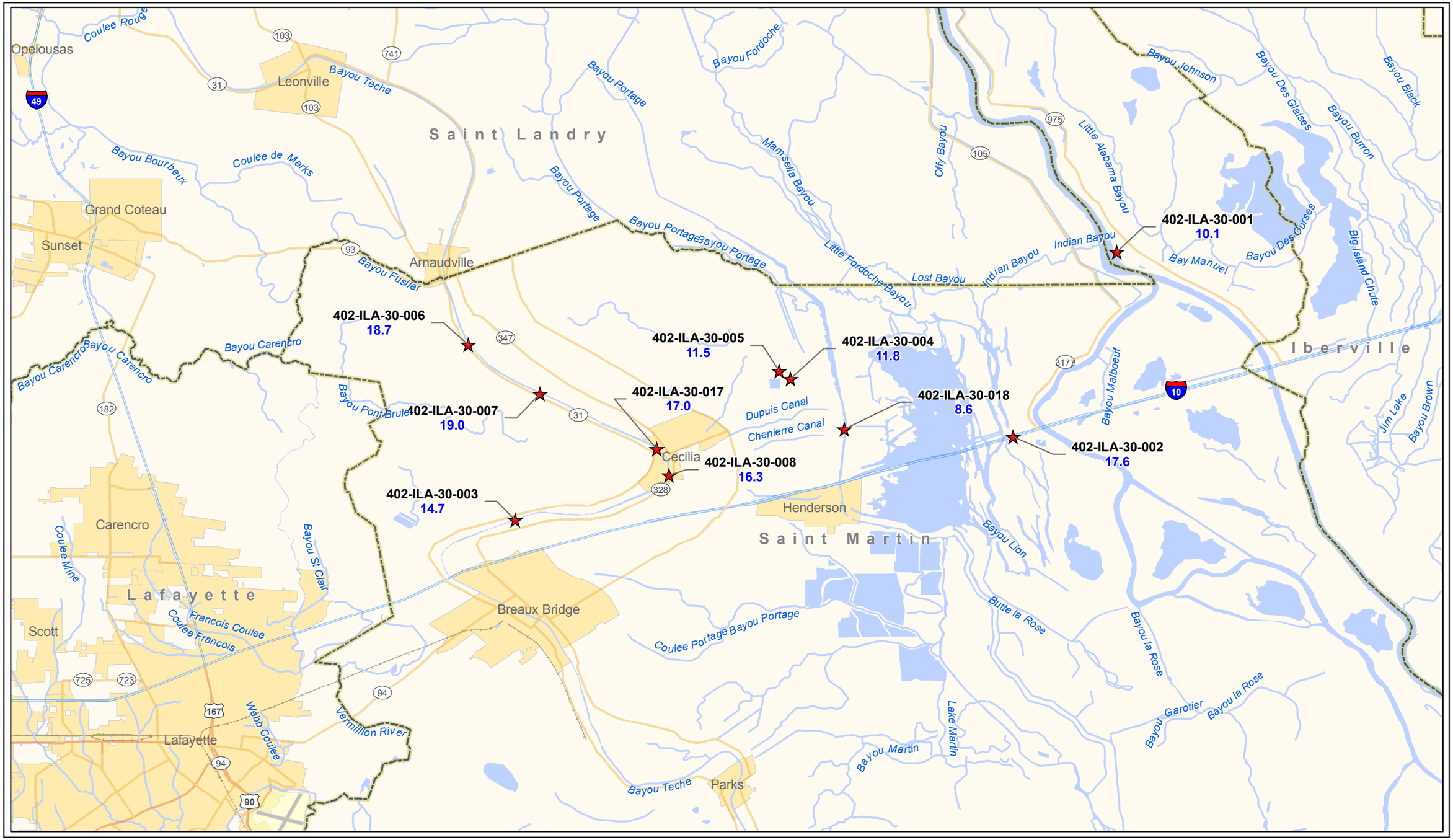


FEMA

Draft

Saint Landry Parish

Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks



County Boundary
State Boundary

402-ILA-30-024
10.7
High Water Mark ID
High Water Mark Elevation NAVD88 (ft)

VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83

N

0 2 4
Miles

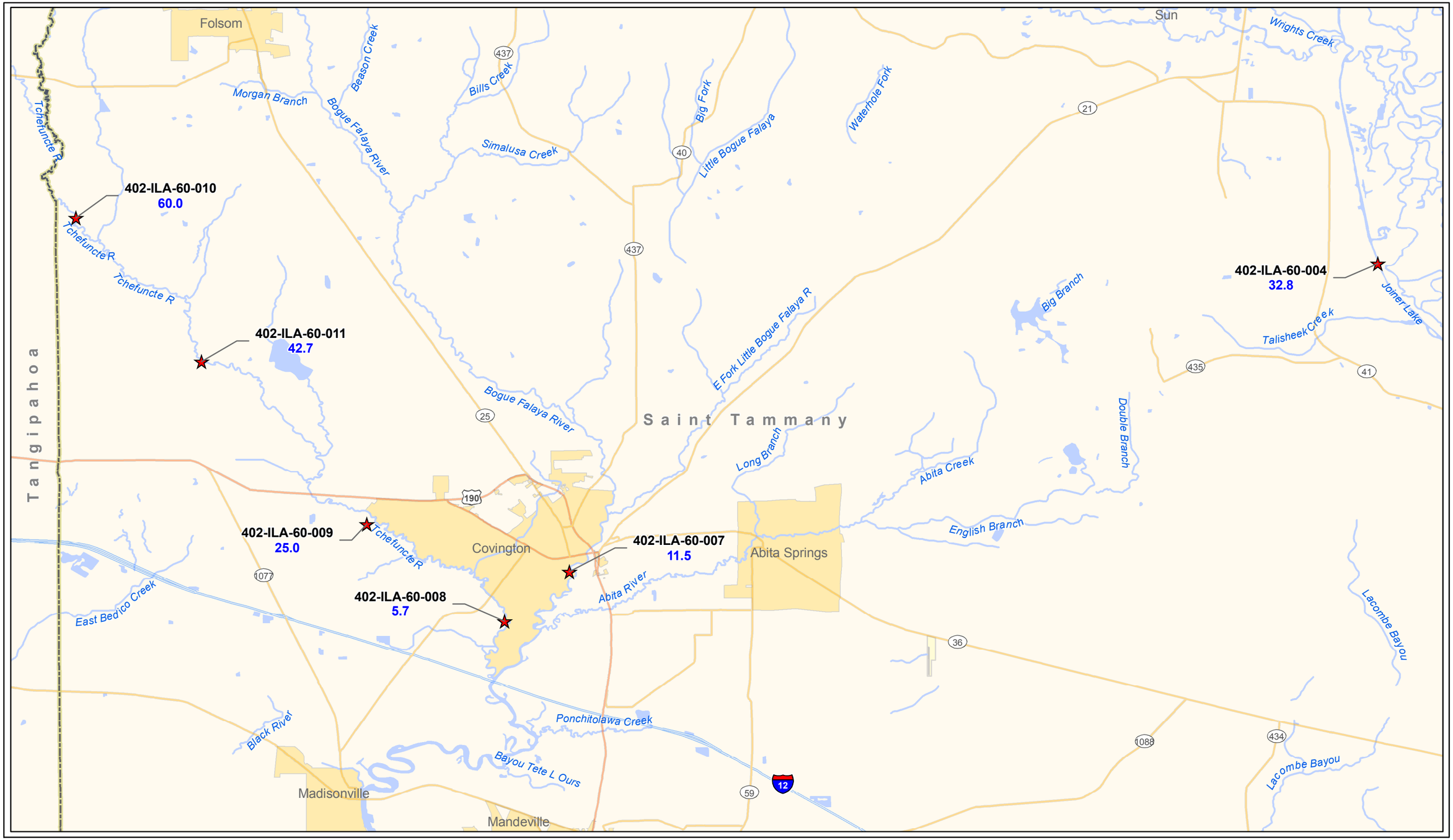
0 2 4 6 8
Kilometers



FEMA

Draft

Saint Martin Parish
Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks



County Boundary
State Boundary

402-ILA-30-024
10.7
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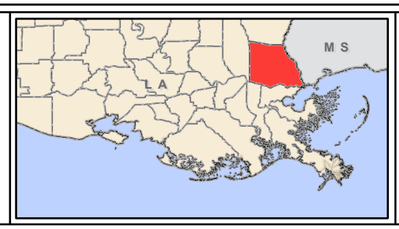
High Water Mark Elevation NAVD88 (ft)

VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83

N

0 2 4
Miles
0 1 2 3 4 5 6
Kilometers



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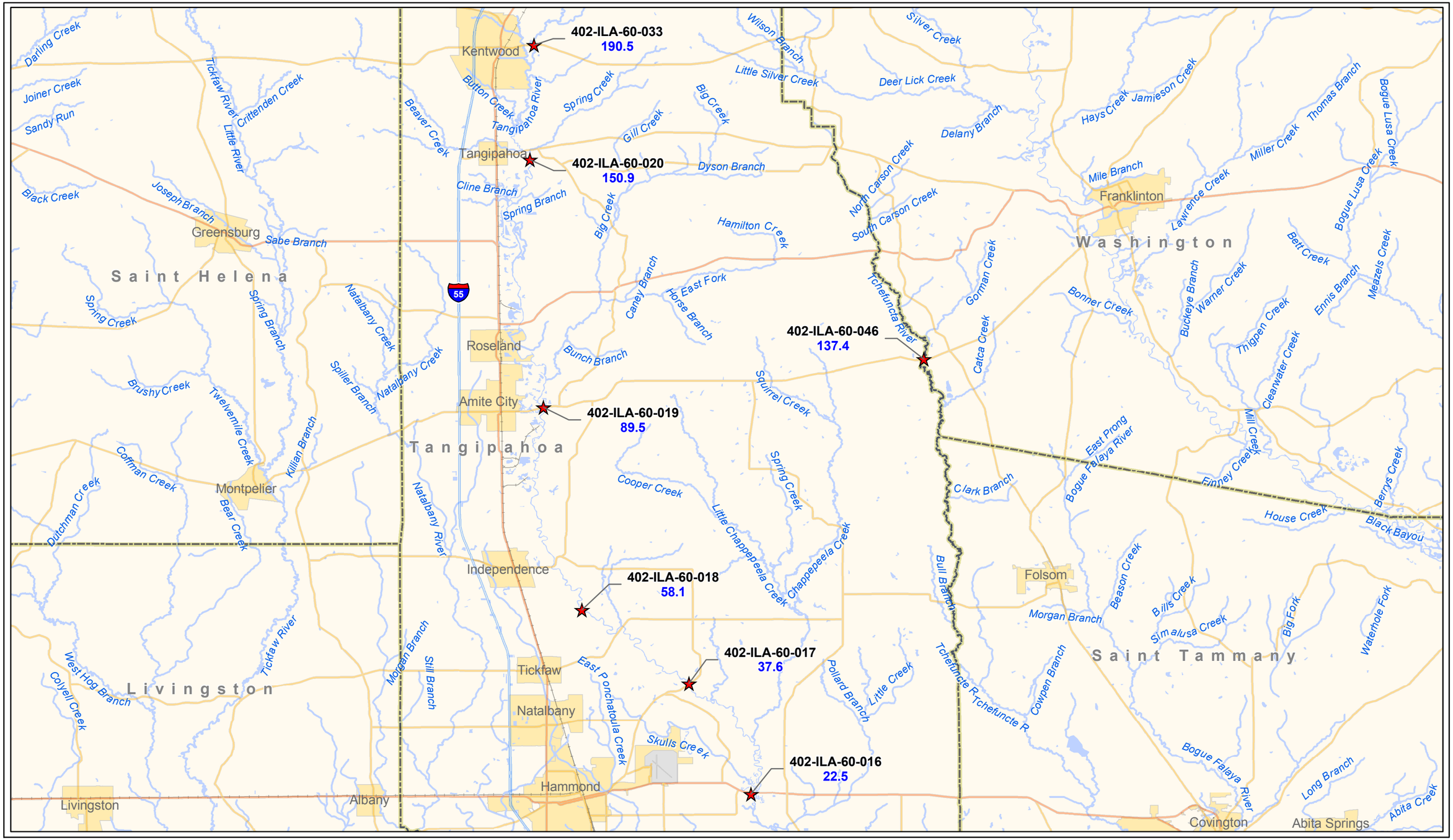
Draft

Saint Tammany Parish
Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks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150.9
402-ILA-60-046
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89.5
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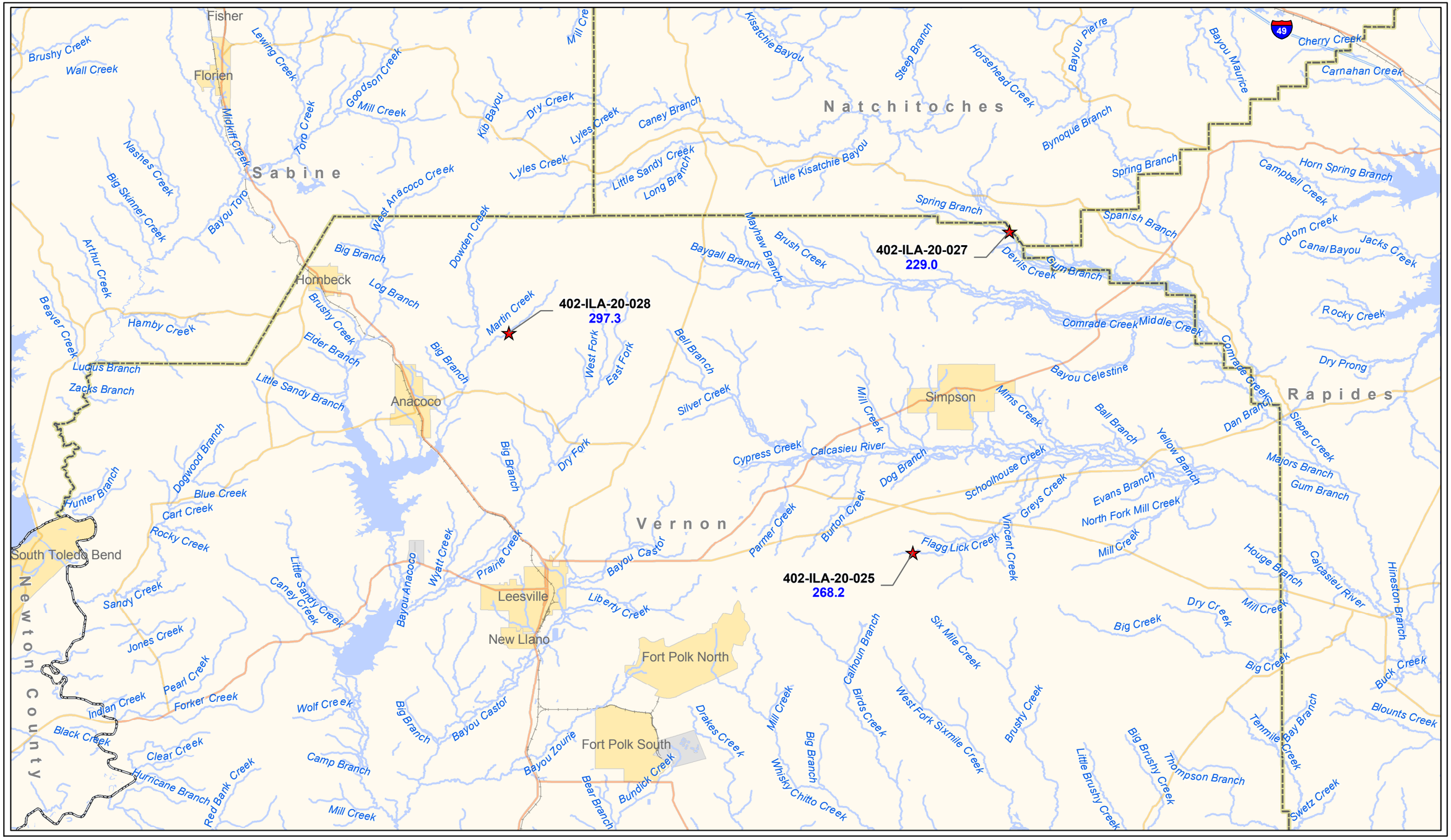
58.1
402-ILA-60-017
37.6
402-ILA-60-016
22.5
Kentwood
Tangipahoa
Greensburg
Roseland
Amite City
Montpelier
Independence
Tickfaw
Natalbany
Hammond
Albany
Livingston
Franklinton
Folsom
Covington
Abita Springs
Saint Helena
Tangipahoa
Washington
Livingston
Saint Tammany
55
Darling Creek
Joiner Creek
Sandy Run
Tickfaw River
Little River
Crittenden Creek
Black Creek
Joseph Branch
Sabe Branch
Spring Creek
Spring Branch
Natalbany Creek
Brushy Creek
Twelvemile Creek
Killian Branch
Spiller Branch
Coffman Creek
Dutchman Creek
Bear Creek
Natalbany River
Beaver Creek
Button Creek
Tangipahoa River
Spring Creek
Gill Creek
Big Creek
Cline Branch
Spring Branch
Big Creek
Hamilton Creek
Caney Branch
Horse Branch
East Fork
Bunch Branch
Squirrel Creek
Cooper Creek
Spring Creek
Little Chappepeela Creek
Chappepeela Creek
Wilson Branch
Little Silver Creek
Silver Creek
Deer Lick Creek
Delany Branch
Dyson Branch
North Carson Creek
South Carson Creek
Tchefuncta River
Gorman Creek
Catca Creek
Clark Branch
Bull Branch
Pollard Branch
Little Creek
Tchefuncte R
Tchefuncte R
Hays Creek
Jamieson Creek
Thomas Branch
Miller Creek
Bogue Lusa Creek
Mile Branch
Lawrence Creek
Bert Creek
Ennis Branch
Meazels Creek
Buckeye Branch
Warner Creek
Bonner Creek
Thigpen Creek
Cleanwater Creek
Mill Creek
Finney Creek
East Prong Bogue Falaya River
Berrys Creek
House Creek
Black Bayou
Beason Creek
Bills Creek
Simalusa Creek
Big Fork
Waterhole Fork
Morgan Branch
Cowpen Branch
Bogue Falaya River
Long Branch
Abita Creek
West Hog Branch
Colyell Creek
Tickfaw River
Morgan Branch
Still Branch
East Ponchatoula Creek
Skulls Creek
County Boundary
State Boundary
402-ILA-30-024
10.7
High Water Mark ID
High Water Mark Elevation NAVD88 (ft)
VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83
N
0 2 4 6 8
Miles
0 2 4 6 8 10 12
Kilometers
MS
LA
FEMA
Draft
Tangipahoa Parish
Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks



County Boundary
State Boundary

402-ILA-30-024
10.7
High Water Mark ID
High Water Mark Elevation NAVD88 (ft)

VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83

N

0 2 4 6 8
Miles

0 2 4 6 8 10 12
Kilometers

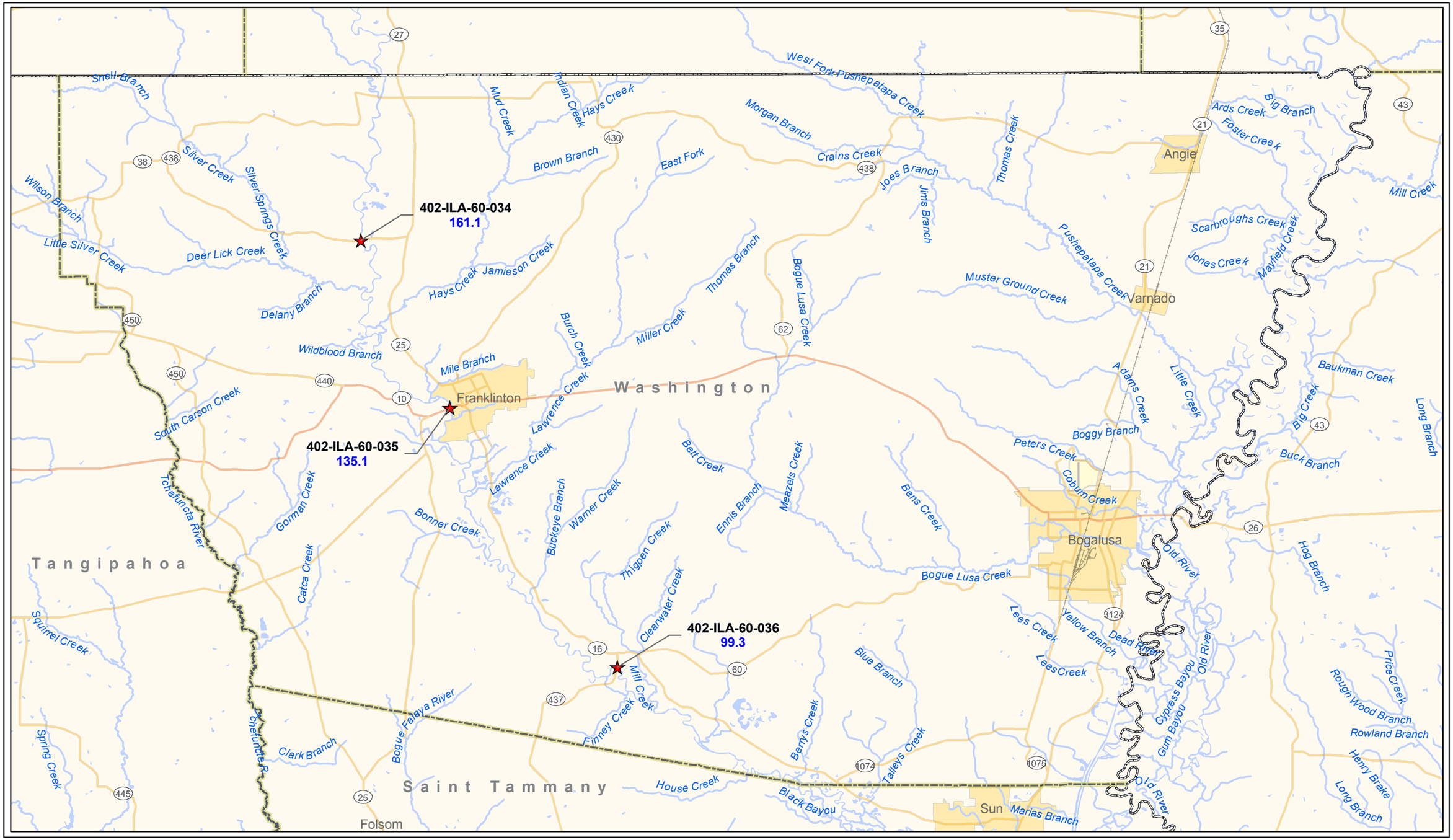


FEMA

Draft

Vernon Parish

Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks



County Boundary
State Boundary

402-ILA-30-024
10.7
High Water Mark ID
High Water Mark Elevation NAVD88 (ft)

VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83

N

0 2 4 6
Miles

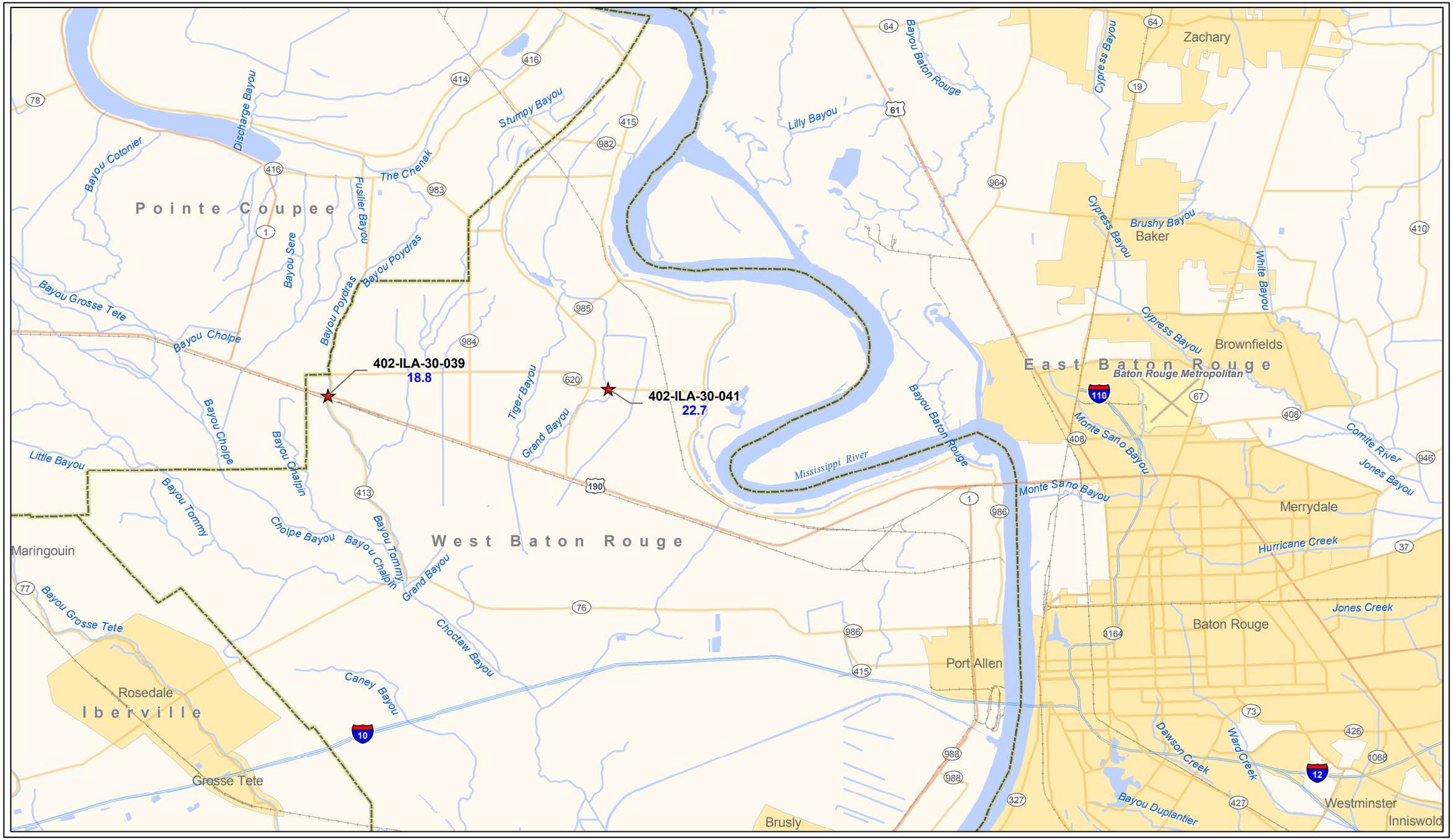
0 2 4 6 8 10
Kilometers

FEMA

Draft

Washington Parish

Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks



County Boundary
State Boundary

402-ILA-30-024
10.7
High Water Mark ID
High Water Mark Elevation NAVD88 (ft)

VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83

N

0 2 4
Miles

0 2 4 6
Kilometers

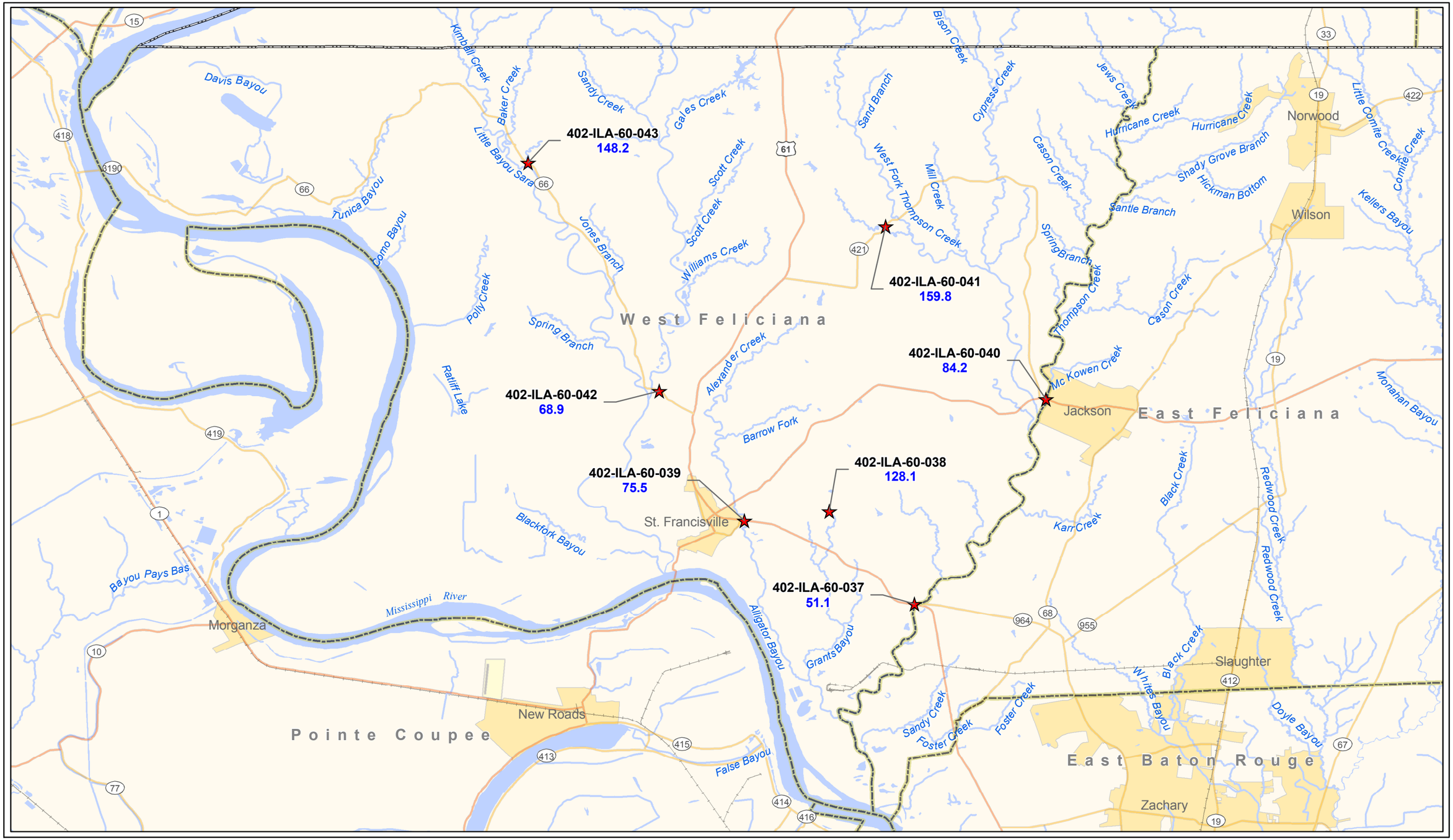


FEMA

Draft

West Baton Rouge Parish

Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks



County Boundary
State Boundary

402-ILA-30-024
10.7
High Water Mark ID
High Water Mark Elevation NAVD88 (ft)

VERTICAL DATUM: NAVD88
HORIZONTAL DATUM: NAD83

N

0 2 4 6
Miles

0 2 4 6 8 10
Kilometers

MS
TX
LA

FEMA

Draft

West Feliciana Parish

Hurricane Gustav September 2008, Louisiana
Surveyed Locations of High Water Marks

Appendix C
HWM Reports (by Parish)

Appendix C

HWM Reports (by Parish)

C1 Acadia

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-30-019	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Bayou Des Cannes	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	4.9	**NGVD 29 :**	4.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Acadia	**State :** Louisiana
Location of HWM Object :	Bridge along Rt. 100 (Old Evangeline Hwy). The column is located on the upstream face of the bridge. The HWM can be accessed by heading west on Rt. 100 from the LA91/LA100 split.		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.2682		
Survey Longitude :	-92.5603	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-30-019-240.jpg



000-ILA-30-019-241.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-021	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Bayou Des Cannes	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	10.6	**NGVD 29 :**	10.5
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Acadia	**State :** Louisiana
Location of HWM Object :	On bridge along Rt 98 (LA 98) Des Cannes Hwy a few miles east of its intersection with Mamou Prairie Rd. The HWM is along the the upstream face of the bridge.		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.3331		
Survey Longitude :	-92.5430	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-30-021-243.jpg



000-ILA-30-021-244.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-022	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	28.3	**NGVD 29 :**	28.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Acadia	**State :** Louisiana
Location of HWM Object :	Hwy 13 on first bridge to the north of Rork Town. Bridge is located near Bayou Mallet.		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4464		
Survey Longitude :	-92.4103	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-30-022-246.jpg



000-ILA-30-022-247.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

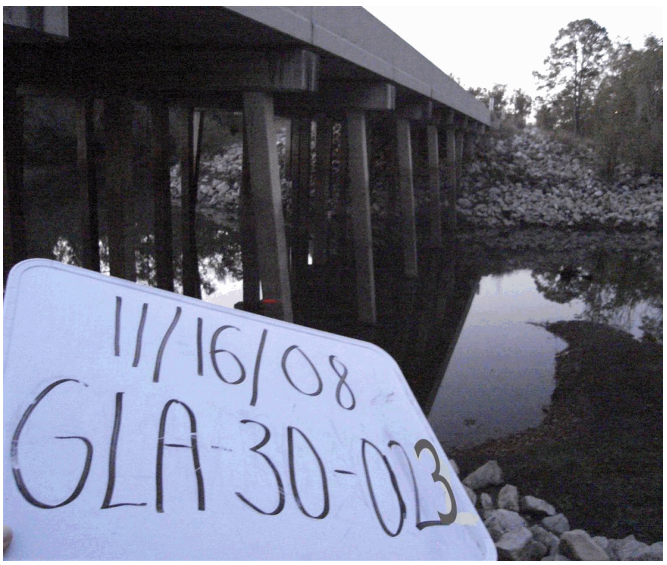
John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-023	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Mallet, Bayou	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	13.3	**NGVD 29 :**	13.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Acadia	**State :** Louisiana
Location of HWM Object :	HWM located on the upstream side of the bridge. This location can be accessed by heading north along Hwy 91 after junction Hwy 367.		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.3945		
Survey Longitude :	-92.4975	**Apx. Bldg Floor Elevation :**	N/A



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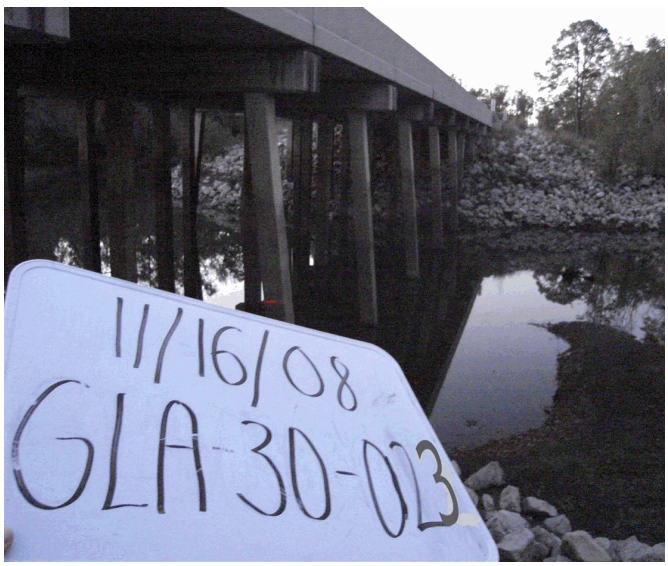

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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-024	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Wikoff, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	10.7	**NGVD 29 :**	10.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Acadia	**State :** Louisiana
Location of HWM Object :	As you head West on I 10 take 1111 toward North%2c and the first bridge over Wikoff Bayou where the mark is located.		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.2527		
Survey Longitude :	-92.3622	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-024-249.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-025	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Plaquemine Brule, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	17.1	**NGVD 29 :**	17.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Acadia	**State :** Louisiana
Location of HWM Object :	First bridge after junction Hwy 1112 and 98 toward north over Plaquemine Brule, Bayou. North west side of the bridge.		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.3018		
Survey Longitude :	-92.3439	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-025-250.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-026	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Plaquemine Brule, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	28.6	**NGVD 29 :**	28.5
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Acadia	**State :** Louisiana
Location of HWM Object :	Hwy 365 bridge crossing Palauqemine, Bayou. North West side of the bridge.		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.3550		
Survey Longitude :	-92.2992	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-026-252.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-027	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Wikoff, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	31.8	**NGVD 29 :**	31.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Acadia	**State :** Louisiana
Location of HWM Object :	Hwy 365 crossing over Wikoff Bayou		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.3495		
Survey Longitude :	-92.2161	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

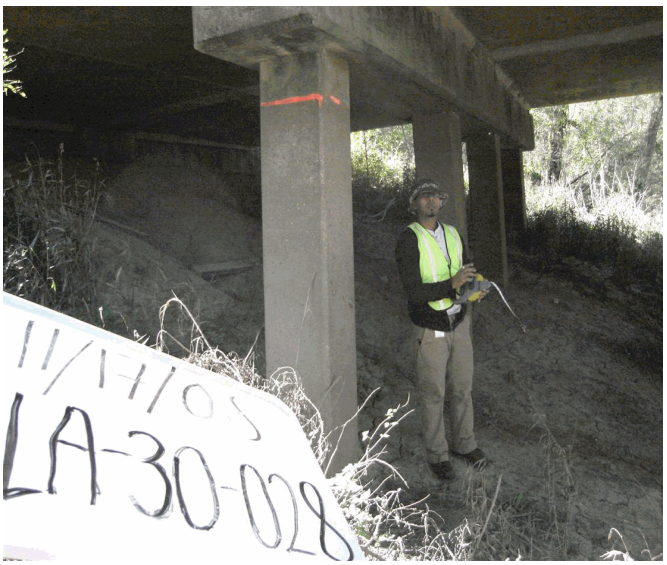
John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-028	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Wikoff, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	22.1	**NGVD 29 :**	22.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Acadia	**State :** Louisiana
Location of HWM Object :	Hwy 35 over Wikoff Bayou		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.2847		
Survey Longitude :	-92.2626	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-028-258.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

Appendix C

HWM Reports (by Parish)

C2 Allen

FEMA

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-40-045	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Clear Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	30.7	**NGVD 29 :**	30.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available , Reeves		
Type of HWM :	Mud Line	**Parish :** Allen	**State :** Louisiana
Location of HWM Object :	Hwy 190 & Clear Creek		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/22/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5196		
Survey Longitude :	-93.0529	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-40-045-202.jpg



000-ILA-40-045-203.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-40-046	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Barnes Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	15.9	**NGVD 29 :**	15.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Allen	**State :** Louisiana
Location of HWM Object :	Bridge on Martin Tram Rd at Barnes Creek		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/22/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4543		
Survey Longitude :	-93.0431	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-40-046-204.jpg



000-ILA-40-046-205.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-047	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Ten Mile Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	110.2	**NGVD 29 :**	110.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Allen	**State :** Louisiana
Location of HWM Object :	Hwy 112 & Ten Mile Creek Bridge #1880306821		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/22/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.8367		
Survey Longitude :	-92.8744	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-40-047-207.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-048	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Mill Creek	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	89.6	**NGVD 29 :**	89.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Ground		
HWM Address	No Street Address Available		
Type of HWM :	Wrack Line	**Parish :** Allen	**State :** Louisiana
Location of HWM Object :	South side of Tower Rd., 305' east of centerline of metal bridge.		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/22/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7701		
Survey Longitude :	-92.8258	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-40-048-208.jpg



000-ILA-40-048-209.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-049	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Calcasieu River	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	70.4	**NGVD 29 :**	70.3
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Ground		
HWM Address	No Street Address Available		
Type of HWM :	Wrack Line	**Parish :** Allen	**State :** Louisiana
Location of HWM Object :	Reeds Bridge Rd. & Calcasieu River Bridge		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/22/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7052		
Survey Longitude :	-92.7520	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-050	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Ouiska Chitto Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	65.3	**NGVD 29 :**	65.3
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Allen	**State :** Louisiana
Location of HWM Object :	Ouiska Chitto Creek bridge #0280506091 on Hwy. 26		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/23/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6984		
Survey Longitude :	-92.8930	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-051	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Calcasieu River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	56.8	**NGVD 29 :**	56.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Allen	**State :** Louisiana
Location of HWM Object :	Hwy. 26 & the Calcasieu River		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/23/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6400		
Survey Longitude :	-92.8152	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-052	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Blue, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	31.5	**NGVD 29 :**	31.3
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Allen	**State :** Louisiana
Location of HWM Object :	Hwy 26 & Bayou Blue Bridge		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/23/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5358		
Survey Longitude :	-92.6714	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-40-052-219.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-053	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	32.5	**NGVD 29 :**	32.4
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Culvert headwall		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Allen	**State :** Louisiana
Location of HWM Object :	Hwy 165, 2.3 miles north of Hwy 190. 4-8'x8' concrete box culvert		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/23/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5206		
Survey Longitude :	-92.8272	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-40-053-221.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-054	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watecourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	26.8	**NGVD 29 :**	26.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Allen	**State :** Louisiana
Location of HWM Object :	Southbound bridge on Hwy 165, 2.4 miles south of Hwy 383 in Kinder		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/23/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4506		
Survey Longitude :	-92.8700	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

Phone Number : (704)-583-4949

Appendix C

HWM Reports (by Parish)

C3 Avoyelles

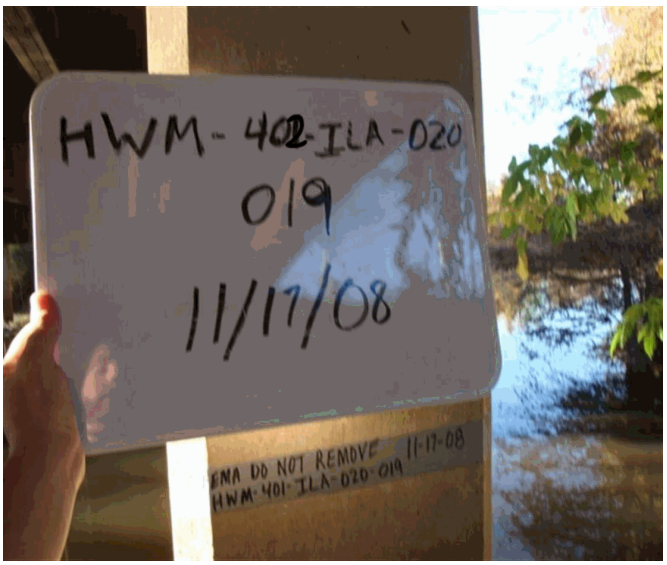
Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-20-019	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Boeuf, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	60.2	**NGVD 29 :**	60.1
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Avoyelles	**State :** Louisiana
Location of HWM Object :	Bridge over Bayou Boeuf on Hwy 71 south of Cheneyville.		

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.9833		
Survey Longitude :	-92.2113	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-001	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Horsepen Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	52.9	**NGVD 29 :**	52.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Avoyelles	**State :** Louisiana
Location of HWM Object :	LA Hwy 115 bridge crossing of Horsepen Creek.		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/14/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.3008		
Survey Longitude :	-92.1570	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-001-109.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

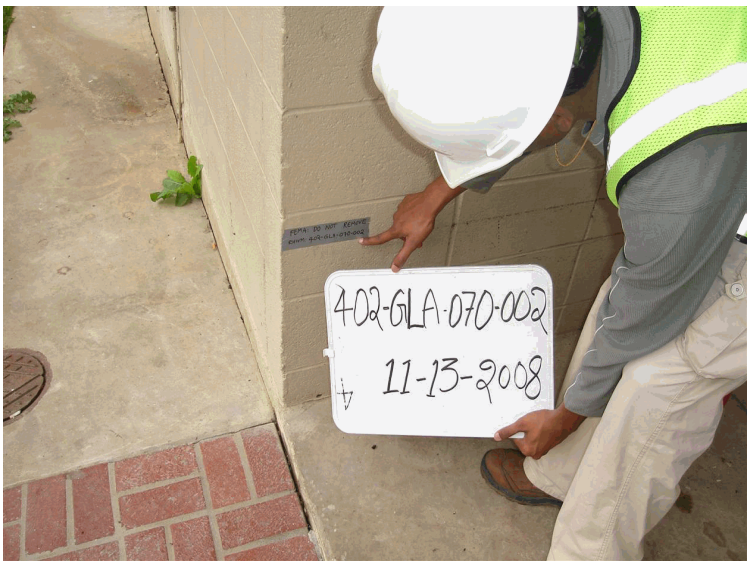
Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-002	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	84.6	**NGVD 29 :**	84.5
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Wall		
HWM Address	No Street Address Available		
Type of HWM :	Seed Line	**Parish :** Avoyelles	**State :** Louisiana
Location of HWM Object :	Oak Haven Nursing Center on LA Hwy 107		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/14/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.2529		
Survey Longitude :	-92.1932	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-004	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	45.4	**NGVD 29 :**	45.3
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Avoyelles	**State :** Louisiana
Location of HWM Object :	Spring Bayou Rd crossing of the bayou.		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.1400		
Survey Longitude :	-92.0365	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-004-115.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-005	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Petite Reviere	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	45.3	**NGVD 29 :**	45.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Avoyelles	**State :** Louisiana
Location of HWM Object :	Boggy Bayou Road bridge crossing of Petite Reviere		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.1418		
Survey Longitude :	-92.0094	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-006	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	45.1	**NGVD 29 :**	45.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Tree		
HWM Address	1855 Spring Bayou		
Type of HWM :	Stain Line	**Parish :** Avoyelles	**State :** Louisiana

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.1329		
Survey Longitude :	-92.0145	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-006-121.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-008	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	La Vieille Riviere	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	45.2	**NGVD 29 :**	45.1
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Boat dock		
HWM Address	1703 Old River Road		
Type of HWM :	Mud Line	**Parish :** Avoyelles	**State :** Louisiana

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.0707		
Survey Longitude :	-92.0018	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-008-125.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-009	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Grand Ecore Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	43.0	**NGVD 29 :**	42.9
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Avoyelles	**State :** Louisiana
Location of HWM Object :	LA Hwy 114 crosing of Bayou Grand Ecore.		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.0352		
Survey Longitude :	-92.0340	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-009-127.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-010	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Des Glasies Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	44.2	**NGVD 29 :**	44.1
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Avoyelles	**State :** Louisiana
Location of HWM Object :	LA Hwy 114 crossing of Bayou Des Glaises		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.0242		
Survey Longitude :	-92.0149	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-010-128.jpg



000-ILA-70-010-129.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-70-011	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Des Glaises Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	50.8	**NGVD 29 :**	50.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available , Cottonport		
Type of HWM :	Mud Line	**Parish :** Avoyelles	**State :** Louisiana
Location of HWM Object :	LA Hwy107 crossing of Bayou Des Glaises		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.0077		
Survey Longitude :	-92.0510	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-011-130.jpg



