APPENDIX F:
Cultural Resources Appendix
Volume III
APPENDIX F:
Cultural Resources

Assessment of the Potential Effects on Archaeological Resources within the LCA ARNTM Project Area

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1.1 Introduction

In satisfaction of Section 106 of the NHPA, a Programmatic Agreement (PA) between USACE-MVN, SHPO, and ACHP, has been developed to address the needs of LCA projects including Convey Atchafalaya River Water to North Terrebonne Marshes. A copy of the PA appears at the conclusion of this section. Federally recognized tribes, State tribes, local governments and other interested parties have been invited to participate as consulting parties. Copies of notification documents and lists of interested parties follow the Programmatic Agreement at the end of the cultural resources summary.

The cultural resources portion of this feasibility study provides a synthesis of previous investigations in the project area that includes the locations and available information for surveys and sites reported, thus facilitating the expeditious planning and implementation of the resulting project. The primary purpose of cultural resources identification is to provide recommendations that will assist project managers, engineers, and other decision-makers in the avoidance of adverse impacts. The current feasibility study is limited to literature and records review and sample survey as set forth in ER 1105-2-100 paragraph 5 (Feasibility Phase Studies). There has been no evaluation and testing, intensive survey/inventory, or mitigation.

Discovery of cultural resources and determinations of significance presented in this section are drawn from archaeological survey reports and site recording documents housed at the State Historic Preservation Office (SHPO) in Baton Rouge, Louisiana. Both SHPO and THPO notification was undertaken to prepare concerned parties for future project possibilities (see correspondence section below). Regular meetings with SHPO and the Louisiana State Archaeologist were supplemented by email correspondence in an effort to work in concert with the interests of the State and its citizens. Visits to potentially impacted loci within the project area were undertaken over two days on May 6, 2009 and May 7, 2009.

The standard for site significance adheres to the criteria established by the National Register of Historic Places (NRHP) and outlined within 36 CFR 60.4. The standard for “significance” as it applies to archaeological sites includes 1) sites that “possess integrity of location, design, setting, materials, workmanship, feeling, and association,” 2) sites that are “associated with events that have made a significant contribution to the broad patterns of our history,” 3) sites that are “associated with the lives of persons significant in our past,” 4) sites that “embody the distinctive characteristics of a type, period, or method of construction,” or “represent the work of a master,” “possess high artistic values,” or “represent a significant and distinguishable entity whose components may lack individual distinction,” or 5) sites that “have yielded, or may be likely to yield, information important to prehistory, or history.”

The study area comprises approximately 1100 square miles, or 700,000 acres, that includes four primary geologic regions. The full array of 61 project features have a total temporary right of way of approximately 3497 acres. This represents the area of direct impact. However, the intent of this project is to deliver fresh water in quantities such that
the broader area of impact has yet to be determined. As such, the total area of potential effect (APE) cannot be mapped at this time. In discussions with the Louisiana State Archaeologist, a monitoring plan that would record long-term impacts to cultural resources has been proposed and is included in the protocols to the Programmatic Agreement.

The historic properties aspect of this feasibility study has the dual objective of identifying cultural resources and site variability within the diverse biomes of the coastal Louisiana marshes. The wetlands and natural levees comprise seven biotic communities that sustained over four-hundred-fifty readily identifiable plant and animal species, providing a vast resource base for human subsistence. Underlying these biotic communities are the depositional environments that comprise the geomorphic history of the Terrebonne Marshes project area. Depositional environments include fluvial features, such as the natural levees, marshes, inland swamps, and lakes that support the distinctive biotic communities previously mentioned. These features can be identified from maps and remote imagery, from their distinctive lithological composition, and via various dating techniques including radiocarbon ($^{14}$C) and thermoluminescence (TL). Understanding the relationship between sites and landforms helps archaeologists to both develop probabilistic models and locate cultural resources. The effort for this study has been to develop such a model for current and future planning.

Biological and environmental diversity in the coastal Louisiana marshes has supported nomadic and settled subsistence regimes for human populations dating to at least 1000 B.C. Abundant archaeological evidence indicates a settlement pattern concentrated on stable landscape features such as the natural levees flanking bayous, both active and inactive, in the study area. To date, approximately three hundred archaeological sites have been identified in the Terrebonne marshes and along the lobes of the Lafourche-Terrebonne Delta. Given the nature of the terrain it is supposed that many Native American traditional cultural properties, and or sacred sites have not been recorded. In some cases, these areas cannot be identified without the assistance of the tribes. Thus, we have requested tribal assistance in identifying such areas within the project boundaries.

The recoverable settlement history for the Terrebonne marshes appears to be tied to the deposition and subsequent stabilization of the Lafourche-Terrebonne Delta between 2000 and 0 B.C. Relict beaches and channels of the delta provided early human foragers with locations to which they returned in seasonal rounds of hunting and collecting. Repeated use of these places is attested by deposits of shells from the bivalve *Rangia cuneata*, a brackish-water clam. These shell deposits, or middens, contain both faunal and human remains and culturally produced artifacts including pottery, which is used to tie occupations at these sites to a relative chronology that is supported by radiocarbon ($^{14}$C) assay from other archaeological sites. Lenses of sediment frequently appear interspersed within layers of shell, attesting to episodic overbanking along levees, and artifacts indicate that sites may have been abandoned for extended periods, possibly due to elevated water levels. The density of settlements associated with different periods of occupation along Bayous Boeuf, Black, Shaffer, Chene, Mauvais Bois, De Cade, Du
Large, Terrebonne, and Bayou Pointe au Chien, all natural levee landforms with sites dispersed at several hundred meter intervals, may reflect a shifting settlement system in response to this variable water table.

Significant sites were visited repeatedly and many habitation loci that were clearly established in prehistory continued to be utilized through the post-bellum period. Settlements in the Terrebonne marshes have been dated to major cultural periods from the pre-ceramic Poverty Point (2000-500 B.C.) through Tchula-Tchefuncte (500-0 B.C.), Marksville (A.D. 0-400), Baytown-Troyville (A.D. 400-700), Coles Creek (A.D. 700-1000), the Mississippian (or Plaquemine) (A.D. 1200-1700), and into Colonial and modern historic times. A sugar economy dominated the agrarian market from the late 1840s through the Civil War, with some thirty to forty plantations eventually constructed along Bayous Boeuf, Shaffer, Black, Du Large, and parts of the Lower Atchafalaya River. Confederate fortifications were established at the confluence of Bayous Shaffer and Chene, and on the west bank of the Atchafalaya River at its junction with Little Wax Bayou. Subsequent Union army occupation of the entire study area, as far west as Berwick Bay, produced additional fortifications along the northernmost edge of the Terrebonne marshes. Restoration period economic activity continued to focus on sugar under a share-crop system supplemented by shell fish production and to a lesser extent lumber extraction. After the early 20th century discovery of oil and gas these industries have dominated the regional economy.

The marshes are an extremely dynamic environment where sites are subject to erosion, alluviation, and subsidence. Therefore, the physical integrity or visibility of sites that may have been present when previous studies were undertaken might now be in question. The following recommended strategy for sites assessment and discovery as the project goes forward has been coordinated with both the State of Louisiana SHPO and archaeologists at the U.S. Army Engineer District New Orleans.

- Determine which sites may be impacted by the current plan that have been listed eligible or recommended as potentially eligible for inclusion in the Nation Register of Historic Places (NRHP) by previous surveys.
- Reassess the current condition of those previously recommended sites.
- Perform Phase I field inspections and limited subsurface testing in areas where structures associated with the implementation of the plan will be installed to identify sites not previously discovered or recorded. Geotechnical data gathered in the areas of planned construction are extremely useful for this and should be accessed/shared with the archaeologist/cultural specialist.
- Monitor construction to record unanticipated site disturbance for sites not previously identified (i.e., sites below the surface not discovered via the methods outlined above. The likelihood of encountering buried cultural material in the course of mechanical excavation increases because of alluviation and subsidence.
Following sections describe the physiographic setting, geomorphic history and the previous research conducted within the study area. Statistical modeling is used to examine correlations between settlement and prominent landforms.

### 2.1 Consultations

Both the SHPO and Tribes were contacted by the St. Louis District Engineering and Construction Division Curation and Archives Analysis Branch between mid-May and early-June of 2009. SHPO notification is dated May 19, 2009 and was sent to the attention of Mr. Scott Hutcheson, Office of Historic Preservation, Capitol Annex Building, P.O. Box 44247, Baton Rouge, Louisiana 70804. Tribal notification was sent by the district’s Native American Coordinator, Roberta L. Hayworth, to elected Tribal Leaders and appointed Tribal Representatives for the following Nations.

- Alabama Coushatta Tribe of Texas
- Caddo Nation of Oklahoma
- Chitimacha Tribe of Louisiana
- Choctaw Nation of Oklahoma
- Coushatta Tribe of Louisiana
- Jena Band of Choctaw
- Mississippi Band of Choctaw
- Quapaw Tribe of Oklahoma
- Seminole Nation of Oklahoma
- Seminole Tribe of Florida
- Tunic-Biloxi Tribe of Louisiana

No written responses to these notifications were received by the St. Louis District Office. Visits to the Baton Rouge Office of Historic Preservation were undertaken by St. Louis District cultural resources POC, Susan Malin-Boyce, on February 19, 2009 and February 20, 2009 to meet with the Louisiana State Archaeologist and review survey reports for the proposed project area. Subsequent meetings with the Louisiana State Archaeologist were attended on July 1, 2009, and November 4, 2009. A draft copy of this report Appendix was submitted to the Louisiana State Archaeologist for review and comment. In a response via email correspondence (December 28, 2009) Dr. McGimsey expressed an interest in potential time and budget impacts in the event that archaeological materials are recovered during monitoring, and concern for the development of a strategy for assessing long-term effects of project implementation. Specifically, he wanted to know when during the planning process such a strategy might be forthcoming.

A notice in intent to prepare a draft EIS for this project was published in the Federal Register (Vol. 73 No. 246) on December 22, 2008. Two public scoping meetings have been held, first on February 3, 2009, and on the following day, February 4, 2009 in Houma and Morgan City respectively. More than 350 media outlets were provided with the advisory announcing these meetings.
3.1 Physiographic Setting

The project area is located within the Mississippi Alluvial Plain physiographic section (Fenneman and Johnson 1946) (Figure 1). It lies to the southwest of the current course of the Mississippi River at the distal end of the valley known as the deltaic plain.

![Physiographic sections along the lower Mississippi](image)

Within a deltaic plain, landforms and the physical environment in general are the predominate factors influencing where people lived and interacted with their environment during both the prehistoric and historic periods. Micro-scale changes in elevation could determine which areas were habitable and which were inundated, while significant shoreline changes could occur in a relatively short period of time. An understanding of the regions geomorphic setting and processes is thus critical in predicting where human habitation may have occurred over time and where the archaeological record might best be preserved.

4.1 Geomorphic History

The geomorphic history of the delta has been the subject of many studies in the past half century (e.g., Fisk 1944, Kob and Van Lopik 1958, Frazier 1967, Smith et al. 1986). While certain aspects of the developmental history remain contentious, a broad geomorphic sequence has achieved general acceptance (Weinstein and Kelly 1992:3). The surface landforms dominating the project area have been formed within the last 9000 years (Frazier 1967). The first period of delta building dating from 9000 to 6500 B.P. is known as the Maringouin (Figure 2). The sea level rise and erosion have since caused a shoreline regression of over 40 miles.
Around 5800 years B.P. sea level had risen to approximately the present elevation and the Mississippi began prograding a new delta known as the Teche. There is some debate over the exact age of the delta, with Smith et al. (1986:61-62) suggesting the major deposition happened ca. 4500 to 3500 B.P., while Weinstein and Gagliano (1985:123) propose an earlier date of 5800 to 3900 B.P.

The main channel of this system has since been reoccupied by bayous Teche, Beuf, L’Ourse and Black (Weinstein and Kelley 1992:3). Its natural levees still exist as raised surface exposures up to a mile wide. The major distributaries of this main channel all trend to the southeast and include Bayou Cocodrie, Bayou Piquant, Bayou Penchant, Carencro Bayou and Little Horn Bayou. Their natural levees are considerably smaller than the main channel and indeed some have completely subsided beneath the delta marshes. Weinstein and Galiano (1985:123) also attribute several southwesterly trending distributaries, including Bayou du Large, Bayou Mauvais Bois and Small Bayou La Point, to the Teche Delta while Smith et al. (1986:64-67) argue that the latter date to subsequent episodes of delta progradation.

Approximately 4800 B.P. the Mississippi River started shifting from the Teche course and creating a new delta to the east known variously as the Cocodri, Metairie, or early-stage St. Bernard Delta (Weinstein and Kelly 1992:4-5). While the Mississippi shifted to the east, the old course of the Teche was eventually occupied by the Red River. The duration of this occupation has been debated, with Russ (1975:163-166) arguing that it was only a relatively short term event. Based on archaeological evidence other scholars, however, have suggested that the Red River only abandoned the Teche around 1800-1900 B.P. (see Weinstein and Kelly 1992:5).
Gradually, the Mississippi shifted away from the St. Bernard Delta to the Bayou Lafourche, which reached its peak flow about 2000 B.P creating new delta lobes and reoccupying old Teche distributaries such as Bayou Black and Bayou L’Ourse. As noted previously, Smith et al. (1986:64) argue that the southwestern trending distributaries in the region were formed at this time. Around 1000 B. P. the Mississippi again shifted its course to the east and began building the Plaquemines Delta and subsidence and marsh transgression became the dominant processes with the Terrebonne marsh (Weinstein and Kelly 1992:5).

5.1 National Register of Historic Places

There are eight (8) locations listed on the National Register than are within the project boundary (Table 1 and Figure 3). There are an additional six (6) within a one kilometer radius of the area (Table 2).

Table 1. NR listed properties within project boundary

<table>
<thead>
<tr>
<th>Name</th>
<th>Date Published</th>
<th>Address</th>
<th>Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atkinson Memorial Presbyterian Church</td>
<td>3/19/91</td>
<td>214 Fourth Street</td>
<td>Morgan City</td>
<td>Gothic Revival Bld</td>
</tr>
<tr>
<td>Brubaker House</td>
<td>2/29/95</td>
<td>1102 Second Street</td>
<td>Morgan City</td>
<td>Stick/Eastlake Bld</td>
</tr>
<tr>
<td>Gibson Methodist Episcopal Church</td>
<td>5/8/86</td>
<td>S. Bayou Black Drive</td>
<td>Gibson</td>
<td>Greek Revival Bld</td>
</tr>
<tr>
<td>Montegut School</td>
<td>10/7/93</td>
<td>1137 LA 55</td>
<td>Montegut</td>
<td>Building</td>
</tr>
<tr>
<td>Morgan City Historic District</td>
<td>1/9/86</td>
<td>N/A</td>
<td>Morgan City</td>
<td>District</td>
</tr>
<tr>
<td>Residence Plantation House</td>
<td>9/8/01</td>
<td>8951 Park Avenue</td>
<td>Houma</td>
<td>Classical Revival Bld</td>
</tr>
<tr>
<td>U. S. Post Office</td>
<td>12/17/82</td>
<td>1st and Everett Streets</td>
<td>Morgan City</td>
<td>Beaux Arts Bld</td>
</tr>
<tr>
<td>Wesley House</td>
<td>8/11/82</td>
<td>1210 E. Main Street</td>
<td>Houma</td>
<td>Greek Revival Bld</td>
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</tbody>
</table>

Table 2. NR listed properties within one kilometers of project area

<table>
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<tr>
<th>Name</th>
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<th>Address</th>
<th>Location</th>
<th>Description</th>
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<tr>
<td>Argyle</td>
<td>7/1/94</td>
<td>3313 Bayou Black Dr</td>
<td>Houma</td>
<td>Colonial Revival Bld</td>
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<tr>
<td>Golden Meadow High School</td>
<td>11/23/98</td>
<td>630 S. Bayou Drive</td>
<td>Golden Meadow</td>
<td>Classical Revival Bld</td>
</tr>
<tr>
<td>Orange Grove Plantation House</td>
<td>3/26/80</td>
<td>W of Houma on U.S. 90</td>
<td>Houma</td>
<td>Greek Revival Bld</td>
</tr>
<tr>
<td>Smith, Clifford Percival, House</td>
<td>4/20/89</td>
<td>501 E. Park Avenue</td>
<td>Houma</td>
<td>Queen Anne Bld</td>
</tr>
<tr>
<td>Southwest Reef Lighthouse</td>
<td>9/12/91</td>
<td>Jct. of Bellevue Front and</td>
<td>Bewick</td>
<td>Structure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Canton Streets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>St. Matthew's Episcopal Church</td>
<td>5/1/89</td>
<td>243 Barrow Street</td>
<td>Houma</td>
<td>Gothic Revival Bld</td>
</tr>
</tbody>
</table>

Of the National Register locations, only the Wesley House is located in close proximity to a potential project feature being within 100 meters from features CC2 and CD4. A private cemetery associated with the Wesley House is within the AOE of CD4 (see discussion of the Gagne Cemetery at end of report).
Figure 3. Map of proposed project area displaying listed National Register locations.
6.1 Known Archaeological Surveys

Assuming a typical survey corridor of 100 meters, a total of 19,910 acres within the proposed project area have been recorded as having undergone an archaeological survey. This amounts to just under three percent of the total area (Table 3). This number may be an underestimate as many recorded sites fall outside the recorded survey tracks (Figure 4). Older surveys may not be recorded on the maps of the Louisiana State Historical Preservation Office from which this dataset was derived.

Table 3. Metrics of archaeological surveys within project boundary

<table>
<thead>
<tr>
<th>Project Area</th>
<th>Sq Meters</th>
<th>Ha</th>
<th>Acres</th>
<th>Percent</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Boudreaux</td>
<td>595,851,917.6</td>
<td>59,585.2</td>
<td>147,238.2</td>
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</tr>
<tr>
<td>Grand Bayou</td>
<td>1,773,445,986.0</td>
<td>177,344.6</td>
<td>438,228.0</td>
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<tr>
<td>Bayou Penchant</td>
<td>478,948,908.7</td>
<td>47,894.9</td>
<td>118,350.9</td>
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<tr>
<td>Total</td>
<td>2,848,246,812.3</td>
<td>284,824.7</td>
<td>703,817.1</td>
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Survey Tracks (> 25 acres)

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<th>Acres</th>
<th>Percent</th>
<th>Note</th>
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<td>22-2115</td>
<td>31,409,226.8</td>
<td>3,140.9</td>
<td>7,761.4</td>
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<td>22-174</td>
<td>1,634,888.0</td>
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<td>404.0</td>
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<td>22-3149</td>
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<td>156.1</td>
<td>385.8</td>
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<td>22-1194</td>
<td>268,490.5</td>
<td>26.8</td>
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<td>22-1050</td>
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<td>42.4</td>
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<td>22-1194</td>
<td>129,014.6</td>
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<td>22-284</td>
<td>125,935.5</td>
<td>12.6</td>
<td>31.1</td>
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<tr>
<td>Total</td>
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<td>3,565.4</td>
<td>8,810.4</td>
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Linear Survey (>2 miles)

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<td>96,220.6</td>
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<td>59.8</td>
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<td>8,726.2</td>
<td>8.7</td>
<td>5.4</td>
</tr>
<tr>
<td>22-386</td>
<td>8,399.3</td>
<td>8.4</td>
<td>5.2</td>
</tr>
<tr>
<td>22-2968</td>
<td>7,065.5</td>
<td>7.1</td>
<td>4.4</td>
</tr>
<tr>
<td>22-1206</td>
<td>6,541.6</td>
<td>6.5</td>
<td>4.1</td>
</tr>
<tr>
<td>22-818</td>
<td>5,689.3</td>
<td>5.7</td>
<td>3.5</td>
</tr>
<tr>
<td>22-359</td>
<td>5,451.0</td>
<td>5.5</td>
<td>3.4</td>
</tr>
<tr>
<td>22-1267</td>
<td>4,717.0</td>
<td>4.7</td>
<td>2.9</td>
</tr>
<tr>
<td>22-272</td>
<td>4,579.9</td>
<td>4.6</td>
<td>2.8</td>
</tr>
<tr>
<td>22-2304</td>
<td>4,318.6</td>
<td>4.3</td>
<td>2.7</td>
</tr>
<tr>
<td>22-3362</td>
<td>3,937.5</td>
<td>3.9</td>
<td>2.4</td>
</tr>
<tr>
<td>Total</td>
<td>449,188.9</td>
<td>449.2</td>
<td>279.1</td>
</tr>
</tbody>
</table>
7.1 Project Area Reconnaissance

On May 6, 2009 and May 7, 2009 a reconnaissance was conducted by members of the Project Delivery Team, representatives from the U. S. Fish and Wildlife Service and other state agencies to familiarize team members with the physical geography, biodiversity and cultural resources of the project area. Approximately 264 linear
kilometers within the project boundary were examined during the trip (Figure 5). The routes selected were targeted toward potential feature areas that will be impacted if the project goes to construction.

8.1 Site Population

There are 290 known archaeological sites within the proposed project area. Of these, 283 are represented within the project GIS database by polygon features and seven by points.
This dataset was derived from both the on-line dataset of the Louisiana Division of Archaeology and sites digitized manually after a visual examination of the legacy 7.5 minute quad maps at the Louisiana State Historic Preservation Office. One archaeological site thought to be in the area (16TR80) is not in the on-line dataset and was not located on the quad maps. The site files for the majority of these sites do not list their National Register status (Table 4).

Table 4. NRHP status for sites within project boundary

<table>
<thead>
<tr>
<th>Status</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Status Listed</td>
<td>29</td>
</tr>
<tr>
<td>Declared Eligible</td>
<td>8</td>
</tr>
<tr>
<td>Not Eligible</td>
<td>84</td>
</tr>
<tr>
<td>Recommended Eligible</td>
<td>28</td>
</tr>
<tr>
<td>Unknown</td>
<td>141</td>
</tr>
</tbody>
</table>

9.1 Site Cultural/Temporal Affiliation

The primary cultural/temporal associations for the archaeological sites within the proposed project area as listed in their site record forms are presented in Table 5.