000-ILA-70-011-131.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

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Registration Number : 1560

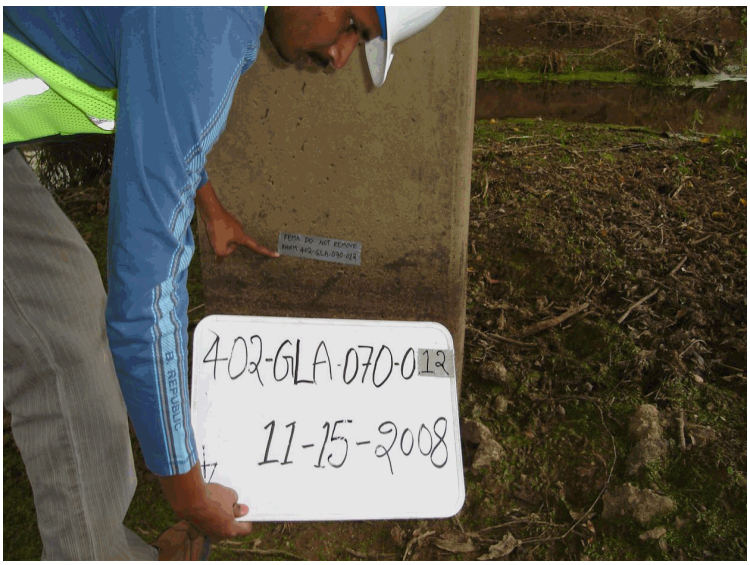
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-70-012	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Des Cyprieres Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	46.5	**NGVD 29 :**	46.5
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Avoyelles	**State :** Louisiana
Location of HWM Object :	LA Hwy 107 crossing of Bayou Des Cyprieres.		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.0191		
Survey Longitude :	-92.0514	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-012-133.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-70-014	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Boeuf, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	57.5	**NGVD 29 :**	57.4
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Avoyelles	**State :** Louisiana
Location of HWM Object :	LA Hwy 115 crossing of Bayou Boeuf.		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.9502		
Survey Longitude :	-92.2232	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-014-292.jpg



000-ILA-70-014-293.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-015	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Wauksha, Bayou	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	54.9	**NGVD 29 :**	54.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Avoyelles	**State :** Louisiana
Location of HWM Object :	LA Hwy 29 crossing Wauksha Bayou		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.9182		
Survey Longitude :	-92.2034	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-015-296.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-016	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Boeuf, Bayou	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	53.9	**NGVD 29 :**	53.9
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Avoyelles	**State :** Louisiana
Location of HWM Object :	LA Hwy 29 crossing of Bayou Boeuf.		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.9088		
Survey Longitude :	-92.2073	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-016-298.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-017	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Boeuf, Bayou	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	49.9	**NGVD 29 :**	49.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Avoyelles	**State :** Louisiana
Location of HWM Object :	LA Hwy 106 crossing of Bayou Boeuf.		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.8671		
Survey Longitude :	-92.2183	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-017-300.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-019	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Boeuf, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	50.0	**NGVD 29 :**	49.9
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Avoyelles	**State :** Louisiana
Location of HWM Object :	LA Hwy 29 crossing of Bayou Boeuf.		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.8570		
Survey Longitude :	-92.2144	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-019-303.jpg



000-ILA-70-019-304.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-021	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Des Glaises Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	55.1	**NGVD 29 :**	55.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available , Evergreen		
Type of HWM :	Mud Line	**Parish :** Avoyelles	**State :** Louisiana
Location of HWM Object :	LA Hwy 29 crossing of Des Glaises Bayou		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.9522		
Survey Longitude :	-92.1090	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-021-308.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

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Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-022	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Des Galises Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	48.1	**NGVD 29 :**	48.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Avoyelles	**State :** Louisiana
Location of HWM Object :	Bidge just off LA Hwy 1185 crossing Des Galises Bayou		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.0193		
Survey Longitude :	-92.0288	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-022-314.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-023	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Des Glaises Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	44.3	**NGVD 29 :**	44.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Avoyelles	**State :** Louisiana
Location of HWM Object :	LA Hwy 1 crossing of Des Glaises Bayou		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.0466		
Survey Longitude :	-91.9870	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-023-316.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

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Registration Number : 1560

Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-70-025	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Des Galises Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	44.5	**NGVD 29 :**	44.4
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Avoyelles	**State :** Louisiana
Location of HWM Object :	LA Hwy 451 crossing of Des Glaises. Bayou		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.0913		
Survey Longitude :	-91.9368	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-025-321.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-70-083	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Yellow Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	41.7	**NGVD 29 :**	41.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Avoyelles	**State :** Louisiana
Location of HWM Object :	Frances Smith Road crossing of Yellow Bayou		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/21/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.9722		
Survey Longitude :	-91.8512	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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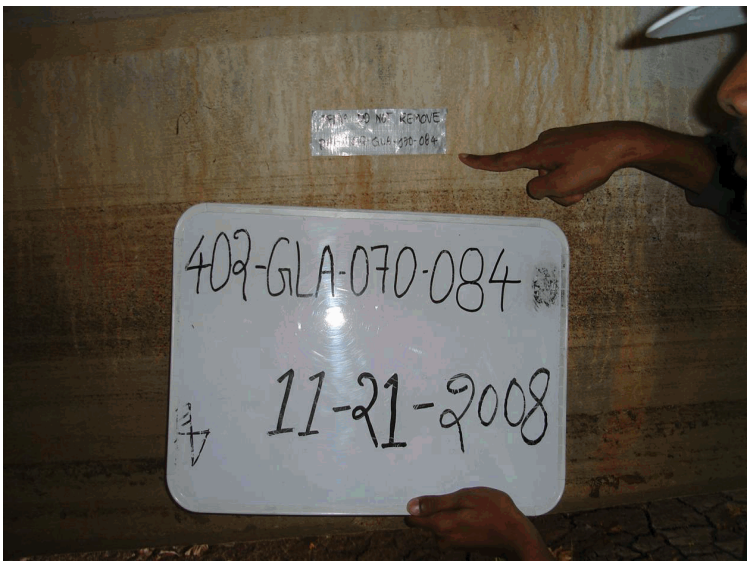
Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-70-084	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Lac Choupique Lake Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	38.7	**NGVD 29 :**	38.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Avoyelles	**State :** Louisiana
Location of HWM Object :	LA Hwy 1181 crossing of Lac Choupique Lake Bayou		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/21/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.9482		
Survey Longitude :	-91.9024	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-70-085	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	42.1	**NGVD 29 :**	42.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Avoyelles	**State :** Louisiana
Location of HWM Object :	LA Hwy 1181 crossing of unknown stream		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/21/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.9796		
Survey Longitude :	-91.9659	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-085-285.jpg



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
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Registration Number : 1560
Phone Number : (704)-583-4949

Appendix C

HWM Reports (by Parish)

C4 Beauregard

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-40-025	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	81.7	**NGVD 29 :**	81.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Beauregard	**State :** Louisiana
Location of HWM Object :	Bridge #3770108611 on Hwy 109 1/2 mile south of Fields		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5214		
Survey Longitude :	-93.5800	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-40-025-160.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-026	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Shoats Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	38.6	**NGVD 29 :**	38.5
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Ground		
HWM Address	3078 Old River Rd.		
Type of HWM :	Personal Account	**Parish :** Beauregard	**State :** Louisiana

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008		**Witness Statement :**	Homeowner George Hillebrandt pointed out the watel level

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4366		
Survey Longitude :	-93.6875	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-40-027	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Big Slough	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	50.0	**NGVD 29 :**	50.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Ground		
HWM Address	No Street Address Available		
Type of HWM :	Other	**Parish :** Beauregard	**State :** Louisiana
Location of HWM Object :	Left side of Fish Hole Rd. after second curve		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6279		
Survey Longitude :	-93.6399	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-028	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Bear Head Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	127.4	**NGVD 29 :**	127.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Beauregard	**State :** Louisiana
Location of HWM Object :	Hwy 110 & Bear head Creek, Bridge #1900108241		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6833		
Survey Longitude :	-93.4541	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-029	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Hoosier Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	104.1	**NGVD 29 :**	104.3
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Beauregard	**State :** Louisiana
Location of HWM Object :	Hwy. 110 & Hoosier Creek, Bridge #1900103591		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7279		
Survey Longitude :	-93.5119	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-030	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Bear Head Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	95.9	**NGVD 29 :**	95.9
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Beauregard	**State :** Louisiana
Location of HWM Object :	Hwy.109 & Bear head Creek, Bridge #3770207681		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5933		
Survey Longitude :	-93.4787	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-40-030-172.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-031	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	68.9	**NGVD 29 :**	68.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Beauregard	**State :** Louisiana
Location of HWM Object :	Hwy. 27 about 6 miles north of De Quincy. Northeast side of bridge #0310803331		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5383		
Survey Longitude :	-93.4364	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-032	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Cowards Gully	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	48.1	**NGVD 29 :**	48.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Beauregard	**State :** Louisiana
Location of HWM Object :	Bridge #0120302181 on Hwy. 12 at Coward's Gully		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4203		
Survey Longitude :	-93.4880	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-033	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Cowpen Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	136.4	**NGVD 29 :**	136.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Beauregard	**State :** Louisiana
Location of HWM Object :	Hwy. 27 near mile marker 25 bridge #0310907871		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7447		
Survey Longitude :	-93.3489	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-034	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Palmetto Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	154.5	**NGVD 29 :**	155.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Ground		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Beauregard	**State :** Louisiana
Location of HWM Object :	Hwy 27 & Palmetto Creek near Sand Bed Rd. bridge just north of Sand Bed Rd. about 1 1/2 miles south of Hwy 190		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.8255		
Survey Longitude :	-93.2952	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-035	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Hickory Branch	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	162.5	**NGVD 29 :**	163.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available , De Ridder		
Type of HWM :	Mud Line	**Parish :** Beauregard	**State :** Louisiana
Location of HWM Object :	Bridge just south of 904 N. Pine St. (Hwy. 171)		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.8593		
Survey Longitude :	-93.2883	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-036	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Whiskey Chitta Creek	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	135.5	**NGVD 29 :**	135.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Beauregard	**State :** Louisiana
Location of HWM Object :	Hwy 112 & Whiskey Chitta Creek, just east of Hwy 399		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.8645		
Survey Longitude :	-93.0736	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-037	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Whiskey Chitta Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	104.7	**NGVD 29 :**	104.9
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Beauregard	**State :** Louisiana
Location of HWM Object :	Hwy 113 & Whiskey Chitta Creek, 3 miles south of Hwy 112 in Sugartown		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7928		
Survey Longitude :	-93.0146	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-40-037-186.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-40-038	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Beckwith Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	37.4	**NGVD 29 :**	37.3
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Beauregard	**State :** Louisiana
Location of HWM Object :	Hwy. 12 & Beckwith Creek Bridge #0120501501		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/21/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4704		
Survey Longitude :	-93.3613	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-40-038-188.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-039	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Hickory Branch	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	43.6	**NGVD 29 :**	43.4
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Beauregard	**State :** Louisiana
Location of HWM Object :	Concrete bridge on Hwy. 12 between mile markers 31 & 32		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/21/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5014		
Survey Longitude :	-93.2794	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-040	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Barnes Creek	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	81.8	**NGVD 29 :**	81.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Ground		
HWM Address	No Street Address Available		
Type of HWM :	Wrack Line	**Parish :** Beauregard	**State :** Louisiana
Location of HWM Object :	Eastbank of creek, South east corner at bridge near the intersection of Parish Rd. 217 (Longville Rd.) & Barnes Creek Little Park Rd.		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/21/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6072		
Survey Longitude :	-93.1957	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-40-041	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Dry Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	98.8	**NGVD 29 :**	98.9
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Beauregard	**State :** Louisiana
Location of HWM Object :	Longville Rd. bridge #651		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/21/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6327		
Survey Longitude :	-93.1117	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-40-041-194.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-40-042	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Bundick Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	70.0	**NGVD 29 :**	70.1
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Beauregard	**State :** Louisiana
Location of HWM Object :	Hwy. 113 & Bundick Creek @ bridge #1390300981		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/21/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6855		
Survey Longitude :	-93.0431	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-40-042-196.jpg



000-ILA-40-042-197.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-40-043	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Barnes Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	43.4	**NGVD 29 :**	43.4
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Beauregard	**State :** Louisiana
Location of HWM Object :	Hwy 190 bridge #0120515431		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/21/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5176		
Survey Longitude :	-93.1406	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-40-043-198.jpg



000-ILA-40-043-199.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-40-044	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Indian Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	41.7	**NGVD 29 :**	41.5
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Culvert headwall		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Beauregard	**State :** Louisiana
Location of HWM Object :	Hwy 171 just north of mile marker 15. 5-8' x 8' Concrete Box Culvert		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/21/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4416		
Survey Longitude :	-93.2324	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

Appendix C

HWM Reports (by Parish)

C5 Calcasieu

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-40-001	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Calcasieu River	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	9.0	**NGVD 29 :**	8.9
Flooding Type :	Coastal - Stillwater Only		
HWM Object, Surface :	Exterior Wall		
HWM Address	25 River Rd. , Lake Charles		
Type of HWM :	Personal Account	**Parish :** Calcasieu	**State :** Louisiana

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/14/2008		**Witness Statement :**	

Contractor claims another contractor measured up from floor in house to a distance of 5'-4" to the HWM.

Survey Crew :	DBS	**Company :**	Pelican Land Surveying, L.L.C
Survey Date :	12/23/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.2497		
Survey Longitude :	-93.2236	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-40-001-105.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

Darren Sargent & David W. Sargent - PLS, Louisiana

Pelican Land Surveying, L.L.C.

838 South Post Oak Road Sulphur, LA
70664-1747

Registration Number : Louisiana Firm License #544

Phone Number : (337)-533-8116

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-40-002	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Calcasieu River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	8.8	**NGVD 29 :**	8.6
Flooding Type :	Coastal - Stillwater Only		
HWM Object, Surface :	Exterior Wall		
HWM Address	1535 Miller Ave.		
Type of HWM :	Mud Line	**Parish :** Calcasieu	**State :** Louisiana

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/14/2008			

Survey Crew :	DBS	**Company :**	Pelican Land Surveying, L.L.C
Survey Date :	12/23/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.2522		
Survey Longitude :	-93.2464	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-40-002-107.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

Darren Sargent & David W. Sargent - PLS, Louisiana

Pelican Land Surveying, L.L.C.

838 South Post Oak Road Sulphur, LA
70664-1747

Registration Number : Louisiana Firm License #544

Phone Number : (337)-533-8116

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-40-003	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	West Fork Calcasieu River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	7.9	**NGVD 29 :**	7.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Wall		
HWM Address	1140 S. Perkins Ferry Rd. , Moss Bluff		
Type of HWM :	Mud Line	**Parish :** Calcasieu	**State :** Louisiana

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/14/2008			

Survey Crew :	DBS	**Company :**	Pelican Land Surveying, L.L.C
Survey Date :	12/23/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.2831		
Survey Longitude :	-93.2288	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-40-003-109.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

Darren Sargent & David W. Sargent - PLS, Louisiana

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70664-1747

Registration Number : Louisiana Firm License #544

Phone Number : (337)-533-8116

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-40-004	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Calcasieu River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	8.6	**NGVD 29 :**	8.4
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Electrical box		
HWM Address	4607 Goos Ferry Rd Lot 18		
Type of HWM :	Mud Line	**Parish :** Calcasieu	**State :** Louisiana

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008			

Survey Crew :	DWS	**Company :**	Pelican Land Surveying, L.L.C
Survey Date :	12/23/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.3044		
Survey Longitude :	-93.1520	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Registration Number : Louisiana Firm License #544

Phone Number : (337)-533-8116

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-40-006	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Serpent, Bayou	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	8.8	**NGVD 29 :**	8.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** Calcasieu	**State :** Louisiana
Location of HWM Object :	Located on the north side of the bridge @ Bayou Serpent and Hecker Rd. Bridge #500058 built in 1997		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008			

Survey Crew :	DWS	**Company :**	Pelican Land Surveying, L.L.C
Survey Date :	12/23/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.3304		
Survey Longitude :	-93.0720	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

Darren Sargent & David W. Sargent - PLS, Louisiana

Pelican Land Surveying, L.L.C.

838 South Post Oak Road Sulphur, LA
70664-1747

Registration Number : Louisiana Firm License #544

Phone Number : (337)-533-8116

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-40-007	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Arceneaux, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	8.1	**NGVD 29 :**	7.9
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Calcasieu	**State :** Louisiana
Location of HWM Object :	Bridge #500159 built in 1993 on the first bent from north bulkhead, outside pile east side		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008			

Survey Crew :	DWS	**Company :**	Pelican Land Surveying, L.L.C
Survey Date :	12/23/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.3085		
Survey Longitude :	-93.0654	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

Darren Sargent & David W. Sargent - PLS, Louisiana

Pelican Land Surveying, L.L.C.

838 South Post Oak Road Sulphur, LA
70664-1747

Registration Number : Louisiana Firm License #544

Phone Number : (337)-533-8116

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-40-008	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Indian Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	8.4	**NGVD 29 :**	8.1
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Interior Wall Transferred to Exterior		
HWM Address	2735 Hwy. 378 Spur		
Type of HWM :	Mud Line	**Parish :** Calcasieu	**State :** Louisiana

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008			

Survey Crew :	DBS	**Company :**	Pelican Land Surveying, L.L.C
Survey Date :	12/23/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.3034		
Survey Longitude :	-93.2494	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

Darren Sargent & David W. Sargent - PLS, Louisiana

Pelican Land Surveying, L.L.C.

838 South Post Oak Road Sulphur, LA
70664-1747

Registration Number : Louisiana Firm License #544

Phone Number : (337)-533-8116

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-40-011	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	8.4	**NGVD 29 :**	8.2
Flooding Type :	Coastal - Stillwater Only		
HWM Object, Surface :	Ground		
HWM Address	No Street Address Available		
Type of HWM :	Wrack Line	**Parish :** Calcasieu	**State :** Louisiana
Location of HWM Object :	Bridge on Hwy 90 about 2 blocks west of Hwy 108		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	DBS	**Company :**	Pelican Land Surveying, L.L.C
Survey Date :	12/24/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.2370		
Survey Longitude :	-93.3288	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

Darren Sargent & David W. Sargent - PLS, Louisiana

Pelican Land Surveying, L.L.C.

838 South Post Oak Road Sulphur, LA
70664-1747

Registration Number : Louisiana Firm License #544

Phone Number : (337)-533-8116

HWM ID :	402-ILA-40-013	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	9.3	**NGVD 29 :**	9.2
Flooding Type :	Coastal - Stillwater Only		
HWM Object, Surface :	Ground		
HWM Address	No Street Address Available , Sulphur		
Type of HWM :	Wrack Line	**Parish :** Calcasieu	**State :** Louisiana
Location of HWM Object :	Southwest corner of the intersection of Beglis Pkwy. (Hwy 27) & Weekly		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	DBS	**Company :**	Pelican Land Surveying, L.L.C
Survey Date :	12/24/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.2194		
Survey Longitude :	-93.3589	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-40-013-131.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

Darren Sargent & David W. Sargent - PLS, Louisiana

Pelican Land Surveying, L.L.C.

838 South Post Oak Road Sulphur, LA
70664-1747

Registration Number : Louisiana Firm License #544

Phone Number : (337)-533-8116

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-40-014	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Choupique, Bayou	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	10.9	**NGVD 29 :**	10.8
Flooding Type :	Coastal - Stillwater Only		
HWM Object, Surface :	Retaining wall		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Calcasieu	**State :** Louisiana
Location of HWM Object :	Southeast side of bridge retaining wall at US 90 & Choupique Bayou		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	DBS	**Company :**	Pelican Land Surveying, L.L.C
Survey Date :	12/24/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.2274		
Survey Longitude :	-93.4395	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-40-014-133.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

Darren Sargent & David W. Sargent - PLS, Louisiana

Pelican Land Surveying, L.L.C.

838 South Post Oak Road Sulphur, LA
70664-1747

Registration Number : Louisiana Firm License #544

Phone Number : (337)-533-8116

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-40-015	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Coon Gully	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	8.8	**NGVD 29 :**	8.7
Flooding Type :	Coastal - Stillwater Only		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Calcasieu	**State :** Louisiana
Location of HWM Object :	Located at the US 90 bridge at Coone Gully		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.	
Date of Flagging/Interview :	11/16/2008				

Survey Crew :	DBS	**Company :**	Pelican Land Surveying, L.L.C
Survey Date :	12/22/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.2026		
Survey Longitude :	-93.5605	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-40-015-134.jpg



000-ILA-40-015-136.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

Darren Sargent & David W. Sargent - PLS, Louisiana

Pelican Land Surveying, L.L.C.

838 South Post Oak Road Sulphur, LA
70664-1747

Registration Number : Louisiana Firm License #544

Phone Number : (337)-533-8116

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-40-016	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Old River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	8.7	**NGVD 29 :**	8.5
Flooding Type :	Coastal - Stillwater Only		
HWM Object, Surface :	Tree		
HWM Address	3409 Niblett Bluff Rd.		
Type of HWM :	Other	**Parish :** Calcasieu	**State :** Louisiana

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	DBS	**Company :**	Pelican Land Surveying, L.L.C
Survey Date :	12/22/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.1977		
Survey Longitude :	-93.6797	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-40-016-137.jpg



000-ILA-40-016-138.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Pelican Land Surveying, L.L.C.

838 South Post Oak Road Sulphur, LA
70664-1747

Registration Number : Louisiana Firm License #544

Phone Number : (337)-533-8116

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-40-017	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Houston River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	8.1	**NGVD 29 :**	7.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** Calcasieu	**State :** Louisiana
Location of HWM Object :	Hwy 27 bridge at the Houston River		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	DWS	**Company :**	Pelican Land Surveying, L.L.C
Survey Date :	12/23/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.2910		
Survey Longitude :	-93.3556	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

Darren Sargent & David W. Sargent - PLS, Louisiana

Pelican Land Surveying, L.L.C.

838 South Post Oak Road Sulphur, LA
70664-1747

Registration Number : Louisiana Firm License #544

Phone Number : (337)-533-8116

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-40-019	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	West Fork Calcasieu River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	8.6	**NGVD 29 :**	8.3
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Steps		
HWM Address	3676 Frank Parker Rd.		
Type of HWM :	Mud Line	**Parish :** Calcasieu	**State :** Louisiana

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	DBS	**Company :**	Pelican Land Surveying, L.L.C
Survey Date :	12/24/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.3188		
Survey Longitude :	-93.2966	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-40-019-144.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Pelican Land Surveying, L.L.C.

838 South Post Oak Road Sulphur, LA
70664-1747

Registration Number : Louisiana Firm License #544

Phone Number : (337)-533-8116

HWM ID :	402-ILA-40-020	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Little River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	31.1	**NGVD 29 :**	31.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Calcasieu	**State :** Louisiana
Location of HWM Object :	Bridge at Holbrook Park Rd. & Little River about 1.8 miles East of Hwy 27		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	DBS	**Company :**	Pelican Land Surveying, L.L.C
Survey Date :	12/23/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.3931		
Survey Longitude :	-93.3822	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Pelican Land Surveying, L.L.C.

838 South Post Oak Road Sulphur, LA
70664-1747

Registration Number : Louisiana Firm License #544

Phone Number : (337)-533-8116

HWM ID :	402-ILA-40-021	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Buxton Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	49.4	**NGVD 29 :**	49.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Ground		
HWM Address	No Street Address Available , DeQuincy		
Type of HWM :	Wrack Line	**Parish :** Calcasieu	**State :** Louisiana
Location of HWM Object :	Near bridge on Hwy 27 just north of Hwy 12. Mile Marker 103. Southeast side of bridge just above concrete canal wall		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	DWS	**Company :**	Pelican Land Surveying, L.L.C
Survey Date :	12/30/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.4583		
Survey Longitude :	-93.4299	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-40-021-148.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Pelican Land Surveying, L.L.C.