Table 5. Cultural/temporal affiliation of sites within project boundary

<table>
<thead>
<tr>
<th>Affiliation</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No affiliation listed</td>
<td>29</td>
</tr>
<tr>
<td>Antebellum</td>
<td>4</td>
</tr>
<tr>
<td>Baytown</td>
<td>2</td>
</tr>
<tr>
<td>Civil War</td>
<td>13</td>
</tr>
<tr>
<td>Coles Creek</td>
<td>31</td>
</tr>
<tr>
<td>Historic (unk)</td>
<td>16</td>
</tr>
<tr>
<td>Industrial Modern</td>
<td>50</td>
</tr>
<tr>
<td>Marksville</td>
<td>12</td>
</tr>
<tr>
<td>Mississippian</td>
<td>5</td>
</tr>
<tr>
<td>Neo-Indian (unk)</td>
<td>43</td>
</tr>
<tr>
<td>Prehistoric and Historic (unk)</td>
<td>2</td>
</tr>
<tr>
<td>Poverty Point</td>
<td>1</td>
</tr>
<tr>
<td>Plaquemine</td>
<td>17</td>
</tr>
<tr>
<td>Prehistoric (unk)</td>
<td>52</td>
</tr>
<tr>
<td>Tchefuncte</td>
<td>1</td>
</tr>
<tr>
<td>Troyville</td>
<td>12</td>
</tr>
</tbody>
</table>

Discounting those sites with no listed affiliation or those given a generic “prehistoric” or “prehistoric and historic” classification, the most common designation is “Neo-Indian” followed by “Mississippian” and “Industrial/Modern” (Figure 6).
Figure 6. Chart showing chronology of cultural periods and number of sites within project area so designated (in circle).
10.1 Site Locations

A STAC (Spatial and Temporal Analysis of Crime) algorithm was used to perform a cluster analysis of the known archaeological sites. STAC was among the first clustering techniques developed for use in spatial analysis within GIS (Levine 2004:7.1). The technique’s scan-type algorithm overlays a circle of a given size on each node of a grid defining the study area, counts the number of points contained within, and then combines overlapping clusters until none remains. The user provides the minimum number of points to be considered and the search radius (in this case 10 and 5 miles respectively). Combining aspects of hierarchical (the aggregation of smaller clusters) and partitioning (the use of search circles) methods, STAC is very flexible and complements hierarchical clustering well (Leveine 2004:7.17).

Known archaeological sites cluster in three main regions (Figure 7). Eighty eight (88) sites are located in the extreme northwest section of the proposed project area. These sites are situated around Lake Palourde and Six Mile Lake (Avoca Lake) as well as in and around the municipalities of Morgan City and Amelia (i.e., the Morgan City Micropolitan Statistical Area). With a minimum convex polygon of less than 62,000 acres, this cluster averages one site per 705 acres. The second cluster is more dispersed with 165 sites populating a minimum convex polygon of approximately 260,000 acres for an average of one site per 1575 acres. The second cluster covers the central third of the project area centered on Bayou du Large. The smallest cluster exists on the central reach of Bayou Pointe au Chien and Grand Bayou Canal were 21 sites are spread over a minimum convex polygon of 25,000 acres.
Figure 7. Major site clusters within project boundary

11.1 Site Landform Associations as listed on Site Record Forms

The vast majority of site record forms list “natural levee” as the landform associated with the sites with no other single category representing any significant percentage (Table 6).

Table 6. Landform listed on State Site Record Forms

<table>
<thead>
<tr>
<th>Landform</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No landform listed</td>
<td>29</td>
</tr>
<tr>
<td>Batture (elevated river bed)</td>
<td>2</td>
</tr>
<tr>
<td>Beach deposit</td>
<td>11</td>
</tr>
<tr>
<td>Chenier (beach ridge on swamp)</td>
<td>1</td>
</tr>
<tr>
<td>Marsh</td>
<td>15</td>
</tr>
<tr>
<td>Natural levee</td>
<td>198</td>
</tr>
<tr>
<td>Other</td>
<td>25</td>
</tr>
<tr>
<td>Ridge</td>
<td>3</td>
</tr>
<tr>
<td>Swamp</td>
<td>4</td>
</tr>
<tr>
<td>Underwater</td>
<td>2</td>
</tr>
</tbody>
</table>

12.1 Site Regional Landform Associations

Site correlation to regional-scale landforms was also undertaken within the project GIS. Site features were spatially joined to a digitized version of a 1:500,000 scale Geologic Map of Louisiana developed by the Louisiana Geological Survey (Figure 8). The relatively small scale of the map lead to some sites falling into obviously incorrect areas.
(e.g., known terrestrial sites falling into the “water” category). Moreover, the map scale only allows the broadest expression of landforms to be mapped. Natural levees, for example, are limited to major ones located along the primary bayous.
Figure 8. Geologic map of proposed project area with known archaeological sites.
The number of sites located on “alluvium” and “natural levees” is clearly higher than what would have been expected given a random distribution of sites across the landscape. A chi-squared goodness-of-fit test was conducted to assess the statistical association between sites and the mapped landform. Based upon the total area of the various geologic categories within the project area an expected number of sites to be located within each category were generated. This expected number of sites was compared to the known number and a chi-square test used to assess the statistical significance of the difference (Table 7). The results indicate that it is statistically considered extremely unlikely that the distribution would have occurred randomly.

<table>
<thead>
<tr>
<th>Geography</th>
<th>Sites</th>
<th>Percent</th>
<th>Sq Meters</th>
<th>Percent</th>
<th>Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alluvium</td>
<td>44</td>
<td>15.17%</td>
<td>361,872,321</td>
<td>12.71%</td>
<td>37</td>
</tr>
<tr>
<td>Delta Plain, Fresh Marsh</td>
<td>83</td>
<td>28.62%</td>
<td>1,404,281,006</td>
<td>49.30%</td>
<td>143</td>
</tr>
<tr>
<td>Delta Plain, Saline Marsh</td>
<td>61</td>
<td>21.03%</td>
<td>591,351,869</td>
<td>20.76%</td>
<td>60</td>
</tr>
<tr>
<td>Natural Levees</td>
<td>92</td>
<td>31.72%</td>
<td>246,681,233</td>
<td>8.66%</td>
<td>25</td>
</tr>
<tr>
<td>Water</td>
<td>10</td>
<td>3.45%</td>
<td>244,060,751</td>
<td>8.57%</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>290</td>
<td>100%</td>
<td>2,848,247,179</td>
<td>100%</td>
<td>290</td>
</tr>
</tbody>
</table>

Chi squared equals 215.076 with 4 degrees of freedom.

The two-tailed P value is less than 0.0001

By conventional criteria, this difference is considered to be extremely statistically significant.

As the boundaries between “Fresh Marsh” and “Saline Marsh” categories were thought to be temporally sensitive, they were combined and the analysis performed again (Table 8). Again, the difference in distributions was considered extremely significant.

<table>
<thead>
<tr>
<th>Geography</th>
<th>Sites</th>
<th>Percent</th>
<th>Sq Meters</th>
<th>Percent</th>
<th>Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alluvium</td>
<td>44</td>
<td>15.17%</td>
<td>361,872,321</td>
<td>12.71%</td>
<td>37</td>
</tr>
<tr>
<td>Delta Plain</td>
<td>144</td>
<td>49.66%</td>
<td>1,995,632,875</td>
<td>70.07%</td>
<td>203</td>
</tr>
<tr>
<td>Natural Levees</td>
<td>92</td>
<td>31.72%</td>
<td>246,681,233</td>
<td>8.66%</td>
<td>25</td>
</tr>
<tr>
<td>Water</td>
<td>10</td>
<td>3.45%</td>
<td>244,060,751</td>
<td>8.57%</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>290</td>
<td>100%</td>
<td>2,848,247,179</td>
<td>100%</td>
<td>290</td>
</tr>
</tbody>
</table>

Chi squared equals 207.032 with 3 degrees of freedom.

The two-tailed P value is less than 0.0001

By conventional criteria, this difference is considered to be extremely statistically significant.

Given the statistics presented above, it might be proposed that levees and areas of alluvium were preferentially selected for site location by people. Other mitigating factors, however, need to be taken into account. For example, the perceived preference of site location may be simply a function of where archaeological surveys have historically been undertaken. Indeed, when the known geologic provenience of survey tracks are themselves queried against a random landform distribution, the difference is consistently statistically significant (Table 9). The results are not dissimilar to
site/geologic correlations with “alluvium” and “natural levees” being over represented. In simple terms, at least some of the apparent site location preferences are doubtless attributable to the bias for archaeological surveys to be conducted on those landforms.

Table 9. Non-random distribution of survey tracks vs. geography of project area

<table>
<thead>
<tr>
<th>Geography</th>
<th>Sites</th>
<th>Percent</th>
<th>Sq. Meters</th>
<th>Percent</th>
<th>Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alluvium</td>
<td>44</td>
<td>15.17%</td>
<td>12,306,373</td>
<td>14.67%</td>
<td>361,872,321 12.71% 10,657,166</td>
</tr>
<tr>
<td>Delta Plain, Fresh Marsh</td>
<td>83</td>
<td>28.62%</td>
<td>44,167,506</td>
<td>52.65%</td>
<td>1,404,281,006 49.30% 41,356,177</td>
</tr>
<tr>
<td>Delta Plain, Saline Marsh</td>
<td>61</td>
<td>21.03%</td>
<td>10,516,218</td>
<td>12.54%</td>
<td>591,351,869 20.76% 17,415,355</td>
</tr>
<tr>
<td>Natural Levees</td>
<td>92</td>
<td>31.72%</td>
<td>12,430,092</td>
<td>14.82%</td>
<td>246,681,233 8.66% 7,264,780</td>
</tr>
<tr>
<td>Water</td>
<td>10</td>
<td>3.45%</td>
<td>4,460,896</td>
<td>5.32%</td>
<td>244,060,751 8.57% 7,187,607</td>
</tr>
<tr>
<td></td>
<td>290</td>
<td>100.00%</td>
<td>83,881,086</td>
<td>100.00%</td>
<td>83,881,086</td>
</tr>
</tbody>
</table>

Chi squared equals 7886424.459 with 4 degrees of freedom.
The two-tailed P value is less than 0.0001
By conventional criteria, this difference is considered to be extremely statistically significant.

To account for this survey locational bias, a further couple of chi-square tests were performed using the survey geological associations rather than the total project area associations. In this way, if site associations with geologic categories are statistically different from the survey areas association with those categories, it can be asserted that the site associations are not solely attributable to the latter (Table 10 and Table 11). Again, the two-tailed P value is considered very significant.

Table 10. Non-random distribution of sites vs. geography of linear survey area (proxy for bias)

<table>
<thead>
<tr>
<th>Geography</th>
<th>Sites</th>
<th>Percent</th>
<th>Sq. Meters</th>
<th>Percent</th>
<th>Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alluvium</td>
<td>44</td>
<td>15.17%</td>
<td>12,306,373</td>
<td>14.67%</td>
<td>43</td>
</tr>
<tr>
<td>Delta Plain, Fresh Marsh</td>
<td>83</td>
<td>28.62%</td>
<td>44,167,506</td>
<td>52.65%</td>
<td>153</td>
</tr>
<tr>
<td>Delta Plain, Saline Marsh</td>
<td>61</td>
<td>21.03%</td>
<td>10,516,218</td>
<td>12.54%</td>
<td>36</td>
</tr>
<tr>
<td>Natural Levees</td>
<td>92</td>
<td>31.72%</td>
<td>12,430,092</td>
<td>14.82%</td>
<td>43</td>
</tr>
<tr>
<td>Water</td>
<td>10</td>
<td>3.45%</td>
<td>4,460,896</td>
<td>5.32%</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>290</td>
<td>100.00%</td>
<td>83,881,086</td>
<td>100.00%</td>
<td>290</td>
</tr>
</tbody>
</table>

Chi squared equals 106.914 with 4 degrees of freedom.
The two-tailed P value equals 0.0001
By conventional criteria, this difference is considered to be extremely statistically significant.

Table 11. Non-random distribution of sites vs. geography of linear survey area (proxy for survey bias) with single marsh category

<table>
<thead>
<tr>
<th>Geography</th>
<th>Sites</th>
<th>Percent</th>
<th>Sq. Meters</th>
<th>Percent</th>
<th>Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alluvium</td>
<td>44</td>
<td>15.17%</td>
<td>12,306,373</td>
<td>14.67%</td>
<td>43</td>
</tr>
<tr>
<td>Delta Plain</td>
<td>144</td>
<td>49.66%</td>
<td>54,683,724</td>
<td>65.19%</td>
<td>189</td>
</tr>
<tr>
<td>Natural Levees</td>
<td>92</td>
<td>31.72%</td>
<td>12,430,092</td>
<td>14.82%</td>
<td>43</td>
</tr>
<tr>
<td>Water</td>
<td>10</td>
<td>3.45%</td>
<td>4,460,896</td>
<td>5.32%</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>290</td>
<td>100.00%</td>
<td>83,881,086</td>
<td>100.00%</td>
<td>290</td>
</tr>
</tbody>
</table>

Chi squared equals 68.241 with 3 degrees of freedom.
The two-tailed P value is less than 0.0001
By conventional criteria, this difference is considered to be extremely statistically significant.

This association of sites to levee and alluvial geological areas is not unexpected and indeed, if anything, may be under-represented. An 1895 map of the region was digitized and georeferenced for comparison to the geologic map (Figure 9). The areas in the historic map without hatching represent natural levees and other elevated areas. The hatched areas represent marshlands (there named “prairie”). The elevated areas correspond well with the areas designated “natural levee” on the geologic map and to a lesser extent with those designated “alluvium.” It is interesting, however, that the historic map shows the levees extending much further south along the bayous than the geologic map. Consequently, many sites that are associated with marshland on the geologic map are associated with natural levee land on the historic map. A clear example is the string of sites along the lower Bayou du Large. Again, the chi-square statistic indicates that the non-random correlation is highly significant.

<table>
<thead>
<tr>
<th>Landform</th>
<th>Sites</th>
<th>Percent</th>
<th>Sq. Meters</th>
<th>Percent</th>
<th>Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevated</td>
<td>148</td>
<td>51.03%</td>
<td>630,218,211</td>
<td>22.13%</td>
<td>64</td>
</tr>
<tr>
<td>“Prairie”</td>
<td>137</td>
<td>47.24%</td>
<td>2,036,736,481</td>
<td>71.51%</td>
<td>207</td>
</tr>
<tr>
<td>Water</td>
<td>5</td>
<td>1.72%</td>
<td>181,292,121</td>
<td>6.37%</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>290</td>
<td>100%</td>
<td>2,848,246,812</td>
<td>100%</td>
<td>290</td>
</tr>
</tbody>
</table>

Chi squared equals 144.237 with 2 degrees of freedom.
The two-tailed P value is less than 0.0001
By conventional criteria, this difference is considered to be extremely statistically significant.

It is clear from both the micro-scale landforms listed on the State Site Record Forms (Table 6) and the macro-scale landform statistics presented above that the elevated landforms (i.e., natural levees and alluvium regions) are significantly more likely to contain archaeological resources. As such, they are considered in this study as “higher probability areas” while the delta marshes are considered “lower probability areas.”
Figure 9. 1895 map of proposed project area showing known archaeological sites.
13.1 Potential Disturbance from Project Features

Disturbances to archaeological resources can result from both construction of project features and the long-term operational effects of the features in an integrated system. While construction disturbances are relatively straightforward to quantify, operational disturbances are harder to measure at this juncture.

Construction Disturbances

The following table (Table 13) details the expected temporary right of way (ROE) for the 61 project features proposed in the current range of alternatives. These areas are expected to be disturbed by construction activity. A subtotal of the various landform acreage affected is presented in Table 14. These numbers represent a sum for all the features from all project alternatives.

Table 13. Temporary ROW of project features

<table>
<thead>
<tr>
<th>ID</th>
<th>Feature Name</th>
<th>Geologic Landform</th>
<th>Width (ft)</th>
<th>Length (ft)</th>
<th>Area (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC2</td>
<td>East Culvert #2</td>
<td>Qdf (Quaternary delta, fresh)</td>
<td>100</td>
<td>100</td>
<td>0.2</td>
</tr>
<tr>
<td>EC3</td>
<td>East Culvert #3</td>
<td>Qdf</td>
<td>100</td>
<td>100</td>
<td>0.2</td>
</tr>
<tr>
<td>EC5</td>
<td>East Culvert #5</td>
<td>Qal (Quaternary alluvium)</td>
<td>600</td>
<td>700</td>
<td>9.6</td>
</tr>
<tr>
<td>EC6</td>
<td>East Culvert #6</td>
<td>Qnl (Quaternary natural levee)</td>
<td>100</td>
<td>100</td>
<td>0.2</td>
</tr>
<tr>
<td>EC7</td>
<td>East Culvert #7</td>
<td>Qnl</td>
<td>100</td>
<td>100</td>
<td>0.2</td>
</tr>
<tr>
<td>ED2</td>
<td>East Dredge Channel #2</td>
<td>Qal (65%), Qnl (11%), Qdf (21%), Qds (3%)</td>
<td>280</td>
<td>56450</td>
<td>362.9</td>
</tr>
<tr>
<td>ED3</td>
<td>East Dredge Channel #3</td>
<td>Qdf (70%), Qal (18%), Qnl (12%)</td>
<td>730</td>
<td>16483</td>
<td>276.2</td>
</tr>
<tr>
<td>ED5</td>
<td>East Dredge Channel #5</td>
<td>Qal</td>
<td>740</td>
<td>1100</td>
<td>18.7</td>
</tr>
<tr>
<td>ED6</td>
<td>East Dredge Channel #6</td>
<td>Qdf</td>
<td>550</td>
<td>17000</td>
<td>214.6</td>
</tr>
<tr>
<td>ED7</td>
<td>East Dredge Channel #7</td>
<td>Qdf</td>
<td>400</td>
<td>13200</td>
<td>121.2</td>
</tr>
<tr>
<td>EM1</td>
<td>East Marsh Creation #1</td>
<td>Qds (90%), Qdf (10%)</td>
<td>200</td>
<td>13,310</td>
<td>61.1</td>
</tr>
<tr>
<td>EM3</td>
<td>East Marsh Creation #3</td>
<td>Qds (Quaternary delta, saline)</td>
<td>200</td>
<td>36620</td>
<td>168.1</td>
</tr>
<tr>
<td>EG1</td>
<td>East Spoil Gap #1</td>
<td>Qdf</td>
<td>60.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EG2</td>
<td>East Spoil Gap #2</td>
<td>Qdf</td>
<td>26.0</td>
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</tr>
<tr>
<td>EP7</td>
<td>East Plug #7</td>
<td>Qds</td>
<td>360</td>
<td>175</td>
<td>1.4</td>
</tr>
<tr>
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<td>East Plug #8</td>
<td>Qal (60%), Qnl (40%)</td>
<td>140</td>
<td>110</td>
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</tr>
<tr>
<td>ES2</td>
<td>East Diversion Structure #2</td>
<td>Qal (90%), Qnl (10%)</td>
<td>600</td>
<td>700</td>
<td>9.6</td>
</tr>
<tr>
<td>EX1</td>
<td>East Removal #1</td>
<td>Qdf</td>
<td>150</td>
<td>115</td>
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</tr>
<tr>
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<td>Qdf</td>
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<td>200</td>
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</tr>
<tr>
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<td>Qnl</td>
<td>150</td>
<td>200</td>
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<td>Qnl</td>
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<td>100</td>
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</tr>
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<td>100</td>
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<td>Qdf</td>
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<td>100</td>
<td>0.2</td>
</tr>
<tr>
<td>CC7</td>
<td>Central Culvert #7</td>
<td>Qdf</td>
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<td>100</td>
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### Temporary Right of Way

<table>
<thead>
<tr>
<th>ID</th>
<th>Feature Name</th>
<th>Geologic Landform</th>
<th>Width (ft)</th>
<th>Length (ft)</th>
<th>Area (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC8</td>
<td>Central Culvert #8</td>
<td>Qdf (75%), Qal (25%)</td>
<td>100</td>
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<td>0.2</td>
</tr>
<tr>
<td>CC9</td>
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<td>Qal</td>
<td>100</td>
<td>100</td>
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<td>CC10</td>
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<td>100</td>
<td>100</td>
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<td>100</td>
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<td>CC13</td>
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<td>200</td>
<td>800</td>
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</tr>
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<td>CC14</td>
<td>Central Culvert #14</td>
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<td>100</td>
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<tr>
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<td>Central Dredge Channel #1</td>
<td>Qnl (53%), Qal (47%)</td>
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<td>6000</td>
<td>38.6</td>
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<td>Central Dredge Channel #2</td>
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<td>240</td>
<td>800</td>
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<td>Central Dredge Channel #3</td>
<td>Qdf (55%), Qnl (45%)</td>
<td>220</td>
<td>4600</td>
<td>23.2</td>
</tr>
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<td>1700</td>
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</tr>
<tr>
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<td>Central Dredge Channel #6</td>
<td>Qdf (54%), Qal (32%), Qnl (14%)</td>
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<td>7200</td>
<td>47.9</td>
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<tr>
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<td>Central Dredge Channel #7</td>
<td>Qnl (62%), Qal (38%)</td>
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<td>6700</td>
<td>49.2</td>
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<td>Central Lock Complex #1</td>
<td>Qds</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>CLV1</td>
<td>Central Levee #1</td>
<td>Qal (86%), Qnl (14%)</td>
<td>160</td>
<td>5180</td>
<td>19.0</td>
</tr>
<tr>
<td>CLV2</td>
<td>Central Levee #2</td>
<td>Qnl (68%), Qal (32%)</td>
<td>160</td>
<td>1760</td>
<td>6.5</td>
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<tr>
<td>CM2</td>
<td>Central Marsh Berm #2</td>
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<td>200</td>
<td>11255</td>
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<td>CM3</td>
<td>Central Marsh Berm #3</td>
<td>Qds</td>
<td>200</td>
<td>8975</td>
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<td>CM4</td>
<td>Central Marsh Berm #4</td>
<td>Qds</td>
<td>200</td>
<td>23358</td>
<td>107.2</td>
</tr>
<tr>
<td>CP1</td>
<td>Central Plug #1</td>
<td>Qnl</td>
<td>180</td>
<td>150</td>
<td>0.6</td>
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<tr>
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<td>Central Plug #2</td>
<td>Qdf</td>
<td>70</td>
<td>100</td>
<td>0.2</td>
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<tr>
<td>CS1</td>
<td>Central Diversion Structure. #1</td>
<td>Qdf (75%), Qnl (25%)</td>
<td>200</td>
<td>800</td>
<td>3.6</td>
</tr>
<tr>
<td>CT1</td>
<td>Central Terracing #1</td>
<td>Qds (82%), Qnl (18%)</td>
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<td></td>
<td>395.0</td>
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<tr>
<td>CT2</td>
<td>Central Terracing #2</td>
<td>Qds</td>
<td></td>
<td></td>
<td>44.0</td>
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<tr>
<td>CT3</td>
<td>Central Terracing #3</td>
<td>Qds</td>
<td></td>
<td></td>
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<tr>
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<td>Central Terracing #6</td>
<td>Qds</td>
<td></td>
<td></td>
<td>78.0</td>
</tr>
<tr>
<td>CT7</td>
<td>Central Terracing #7</td>
<td>Qds</td>
<td></td>
<td></td>
<td>91.0</td>
</tr>
<tr>
<td>CT8</td>
<td>Central Terracing #8</td>
<td>Qds</td>
<td></td>
<td></td>
<td>172.0</td>
</tr>
<tr>
<td>WD2</td>
<td>West Dredge Channel #2</td>
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<td>430</td>
<td>35500</td>
<td>350.4</td>
</tr>
<tr>
<td>WD3</td>
<td>West Dredge Channel #3</td>
<td>Qal</td>
<td>650</td>
<td>16500</td>
<td>246.2</td>
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<tr>
<td>WP1</td>
<td>West Plug #1</td>
<td>Qds</td>
<td>100</td>
<td>200</td>
<td>0.5</td>
</tr>
<tr>
<td>WO2</td>
<td>W. Shoreline Protection #2</td>
<td>Qdf</td>
<td>225</td>
<td>48200</td>
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<tr>
<td>WS4</td>
<td>West Diversion Structure #4</td>
<td>Qdf</td>
<td>200</td>
<td>1000</td>
<td>4.6</td>
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<tr>
<td>WW2</td>
<td>West Weir #2</td>
<td>Qds</td>
<td>100</td>
<td>1000</td>
<td>2.3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
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<td>3761.2</td>
</tr>
</tbody>
</table>

#### Table 14. Impacted geologic regions of combined project features

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Area (acres)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qal</td>
<td>Alluvium</td>
<td>605.44</td>
<td>16.17%</td>
</tr>
<tr>
<td>Qdf</td>
<td>Delta Plain - Fresh Water</td>
<td>1635.03</td>
<td>43.67%</td>
</tr>
<tr>
<td>Qds</td>
<td>Delta Plain - Saline Water</td>
<td>1269.48</td>
<td>33.91%</td>
</tr>
</tbody>
</table>
Operational Disturbances

While construction of individual project features has an immediate impact on their surrounding environment, as an integrated system they are designed to affect the regional environment at large. These “operational disturbances” are much more likely to affect the cultural resources within the project area as they impact a much larger area than the construction of individual features. Examples of such effects include increased erosion of riverbanks and shorelines due to changing water flow patterns and increased sedimentation or overburden. While the “burying” of archaeological resources is generally considered a benign, or even beneficial, effect, erosion shorelines or river banks is a major concern as it may result in the destruction of cultural resources. At this point in the projects feasibility study, it is not possible to model the effects of the operational disturbance to archaeological resources over the long term.