838 South Post Oak Road Sulphur, LA
70664-1747

Registration Number : Louisiana Firm License #544

Phone Number : (337)-533-8116

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-40-023	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Buxton Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	41.9	**NGVD 29 :**	41.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Calcasieu	**State :** Louisiana
Location of HWM Object :	Bridge #0310814371 on Hwy 27 south of De Quincy just north of mile marker 100		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	DBS	**Company :**	Pelican Land Surveying, L.L.C
Survey Date :	12/24/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.4233		
Survey Longitude :	-93.4247	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-40-023-152.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Pelican Land Surveying, L.L.C.

838 South Post Oak Road Sulphur, LA
70664-1747

Registration Number : Louisiana Firm License #544

Phone Number : (337)-533-8116

HWM ID :	402-ILA-40-024	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Buxton Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	21.7	**NGVD 29 :**	21.5
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Calcasieu	**State :** Louisiana
Location of HWM Object :	Route 66 3.5 miles west of Hwy 27, first or eastmost bridge. HWM is 3.7 miles southwest of Perkins		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	DBS	**Company :**	Pelican Land Surveying, L.L.C
Survey Date :	12/23/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.3568		
Survey Longitude :	-93.4533	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

Darren Sargent & David W. Sargent - PLS, Louisiana

Pelican Land Surveying, L.L.C.

838 South Post Oak Road Sulphur, LA
70664-1747

Registration Number : Louisiana Firm License #544

Phone Number : (337)-533-8116

Appendix C

HWM Reports (by Parish)

C6 Catahoula

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-50-015	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Lovelace Lake	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	50.6	**NGVD 29 :**	50.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Wall		
HWM Address	121 John Road		
Type of HWM :	Mud Line	**Parish :** Catahoula	**State :** Louisiana

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.8242		
Survey Longitude :	-91.6438	**Apx. Bldg Floor Elevation :**	N/A



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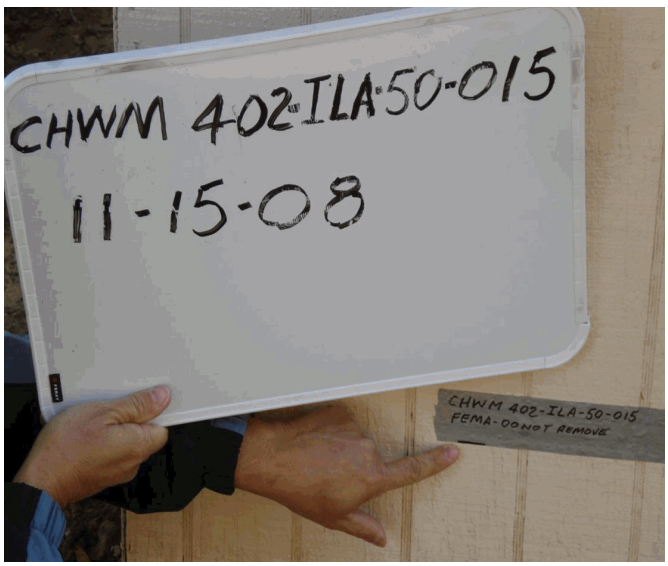

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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-50-017	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Louis, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	51.2	**NGVD 29 :**	51.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Catahoula	**State :** Louisiana
Location of HWM Object :	Bridge Overpass on HWY 8 after Doughty Road		

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.7826		
Survey Longitude :	-91.7745	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-50-024	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Little River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	54.4	**NGVD 29 :**	54.3
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** Catahoula	**State :** Louisiana
Location of HWM Object :	Bridge after Catahoula Wildlife Refuge.		

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.5742		
Survey Longitude :	-91.9909	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-70-007	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	29.2	**NGVD 29 :**	25.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Wall		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Catahoula	**State :** Louisiana
Location of HWM Object :	LA Hwy 452 - Lindy C. Boggs Lock and Dam - US Army Corps of Engineers facility		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.2531		
Survey Longitude :	-91.9560	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

Appendix C

HWM Reports (by Parish)

C7 Concordia

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-50-029	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Lake Saint John	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	57.5	**NGVD 29 :**	57.5
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Boat dock		
HWM Address	1182 Highway 568		
Type of HWM :	Stain Line	**Parish :** Concordia	**State :** Louisiana

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceon	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.6812		
Survey Longitude :	-91.4351	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-50-029-178.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-50-031	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Lake Saint John	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	57.2	**NGVD 29 :**	57.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Boat dock		
HWM Address	5503 Highway 568		
Type of HWM :	Stain Line	**Parish :** Concordia	**State :** Louisiana

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceon	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.7315		
Survey Longitude :	-91.4540	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-50-031-174.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-50-032	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Lake Saint John	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	57.4	**NGVD 29 :**	57.4
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Boat dock		
HWM Address	4752 Highway 569		
Type of HWM :	Stain Line	**Parish :** Concordia	**State :** Louisiana

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceon	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.7315		
Survey Longitude :	-91.4418	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-50-032-172.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-50-033	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Lake Concordia	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	51.0	**NGVD 29 :**	51.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Boat dock		
HWM Address	329 Weecama Road		
Type of HWM :	Stain Line	**Parish :** Concordia	**State :** Louisiana

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceon	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.6698		
Survey Longitude :	-91.5070	**Apx. Bldg Floor Elevation :**	N/A



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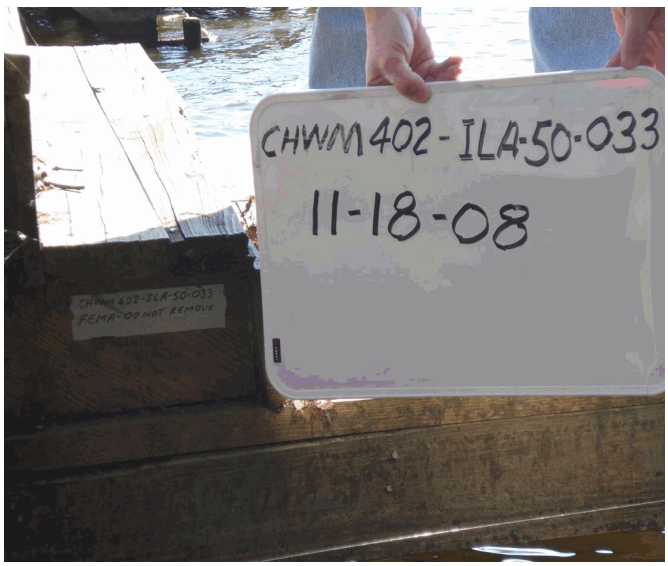

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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-50-034	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Lake Concordia	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	50.8	**NGVD 29 :**	50.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Tree		
HWM Address	819 HWY 568		
Type of HWM :	Stain Line	**Parish :** Concordia	**State :** Louisiana

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceon	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.6403		
Survey Longitude :	-91.5412	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

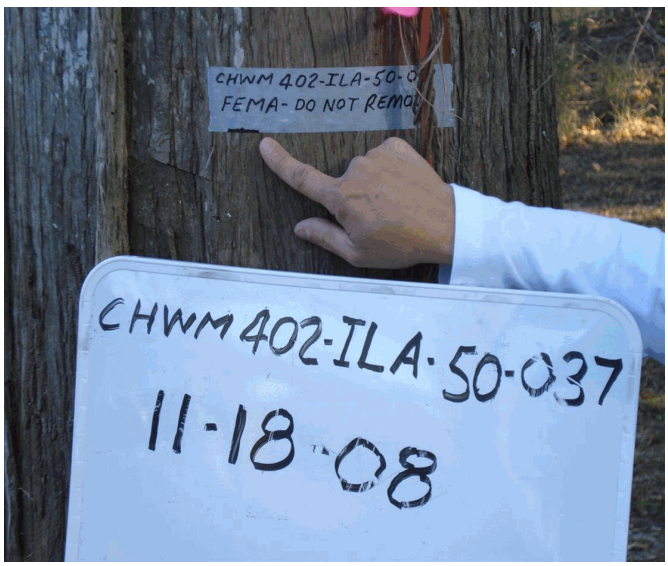
HWM ID :	402-ILA-50-037	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	44.7	**NGVD 29 :**	44.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Tree		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** Concordia	**State :** Louisiana
Location of HWM Object :	Near HWY 906, take right off Bodark Road onto boat launch called The Landing after bridge.		

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceon	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.4726		
Survey Longitude :	-91.7426	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-50-037-161.jpg



000-ILA-50-037-162.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-50-038	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Cocodrie Lake	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	44.8	**NGVD 29 :**	44.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Tree		
HWM Address	4831 Highway 129		
Type of HWM :	Stain Line	**Parish :** Concordia	**State :** Louisiana

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceon	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.4817		
Survey Longitude :	-91.7158	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-50-038-159.jpg



000-ILA-50-038-160.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-50-040	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	44.2	**NGVD 29 :**	44.2
Flooding Type :	Riverine - Hurricane	**Description of HWM Object**	
HWM Object, Surface :	Building support post, piling,column, or beam		
HWM Address	185 Ellard Road		
Type of HWM :	Stain Line	**Parish :** Concordia	**State :** Louisiana

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceon	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.4960		
Survey Longitude :	-91.6672	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-50-040-155.jpg



000-ILA-50-040-156.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

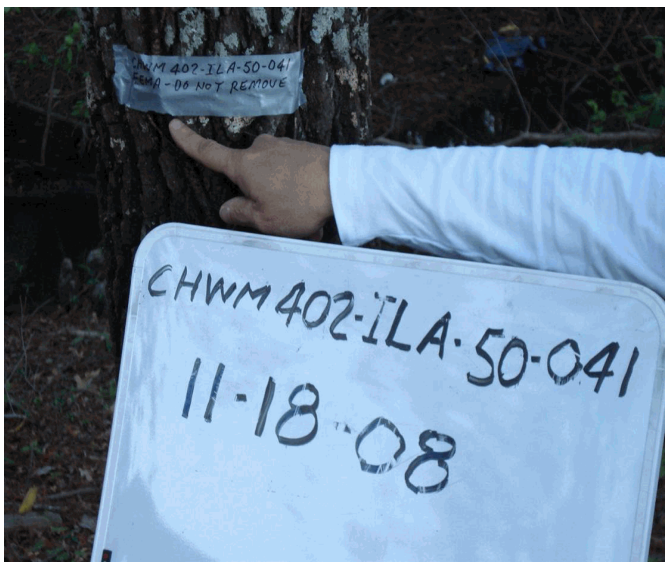
HWM ID :	402-ILA-50-041	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	44.3	**NGVD 29 :**	44.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Tree		
HWM Address	112 Ronald Road		
Type of HWM :	Stain Line	**Parish :** Concordia	**State :** Louisiana

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceon	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.4600		
Survey Longitude :	-91.6518	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-50-041-153.jpg



000-ILA-50-041-154.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-50-042	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Cocodrie, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	38.0	**NGVD 29 :**	38.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Concordia	**State :** Louisiana
Location of HWM Object :	Mark under bridge on Hwy 565 south of Deer Park.		

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.4302		
Survey Longitude :	-91.6188	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-50-042-188.jpg



000-ILA-50-042-189.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949

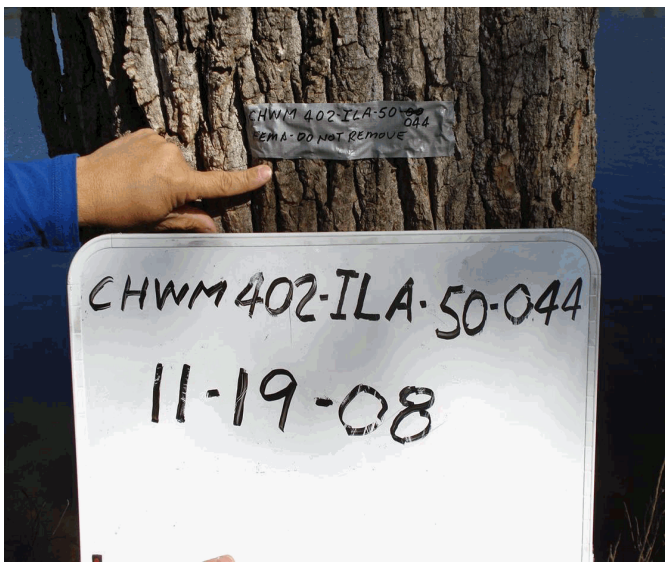
HWM ID :	402-ILA-50-044	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	44.7	**NGVD 29 :**	44.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Tree		
HWM Address	8059 Highway 129		
Type of HWM :	Stain Line	**Parish :** Concordia	**State :** Louisiana

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.4327		
Survey Longitude :	-91.7678	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-50-044-183.jpg



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

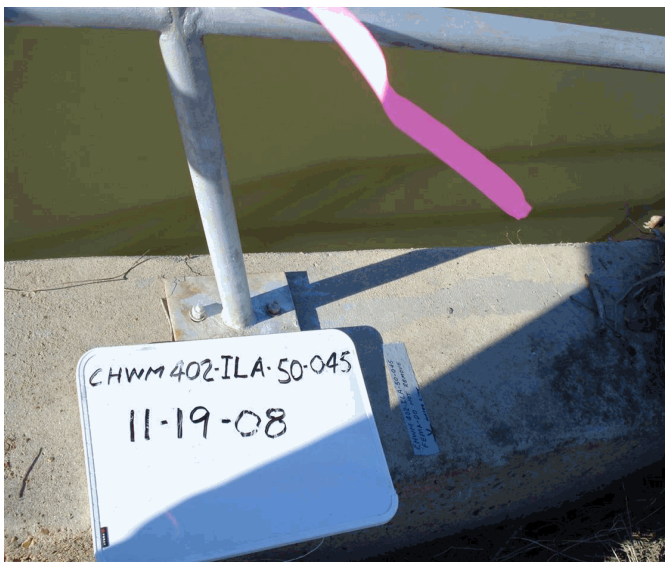
HWM ID :	402-ILA-50-045	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Cocodrie, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	38.1	**NGVD 29 :**	38.0
Flooding Type :	Riverine - Hurricane	**Description of HWM Object**	
HWM Object, Surface :	Other	Dam structure	
HWM Address	Wild Cow Bayou Road		
Type of HWM :	Stain Line	**Parish :** Concordia	**State :** Louisiana

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.3557		
Survey Longitude :	-91.7391	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-50-045-181.jpg



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-50-046	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	43.3	**NGVD 29 :**	43.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Tree		
HWM Address	Across the Street from 1460 Highway 909		
Type of HWM :	Stain Line	**Parish :** Concordia	**State :** Louisiana

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.3397		
Survey Longitude :	-91.8524	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-50-046-179.jpg



000-ILA-50-046-180.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

Appendix C

HWM Reports (by Parish)

C8 East Baton Rouge

FEMA

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-60-012	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	66.7	**NGVD 29 :**	66.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Fence		
HWM Address	16212 Palomino Rd.		
Type of HWM :	Stain Line	**Parish :** East Baton Rouge	**State :** Louisiana

Name of Flagger/Interviewer :	Angelique Cella	Shawn Ledig	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/20/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5743		
Survey Longitude :	-91.0115	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-012-100.jpg



000-ILA-60-012-102.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

FEMA

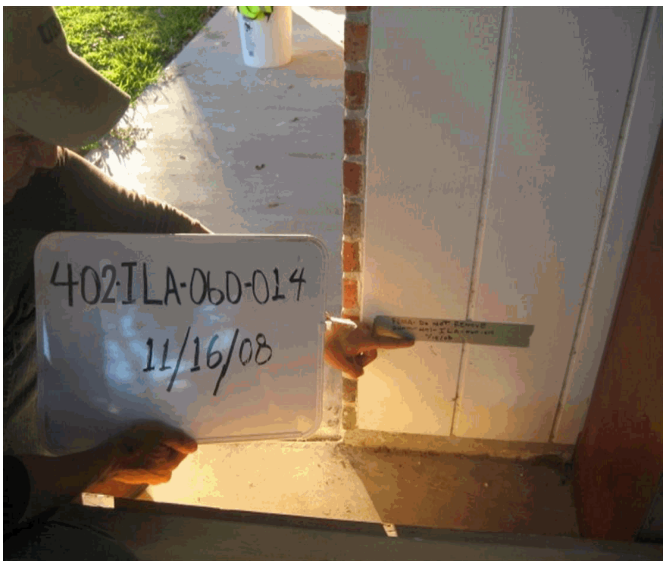
Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-60-014	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	White Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	91.8	**NGVD 29 :**	91.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Wall		
HWM Address	7585 Main St.		
Type of HWM :	Mud Line	**Parish :** East Baton Rouge	**State :** Louisiana

Name of Flagger/Interviewer :	Angelique Cella	Shawn Ledig	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6494		
Survey Longitude :	-91.1267	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-014-108.jpg



000-ILA-60-014-109.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-015	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Comite River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	59.8	**NGVD 29 :**	59.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Wall		
HWM Address	11516 Cline Dr		
Type of HWM :	Stain Line	**Parish :** East Baton Rouge	**State :** Louisiana

Name of Flagger/Interviewer :	Angelique Cella	Shawn Ledig	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/20/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5492		
Survey Longitude :	-91.0985	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-015-110.jpg



000-ILA-60-015-111.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949

Appendix C
HWM Reports (by Parish
C9 East Feliciana

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-60-023	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Amite River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	103.0	**NGVD 29 :**	103.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** East Feliciana	**State :** Louisiana
Location of HWM Object :	Bent 4 middle pilon under the Hwy 37 bridge that crosses the Amite River		

Name of Flagger/Interviewer :	Angelique Cella	Don Patecek	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7353		
Survey Longitude :	-90.8438	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-023-128.jpg



000-ILA-60-023-130.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
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Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-60-024	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Amite River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	152.8	**NGVD 29 :**	152.9
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** East Feliciana	**State :** Louisiana
Location of HWM Object :	Under the east side of the Hwy 10 bridge that crosses the Amite River		

Name of Flagger/Interviewer :	Angelique Cella	Don Patecek	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.8884		
Survey Longitude :	-90.8477	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-024-134.jpg



000-ILA-60-024-136.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
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Registration Number : 1560
Phone Number : (704)-583-4949

Appendix C

HWM Reports (by Parish)

C10 Evangeline

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-70-030	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Valentine Coulee	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	32.7	**NGVD 29 :**	32.5
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** Evangeline	**State :** Louisiana
Location of HWM Object :	LA Hwy 374 crossing of Coulee Valentine		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5438		
Survey Longitude :	-92.5370	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-030-166.jpg



000-ILA-70-030-167.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-70-031	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Nezpique, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	33.4	**NGVD 29 :**	33.3
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Seed Line	**Parish :** Evangeline	**State :** Louisiana
Location of HWM Object :	LA Hwy 104 crossing of Nezpique Bayou.		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5817		
Survey Longitude :	-92.5806	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

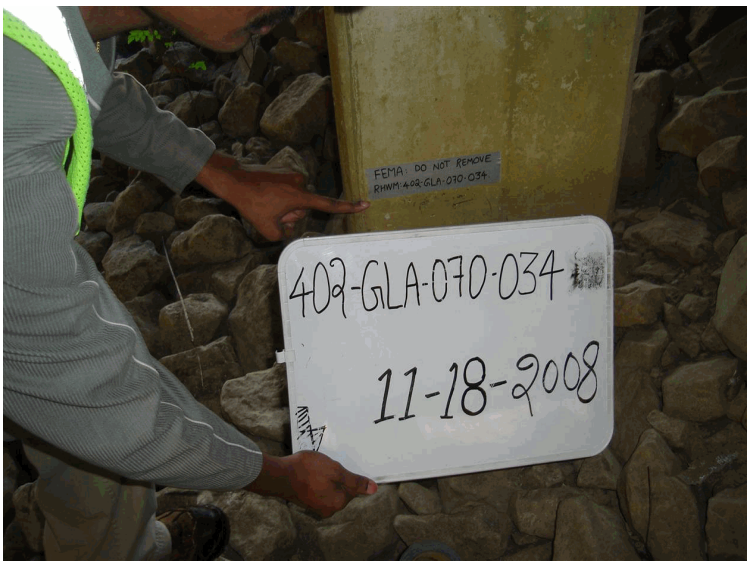
John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-034	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Nezpique, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	60.1	**NGVD 29 :**	60.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Seed Line	**Parish :** Evangeline	**State :** Louisiana
Location of HWM Object :	LA Hwy 13 crossing of East Fork Bayou Nezpique.		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7283		
Survey Longitude :	-92.4281	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-70-035	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	94.3	**NGVD 29 :**	94.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Seed Line	**Parish :** Evangeline	**State :** Louisiana
Location of HWM Object :	Hwy 167 crossing of Unknown Watercourse		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.8959		
Survey Longitude :	-92.4102	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-035-181.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
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Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-036	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Cocodrie, Bayou	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	59.4	**NGVD 29 :**	59.3
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Evangeline	**State :** Louisiana
Location of HWM Object :	Hwy 167 crossing of Bayou Cocodrie.		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	31.0001		
Survey Longitude :	-92.3803	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-036-183.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-70-037	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Cocodrie, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	60.2	**NGVD 29 :**	60.1
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Wall		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Evangeline	**State :** Louisiana
Location of HWM Object :	Boat launch at the end of Clarks Landing Road		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008		**Witness Statement :**	

Resident who has lived here for 56 years says that several times the water has been significantly higher than Gustave (up to 4 feet higher).