14.1 Known Sites Endangered by Project Features

Fourteen sites are located within 100 meters of a proposed project feature (Figure 10 and Table 15), as the latter are represented within the project GIS. Two of the sites are within 10 meters and three are in actual contact with a project feature. Two of the sites are described in their State Site Record files as being “eligible” for listing in the National Register of Historic Places (NRHP), five as “unknown” and seven as “not eligible.”
Figure 10. Sites within 100 meters of proposed project features
Table 15. Archaeological sites within 100 meters of proposed project features

<table>
<thead>
<tr>
<th>Site Number</th>
<th>Site Name</th>
<th>Description</th>
<th>Cultural Affiliation</th>
<th>Condition</th>
<th>NR Status</th>
<th>Recorder Recommendations</th>
<th>ARNTM Proposed Feature in Proximity</th>
</tr>
</thead>
<tbody>
<tr>
<td>16LF31</td>
<td>Bayou L'Eau Bleue</td>
<td>Shell midden. Sherd and shell found on edge of old bayou in plowed field</td>
<td>Mississippian (Bayou Petre Phase - CEJ)</td>
<td>&quot;Now a plowed field&quot;</td>
<td>Unknown</td>
<td>None</td>
<td>EP8 (Proposed canal plug)</td>
</tr>
<tr>
<td>16LF65</td>
<td>Bayou Junction</td>
<td>Shell Midden, Earth Midden</td>
<td>Barataria phase Plaquemine; Historic</td>
<td>Fellow site is preserved in place</td>
<td>Eligible</td>
<td>Preserve or mitigate</td>
<td>ES2 (Siphon Pump structure), EDS &amp; EDS (dredge channels)</td>
</tr>
<tr>
<td>16LF66</td>
<td>The Discovery Site, Loca P-1</td>
<td>12 features including historic post molds, pits, and four human urinals, two hearts</td>
<td>Barataria phase Plaquemine</td>
<td>Cattle Pasture, well preserved</td>
<td>Eligible</td>
<td>No further work</td>
<td>ES2 (Siphon Pump structure), EDS &amp; EDS (dredge channels)</td>
</tr>
<tr>
<td>16LF72</td>
<td>Site 6-02</td>
<td>Multi-componet site</td>
<td>Late Plaquemine and Historic (19th-20th century)</td>
<td>Hay field, and mobile home yard</td>
<td>Does not possess the qualities of significance</td>
<td>No additional testing is recommended</td>
<td>ES2 (Siphon Pump structure), EDS &amp; EDS (dredge channels)</td>
</tr>
<tr>
<td>16SMY48</td>
<td>Elephant Ear</td>
<td>Rangia lag deposit</td>
<td>Historic (unknown); Coles Creek</td>
<td>Completely eroded and redeposited</td>
<td>Not eligible</td>
<td>None</td>
<td>WO2 (Shoreline Protection)</td>
</tr>
<tr>
<td>16TR1086</td>
<td>Rhodes Cemetery</td>
<td>Two habitation mounds, one with historic graves</td>
<td>Late Coles Creek and Plaquemine; Historic</td>
<td>Severe marsh erosion and S. Mound has trail on it</td>
<td>Unknown</td>
<td>None</td>
<td>CT2 (Terracing)</td>
</tr>
<tr>
<td>16TR104</td>
<td>Chene Cut-Oil (Blue Camp)</td>
<td>Rangia shell deposit</td>
<td>Late Baytown; Early Coles Creek</td>
<td>Destroyed by excavation of cut-off and bank erosion</td>
<td>Unknown</td>
<td>None</td>
<td>WO2 (Shoreline Protection)</td>
</tr>
<tr>
<td>16TR134</td>
<td>Intra coastal Oil Company</td>
<td>New building, concrete slab, oil tanks just to E of lot; historic scatter</td>
<td>Historic - 20th c. American</td>
<td>Oil company office and warehouse, moderate erosion</td>
<td>Not eligible</td>
<td>None</td>
<td>CC1 (Culvert), CD4 &amp; CD5 (Dredge Channel)</td>
</tr>
<tr>
<td>16TR146</td>
<td>Peoples Oyster Packing</td>
<td>Historic scatter</td>
<td>Historic - early 20th century American</td>
<td>Piles of debris</td>
<td>Not eligible</td>
<td>None</td>
<td>CC1 &amp; CC2 (Culverts), CD4 (Dredge Channel)</td>
</tr>
<tr>
<td>16TR147</td>
<td>Earl Chauvin Site</td>
<td>Cement floor from large building, animal pen, garden; historic scatter</td>
<td>Historic - 20th century American</td>
<td>Unused garden, bridge construction</td>
<td>Not eligible</td>
<td>None</td>
<td>CD4 (Dredge Channel)</td>
</tr>
<tr>
<td>16TR2</td>
<td>Sanders</td>
<td>Site was bench deposit - shell midden; 1978 - A mouth did not relocate</td>
<td>Delta Natchezan phase of the Mississippian period</td>
<td>Destroyed</td>
<td>Unknown</td>
<td>None</td>
<td>CC4 (Culvert), CD3 (Dredge Channel)</td>
</tr>
<tr>
<td>16TR261</td>
<td>Triton Well</td>
<td>Redesposited range and oyster shell</td>
<td>Prehistoric unknown; 19th century</td>
<td>Erosion and redeposition</td>
<td>Not eligible</td>
<td>Continued surface collection</td>
<td>CT2 (Terracing)</td>
</tr>
<tr>
<td>16TR84</td>
<td>Bayou Black - GWW</td>
<td>Shell middens - 2' from surface and extends about 30', midden is 4 - 6' thick, Rangia</td>
<td>Transitional Coles Creek and late Mississippian, late 19th early 20th century</td>
<td>Destroyed</td>
<td>Not eligible</td>
<td>None</td>
<td>WD3 (Dredge Channel)</td>
</tr>
<tr>
<td>16TR89</td>
<td>East Provost</td>
<td>Series of 3' x 8' high remnants of eroded levee or spoil - shell midden</td>
<td>Mid to late Marksville, possibly into Baytown</td>
<td>Erosion</td>
<td>Unknown</td>
<td>None</td>
<td>CD1 (Dredge Channel)</td>
</tr>
</tbody>
</table>

Within 10m

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F-29

Volume III - Convey Atchafalaya River Water to Northern Terrebonne Marshes and Multipurpose Operation of the Houma Navigation Lock, Appendix F, Cultural Resources
15.1 Testing Strategies

Testing strategies generally follow the procedures outlined in the Field and Report Standards of the Louisiana Division of Archaeology. Relevant sections include “Reconnaissance Surveys,” “Phase I Surveys,” “Phase II Archaeological Testing” and “Archaeological Monitoring.” Deviations from these standards (in methodology, transect widths etc.) are made to reflect specific project needs and goals. Areas to be tested at this juncture are limited to those that are directly and immediately impacted by the construction of project features. Areas potentially disturbed by the project’s longer term operational effects are not considered here.

Known resources impacted

A full archival investigation will be completed for each of the known archaeological sites determined to be potentially impacted by the construction of project features. These should include initial and updated site record forms as well as all archaeological reports pertaining to the sites. In order to verify the location and current condition of these sites, a reconnaissance will be undertaken and a fully documented site assessment produced.

Higher probability areas

Areas of raised land (e.g., natural levees) are considered “higher probability areas.” In such cases traditional shovel test transects will be undertaken in accordance with the Phase I Standards of the Louisiana Division of Archaeology. These include a mandated 30 meter distance between transects and a 30 meter spacing between STPs on those transects and/or monitoring during feature construction. Other guidelines can be found on the Division’s website (http://www.crt.state.la.us/archaeology/). In the case that potential sites are discovered, they will be delineated following the given standards.

Lower probability areas

Lower probability areas are limited to inundated or marsh environments within the project area. Traditionally, boat or airboats have been used to survey these areas with examinations being limited to exposed ground (such as remnant natural levees). Limitations to such surveys, however, include excessive ingress and egress times for each area of interest (AOI) and partial or limited visibility for areas not directly adjacent to open water locations.

In order to maximize efficiency, lower probability areas will be surveyed by helicopter. This technique allows the rapid investigation of a large amount of territory within a short time period. Moreover, it enables examination of areas not easily accessible by water or land. Sites characterized by Rangia shell and ceramic scatters have proven to be generally visible. If potential sites are identified within the “lower probability areas,” testing strategies outlined for “higher probability areas” will be followed.
16.1 **Summary**

- Two hundred and ninety (290) known archaeological sites are located in the project area as currently delineated.
- Many of these archaeological sites were recorded more than 20 years ago.
- There is a relative paucity of previously identified archaeological sites that have yielded datable materials.
- Many sites that have reliable cultural associations were repeatedly occupied, so for instance a site may have a Marksville (AD 1-400) occupation followed by Baytown (AD 400-700) or Coles Creek (AD 700-1200), a Mississippian occupation (AD 1200-1700), an early settler’s farm and then a modern plantation – because these were significant places in human memory, and also they were strategically located on high ground and next to distributary channels.
- Very few of the sites extend all the way back to the Poverty Point period (1000 BC to AD 1) and only a handful to the Marksville.
- Any site likely to be adversely impacted in the course of this project should be carefully considered for the contribution it may make to an understanding of the prehistory of this area.
- Sixty-five (61) project features have been considered for adverse effect and budgetary purposes.
- Fourteen (14) known archaeological sites are located within 100 meters of a potential project feature.
- Thirteen residential structures and one recreational structure will require evaluation depending on the alternate chosen, as they will need to be relocated.
- The National Register of Historic Places (NRHP) lists eight (8) locations within the project boundary.
- One (1) location listed on the NRHP (the Wesley House) is situated within 100 meters of a potential project feature.
- A small family cemetery of probably under ten (10) interments associated with the Wesley House (the Gagne cemetery) is within the APE of a project feature.
- Operational effects (secondary impacts) of project features on the archaeological landscape have not been modeled for this feasibility study as there is insufficient information available to do so at this time.
- A Programmatic Agreement (PA) to guide consideration of historic properties relative to implementation of the LCA Program for ecosystem restoration (including this undertaking) is being developed.
- This PA will assist the Corps in meeting its responsibilities under Section 106 of the National Historic Preservation Act for the LCA Program (including this undertaking).
17.1 References Cited

Fenneman, N. M., and Johnson, D. W.
1946 Physical Divisions of the United States. 1:7,000,000-scale map. USGS, Washington, D.C.

Fisk, H. N.

Frazier, D. E.

Kob, C. R. and J. R. Van Lopik

Levine, N.

Russ, D. P.

Smith, L. M., J. B. Dunbar, and L. D. Britsch

Weinstein, R. A. and S. M. Gagliano

Weinstein, R. A. and D. B. Kelley
18.1 Addendum: Gagne Private Cemetery

19.1 Background

The Real Estate division, in the course of their normal investigations, identified a “historic cemetery” within the AOE of potential feature CD-4. CD-4 is a dredge feature running alongside the Gulf Intracoastal Waterway (GIWW) and is situated wholly within the boundary of Houma in Terrebonne Parish. The lot in which the cemetery is reportedly located (parcel ID: A03C-42226) is immediately southeast of the intersection of the Terrebonne Bayou and Intracoastal Waterway in Ward 03C (Figure 1). The lot immediately to the north has the address of 8308 Main Street.

Research failed to find any notation of the cemetery on historic Sanborn Maps (1924, 1939 and 1940), or historic USGS quad maps (1944, 1963, and 1974). Internet research found a reference to a “Zeringue Gagne” private cemetery located southeast of the intersection of the Terrebonne Bayou and Intracoastal Waterway (e.g., http://www.lacemeteries.com/Maps/Terrebonne/TB11MapVE.htm). One source (cited above) lists the cemetery with a “CSA” attribution indicating that at least one Confederate States Army veteran is interred at the location. As the cemetery is not in the SHPO or NR databases, it appears it has never been evaluated for NRHP status.

The Louisiana Cemetery Board (LCB) maintains a database of cemeteries that are licensed and/or registered, but does not include abandoned ones. A “Gagne” cemetery is not listed in this database and none of the other entries appears to match the location. It is assumed that it is an abandoned family graveyard.
On Nov. 9th 2009, Project Manager John Peukert conducted a site visit to the location of the cemetery. He reported that no grave markers were visible at that time. Subsequent research, however, has determined the nature of the cemetery and the identities of the individuals interred.

20.1 History of Cemetery Location

The history of the property prior to the purchase of Louisiana by the United States is largely unknown. As Spanish records were unavailable and/or incomplete, however, in the early 1800s the American State Papers were assembled. Settlers had to prove that they had occupied and cultivated land to which they claimed. Those whose claims were accepted gained patents to the land. Pierre Minoux was able to prove that he had permission by a Spanish officer prior to December 20th, 1803 to settle 640 acres on both sides of Bayou Derbonne (later Bayou Terrebonne) and that he had cultivated that land (United States Congress 1834: 247). The land included the area now occupied by the Gagne cemetery (Figure 2). In the 1830s Pierre’s widow, Marie Rose, divided the land and sold it off in pieces.

At some point, a four room, cypress, raised Greek Revival cottage was built in the immediate area of the cemetery. Based upon its architectural style it has been dated to the 1830s and therefore is probably related to the breakup of Minoux patent. The building was expanded in the 1880s and again in the 1930s. It is one of the few remaining examples of a Greek Revival plantation house in the parish and is distinguished by its French hall-less plan. In 1982, it was placed on the National Register of Historic Places. It is uncertain when the Gagne family acquired the house and

Figure 2. Original land patents in Terrebonne Parish from 1830 survey
associated property, but the first record of their presence in Terrebonne Parish is 1848 and the first known burial in the cemetery dates to 1859. In his obituary, Joseph Gagne is described as dying at his residence “near Houma” suggesting that it was his purchase (Louisiana Sugar Planters’ Association 1890: 137-138).

The majority of the property stayed in the Gagne family until it was sold to Adam Boquet after the death of Sarah Dunn Gagne circa 1917. Boquet quickly resold the property, however, claiming that the building was haunted by the ghost of the latter (Hebert 1994). The Gagne house along with 18 acres was acquired in 1919 by Ella K. Hooper and Laura White, deaconesses of the Methodist Episcopal Church South, for use as a school for girls to address the need for their education in the Houma area. The building became known as the Wesley House, a common name for homes sponsored by the Methodist Church that took in young girls to “raise them in a Christian manner.” Soon more structures were built and the campus was named the MacDonell French Mission School. Around 1952, MacDonell became a home serving children, who for various reasons, needed to live away from their homes. It has since evolved into a therapeutic residential facility for school-aged children owned by the MacDonell United Methodist Children's Services, Inc.

Before the property was sold to the Methodist Church in 1919, a lot (approx. 315 x 80 feet) containing the Gagne family cemetery and frontage on Main Street was extracted and remained in possession of the Gagne family. In a plat attached to the Westly House NRHP recommendation (1982) it is labeled “Harris Gagne or assigns” (Figure 3). Harris Gagne died in 1939 and it is unknown to whom the lot passed at that juncture.
Figure 3. Sketch map from Wesley House NRHP nomination

This lot appears on the 1924 and 1940 Sanborn maps of the area (Figure 4 and Figure 5). These show the Gulf Intracoastal Waterway excavated to the west of the property. In 1933, the region around the cemetery was annexed to Houma (Figure 6) and at some point after 1940, the lot was divided in half to obtain the current configuration.
Figure 4. 1924 Sanborn map of area near cemetery with modern shoreline indicated

Figure 5. 1940 Sanborn map of area near cemetery with modern shoreline indicated
Published research lists eight headstone inscriptions in the graveyard (Terrebonne Genealogical Society 1989: 203). These include four adults and four young children, two of whom probably died during childbirth.

1) A Kind, Indulgent, Father
   Joseph A. Gagne
   Died
   Feb. 16, 1890
   Aged
   65 Years 4 Months 13 Days

2) Our Dear Beloved Mother
   Sarah A. Gagne
   Died
   July 18, 1803 [1903]
   Aged
   77 Years 6 Months 19 Days

3) Julia Danks Gagne
   Died September 10, 1862
   Age 2 Years and 1 Month
   A Lovely Child

4) Son No Name
   Died April 18, 1859
   Aged 1 Hour

5) Daughter No Name
   Died August 2, 1868
   Aged 1 Hour

6) James Bateman Gray
   Died Nov 8, 1899
   Aged 2 Months and 19 Days

7) Mother
   Sophy Gagne Gray
   Born Jan. 16, 1870
   Died Nov. 25, 1912

8) Father
   David Fuqua Gray
   Born Sept. 6 1859
   Died May 27, 1943
21.1 Brief history of the Gagne Brothers

The 1850 federal census for Terrebonne Parish lists a “Frank Gagne” as a 29 year old merchant and a “Joseph A. Gagne” as a 24 year old clerk, both born in Canada. We know from later documents that the two were brothers and it seems likely that Joseph assisted Frank in his business as Frank’s real estate value was recorded to be $600, while no value is assigned for Joseph (United States Census Bureau 1850: Sheet 315B). It is probable that the brothers immigrated to Louisiana sometime in the mid 1840s as in his 1890 obituary, Joseph is described as being a pillar of the community for “over forty years” (Louisiana Sugar Planters' Association 1890: 137-138). Joseph had four children with the first being born in 1848 (Hebert 1974: 255). By 1850, it appears that the brothers were solidly placed among the minor gentry in Houma.

As fitting for a member of the gentry, when the Civil War ensued Joseph Gagne was commissioned into the Confederate Army as an officer. His record is summarized in Booth’s work as:


Another Gagne is also listed as serving in the same battalion only this time as an enlisted man. It is likely that he was a son or nephew of Joseph.


Within the 1st Special Battalion, Joseph was associated with Company E: the Grivot Guards (Bartlett 1874: 253). In December 1861 he was nominated to be a Captain in the Quartermaster Department (United States Senate 1904: 626). It appears he also took on local responsibilities. In lieu of U.S. currency, paper money was issued by the “Houma Consolidated Association” briefly during the early part of the Civil War. These notes bore the signatures of A. J. Delaporte and Joseph Gagne, listed as the president and treasurer of the parish police jury respectively (Ellzey 2009).

In May of 1862, a Union column conducted a punitive mission in Houma in retaliation for a partisan ambush on a small group of wounded Union soldiers passing through the area. After the column entered the town its commander, Lt. Colonel John Keith, issued a proclamation stating that unless the perpetrators were identified, Houma would be burned to the ground. A list of names was quickly produced by local citizens. While everyone on the list was absent, having fled, all of their houses and other property were destroyed. After fining the town for the expedition’s expenses and making townsfolk rebury the two Federal soldiers killed in the initial ambush, the column left. With them, they took a
number of notable locals including a “Captain Gayne” (United States War Department 1886: 450-456). In an associated document accompanying Keith’s report, a “F. Gayne” is also listed as a prominent local in the town. It is likely that this individual is Frank Gagne. “Captain Gayne” was likely Joseph Gagne. It is unknown when he was released by Federal authorities, as are the activities of either brother during the remainder of the war.

Records suggest that by at least the 1870s the Gagnes had financially prospered in Houma. An indication of this relative affluence is seen in an 1879 appeals case involving Joseph that was brought to the Louisiana Supreme Court (Robert 1880). As former “administrator of the succession, and tutor of the minor children of Frank Gagne,” Joseph had sold property “belonging to the succession.” At the probate sale, his wife purchased “a block of brick stores in the town of Houma, at the appraised value, $3000.” After fulfilling his responsibilities as administrator, he also resigned as tutor. The minors’ subsequent “Tutrix” brought a case against Joseph and his wife the results of which were appealed to the State Supreme Court.

22.1 Summary and Conclusion

The Gagne cemetery is a private family graveyard associated with the “Wesley House,” a Greek Revival style plantation house probably built in the 1830s and listed on the National Register of Historic Places (08/11/1982). The first Gagne associated with the property is Joseph A. Gagne, a veteran of the Confederate States Army. Joseph immigrated to Terrebonne Parish in the 1840s and died in 1890. The property stayed in the Gagne family until 1917 when the bulk of it was bought by the Methodist Church to become the site of the MacDonell School for girls, which still exists as the MacDonell United Methodist Children's Services. Apparently, at the time of the sale to the church, a small lot including the location of the cemetery was deducted from the larger property. This lot continued to be owned by a Gagne until it was sold out of the family at some unknown time.