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.9585		
Survey Longitude :	-92.4524	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-038	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Chicot Lake	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	48.3	**NGVD 29 :**	48.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Boat dock		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Evangeline	**State :** Louisiana
Location of HWM Object :	Boat launch at the North entrance of the campgound.		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.8286		
Survey Longitude :	-92.2745	**Apx. Bldg Floor Elevation :**	N/A



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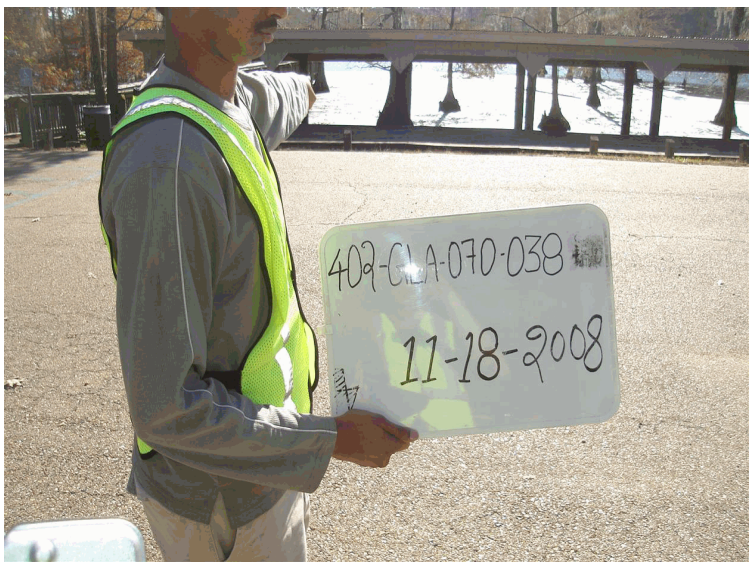

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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-039	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Cocodrie, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	46.0	**NGVD 29 :**	45.9
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Evangeline	**State :** Louisiana
Location of HWM Object :	Hwy 115 crossing of Bayou Cocodrie.		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.8562		
Survey Longitude :	-92.2821	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-039-188.jpg



000-ILA-70-039-189.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-040	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Cocodrie, Bayou	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	51.2	**NGVD 29 :**	51.1
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** Evangeline	**State :** Louisiana
Location of HWM Object :	LA Hwy 115 crossing of Bayou Cocodrie		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.9193		
Survey Longitude :	-92.3145	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-70-041	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Beaver Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	82.9	**NGVD 29 :**	82.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Evangeline	**State :** Louisiana
Location of HWM Object :	Leman Road crossing of Beaver Creek.		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7853		
Survey Longitude :	-92.5421	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-041-193.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-043	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Pine Point Gully	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	57.3	**NGVD 29 :**	57.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Evangeline	**State :** Louisiana
Location of HWM Object :	LA Hwy 104 crossing of Pine Point Gully		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6411		
Survey Longitude :	-92.3953	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-055	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Chicot Lake	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	49.4	**NGVD 29 :**	49.3
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Evangeline	**State :** Louisiana
Location of HWM Object :	LA Hwy 3042 crossing of Lake Chicot		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7601		
Survey Longitude :	-92.2830	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-056	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Petite Passe, Bayou	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	34.3	**NGVD 29 :**	34.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** Evangeline	**State :** Louisiana
Location of HWM Object :	LA Hwy 29 crossing of Petite Passe, Bayou		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7662		
Survey Longitude :	-92.1965	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-056-228.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-061	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	De Manuel Coulee	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	71.0	**NGVD 29 :**	70.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Culvert headwall		
HWM Address	No Street Address Available , Ville Platte		
Type of HWM :	Mud Line	**Parish :** Evangeline	**State :** Louisiana
Location of HWM Object :	Hwy 10 crossing of Coulee De Manuel		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6789		
Survey Longitude :	-92.2527	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949

Appendix C

HWM Reports (by Parish

C11 Franklin

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-50-002	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Turkey Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	66.8	**NGVD 29 :**	66.9
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Interior Wall Transferred to Exterior		
HWM Address	4198 Front Street , Winnsboro		
Type of HWM :	Mud Line	**Parish :** Franklin	**State :** Louisiana

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/13/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	32.1542		
Survey Longitude :	-91.7114	**Apx. Bldg Floor Elevation :**	N/A



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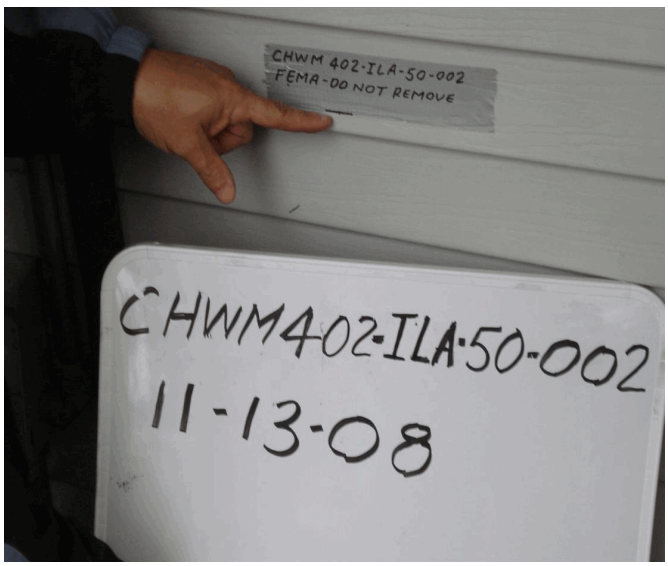

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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-50-003	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	64.9	**NGVD 29 :**	65.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Wall		
HWM Address	2359 Highway 865		
Type of HWM :	Stain Line	**Parish :** Franklin	**State :** Louisiana

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/14/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	32.1390		
Survey Longitude :	-91.7148	**Apx. Bldg Floor Elevation :**	N/A



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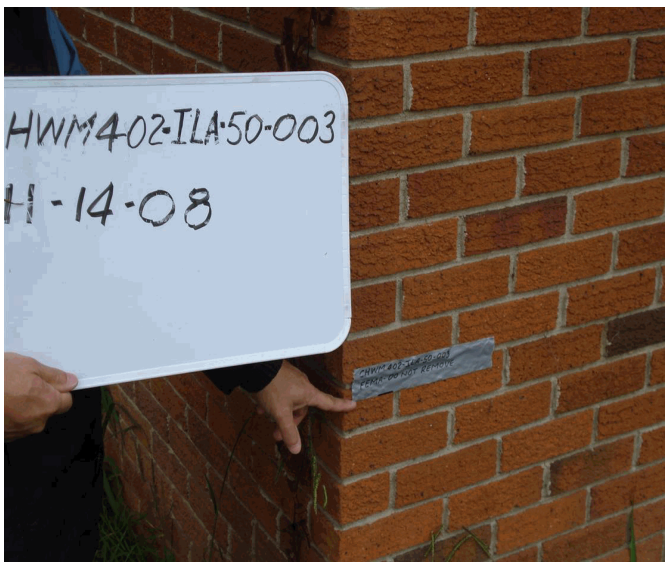

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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-50-004	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Turkey Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	64.7	**NGVD 29 :**	64.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Interior Wall Transferred to Exterior		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Franklin	**State :** Louisiana
Location of HWM Object :	Data Sales office on HWY 3201, metal office with red trim after bridge.		

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/14/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	32.1465		
Survey Longitude :	-91.7130	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-50-004-99.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-50-005	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Turkey Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	64.8	**NGVD 29 :**	64.9
Flooding Type :	Riverine - Hurricane	**Description of HWM Object**	
HWM Object, Surface :	Other	Pump	
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** Franklin	**State :** Louisiana
Location of HWM Object :	LSU AG CENTER		

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/14/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	32.1420		
Survey Longitude :	-91.7097	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-50-007	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	68.9	**NGVD 29 :**	69.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Wall		
HWM Address	807 Fair Ave , Winnsboro		
Type of HWM :	Seed Line	**Parish :** Franklin	**State :** Louisiana

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/14/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	32.1676		
Survey Longitude :	-91.7216	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-50-007-105.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-50-008	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Turkey Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	76.0	**NGVD 29 :**	76.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Wall		
HWM Address	1669 Highway 857 , Baskin		
Type of HWM :	Mud Line	**Parish :** Franklin	**State :** Louisiana

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/14/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	32.2687		
Survey Longitude :	-91.7382	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-50-008-107.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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ESP Associates, P.A.
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Registration Number : 1560
Phone Number : (704)-583-4949

Appendix C

HWM Reports (by Parish)

C12 Grant

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-20-037	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Bear Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	54.7	**NGVD 29 :**	54.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** Grant	**State :** Louisiana
Location of HWM Object :	HWY 165 south of Georgetown first concrete bridge over Bear Creek, north bank.		

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.	
Date of Flagging/Interview :	11/21/2008				

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.7358		
Survey Longitude :	-92.4002	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

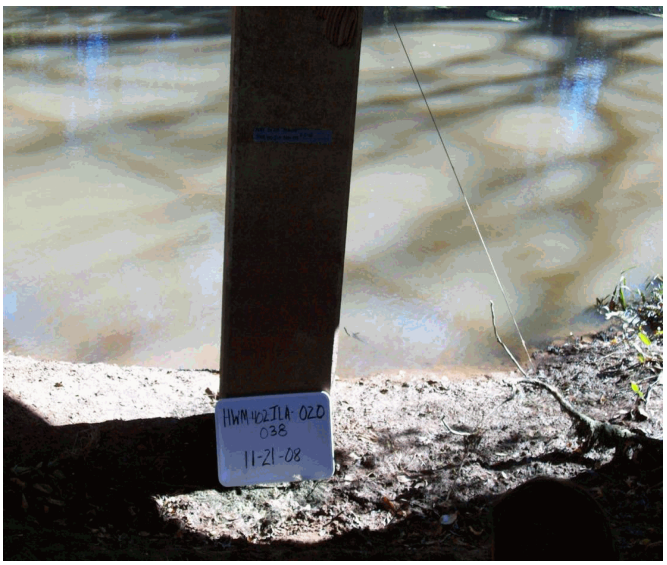
Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-20-038	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	86.1	**NGVD 29 :**	86.1
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available , Colfax		
Type of HWM :	Stain Line	**Parish :** Grant	**State :** Louisiana
Location of HWM Object :	West side of Colfax at city limits HWY 8 bridge west bank south side.		

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/21/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.5253		
Survey Longitude :	-92.6843	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Appendix C

HWM Reports (by Parish)

C13 Iberville

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-30-029	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Grosse Tete, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	12.9	**NGVD 29 :**	13.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available , Grosse Tete		
Type of HWM :	Mud Line	**Parish :** Iberville	**State :** Louisiana
Location of HWM Object :	First bridge at the junction of Hwy I 10 and Hwy 76. Across Grosse Tete Bayou in Rosedale.		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008		**Witness Statement :**	The level was confirmed by John Clark Parish Environmental Officer. No flooding damage in this area.

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4192		
Survey Longitude :	-91.4344	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-029-260.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-030	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Grosse Tete, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	13.5	**NGVD 29 :**	13.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available , Rosedale		
Type of HWM :	Mud Line	**Parish :** Iberville	**State :** Louisiana
Location of HWM Object :	Bridge is located at the Junction of Hwy 77 and 76 on Bayou Grosse Tete in the center of Rosedale		

Name of Flagger/Interviewer :	Zsofia Dobos	Saruabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008		**Witness Statement :**	The level was confirmed by John Clark Parish Environmental Officer. No flooding damage in this area.

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4421		
Survey Longitude :	-91.4522	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-031	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Grosse Tete, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	16.1	**NGVD 29 :**	16.1
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available , Maringouin		
Type of HWM :	Mud Line	**Parish :** Iberville	**State :** Louisiana
Location of HWM Object :	In the center of Maringouin across Bayou Grosse Tete		

Name of Flagger/Interviewer :	Zsofia Dobos	Saruabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008		**Witness Statement :**	The level was confirmed by John Clark Parish Environmental Officer. No flooding damage in this area.

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4943		
Survey Longitude :	-91.5151	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-032	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Bayou Maringouin	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	17.7	**NGVD 29 :**	17.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available , Maringouin		
Type of HWM :	Mud Line	**Parish :** Iberville	**State :** Louisiana
Location of HWM Object :	Bridge is on the Bayou Maringouin in the west side of Maringouin		

Name of Flagger/Interviewer :	Zsofia Dobos	Saruabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008		**Witness Statement :**	The level was confirmed by John Clark Parish Environmental Officer. No flooding damage in this area.

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4889		
Survey Longitude :	-91.5229	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-032-267.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-033	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Bayou Maringouin	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	17.6	**NGVD 29 :**	17.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Iberville	**State :** Louisiana
Location of HWM Object :	On Hwy 76 bridge over Maringouin Bayou at Sparks Ln and Musson Ln		

Name of Flagger/Interviewer :	Zsofia Dobos	Saruabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008		**Witness Statement :**	The level was confirmed by John Clark Parish Environmental Officer. No flooding damage in this area.

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4725		
Survey Longitude :	-91.5233	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-033-269.jpg

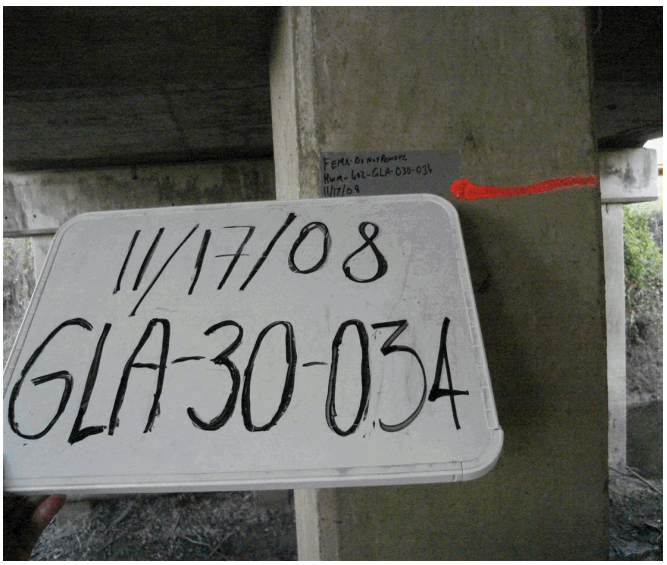
Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-034	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Bayou Maringouin	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	11.5	**NGVD 29 :**	11.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Iberville	**State :** Louisiana
Location of HWM Object :	Bridge is located at the junction of Hwy 3000 and Hwy 76 over Maringouin Bayou		

Name of Flagger/Interviewer :	Zsofia Dobos	Saruabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008		**Witness Statement :**	The level was confirmed by John Clark Parish Environmental Officer. No flooding damage in this area.

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4160		
Survey Longitude :	-91.5031	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-035	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Atachafalaya Levee Borrow Canal	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	8.6	**NGVD 29 :**	8.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Iberville	**State :** Louisiana
Location of HWM Object :	It is located by the boat launch beneath I 10 at the junciton of Frontage 3000 Rd. above East Atachafalaya Levee Borrow Canal.		

Name of Flagger/Interviewer :	Zsofia Dobos	Saruabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008		**Witness Statement :**	The level was confirmed by John Clark Parish Environmental Officer. No flooding damage in this area.

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4002		
Survey Longitude :	-91.5095	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-035-273.jpg

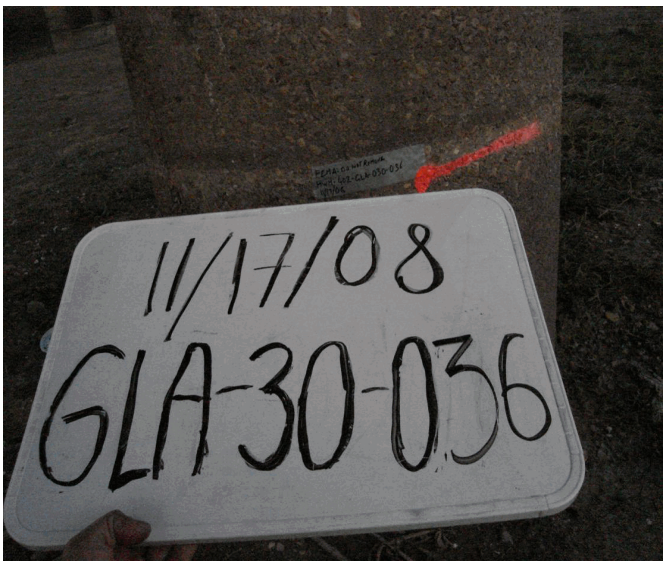
Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-036	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	11.2	**NGVD 29 :**	11.3
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Iberville	**State :** Louisiana
Location of HWM Object :	Over the levee from Atchafalaya Basin Levee Road and Frontage 3000 Road.It is located within the Atchafalaya basin.		

Name of Flagger/Interviewer :	Zsofia Dobos	Saruabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008		**Witness Statement :**	The level was confirmed by John Clark Parish Environmental Officer. No flooding damage in this area.

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.3996		
Survey Longitude :	-91.5118	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

Appendix C

HWM Reports (by Parish)

C14 Jefferson Davis

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-40-055	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Serpent, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	22.7	**NGVD 29 :**	22.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Jefferson Davis	**State :** Louisiana
Location of HWM Object :	Hwy 165 southbound & Bayou Serpent bridge.		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/23/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.3903		
Survey Longitude :	-92.9039	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-40-055-224.jpg



000-ILA-40-055-225.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-40-056	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Arceneaux, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	8.2	**NGVD 29 :**	8.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Jefferson Davis	**State :** Louisiana
Location of HWM Object :	Hwy. 383 & Bayou Arceneaux bridge, mile marker 6		

Name of Flagger/Interviewer :	Albert Collongues	George Chandler	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/24/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.3199		
Survey Longitude :	-93.0140	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-40-056-226.jpg



000-ILA-40-056-227.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

Appendix C

HWM Reports (by Parish)

C15 La Salle

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-50-023	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	47.0	**NGVD 29 :**	47.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Wall		
HWM Address	155 Lot 25 Riverfront Road		
Type of HWM :	Stain Line	**Parish :** LaSalle	**State :** Louisiana

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.6087		
Survey Longitude :	-92.0335	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-50-023-128.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-50-025	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	46.0	**NGVD 29 :**	45.9
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** LaSalle	**State :** Louisiana
Location of HWM Object :	Approximately 7 miles south of Highway 84 and Korean War Veterans Hwy/ Hwy 28		

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.5100		
Survey Longitude :	-92.0573	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-50-025-123.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-50-028	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Catahoula Lake	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	46.1	**NGVD 29 :**	46.1
Flooding Type :	Riverine - Hurricane	**Description of HWM Object**	
HWM Object, Surface :	Other	Fishing Pier	
HWM Address	Catahoula National Wildlife Refuge		
Type of HWM :	Stain Line	**Parish :** LaSalle	**State :** Louisiana

Name of Flagger/Interviewer :	Jordan Montz	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/12/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.5559		
Survey Longitude :	-92.0317	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-50-028-117.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

Appendix C

HWM Reports (by Parish)

C16 Lafayette

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-30-010	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Coulee Mine	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	35.0	**NGVD 29 :**	35.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available , Scott		
Type of HWM :	Stain Line	**Parish :** Lafayette	**State :** Louisiana
Location of HWM Object :	Bridge is across Hwy 723. It is located between Jalon Rd and Kossuth Rd.		

Name of Flagger/Interviewer :	Zsofia Dobos	Shurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.2642		
Survey Longitude :	-92.0694	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-010-222.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-30-012	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Francois Coulee	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	18.0	**NGVD 29 :**	18.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	3619 Moss St. , Lafayette		
Type of HWM :	Stain Line	**Parish :** Lafayette	**State :** Louisiana

Name of Flagger/Interviewer :	Zsofia Dobos	Shurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.2706		
Survey Longitude :	-92.0082	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-012-227.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-014	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Vermilion River	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	13.0	**NGVD 29 :**	13.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Lafayette	**State :** Louisiana
Location of HWM Object :	The bridge is located along the E Gloria Switch Road between Beau Bassin Rd and N. Wilderness Trail		

Name of Flagger/Interviewer :	Zsofia Dobos	Shurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.2937		
Survey Longitude :	-91.9829	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-30-014-230.jpg



000-ILA-30-014-231.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-049	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Carencro Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	28.0	**NGVD 29 :**	27.9
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Lafayette	**State :** Louisiana
Location of HWM Object :	Hwy 49 crossing of Bayou Carencro		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.3788		
Survey Longitude :	-92.0533	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Registration Number : 1560
Phone Number : (704)-583-4949

Appendix C

HWM Reports (by County)

C17 Livingston

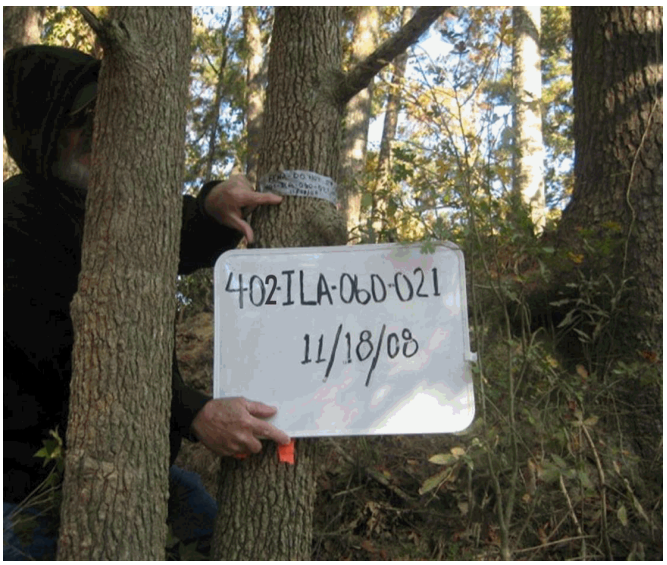
Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-60-021	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Amite River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	41.2	**NGVD 29 :**	41.3
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Tree		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Livingston	**State :** Louisiana
Location of HWM Object :	Dirt driveway north of 7334 Latimer Dr. 128 feet west of the end of Latimer Dr.		

Name of Flagger/Interviewer :	Angelique Cella	Don Patecek	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/20/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5100		
Survey Longitude :	-90.9656	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-022	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Amite River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	46.0	**NGVD 29 :**	46.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Tree		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Livingston	**State :** Louisiana
Location of HWM Object :	Driveway to home is at the end of Hancock Lane to the east of the entrance to Tiki Tubing		

Name of Flagger/Interviewer :	Angelique Cella	Don Patecek	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/20/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5870		
Survey Longitude :	-90.9796	**Apx. Bldg Floor Elevation :**	N/A



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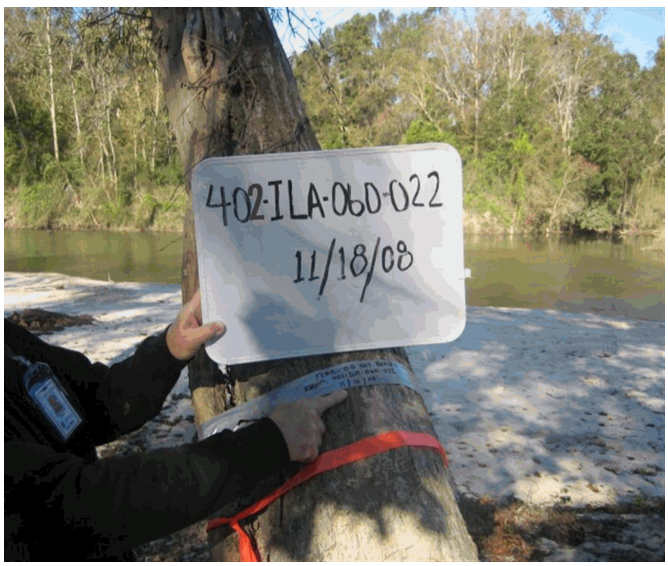

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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
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HWM ID :	402-ILA-60-026	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Tickfaw River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	33.7	**NGVD 29 :**	33.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Livingston	**State :** Louisiana
Location of HWM Object :	West side of the Hwy 190 bridge that crosses over the Tickfaw River		

Name of Flagger/Interviewer :	Angelique Cella	Don Patecek	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/20/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5039		
Survey Longitude :	-90.6782	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-026-137.jpg



000-ILA-60-026-138.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-027	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Tickfaw River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	55.3	**NGVD 29 :**	55.4
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** Livingston	**State :** Louisiana
Location of HWM Object :	Southeast side of the Hwy. 441 bridge that crosses the Tickfaw River		

Name of Flagger/Interviewer :	Angelique Cella	Don Patecek	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/20/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5610		
Survey Longitude :	-90.6594	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-027-139.jpg



000-ILA-60-027-140.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Phone Number : (704)-583-4949

Appendix C

HWM Reports (by County)

C18 Natchitoches

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-20-001	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Cane River	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	98.6	**NGVD 29 :**	98.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available , Natchitoches		
Type of HWM :	Mud Line	**Parish :** Natchitoches	**State :** Louisiana
Location of HWM Object :	South bridge over Caner Lake/river at South Willams and Washington St. near Keyser and South Williams Ave.		

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.	
Date of Flagging/Interview :	11/13/2008				

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.7540		
Survey Longitude :	-93.0861	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-20-001-52.jpg



000-ILA-20-001-53.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

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Registration Number : 1560

Phone Number : (704)-583-4949

Appendix C

HWM Reports (by County)

C19 Pointe Coupee

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-30-043	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Fordoche, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	25.0	**NGVD 29 :**	25.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Pointe Coupee	**State :** Louisiana
Location of HWM Object :	Under the railway bridge runs over Fordoche Bayou, that is located next to Hwy 77.		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6224		
Survey Longitude :	-91.6409	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-30-043-292.jpg



000-ILA-30-043-293.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-30-045	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Portage Canal	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	27.9	**NGVD 29 :**	27.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Interior Wall Transferred to Exterior		
HWM Address	8607 St. Augustine Road		
Type of HWM :	Mud Line	**Parish :** Pointe Coupee	**State :** Louisiana

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008		**Witness Statement :**	

Flood came from Portage Canal. A levee broke and flooded several houses and large part of the city. All marks had been shown by the local City Joury Owel Jimmy Bellow (cell225 718 5172).

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7100		
Survey Longitude :	-91.4373	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-045-298.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-046	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Portage Canal	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	27.3	**NGVD 29 :**	27.3
Flooding Type :	Riverine - Hurricane	**Description of HWM Object**	
HWM Object, Surface :	Personal account	The City paid for a surveyor to get the flood elevations (Surveyor: James H. Chustz 225- 638-5949)	
HWM Address	No Street Address Available , New Roads		
Type of HWM :	Mud Line	**Parish :** Pointe Coupee	**State :** Louisiana
Location of HWM Object :	New Roads, School Board office on Hwy 1.		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008		**Witness Statement :**	

Flooding from levee breach, City Joury Owel Jimmy Bellow (cell225 718 5172) show us the mark. He told us the city did not experince such flood event in the past 35 years or even longer.

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7016		
Survey Longitude :	-91.4540	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-046-300.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-047	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Portage Canal	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	32.9	**NGVD 29 :**	32.9
Flooding Type :	Riverine - Hurricane	**Description of HWM Object**	
HWM Object, Surface :	Other	The City paid for a surveyor to get the flood elevations (Surveyor: James H. Chustz 225- 638-5949)	
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Pointe Coupee	**State :** Louisiana
Location of HWM Object :	False River Airport		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008		**Witness Statement :**	

Flooding from levee breach along Portage Canal, City Joury Owel Jimmy Bellow (cell225 718 5172) show us the mark.

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7117		
Survey Longitude :	-91.4804	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-047-301.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

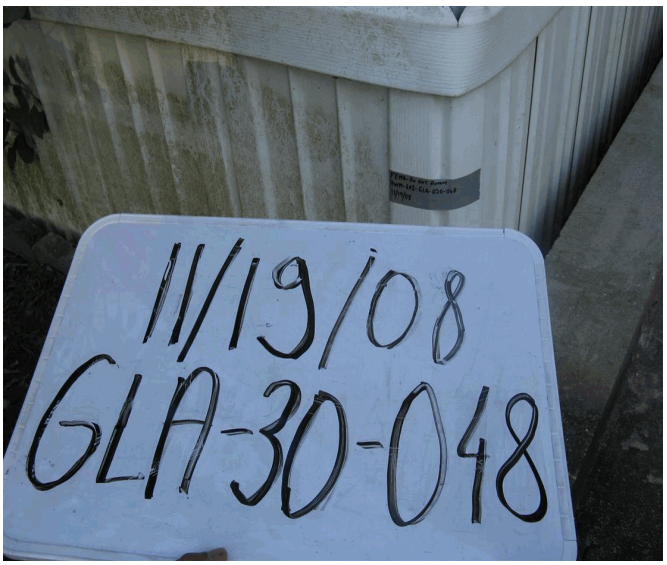
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-048	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	21.8	**NGVD 29 :**	21.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Wall		
HWM Address	8892 Canezaro Rd		
Type of HWM :	Mud Line	**Parish :** Pointe Coupee	**State :** Louisiana

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008		**Witness Statement :**	

Cletus Langlois told us about which areas got flooded in the Parish as he done significant ground work after the Hurricane. He also done flood mapping for the parish. His cell 225-445-1330

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5221		
Survey Longitude :	-91.5371	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-049	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	22.6	**NGVD 29 :**	22.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Pointe Coupee	**State :** Louisiana
Location of HWM Object :	The bridge can be found under Hwy 81		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008		**Witness Statement :**	We have been told by the parish, that the area got flooded

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5471		
Survey Longitude :	-91.5902	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-050	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	White, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	22.8	**NGVD 29 :**	22.9
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Wall		
HWM Address	5403 Maple St.		
Type of HWM :	Mud Line	**Parish :** Pointe Coupee	**State :** Louisiana

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5542		
Survey Longitude :	-91.6475	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-30-050-307.jpg



000-ILA-30-050-308.jpg

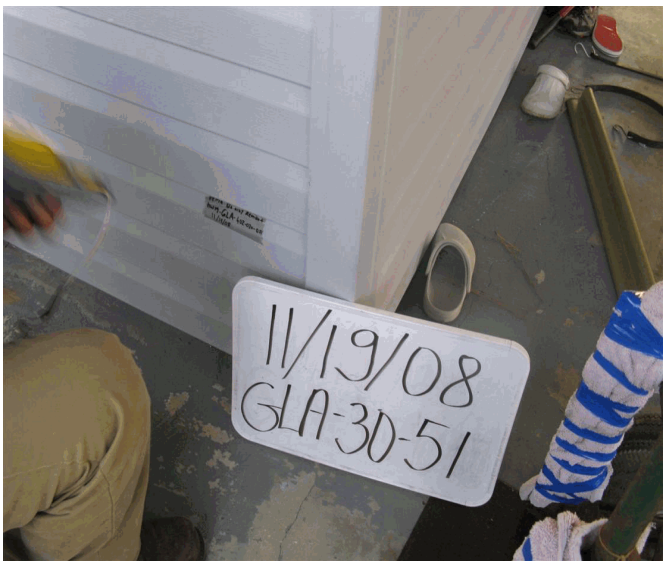
Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-051	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	22.2	**NGVD 29 :**	22.1
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Interior Wall Transferred to Exterior		
HWM Address	3823 Lejeune Road		
Type of HWM :	Mud Line	**Parish :** Pointe Coupee	**State :** Louisiana

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008		**Witness Statement :**	Locals say there is a problem with the maintenance of the local drainage. House owner show us the mark inside.

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5799		
Survey Longitude :	-91.5247	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-052	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	False River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	19.0	**NGVD 29 :**	19.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Wall		
HWM Address	12352 Pecan Island Rd.		
Type of HWM :	Mud Line	**Parish :** Pointe Coupee	**State :** Louisiana

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008		**Witness Statement :**	

Owner's friend show us the mark. This flooding came from the false river, and represents the height of the lake during Gustav.

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6133		
Survey Longitude :	-91.4276	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-052-314.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-053	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	False River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	19.2	**NGVD 29 :**	19.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Tree		
HWM Address	5128 Tibby's lane		
Type of HWM :	Stain Line	**Parish :** Pointe Coupee	**State :** Louisiana

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008		**Witness Statement :**	confirmed by the owner, this represents the height of the bayou, he told us the water backed up during the event.

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6138		
Survey Longitude :	-91.4250	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-30-053-315.jpg



000-ILA-30-053-315.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-054	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Moreau Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	36.1	**NGVD 29 :**	36.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Pointe Coupee	**State :** Louisiana
Location of HWM Object :	On Hwy 970 Bridge across Bayou Moreau		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.9241		
Survey Longitude :	-91.7641	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-054-317.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-055	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	The Bays Canal	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	33.9	**NGVD 29 :**	33.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Pointe Coupee	**State :** Louisiana
Location of HWM Object :	Bridge on Hwy 417 crossing The Bays canal.		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.8698		
Survey Longitude :	-91.7689	**Apx. Bldg Floor Elevation :**	N/A



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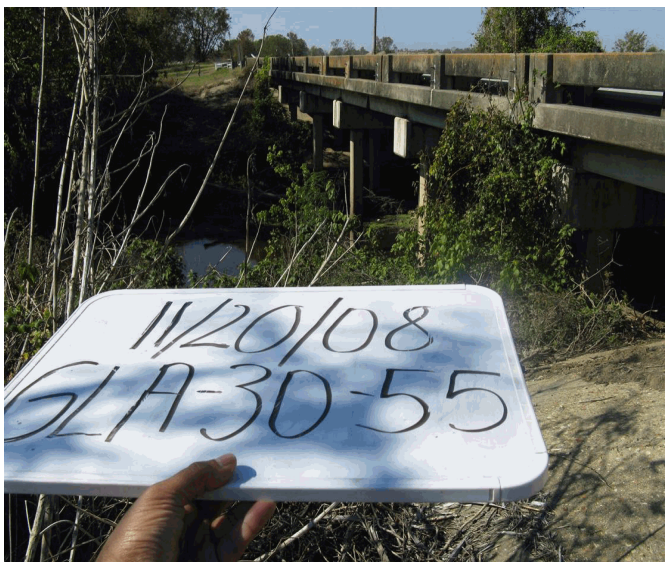

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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

Appendix C

HWM Reports (by County)

C20 Rapides

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-20-004	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Boeuf, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	75.4	**NGVD 29 :**	75.3
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Wall		
HWM Address	43 Bill Gunter Rd		
Type of HWM :	Stain Line	**Parish :** Rapides	**State :** Louisiana

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.0813		
Survey Longitude :	-92.4156	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-20-004-57.jpg



000-ILA-20-004-58.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-20-006	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Red River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	69.6	**NGVD 29 :**	69.5
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Boat dock		
HWM Address	No Street Address Available , Alexandria		
Type of HWM :	Stain Line	**Parish :** Rapides	**State :** Louisiana
Location of HWM Object :	Red River near Main and Winn river front park area.		

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.3119		
Survey Longitude :	-92.4421	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-20-006-64.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-20-010	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	73.1	**NGVD 29 :**	73.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Window		
HWM Address	3120 Tulane Ave. 71302 , Alexandria		
Type of HWM :	Personal Account	**Parish :** Rapides	**State :** Louisiana

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008		**Witness Statement :**	France Bayonne lived at this place for 15 years.

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.2733		
Survey Longitude :	-92.4291	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-20-010-71.jpg



000-ILA-20-010-72.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-20-011	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	75.0	**NGVD 29 :**	74.9
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Wall		
HWM Address	5216 West Sandy Bayou , Alexandria		
Type of HWM :	Stain Line	**Parish :** Rapides	**State :** Louisiana

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008		**Witness Statement :**	Robbie Cape show us the mark

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.2808		
Survey Longitude :	-92.4138	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-20-011-73.jpg



000-ILA-20-011-74.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-20-012	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	73.6	**NGVD 29 :**	73.5
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Ground		
HWM Address	516 Richmond Dr , Alexandria		
Type of HWM :	Stain Line	**Parish :** Rapides	**State :** Louisiana

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008		**Witness Statement :**	James Green show us the mark. Phone: 318.448 0314

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.2853		
Survey Longitude :	-92.4147	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-20-012-76.jpg



000-ILA-20-012-78.jpg

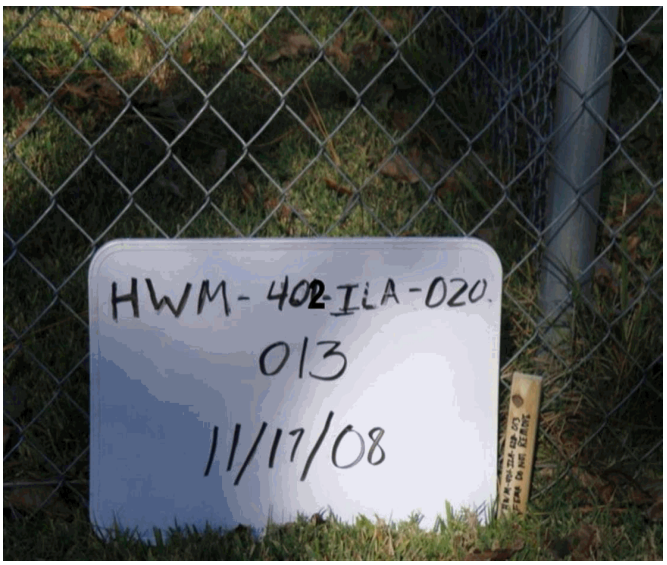
Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-20-013	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	74.3	**NGVD 29 :**	74.3
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Fence		
HWM Address	520 Herold Glen St , Alexandria		
Type of HWM :	Stain Line	**Parish :** Rapides	**State :** Louisiana

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008		**Witness Statement :**	Andrew Jackson, show us the mark, 318.448.1311

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.2902		
Survey Longitude :	-92.4194	**Apx. Bldg Floor Elevation :**	N/A



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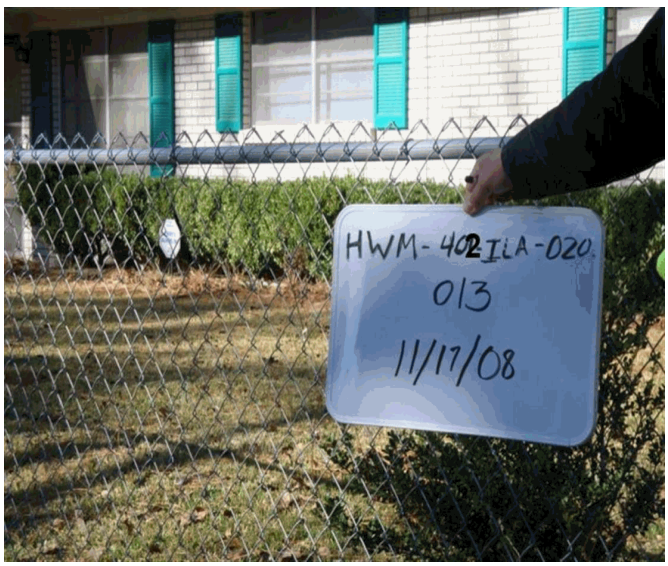

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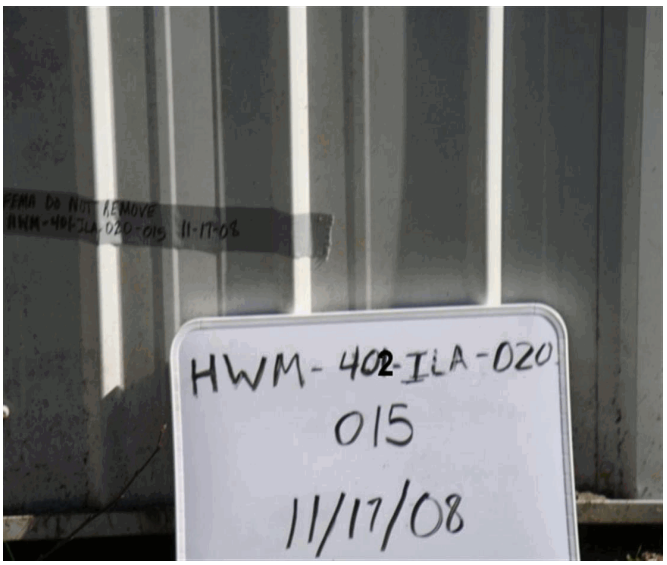
Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-20-015	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	60.8	**NGVD 29 :**	60.8
Flooding Type :	Riverine - Hurricane	**Description of HWM Object**	
HWM Object, Surface :	Other	white metal out builing back exterior wall	
HWM Address	222 Dewitt Lane		
Type of HWM :	Mud Line	**Parish :** Rapides	**State :** Louisiana

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.1558		
Survey Longitude :	-92.3007	**Apx. Bldg Floor Elevation :**	N/A



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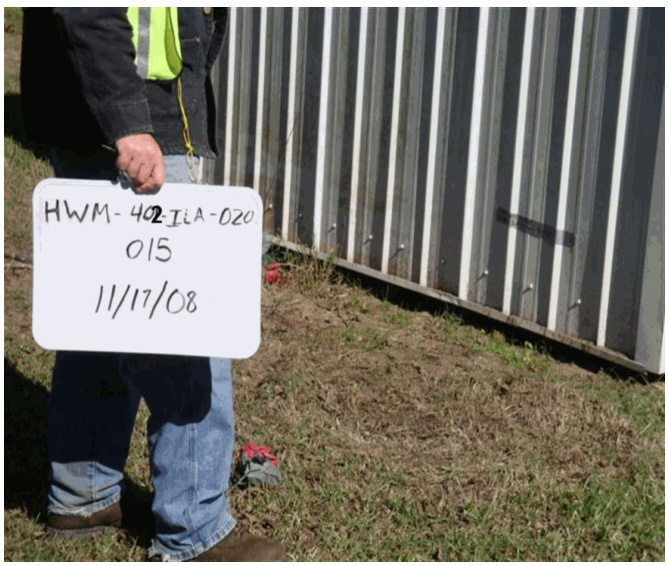

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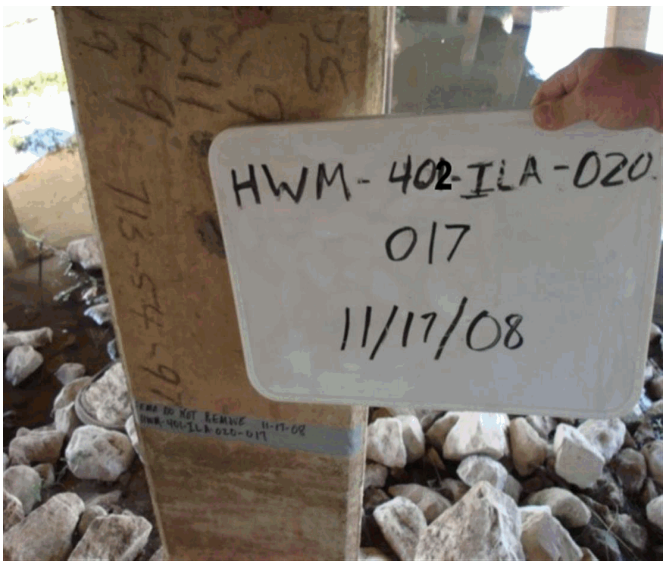
Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-20-017	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Boeuf, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	61.7	**NGVD 29 :**	61.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available , Cheneyville		
Type of HWM :	Mud Line	**Parish :** Rapides	**State :** Louisiana
Location of HWM Object :	Bridge over Bayou Boeuf. West of Wadsworth and Beouf Rd.		

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.0165		
Survey Longitude :	-92.2863	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-20-018	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Boeuf, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	64.4	**NGVD 29 :**	64.3
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** Rapides	**State :** Louisiana
Location of HWM Object :	North of Cheneyville on Bayou Boeuf. Small wooden bridge on gravel rd 100ft from Bayou Rd.		

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.0357		
Survey Longitude :	-92.2987	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-20-018-91.jpg



000-ILA-20-018-92.jpg

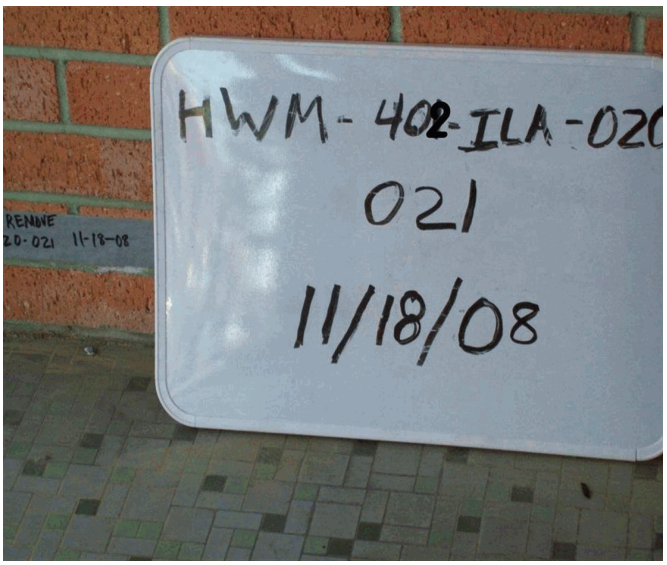
Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-20-021	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Red River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	75.3	**NGVD 29 :**	75.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Interior Wall Transferred to Exterior		
HWM Address	6th and Washington, 601 Washington, KALB Radio , Alexandria		
Type of HWM :	Stain Line	**Parish :** Rapides	**State :** Louisiana

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.3087		
Survey Longitude :	-92.4454	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-20-024	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	83.7	**NGVD 29 :**	83.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Wall		
HWM Address	Fred Wilson, Linda Duote, 231 Brookwood , Woodworth		
Type of HWM :	Personal Account	**Parish :** Rapides	**State :** Louisiana

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008		**Witness Statement :**	Fred Wilson, Linda Duote show us the mark

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.1558		
Survey Longitude :	-92.5000	**Apx. Bldg Floor Elevation :**	N/A



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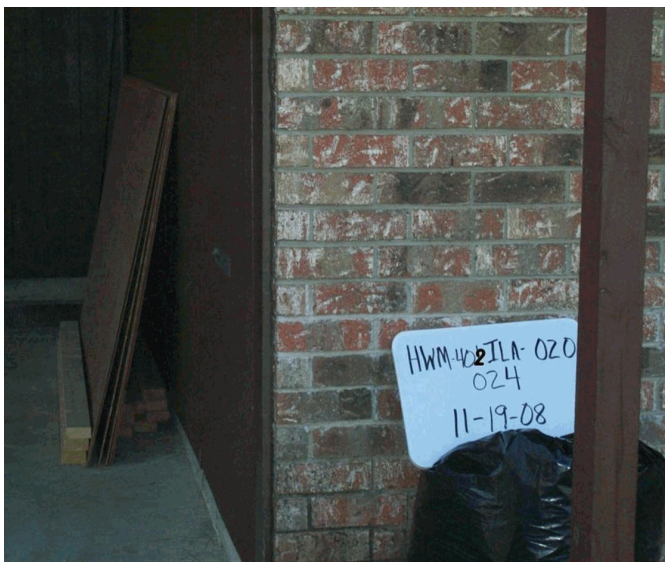

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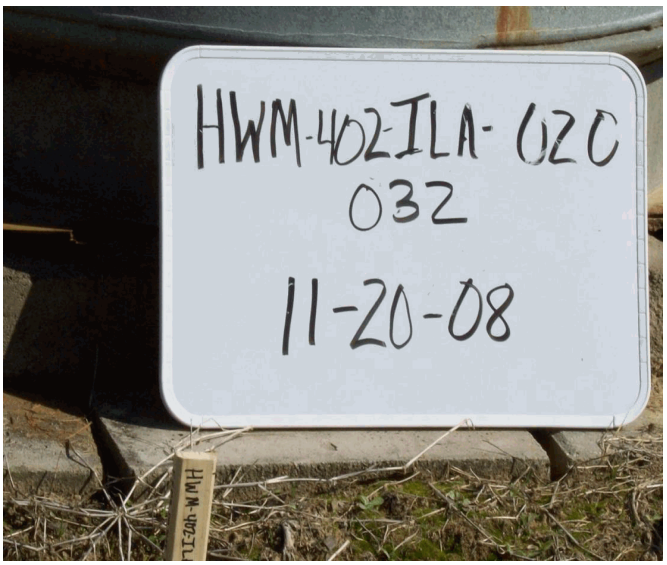
Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-20-032	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Beaver Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	91.2	**NGVD 29 :**	91.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Ground		
HWM Address	3217 Hwy 112 G and C Nursery		
Type of HWM :	Mud Line	**Parish :** Rapides	**State :** Louisiana

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.0592		
Survey Longitude :	-92.4478	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-20-034	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	141.3	**NGVD 29 :**	141.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Wall		
HWM Address	814 Hughes Ave , Glenmora		
Type of HWM :	Stain Line	**Parish :** Rapides	**State :** Louisiana

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.9731		
Survey Longitude :	-92.5941	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-20-034-143.jpg



000-ILA-20-034-144.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-20-035	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	137.1	**NGVD 29 :**	137.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Wall		
HWM Address	Reggie's Flea Mkt., 1109 7th Ave , Glenmora		
Type of HWM :	Personal Account	**Parish :** Rapides	**State :** Louisiana

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008		**Witness Statement :**	Reggie Burnaman stated, the water got 3 inches above the floor level

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.9765		
Survey Longitude :	-92.5833	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-20-035-146.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-20-042	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Rapides, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	71.6	**NGVD 29 :**	71.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available , Alexandria		
Type of HWM :	Stain Line	**Parish :** Rapides	**State :** Louisiana
Location of HWM Object :	Bridge on N Bolton Ave. near the bike route and junction of Hwy 71 and 165. HWM is on the east bank.		