The first identified burial at the cemetery dates to 1859 and the last to 1944. There are only eight known interments at the location, although it is possible there are additional unmarked graves, or some for which the headstone has been buried or otherwise obscured. At the most, only three generations of the Gagne family occupied the plantation, so it is probable that even given the latter case, the number of burials is relatively small, almost certainly less than twenty. Being a small family cemetery, it seems likely to be contained wholly within the approx. 80 by 155 foot lot. Indeed, it is possible the lots dimensions were designed to this effect. It is therefore unlikely that the cemetery was affected by the construction of the Gulf Intracoastal Waterway. As no grave markers were located during the November site visit, it is possible that they were removed sometime after their 1989 documentation. Given that situation, however, it is still unknown if the graves themselves would have been relocated. Alternately, the grave markers many simply have been obscured or buried at the time of the visit.
In accordance with the terms of the PA, a subsequent Phase I investigation will make a recommendation on the NRHP eligibility of this property, either on its own or as part of the Wesley House, which is a NR site.
23.1 **References Cited**

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United States Senate  

United States War Department
Programmatic Agreement

Followed by Notification of Interested Parties to the Programmatic Agreement
Programmatic Agreement
among
the United States Army Corps of Engineers,
the Coastal Protection and Restoration Authority of Louisiana,
the Louisiana State Historic Preservation Officer,
and
the Advisory Council on Historic Preservation,
Regarding the
Louisiana Coastal Area Ecosystem Restoration Plan (LCA Plan)

WHEREAS, the United States Army Corps of Engineers (USACE), in cooperation with the Coastal Protection and Restoration Authority of Louisiana (CPRA), has been working to reverse the current trend of coastal degradation; and

WHEREAS, the Louisiana Coastal Area Plan (LCA Plan) is the recommended plan resulting from the Louisiana Coastal Area Ecosystem Restoration Study, completed in November 2004 and recommended to the Congress by a Chief of Engineers report dated January 31, 2005; and

WHEREAS, Section 7006 of the Water Resources Development Act (WRDA) of 2007 (Public Law 110-114) includes conditional authorization for the LCA Plan; and

WHEREAS, the LCA Plan calls for a coordinated, feasible solution to the identified critical water resource problems and opportunities in coastal Louisiana and includes fifteen (15) near-term critical restoration features (Undertakings); and

WHEREAS, the USACE has determined that the restoration features are undertakings as defined in the regulations of the Advisory Council on Historic Preservation (ACHP) implementing Section 106 of the National Historic Preservation Act (36 CFR § 800) that may affect properties included in or eligible for inclusion in the National Register of Historic Places (NRHP); and

WHEREAS, the USACE has consulted with the ACHP and the Louisiana State Historic Preservation Officer (SHPO) to develop this Programmatic Agreement (Agreement) pursuant to 36 CFR § 800.14(b)(1) of the ACHP’s regulations implementing Section 106; and

WHEREAS, Section 7006(e)(3) of WRDA 2007 requires submittal of additional feasibility reports on the following six (6) of the fifteen (15) near-term critical restoration features identified in the 2004 LCA Study: (1) Multipurpose Operation of Houma Navigation Canal Lock, (2) Terrebonne Basin Barrier Shoreline Restoration, (3) Small Diversion at Convent/Blind River, (4) Amite River Diversion Canal Modification, (5) Medium Diversion at White’s Ditch, and (6) Convey Atchafalaya River Water to Northern Terrebonne Marshes; and authorizes construction of those six features substantially in accordance with the recommendations presented in a final report of the
Chief of Engineers if a favorable report of the Chief is completed by not later than December 31, 2010; and

WHEREAS, Section 7006(e)(1) of WRDA 2007 requires submittal of feasibility reports on the following four (4) of the fifteen (15) near-term critical restoration features identified in the 2004 LCA Study: (1) Land Bridge between Caillou Lake and the Gulf of Mexico, (2) Gulf Shoreline at Point au Fer Island, (3) Modification of Caernarvon Diversion, and (4) Modification of Davis Pond Diversion; and authorizes construction of those four features if the Secretary of the Army determines that the projects are feasible; and

WHEREAS, Section 7006(c) of WRDA 2007 requires submittal of construction reports on the following five (5) of the fifteen (15) near-term critical restoration features identified in the 2004 LCA Study: (1) Mississippi River-Gulf Outlet Environmental Restoration, (2) Small Diversion at Hope Canal, (3) Barataria Basin Barrier Shoreline Restoration, (4) Small Bayou Lafourche Reintroduction, and (5) Medium Diversion at Myrtle Grove; and authorizes construction of those five features substantially in accordance with the report of the Chief of Engineers dated January 31, 2005; and

WHEREAS, the USACE has elected to fulfill its obligations under Section 106 of the National Historic Preservation Act of 1966, as amended, through the execution and implementation of this Agreement as provided in 36 CFR § 800; and

WHEREAS, the Undertakings, including stipulations of the Agreement, are subject to provisions of the Antideficiency Act (31 U.S.C. § 1341), the unavailability of funds shall not relieve the USACE from its obligation to perform those Section 106 responsibilities set forth in the Agreement; and

WHEREAS, the USACE, ACHP, SHPO, and Indian tribes as defined in 36 CFR § 800.16(m), representatives of local governments, and other appropriate parties have consulted to develop this Agreement to define efficient and cost effective processes and protocols for taking into consideration the effects of the Undertakings upon historic properties pursuant to 36 CFR § 800.14(b)(1); and

WHEREAS, the USACE acknowledges Indian tribes as sovereign nations which have a unique government-to-government relationship with the federal government and its agencies; the USACE further acknowledges its Trust Responsibility to those recognized Indian tribes; and

WHEREAS, the USACE has notified affected Indian tribes and shall fulfill its tribal consultation responsibilities through ongoing consultation with Indian tribes that attach religious and cultural significance to historic properties that may be affected by the Undertakings; and

WHEREAS, the USACE has decided that it will invite any interested Indian tribe to sign this Agreement as a concurring party; and
WHEREAS, the CPRA has been invited to be a signatory to this Agreement; and

WHEREAS, the USACE, in coordination with the SHPO, has taken appropriate measures to identify other consulting parties and to invite such parties to participate in the development and execution of this Agreement; and

WHEREAS, the USACE has requested the participation of local governments and the public by mail during the development of this Agreement and will take appropriate steps to involve and notify those parties, as appropriate, during the implementation of the terms of this Agreement; and

NOW, THEREFORE, the USACE, ACHP, and SHPO agree that the implementation of the following stipulations will evidence that the USACE has taken into account the effects of the Undertakings upon historic properties.

STIPULATIONS

The USACE shall adhere to the process and protocols set forth in this Agreement and shall ensure the following stipulations are carried out.

I. Tribal Consultation

   A. The USACE shall conduct government-to-government consultation with Indian tribes that attach religious and cultural significance to historic properties that may be affected by the Undertakings.

   B. The USACE will develop protocols with Indian tribes with cultural, religious, and/or ancestral ties to the Gulf Coast region to facilitate tribal consultation regarding the potential effect of the Undertakings on properties with tribal cultural or religious significance. The USACE shall provide Indian tribes with copies of all plans, determinations, and findings provided to the SHPO to assist the Indian tribes in identifying activities that may be of interest.

   C. Pursuant to this Agreement, the USACE will develop consultation protocols with each Indian tribe, as requested, within ninety (90) days of the execution of this Agreement unless that timeframe is modified by written agreement.

   D. The USACE has invited the Alabama Coushatta Tribe of Texas, the Caddo Nation of Oklahoma, the Chitimacha Tribe of Louisiana, the Choctaw Nation of Oklahoma, the Coushatta Tribe of Louisiana, the Jena Band of Choctaw Indians, the Mississippi Band of Choctaw Indians, the Quapaw Tribe of Oklahoma, the Seminole Nation of Oklahoma, the Seminole Tribe of Florida, and the Tunica-Biloxi Tribe.
of Louisiana to consult in the development of the Agreement. The Alabama-Coushatta Tribe of Texas and the Mississippi Band of Choctaw Indians have participated in the development of the Agreement and will each sign the Agreement as a concurring party. The USACE will provide all invited Indian tribes with a copy of the Programmatic Agreement and will invite them to sign the Agreement as concurring parties.

II. Public Involvement

A. The USACE, in coordination with the SHPO, shall identify and provide members of the public likely to be interested in the effects of the Undertakings upon historic properties with a description of the restoration features and the provisions of the Agreement.

B. The USACE will involve the public through the National Environmental Policy Act (NEPA) process, which affords all persons, organizations and government agencies the right to review and comment on proposed major federal actions that are evaluated by a NEPA document. This is known as the “scoping process.” The scoping process is the initial step in the preparation of a NEPA document and will help identify (1) the range of actions (project, procedural changes), (2) alternatives (both those to be rigorously explored and evaluated and those that may be eliminated), and (3) the range of environmental resources considered in the evaluation of environmental impacts.

C. The USACE will release a draft of the NEPA document for each of the Undertakings to the public for a review period. A public meeting soliciting comments on the proposed action presented in each draft NEPA document will be held during the public comment period. Comments from this review period will be incorporated into each final NEPA document.

D. To the extent permitted under applicable federal laws and regulations, the USACE will release to the public documents developed pursuant to this Agreement, including protocols, effects determinations, and Interim Progress Reports.

III. Other Consulting Parties

A. The USACE, in coordination with the SHPO, will continue efforts during the duration of this Agreement to identify other parties with demonstrated interests in preservation issues and invite them to participate as consulting parties.
B. The USACE will document the consulting parties in the consultation process for each of the Undertakings and maintain it as part of the administrative record.

C. If any dispute arises about the right to be recognized as a consulting party, the USACE will contact the ACHP and provide all appropriate documentation. The ACHP will participate in the resolution of the issue.

IV. Identification, Evaluation, and Assessment of Effects Determinations

A. In coordination with the SHPO and Indian tribes, the USACE will develop protocols for the identification and evaluation of historic properties covered under the terms of this Agreement. Such protocols also will address applicable professional standards, documentation requirements for SHPO submissions, review procedures, and the involvement of consulting parties. Identification and evaluation protocols will be developed within ninety (90) days of the execution of this Agreement unless that timeframe is modified by written agreement.

B. The USACE, in consultation with the SHPO and Indian tribes, will define and document the area of potential effects (APE) for each of the Undertakings based on the nature of the proposed construction, existing information on the presence or absence of historic properties, the types of historic properties expected to be encountered, the physical characteristics of the APE, and the religious and cultural significance of the APE to Indian tribes. The APE associated with each restoration feature will anticipate the potential for direct, indirect, and cumulative effects upon historic properties. Identification and evaluation efforts will be limited to the APE once that APE is approved by the SHPO and Indian tribes who have signed this Agreement.

C. In the event of disagreement between the USACE, SHPO, and/or Indian tribes on the eligibility of a property for listing in the National Register of Historic Places under 36 CFR § 60, the USACE shall request a formal determination of eligibility for that property from the Keeper of the National Register of Historic Places (Keeper). The determination by the Keeper will serve as the final decision regarding the National Register eligibility of the property.

D. All standard response timeframes established under 36 CFR § 800 will apply during the interim period between the execution of this Agreement and the adoption of identification and evaluation protocols, unless otherwise agreed by the SHPO and Indian tribes. The USACE may request expedited review by the SHPO and Indian tribes on a case by case basis during the interim period.
V. Coordination of Effects Determinations

A. The USACE shall evaluate effects of each of the Undertakings on historic properties in a holistic manner. In the event the USACE determines that any aspect of an Undertaking will have an effect or adverse effect on a historic property within the restoration feature’s APE, the entire restoration feature will be reviewed accordingly.

B. In the absence of alternative response timeframes identified in approved protocols developed pursuant to this Agreement, consultation under this Agreement will be concluded for USACE findings of no historic properties affected when the SHPO and Indian tribes have reviewed the written documentation and concur with the USACE finding or do not object within thirty (30) days of receipt of an adequately documented finding.

C. Following submission of written documentation to the SHPO and Indian tribes, the USACE may propose a finding of no adverse effect with conditions, as appropriate. Such conditions may include, but are not limited to:

1. Avoidance and/or preservation in-place of historic properties;

2. Unavoidable visual effects to historic properties in cases where reasonable and practicable efforts to screen views are considered and implemented; and

3. Modifications or conditions to ensure consistency with the Secretary of Interior’s Standards for the Treatment of Historic Properties and applicable guidelines.

D. In the absence of alternative response timeframes identified in approved protocols developed pursuant to this Agreement, consultation under this Agreement will be concluded for USACE findings of no adverse effect or no adverse effect with conditions when the SHPO and Indian tribes have reviewed the written documentation and concur with the USACE finding or do not object within thirty (30) days of receipt of an adequately documented finding. The public shall also be afforded an opportunity to comment.