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/22/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.3139		
Survey Longitude :	-92.4660	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-20-042-161.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

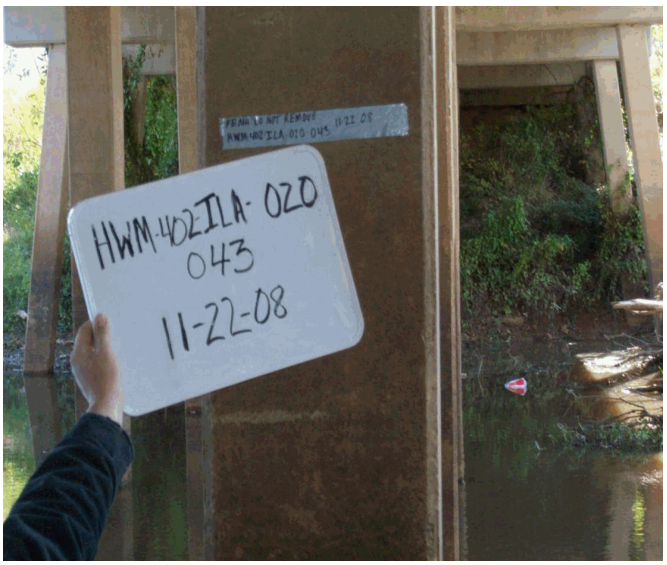
John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-20-043	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Rapides, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	72.0	**NGVD 29 :**	72.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available , Alexandria		
Type of HWM :	Stain Line	**Parish :** Rapides	**State :** Louisiana
Location of HWM Object :	Bridge on Vetrens near Bayou View Rd. southwest side of the bridge.		

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/22/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.3078		
Survey Longitude :	-92.4760	**Apx. Bldg Floor Elevation :**	N/A



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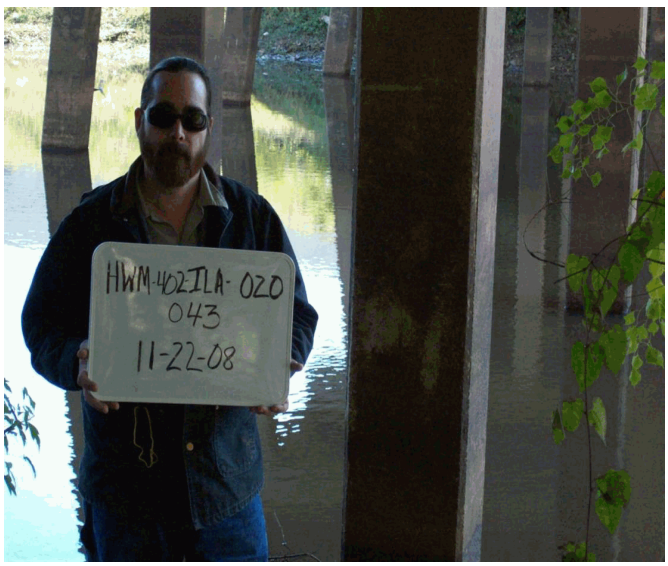

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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-20-044	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	73.5	**NGVD 29 :**	73.4
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available , Alexandria		
Type of HWM :	Mud Line	**Parish :** Rapides	**State :** Louisiana
Location of HWM Object :	Bridge on Near Calvert and Colisem blv. at "Red River Atchafalaya and Bayou Boeuf Levee District" red sign.		

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/22/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.2960		
Survey Longitude :	-92.4942	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-20-044-164.jpg



000-ILA-20-044-165.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-20-046	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	74.5	**NGVD 29 :**	74.5
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Wall		
HWM Address	401 Windermeer , Alexandria		
Type of HWM :	Mud Line	**Parish :** Rapides	**State :** Louisiana

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/22/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.2878		
Survey Longitude :	-92.4905	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-20-046-169.jpg



000-ILA-20-046-170.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-20-049	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	77.7	**NGVD 29 :**	77.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Window		
HWM Address	5120 Crestwood Drive , Alexandria		
Type of HWM :	Stain Line	**Parish :** Rapides	**State :** Louisiana

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/23/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.2649		
Survey Longitude :	-92.4558	**Apx. Bldg Floor Elevation :**	N/A



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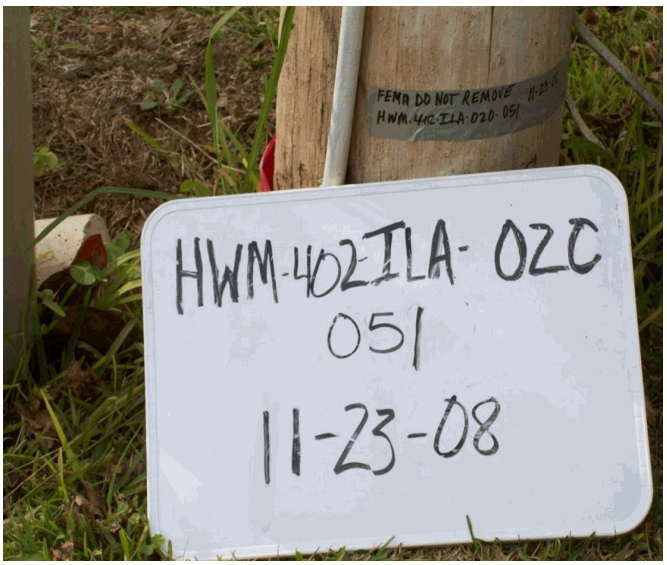
Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-20-051	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	73.7	**NGVD 29 :**	73.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Utility pole		
HWM Address	3904 Baker St. , Alexandria		
Type of HWM :	Stain Line	**Parish :** Rapides	**State :** Louisiana

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/23/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/14/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.2700		
Survey Longitude :	-92.4426	**Apx. Bldg Floor Elevation :**	N/A



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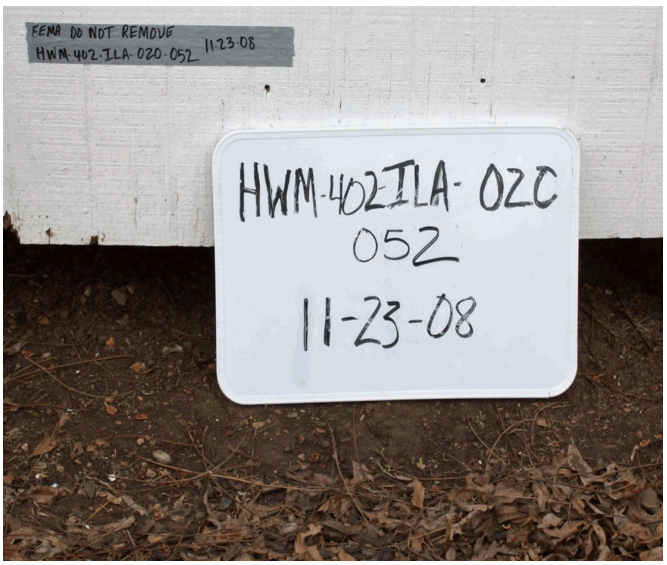
Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-20-052	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	73.8	**NGVD 29 :**	73.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Exterior Wall		
HWM Address	2712 7th St. , Alexandria		
Type of HWM :	Stain Line	**Parish :** Rapides	**State :** Louisiana

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/23/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.2979		
Survey Longitude :	-92.4330	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-20-056	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	126.0	**NGVD 29 :**	126.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Fence		
HWM Address	1106 8th Street , Glenmora		
Type of HWM :	Stain Line	**Parish :** Rapides	**State :** Louisiana

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/23/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	30.9743		
Survey Longitude :	-92.5836	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-20-056-189.jpg



000-ILA-20-056-190.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

Appendix C

HWM Reports (by County)

C21 St, Helena

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-60-025	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Amite River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	177.9	**NGVD 29 :**	177.9
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Helena	**State :** Louisiana
Location of HWM Object :	Under the east side of the Hwy. 432 Bridge that crosses the Amite River		

Name of Flagger/Interviewer :	Angelique Cella	Don Patecek	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.9457		
Survey Longitude :	-90.8593	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-60-025-133.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-028	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Tickfaw River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	97.6	**NGVD 29 :**	97.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available , Montpelier		
Type of HWM :	Stain Line	**Parish :** St. Helena	**State :** Louisiana
Location of HWM Object :	South West side of the Hwy 16 bridge that crosses the Tickfaw River		

Name of Flagger/Interviewer :	Angelique Cella	Don Patecek	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6847		
Survey Longitude :	-90.6447	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-60-028-142.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-029	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Tickfaw River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	128.0	**NGVD 29 :**	128.1
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** St. Helena	**State :** Louisiana
Location of HWM Object :	Under the southeast side of the Hwy 1045 bridge that crosses the Tickfaw River		

Name of Flagger/Interviewer :	Angelique Cella	Don Patecek	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7506		
Survey Longitude :	-90.6322	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-029-143.jpg



000-ILA-60-029-144.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-031	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Tickfaw River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	158.7	**NGVD 29 :**	158.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** St. Helena	**State :** Louisiana
Location of HWM Object :	Under the north-northeast side of Hwy. 10 bridge that crosses the Tickfaw River		

Name of Flagger/Interviewer :	Angelique Cella	Don Patecek	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.8245		
Survey Longitude :	-90.6377	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-031-145.jpg



000-ILA-60-031-146.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-032	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	211.6	**NGVD 29 :**	211.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Helena	**State :** Louisiana
Location of HWM Object :	Under the east side of the Hwy. 38/441 bridge that crosses Unknown Watercourse		

Name of Flagger/Interviewer :	Angelique Cella	Don Patecek	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.9308		
Survey Longitude :	-90.6729	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-60-032-149.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Appendix C

HWM Reports (by County)

C22 Saint Landry

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-70-020	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Boeuf, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	48.3	**NGVD 29 :**	48.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	LA Hwy 29 crossing of Baoyu Boeuf.		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.8476		
Survey Longitude :	-92.2098	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-020-305.jpg



000-ILA-70-020-306.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-028	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	39.1	**NGVD 29 :**	39.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Steps		
HWM Address	359 Sandpiper , Sunset		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008		**Witness Statement :**	

Property owner said that this stream floods often. Flooding worse than Gustave has occured many times in the last several years.

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4019		
Survey Longitude :	-92.0642	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-028-174.jpg



000-ILA-70-028-175.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-033	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	44.0	**NGVD 29 :**	43.9
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	LA Hwy 13 crossing of Richards Gully		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5049		
Survey Longitude :	-92.4152	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-033-165.jpg

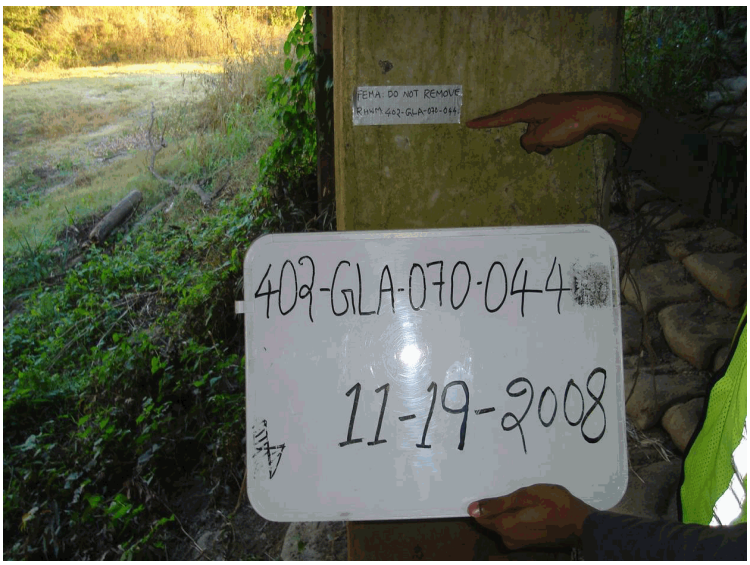
Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-044	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Bayou Des Cannes	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	33.4	**NGVD 29 :**	33.3
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	LA Hwy 190 crossing of Bayou Des Cannes		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4833		
Survey Longitude :	-92.4904	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-044-199.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-045	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Doza, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	46.6	**NGVD 29 :**	46.5
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	Hwy 190 crossing of Bayou Doza		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5060		
Survey Longitude :	-92.3260	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-045-201.jpg



000-ILA-70-045-202.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-046	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Mallet, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	49.7	**NGVD 29 :**	49.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	LA Hwy 752 crossing Mallet Bayou		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5096		
Survey Longitude :	-92.2604	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-046-207.jpg



000-ILA-70-046-208.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-047	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	41.5	**NGVD 29 :**	41.4
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	LA Hwy 356 crossing of Unknown Watercourse		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.3715		
Survey Longitude :	-92.1454	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-047-210.jpg



000-ILA-70-047-501.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-70-048	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	39.7	**NGVD 29 :**	39.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available , Sunset		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	LA Hwy 182 crossing of Unknown Watercourse		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4170		
Survey Longitude :	-92.0883	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-048-211.jpg



000-ILA-70-048-212.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-050	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Vermilion River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	19.8	**NGVD 29 :**	19.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	LA Hwy 92 crossing Vermilion River		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4053		
Survey Longitude :	-91.9943	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-050-216.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-051	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Fusiler Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	19.5	**NGVD 29 :**	19.4
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	LA Hwy Ccrossing of Bayou Fusiler		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4074		
Survey Longitude :	-91.9785	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-70-052	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Fusiler Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	19.7	**NGVD 29 :**	19.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available , Arnaudville		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	LA Hwy 93 crossing of Bayou Fusiler.		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.3968		
Survey Longitude :	-91.9317	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-053	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Teche, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	19.8	**NGVD 29 :**	19.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available , Arnaudville		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	LA Hwy 31 crossing of Bayou Teche.		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.3974		
Survey Longitude :	-91.9304	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-053-222.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

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Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-70-054	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Teche, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	20.4	**NGVD 29 :**	20.4
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	Oscar Rivette crossing of Bayou Teche		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4479		
Survey Longitude :	-91.9248	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-057	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Cocodrie, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	34.2	**NGVD 29 :**	34.1
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	LA Hwy 29 crossing of B Boeuf-Cocodrie Diversion Channel		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7785		
Survey Longitude :	-92.1910	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-057-229.jpg



000-ILA-70-057-230.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-058	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Boeuf, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	42.9	**NGVD 29 :**	42.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	LA Hwy 29 crossing of Bayou Boeuf		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.8102		
Survey Longitude :	-92.1873	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-058-232.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-059	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Boeuf, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	41.9	**NGVD 29 :**	41.9
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	LA Hwy 182 crossing of Bayou Boeuf		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7851		
Survey Longitude :	-92.1478	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-059-233.jpg



000-ILA-70-059-234.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-70-062	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Petite Passe Bayou	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	47.5	**NGVD 29 :**	47.4
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	LA HWy 103 crossing Bayou Petite Passe		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6585		
Survey Longitude :	-92.1627	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-062-240.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

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Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-063	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	58.1	**NGVD 29 :**	57.9
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	Hwy 161 crossing Unknown Watercourse		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6170		
Survey Longitude :	-92.1306	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-063-242.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-70-064	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Carron Bayou	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	25.9	**NGVD 29 :**	25.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	LA HWy 182 crossing of Bayou Carron		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6102		
Survey Longitude :	-92.0640	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-064-244.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-065	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Boeuf, Bayou	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	25.8	**NGVD 29 :**	25.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	LA Hwy 182 crossing of Boeuf Bayou		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6178		
Survey Longitude :	-92.0553	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-065-246.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-066	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Little Wauksha Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	29.0	**NGVD 29 :**	29.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	LA Hwy 10 crossing of Little Wauksha Bayou		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6854		
Survey Longitude :	-92.0340	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-066-247.jpg



000-ILA-70-066-248.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-70-067	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Wauksha, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	29.3	**NGVD 29 :**	29.3
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	La Hwy 10 crossing of Bayou Wauksha.		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7014		
Survey Longitude :	-92.0137	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-067-249.jpg



000-ILA-70-067-250.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-70-068	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Teche, Bayou	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	25.1	**NGVD 29 :**	25.1
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	LA Hwy 103 crossing of Bayou Teche		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6209		
Survey Longitude :	-92.0190	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-068-251.jpg



000-ILA-70-068-252.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-069	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	25.7	**NGVD 29 :**	25.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	LA Hay 103 crossing of Unknown Watercourse		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6153		
Survey Longitude :	-92.0354	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-069-253.jpg



000-ILA-70-069-254.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-070	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	24.9	**NGVD 29 :**	24.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	unnamed bridge crossing of Unknown Watercourse		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5697		
Survey Longitude :	-92.0221	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-070-255.jpg



000-ILA-70-070-256.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

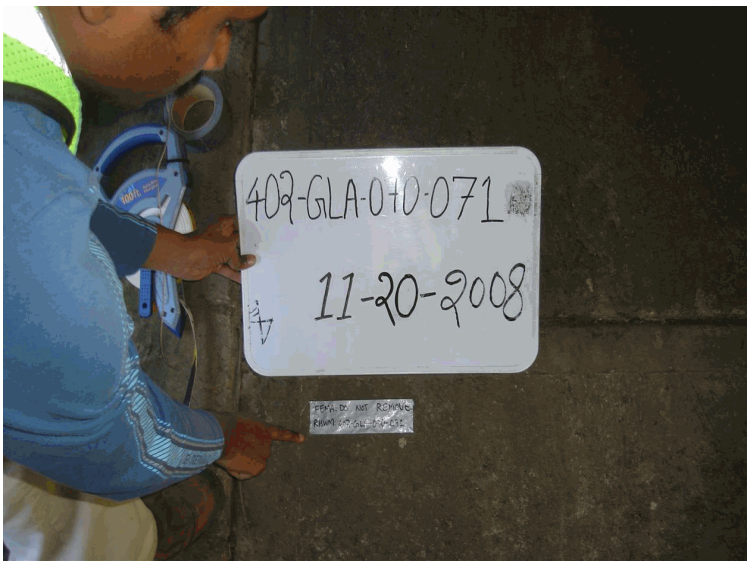
John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-071	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	25.1	**NGVD 29 :**	25.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	Hwy 190 crossing of Unknown Watercourse		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5459		
Survey Longitude :	-92.0104	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-071-257.jpg



000-ILA-70-071-258.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-072	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	21.9	**NGVD 29 :**	21.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	LA Hwy 742 crossing Unknown Watercourse		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5341		
Survey Longitude :	-91.9991	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-072-260.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-073	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Teche, Bayou	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	22.3	**NGVD 29 :**	22.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available , Port Barre		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	Hwy 190 crossing of Bayou Teche		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5468		
Survey Longitude :	-91.9682	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-073-261.jpg



000-ILA-70-073-262.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-70-074	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Des Glaises Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	19.2	**NGVD 29 :**	19.1
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	Hwy 190 crossing of Des Glaises Bayou		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5474		
Survey Longitude :	-91.8749	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-074-265.jpg



000-ILA-70-074-266.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-075	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Bushy Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	18.4	**NGVD 29 :**	18.4
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	Hwy 71 crossing of Brushy Bayou		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5610		
Survey Longitude :	-91.8265	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-075-264.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-076	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Big Darbonne Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	19.5	**NGVD 29 :**	19.5
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	Hwy 71 crossing of Big Darbonne Bayou		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6146		
Survey Longitude :	-91.8736	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-076-268.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-70-078	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	East Prong Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	24.0	**NGVD 29 :**	24.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Culvert headwall		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	Hwy 71 crossing of East Prong Bayou		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6563		
Survey Longitude :	-91.9102	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-078-272.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-079	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Bayou Des Glaises	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	29.4	**NGVD 29 :**	29.3
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	Dominiques Ranch crossing of Des Glaises Bayou		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.8256		
Survey Longitude :	-92.0272	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-079-274.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-080	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	21.6	**NGVD 29 :**	21.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	Hwy 10 crossing uknown flooding source.		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/21/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6928		
Survey Longitude :	-91.7680	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-70-080-276.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-70-082	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Rouge, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	25.8	**NGVD 29 :**	25.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Landry	**State :** Louisiana
Location of HWM Object :	LA Hawy 360 crossing of Bayou Rouge		

Name of Flagger/Interviewer :	Ben Kaiser	Rajendra Rachamalla	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/21/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7593		
Survey Longitude :	-91.8511	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-70-082-279.jpg



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

Appendix C

HWM Reports (by County)

C23 Saint Martin

FEMA

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-30-001	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Atchafalaya River	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	10.1	**NGVD 29 :**	10.1
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Ground		
HWM Address	No Street Address Available		
Type of HWM :	Wash Line	**Parish :** St. Martin	**State :** Louisiana
Location of HWM Object :	Boat Launch along Hwy 975 by Atchafalaya River.		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/14/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4060		
Survey Longitude :	-91.6923	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-001-199.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

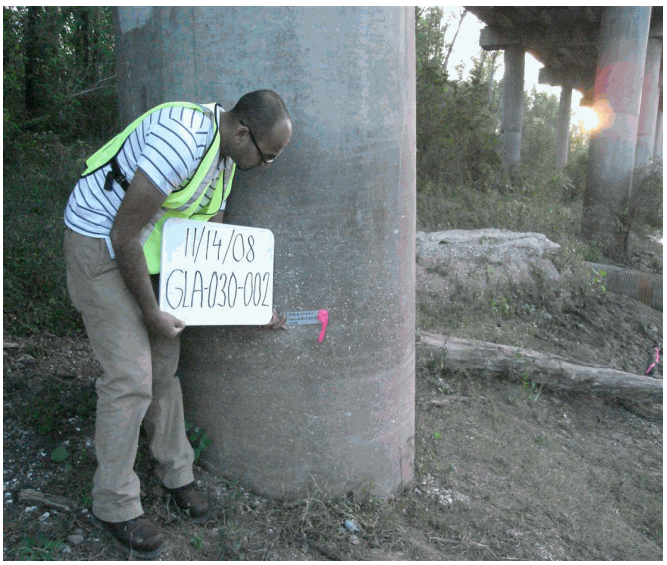
John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-30-002	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	17.6	**NGVD 29 :**	17.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** St. Martin	**State :** Louisiana
Location of HWM Object :	Beneath I 10 by the public boat ramp, after passing the visotor center.		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/14/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.3404		
Survey Longitude :	-91.7291	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-002-201.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-003	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Teche, Bayou	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	14.7	**NGVD 29 :**	14.7
Flooding Type :	Riverine - Hurricane	**Description of HWM Object**	
HWM Object, Surface :	Other	bird feeding post	
HWM Address	1034 Rue Bois De Chene		
Type of HWM :	Personal Account	**Parish :** St. Martin	**State :** Louisiana

Name of Flagger/Interviewer :	Zsofia Dobos	Zsofia Dobos	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	09/01/2008		**Witness Statement :**	

He was here during the hurricane and he gave the estimate height of the water.

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.3109		
Survey Longitude :	-91.9057	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-30-003-202.jpg



000-ILA-30-003-203.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-004	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Swamps Bayou	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	11.8	**NGVD 29 :**	11.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Ground		
HWM Address	1156 Hope Rd		
Type of HWM :	Personal Account	**Parish :** St. Martin	**State :** Louisiana

Name of Flagger/Interviewer :	Zsofia Dobos	Surabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008		**Witness Statement :**	

Resident states flood water came from the bayou, reached the top of the bridge and flooded lower part of the Hope Rd. A drainage ditch is in front of the house that connects to the Swamp Bayou.

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.3610		
Survey Longitude :	-91.8080	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-004-205.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-005	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	11.5	**NGVD 29 :**	11.5
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Utility pole		
HWM Address	1056 HH Jim Sells Rd		
Type of HWM :	Personal Account	**Parish :** St. Martin	**State :** Louisiana

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008		**Witness Statement :**	Water got under the house, but did not flood the property. Road and the properties along the street flooded.[Houses are raised] The road had about 20 inches of water.

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.3638		
Survey Longitude :	-91.8120	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-005-207.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-006	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Teche, Bayou	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	18.7	**NGVD 29 :**	18.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Tree		
HWM Address	1389 Main Hwy (31)		
Type of HWM :	Personal Account	**Parish :** St. Martin	**State :** Louisiana

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008		**Witness Statement :**	

This property is designed by the eyewitness. He said he came out during the hurricane Gustav every day and marked the highest water level. (Phone 337-332-6681)

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.3731		
Survey Longitude :	-91.9223	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-006-210.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-007	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Teche, Bayou	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	19.0	**NGVD 29 :**	19.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Ground		
HWM Address	1723 Main Hwy		
Type of HWM :	Personal Account	**Parish :** St. Martin	**State :** Louisiana

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008		**Witness Statement :**	Owner was here during the hurricane. Daniel J. Hamilton, Phone 337-754-9900

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.3557		
Survey Longitude :	-91.8968	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-007-213.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-008	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Teche, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	16.3	**NGVD 29 :**	16.3
Flooding Type :	Riverine - Hurricane	**Description of HWM Object**	
HWM Object, Surface :	Other	Base of the tree	
HWM Address	1013 Kathleen Dr , Cecilia		
Type of HWM :	Personal Account	**Parish :** St. Martin	**State :** Louisiana

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008		**Witness Statement :**	

The eyewitness came back 3 days after the hurricane. He says it was the highest water level.

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/15/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.3269		
Survey Longitude :	-91.8511	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-017	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Teche, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	17.0	**NGVD 29 :**	17.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available , Cecilia		
Type of HWM :	Mud Line	**Parish :** St. Martin	**State :** Louisiana
Location of HWM Object :	HWM located on the Column on the Bridge across Bayou Teche along Rt. 355 (Cecilia Bridge HWY).		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/16/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.3361		
Survey Longitude :	-91.8555	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-017-237.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-30-018	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Bayou Des Glaises	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	8.6	**NGVD 29 :**	8.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** St. Martin	**State :** Louisiana
Location of HWM Object :	HWM located underneath the bridge across the Bayou along Potato Shed Road just next to the Spillway Rd.		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/16/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/17/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.3431		
Survey Longitude :	-91.7889	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-30-018-239.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

Appendix C

HWM Reports (by County)

C24 Saint Tammany

FEMA

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-60-004	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	32.8	**NGVD 29 :**	33.1
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Boat dock		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** St. Tammany	**State :** Louisiana
Location of HWM Object :	Dock fence over the water east of Hickory Field Rd.		

Name of Flagger/Interviewer :	Angelique Cella	Shawn Ledig	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/14/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5617		
Survey Longitude :	-89.8570	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-007	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Falaya, Bogue	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	11.5	**NGVD 29 :**	11.6
Flooding Type :	Riverine - Hurricane	**Description of HWM Object**	
HWM Object, Surface :	Other	Picnic deck post	
HWM Address	No Street Address Available , Covington		
Type of HWM :	Stain Line	**Parish :** St. Tammany	**State :** Louisiana
Location of HWM Object :	Bouge Falaya Wayside Park at the end of New Hampshire St.		

Name of Flagger/Interviewer :	Angelique Cella	Shawn Ledig	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/14/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4712		
Survey Longitude :	-90.0944	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-60-007-94.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-008	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Tchefuncte River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	5.7	**NGVD 29 :**	5.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Fence		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** St. Tammany	**State :** Louisiana
Location of HWM Object :	FECA Boat Launch at the end of N. Dogwood on the Tchefuncte River.		

Name of Flagger/Interviewer :	Angelique Cella	Shawn Ledig	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/14/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4567		
Survey Longitude :	-90.1134	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-60-008-96.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-009	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Tchefuncte River	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	25.0	**NGVD 29 :**	25.1
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Fence		
HWM Address	724401 Magnolia Lane		
Type of HWM :	Stain Line	**Parish :** St. Tammany	**State :** Louisiana

Name of Flagger/Interviewer :	Angelique Cella	Shawn Ledig	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.4851		
Survey Longitude :	-90.1539	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-60-009-99.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-010	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Tchefuncte River	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	60.0	**NGVD 29 :**	60.2
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Tree		
HWM Address	10120 Hwy 1077		
Type of HWM :	Mud Line	**Parish :** St. Tammany	**State :** Louisiana

Name of Flagger/Interviewer :	Angelique Cella	Shawn Ledig	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5750		
Survey Longitude :	-90.2393	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-010-103.jpg

Image Not Available

000-ILA-60-010-501.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-011	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Tchefuncte River	**HWM Quality :**	Not provided by Otl
Survey Ele. (US FT) NAVD88 :	42.7	**NGVD 29 :**	42.9
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Tree		
HWM Address	75610 Trinchard Rd.		
Type of HWM :	Personal Account	**Parish :** St. Tammany	**State :** Louisiana

Name of Flagger/Interviewer :	Angelique Cella	Shawn Ledig	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/15/2008		**Witness Statement :**	Water came up to the top of the bank

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5329		
Survey Longitude :	-90.2024	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-011-104.jpg



000-ILA-60-011-105.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

Appendix C

HWM Reports (by County)

C25 Tangipahoa

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-60-016	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Tangipahoa River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	22.5	**NGVD 29 :**	22.5
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Building support post, piling,column, or beam		
HWM Address	21544 Highway 190 E , Hammond		
Type of HWM :	Mud Line	**Parish :** Tangipahoa	**State :** Louisiana

Name of Flagger/Interviewer :	Angelique Cella	Don Patecek	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/20/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5057		
Survey Longitude :	-90.3648	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-016-112.jpg



000-ILA-60-016-113.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

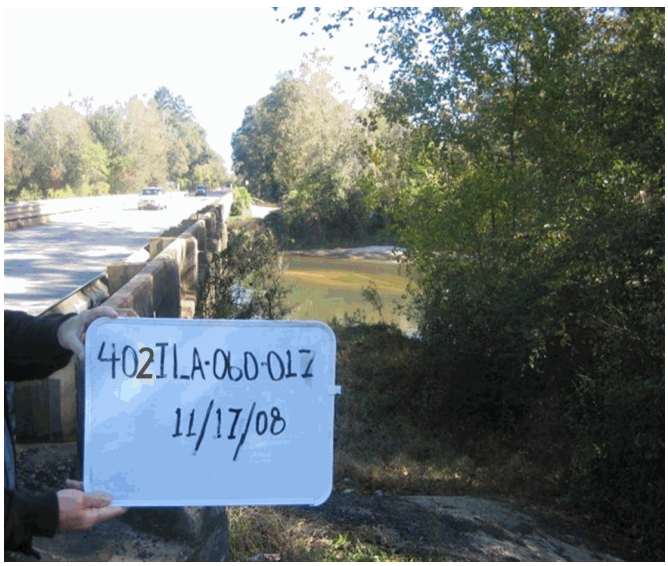
HWM ID :	402-ILA-60-017	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Tangipahoa River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	37.6	**NGVD 29 :**	37.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Tangipahoa	**State :** Louisiana
Location of HWM Object :	Hwy 1064/443 under the bridge that crosses the Tangipahoa River		

Name of Flagger/Interviewer :	Angelique Cella	Don Patecek	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/20/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5697		
Survey Longitude :	-90.4005	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-017-114.jpg



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-018	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Tangipahoa River	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	58.1	**NGVD 29 :**	58.2
Flooding Type :	Riverine - Hurricane	**Description of HWM Object**	
HWM Object, Surface :	Other	metal pole with numbers	
HWM Address	16092 E. Paradise Park		
Type of HWM :	Stain Line	**Parish :** Tangipahoa	**State :** Louisiana

Name of Flagger/Interviewer :	Angelique Cella	Don Patecek	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/20/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.6121		
Survey Longitude :	-90.4622	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-60-018-119.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-019	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Tangipahoa River	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	89.5	**NGVD 29 :**	89.5
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Tangipahoa	**State :** Louisiana
Location of HWM Object :	Under bridge that crosses the Tangipahoa River on Hwy. 16		

Name of Flagger/Interviewer :	Angelique Cella	Don Patecek	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7290		
Survey Longitude :	-90.4846	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-019-120.jpg



000-ILA-60-019-121.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-020	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	150.9	**NGVD 29 :**	151.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Tree		
HWM Address	70306 Easley Rd.		
Type of HWM :	Mud Line	**Parish :** Tangipahoa	**State :** Louisiana

Name of Flagger/Interviewer :	Angelique Cella	Don Patecek	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/17/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.8719		
Survey Longitude :	-90.4923	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-020-122.jpg



000-ILA-60-020-123.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-033	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Tangipahoa River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	190.5	**NGVD 29 :**	190.5
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Tangipahoa	**State :** Louisiana
Location of HWM Object :	Under the east side of the Hwy. 38 bridge that crosses the Tangipahoa River		

Name of Flagger/Interviewer :	Angelique Cella	Don Patecek	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	CHKL	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.9381		
Survey Longitude :	-90.4899	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-033-150.jpg



000-ILA-60-033-151.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-046	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Tchefuncte River	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	137.4	**NGVD 29 :**	137.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** Tangipahoa	**State :** Louisiana
Location of HWM Object :	Under the west side of the Hwy 16 bridge as it crosses the Tchefuncte River		

Name of Flagger/Interviewer :	Angelique Cella	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/21/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7568		
Survey Longitude :	-90.2650	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-046-176.jpg



000-ILA-60-046-177.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Appendix C

HWM Reports (by County)

C26 Vernon

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-20-025	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Floctaw Creek	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	268.2	**NGVD 29 :**	268.4
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Sign post		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Vernon	**State :** Louisiana
Location of HWM Object :	Almon Hagan Rd. over Floctaw Creek		

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.	
Date of Flagging/Interview :	11/19/2008		**Witness Statement :**		

Huey Wilson, road forman for dist 6, 337 208 4308.

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.1646		
Survey Longitude :	-93.0470	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-20-025-121.jpg



000-ILA-20-025-122.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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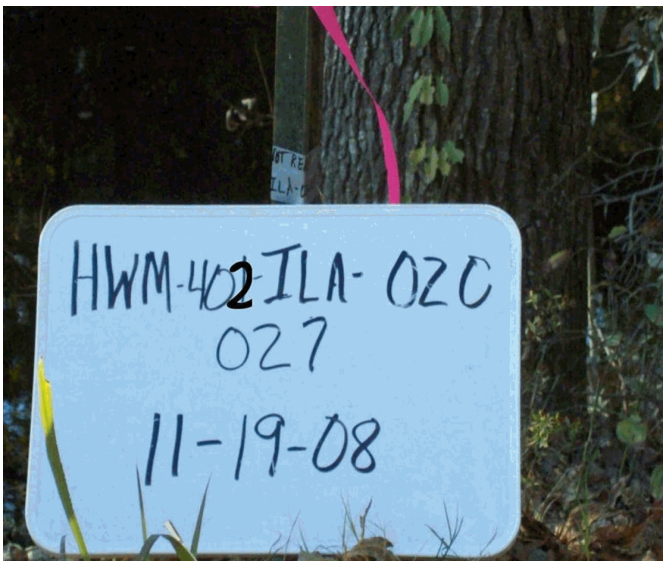
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-20-027	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Cypress Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	229.0	**NGVD 29 :**	229.1
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Sign post		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** Vernon	**State :** Louisiana
Location of HWM Object :	Devil Swamp Rd. Near the "one lane bridge" sign on black and yellow sign post on the north east.		

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008		**Witness Statement :**	Huey Wilson, road forman for dist 6, 337 208 4308.

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.3552		
Survey Longitude :	-92.9897	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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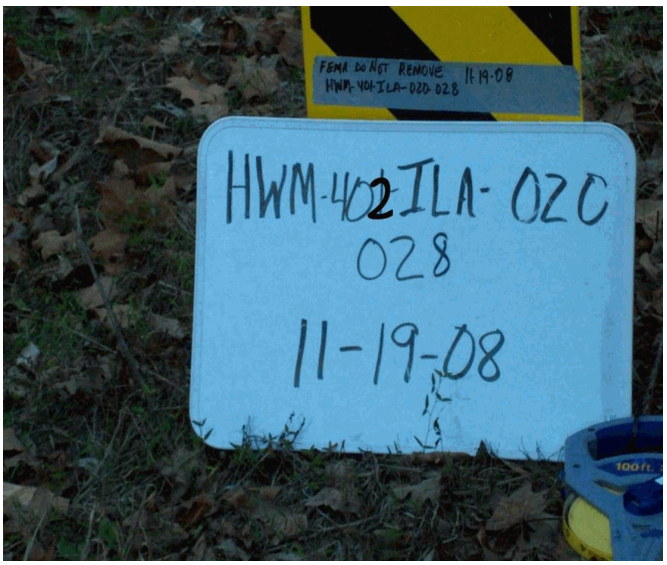
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-20-028	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Martin Creek	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	297.3	**NGVD 29 :**	297.5
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Sign post		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** Vernon	**State :** Louisiana
Location of HWM Object :	North Easy of Anacoco, on Cold Spring Lp. gravel Rd. at second large culvert.		

Name of Flagger/Interviewer :	John Bell	Madeline Woodberry	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008		**Witness Statement :**	Huey Wilson, road forman for dist 6, 337 208 4308.

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/13/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana North 1701		
Survey Latitude :	31.2950		
Survey Longitude :	-93.2867	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Appendix C

HWM Reports (by County)

C27 Washington

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-60-034	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Bogue Chitto	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	161.1	**NGVD 29 :**	161.5
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** Washington	**State :** Louisiana
Location of HWM Object :	Under the east side of the Hwy. 38 bridge that crosses the Bogue Chitto River		

Name of Flagger/Interviewer :	Angelique Cella	Don Patecek	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.9225		
Survey Longitude :	-90.2046	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-034-152.jpg



000-ILA-60-034-153.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-035	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Bogue Chitto	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	135.1	**NGVD 29 :**	135.4
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** Washington	**State :** Louisiana
Location of HWM Object :	Under the south side of the Chess Richardson Bridge that crosses the Bogue Chitto River on Hwy. 10		

Name of Flagger/Interviewer :	Angelique Cella	Don Patecek	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	JGJG	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.8434		
Survey Longitude :	-90.1625	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-035-154.jpg



000-ILA-60-035-155.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-036	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Bogue Chitto	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	99.3	**NGVD 29 :**	99.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** Washington	**State :** Louisiana
Location of HWM Object :	Under the north side of the Hwy. 437 bridge that crosses the Bogue Chitto River		

Name of Flagger/Interviewer :	Angelique Cella	Don Patecek	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/19/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7209		
Survey Longitude :	-90.0835	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-036-156.jpg



000-ILA-60-036-157.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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ESP Associates, P.A.
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Registration Number : 1560
Phone Number : (704)-583-4949

Appendix C

HWM Reports (by County)

C28 West Baton Rouge

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-30-039	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Fusilier, Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	18.8	**NGVD 29 :**	18.8
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** West Baton Rouge	**State :** Louisiana
Location of HWM Object :	Mark is located at the junction of Hwy 413 and 1 on Fusilier Bayou		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5338		
Survey Longitude :	-91.4081	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-30-039-279.jpg



000-ILA-30-039-280.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

FEMA

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-30-041	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Grand Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	22.7	**NGVD 29 :**	22.6
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** West Baton Rouge	**State :** Louisiana
Location of HWM Object :	From Hwy 983 and Hwy 630's junction toward east the first bridge.		

Name of Flagger/Interviewer :	Zsofia Dobos	Saurabh Kulkarni	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/18/2008			

Survey Crew :	DJJD	**Company :**	ESP Associates, P.A.
Survey Date :	12/18/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.5359		
Survey Longitude :	-91.3223	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-30-041-286.jpg



000-ILA-30-041-287.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

Appendix C

HWM Reports (by County)

C29 West Feliciana

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection
(HMTAP Task Order # HSFEHQ-09-J-0002)

Contents : Riverine High Water Mark (HWM) Survey Report

HWM ID :	402-ILA-60-037	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Thompson Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	51.1	**NGVD 29 :**	51.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** West Feliciana	**State :** Louisiana
Location of HWM Object :	Under the west side of the northbound Hwy 61 bridge that crosses the Thompson Creek just as you enter parish		

Name of Flagger/Interviewer :	Angelique Cella	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7477		
Survey Longitude :	-91.2863	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-037-158.jpg



000-ILA-60-037-159.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-038	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Grants Bayou	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	128.1	**NGVD 29 :**	128.0
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** West Feliciana	**State :** Louisiana
Location of HWM Object :	Under the west side of the Hwy. 965 bridge as it crosses a Grants Bayou		

Name of Flagger/Interviewer :	Angelique Cella	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7896		
Survey Longitude :	-91.3248	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-038-160.jpg



000-ILA-60-038-161.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

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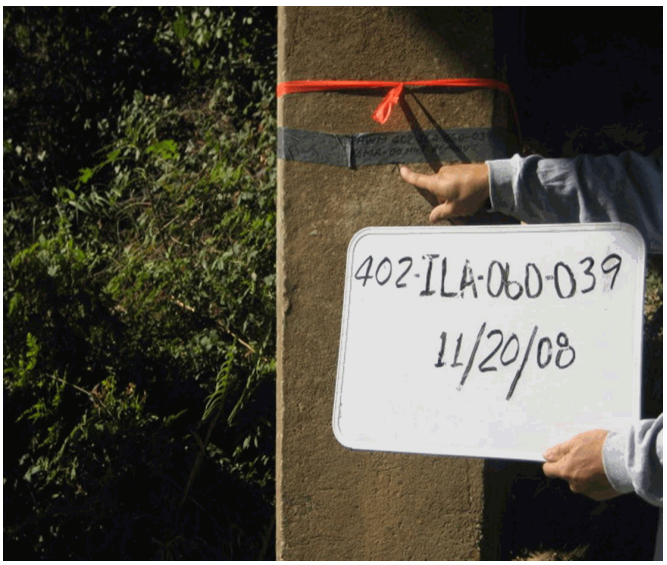
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-039	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Alexander Creek	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	75.5	**NGVD 29 :**	75.4
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** West Feliciana	**State :** Louisiana
Location of HWM Object :	Under the east side of the Hwy. 61 bridge that crosses Alexander Creek		

Name of Flagger/Interviewer :	Angelique Cella	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.7853		
Survey Longitude :	-91.3632	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

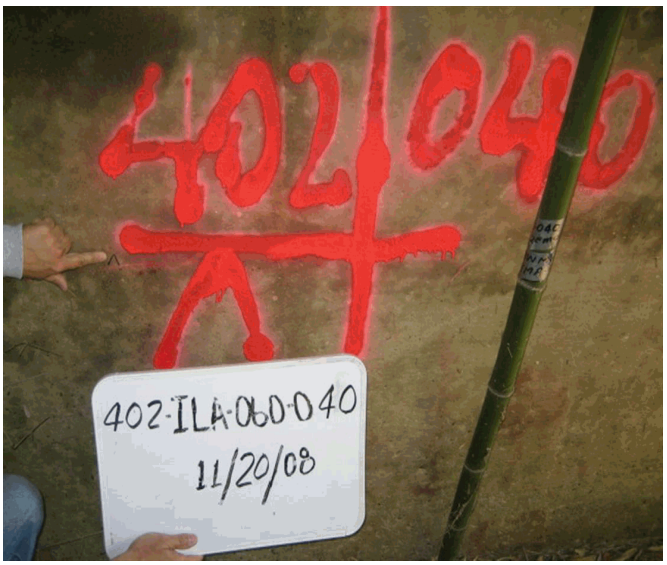
John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-040	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Thompson Creek	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	84.2	**NGVD 29 :**	84.1
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** West Feliciana	**State :** Louisiana
Location of HWM Object :	Under the west side of the Hwy. 10 bridge that crosses Thompson Creek		

Name of Flagger/Interviewer :	Angelique Cella	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.8402		
Survey Longitude :	-91.2270	**Apx. Bldg Floor Elevation :**	N/A



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Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-041	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	159.8	**NGVD 29 :**	159.7
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** West Feliciana	**State :** Louisiana
Location of HWM Object :	Under the southwest side of the Hwy. 421 bridge that crosses an unknown creek (west of 13290 Hwy 421)		

Name of Flagger/Interviewer :	Angelique Cella	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.9182		
Survey Longitude :	-91.2994	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-60-041-167.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
ESP Associates, P.A.
P.O. Box 7030 Charlotte, NC 28241
Registration Number : 1560
Phone Number : (704)-583-4949

HWM ID :	402-ILA-60-042	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Fair
Survey Ele. (US FT) NAVD88 :	68.9	**NGVD 29 :**	68.9
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Stain Line	**Parish :** West Feliciana	**State :** Louisiana
Location of HWM Object :	Under the east side of Hwy. 66 bridge that crosses an unknown watercourse		

Name of Flagger/Interviewer :	Angelique Cella	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.8439		
Survey Longitude :	-91.4016	**Apx. Bldg Floor Elevation :**	N/A



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000-ILA-60-042-169.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana

ESP Associates, P.A.

P.O. Box 7030 Charlotte, NC 28241

Registration Number : 1560

Phone Number : (704)-583-4949

Project : Louisiana Hurricane Gustav Riverine HWM Data Collection **HMTAP Task Order(s):** HSFEHQ-09-J-0002

HWM ID :	402-ILA-60-043	**Date of Flood Event :**	Sept 2008
Name of Storm Event :	Hurricane Gustav, LA Riverine	**Date of Peak :**	N/A
Disaster Number :	FEMA-1786-DR-Louisiana	**Source of Date of Peak :**	N/A
Flood Source	Unknown Watercourse	**HWM Quality :**	Good
Survey Ele. (US FT) NAVD88 :	148.2	**NGVD 29 :**	148.1
Flooding Type :	Riverine - Hurricane		
HWM Object, Surface :	Bridge support or skirt		
HWM Address	No Street Address Available		
Type of HWM :	Mud Line	**Parish :** West Feliciana	**State :** Louisiana
Location of HWM Object :	Under the south side of the Hwy. 66 bridge that crosses an Unknown watercourse		

Name of Flagger/Interviewer :	Angelique Cella	Brian Merceron	**Flagger Company:**	URS Corp.
Date of Flagging/Interview :	11/20/2008			

Survey Crew :	MJMC	**Company :**	ESP Associates, P.A.
Survey Date :	12/19/08	**Vertical Datum :** NGVD 88	**Horizontal Datum:** NAD 83
Map Projection Used :	Louisiana South 1702		
Survey Latitude :	30.9469		
Survey Longitude :	-91.4608	**Apx. Bldg Floor Elevation :**	N/A



000-ILA-60-043-170.jpg



000-ILA-60-043-171.jpg

Survey Certification : High water mark survey is certified to 0.25 feet vertically and 10 feet horizontally with a 95% accuracy level

John Avery, Jr. - PLS, Louisiana
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Registration Number : 1560
Phone Number : (704)-583-4949