E. Should the SHPO and/or Indian tribes object to USACE’s findings of no historic properties affected, findings of no adverse effect with conditions, findings of no adverse effect, or should the USACE determine that it cannot accept conditions requested by the SHPO and/or Indian tribes, the USACE shall seek to resolve such objection through consultation in accordance with Stipulation IX of this Agreement.
VI. Resolution of Adverse Effects

A. In the event that the USACE, in consultation with the SHPO and Indian tribes, determines that the implementation of an Undertaking may result in an adverse effect upon historic properties as defined in 36 CFR § 800.5(a)(1) and (2) of the ACHP’s regulations, the USACE shall notify the ACHP, SHPO, Indian tribes, other consulting parties, and the public. If the project activity will affect a National Historic Landmark, the USACE shall also notify the National Park Service (NPS). The adverse effect notification shall include the documentation specified in 36 CFR § 800.11(e), subject to the confidentiality provisions of 36 CFR § 800.11(c).

B. In the absence of alternative response timeframes identified in approved protocols developed pursuant to this Agreement, the ACHP, SHPO, Indian tribes, consulting parties, including NPS, as appropriate, and the public shall be afforded an opportunity to review and comment on the adverse effect notification for a period of thirty (30) days after receipt of the adverse effect notification.

C. The USACE, in consultation with the SHPO, Indian tribes, other consulting parties, and the ACHP if they notify the parties of their participation pursuant to 36 CFR 800.6(a)(1)(iii), will develop treatment plans for the resolution of adverse effects to historic properties within sixty (60) days of the receipt of the adverse effect notification. Such treatment plans will address measures to avoid, minimize, or mitigate adverse effects on historic properties. Standard mitigation measures will be tailored to the significance of the historic property, and may address the following:

1. Public Interpretation;

2. Documentation consistent with the Level II Standards of the Historic American Building Survey/ Historic American Engineering Record (HABS/HAER);

3. Historical, Architectural or Archaeological Monographs;

4. Rehabilitation of historic buildings in accordance with the Secretary of the Interior’s Standards for the Treatment of Historic Properties (36 CFR § 68);

5. Off-site mitigation, including acquisition of property or preservation easements on property, as appropriate, containing threatened resources of comparable significance in
circumstances where there is an imminent need to proceed with construction activity and it is in the public interest;

6. Ethnographic studies;

7. Studies of traditional cultural properties;

8. Relocation of historic properties to sites approved by the SHPO as possessing similar overall character; and

9. Data recovery for archeological properties.

D. Once the consulting parties agree to a treatment plan for the resolution of adverse effects on historic properties, the parties will execute a memorandum of agreement.

E. Should the USACE, SHPO, and/or Indian tribes disagree on the proposed mitigation measures, the USACE shall seek to resolve such objection through consultation in accordance with Stipulation IX of this Agreement.

F. As specified in Section 7(a) of Public Law 86-523, as amended by Public Law 93-291 (16 U.S.C. 469c(a)), the USACE may not incur costs for data recovery activities that exceed one percent of the total amount authorized to be appropriated for the critical restoration feature, unless and until the Assistant Secretary of the Army (Civil Works) has waived that limit and the Secretary of the Interior has concurred in the waiver in accordance with Section 208(3) of Public Law 96-515, as amended (16 U.S.C. 469c-2(3)).

VII. Unanticipated Discoveries and Effects

A. In the event that the USACE discovers a previously unidentified historic property, including archeological sites, human remains, and properties of traditional religious and cultural significance to Indian tribes, during the execution of any of the Undertakings, the USACE immediately shall secure the jobsite and suspend work in the vicinity of the affected resource. The USACE shall immediately notify the SHPO, Indian tribes consistent with tribal protocols, and other consulting parties, as appropriate, should the proposed work adversely affect a previously unidentified historic property or will adversely affect a known historic property in an unanticipated manner. In accordance with Stipulation VI of this Agreement, the USACE, in coordination with the ACHP, SHPO, Indian tribes, and other consulting parties, as appropriate, will develop standard mitigation measures. The USACE will implement the standard
mitigation measures once approved by the ACHP, SHPO, Indian tribes, and consulting parties, as appropriate.

B. In the event that the USACE discovers a previously unidentified burial, including burial sites, human skeletal remains, or burial artifacts, on private or state land during the execution of any of the Undertakings, the USACE will follow procedures established in the Louisiana Unmarked Human Burial Sites Preservation Act (R.S. 8:671-681).

C. In the event that the USACE discovers a previously unidentified burial, including burial sites, human remains or funerary objects, on federal or tribal land during the execution of any of the Undertakings, the USACE will follow procedures established by the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 and the regulations that allow for its implementation (43 CFR § 10) and the Archaeological Resources Protection Act of 1979 (Public Law 96-95; 16 U.S.C. 470aa-mm), as amended, and implementing regulations (32 CFR § 229).

D. The USACE shall insure that all contractors are made aware of the requirements of this Agreement by way of its inclusion with solicitation and award documentation. In the event that a contractor discovers a previously unidentified historic property, the contractor shall immediately notify the USACE, refrain from further project activities within the immediate vicinity of the discovery, and take reasonable efforts to avoid and minimize harm to the historic property. The USACE shall implement additional measures to secure the historic property for safety and security concerns, as appropriate.

E. In the event that previously unidentified direct adverse effects to historic properties are identified following the completion of work within an activity area, any party may provide the USACE with evidence of such effects for a period of twelve (12) months from the completion of the affecting work. The USACE, in consultation with the SHPO, Indian tribes, and ACHP, as appropriate, will review the effect in accordance with the provisions of this Agreement.

F. In the event that previously unidentified direct adverse effects to structural historic properties are identified following the completion of work within an activity area, owners of such affected properties may provide the USACE with evidence of such effects for a period of twelve (12) months from the completion of the affecting work. The USACE, in consultation with the SHPO, Indian tribes, as appropriate, and the ACHP, as appropriate, will review the effect in accordance with the provisions of this Agreement.
G. If the USACE, SHPO, Indian tribes, consulting parties, or member of the public, as appropriate, cannot agree on an appropriate course of action to address the discovery situation, the USACE shall initiate the dispute resolution process set forth in Stipulation IX of this Agreement.

H. If, during performance of any relocations, construction of any improvements required on lands, easements, and rights-of-way to enable the disposal of dredged or excavated material, or performance of any operation, maintenance, repair, rehabilitation and replacement (OMRR&R) activities required for a critical restoration feature, the CPRA discovers a previously unidentified historic property, including archeological sites, human remains, and properties of traditional religious and cultural significance to Indian tribes, the CPRA shall immediately notify the USACE, refrain from further project activities within the immediate vicinity of the discovery, and take reasonable efforts to avoid and minimize harm to the historic property. The CPRA, in coordination with the USACE, shall follow the procedures discussed in paragraphs A. through C. of this Stipulation, as applicable. The CPRA shall not proceed with performance of any relocation or construction of any improvement that is related to such a discovery until the USACE provides written notice to the CPRA that it should proceed with such work.

I. The CPRA shall insure that its contractors are made aware of the requirements of this Agreement by way of its inclusion with solicitation and award documentation for activities related to performance of relocations, construction of improvements, or OMRR&R activities required for a critical restoration feature. In the event that a contractor discovers a previously unidentified historic property, the contractor shall immediately notify the CPRA, refrain from further project activities within the immediate vicinity of the discovery, and take reasonable efforts to avoid and minimize harm to the historic property. The CPRA shall implement additional measures to secure the historic property for safety and security concerns, as appropriate.

VIII. Treatment of Human Remains

A. Pursuant to this Agreement, the USACE, in consultation with the SHPO and Indian tribes will develop protocols within ninety (90) days of the execution of this Agreement that take into account all applicable laws and regulations for the treatment of human remains that may be encountered during any ground disturbing activities related to the Undertakings.
B. For human remains that are determined to be Native American, the USACE will develop a subset of the treatment protocols in consultation with the SHPO and Indian tribes.

C. The USACE or the CPRA, as applicable, will implement the approved treatment protocols, in consultation with the SHPO and Indian tribes, in the event human remains are encountered during any ground disturbing activities related to the Undertakings.

IX. Dispute Resolution

A. Except for the resolution of eligibility issues, as set forth in Stipulation IV.C. of this Agreement, should the SHPO, Indian tribes, or member of the public disagree on the implementation of the provisions of this Agreement, they will notify the USACE, who will seek to resolve such objection through consultation.

B. If the dispute cannot be resolved through consultation, the USACE shall forward all documentation relevant to the dispute to the ACHP, including any proposed resolution identified during consultation. Within seven days after receipt of all pertinent documentation, the ACHP may:

1. Provide the USACE with recommendations to take into account in reaching final decision regarding the dispute; or

2. Notify the USACE that it will comment pursuant to 36 CFR § 800.7(c) and provide formal comments within twenty-one (21) days.

C. Any recommendation or comment provided by the ACHP will be understood to pertain only to the subject of the dispute, and the USACE’s responsibilities to fulfill all actions that are not subject of the dispute will remain unchanged.

D. If the ACHP does not provide the USACE with recommendations or notification of its intent to provide formal comments within seven (7) days, the USACE may assume that the ACHP does not object to its recommended approach and it will proceed accordingly.

X. Administration and Duration of this Agreement

A. This Agreement will become effective upon the date of execution by the final signatory. The refusal of any party invited to concur in the Agreement will not invalidate the Agreement.
B. This Agreement will remain in effect for fifteen (15) years from the date of execution, unless extended for a five-year period by written agreement negotiated by all signatories by July 2025.

C. The USACE shall provide all signatories with annual Interim Progress Reports, which will be submitted every twelve (12) months from the execution date of this Agreement.

D. The consulting parties to this Agreement shall meet annually, or as needed, to evaluate the effectiveness of this Agreement.

XI. Amendment and Termination

A. Notwithstanding any provision of this Agreement, the signatories may request that it may be amended, whereupon the signatories will consult to consider such amendment. The USACE will facilitate such consultation, including Indian tribes, within thirty (30) days of the request from one of the signatory parties. Any amendment will be in writing and will be signed by the USACE, ACHP, SHPO, and CPRA, and shall be effective on the date of the final signatory.

B. This Agreement may be terminated at the request of any of the signatory parties within thirty (30) days following written notification to all parties. In the event of termination, the USACE shall comply with 36 CFR § 800 on a case by case basis for all activities covered by the Agreement.
Programmatic Agreement
among
the United States Army Corps of Engineers,
the Coastal Protection and Restoration Authority of Louisiana,
the Louisiana State Historic Preservation Officer,
and
the Advisory Council on Historic Preservation,
Regarding the
Louisiana Coastal Area Ecosystem Restoration Plan (LCA Plan)

Execution of this Programmatic Agreement and implementation of its terms evidences that the USACE has taken into account the effects of the LCA Plan upon historic properties and has afforded the ACHP an opportunity to comment.

Signatory:

United States Army Corps of Engineers

[Signature]

By: Colonel Edward R. Fleming
District Commander
U.S. Army Corps of Engineers, New Orleans District

Date: 28 July 2010
Programmatic Agreement  
among  
the United States Army Corps of Engineers,  
the Coastal Protection and Restoration Authority of Louisiana,  
the Louisiana State Historic Preservation Officer,  
and  
the Advisory Council on Historic Preservation,  
Regarding the  
Louisiana Coastal Area Ecosystem Restoration Plan (LCA Plan)

Execution of this Programmatic Agreement and implementation of its terms evidences that the USACE has taken into account the effects of the LCA Plan upon historic properties and has afforded the ACHP an opportunity to comment.

Signatory:

Coastal Protection and Restoration Authority of Louisiana

By: [Signature]  
Garret Graves  
Chairman  
Coastal Protection and Restoration Authority of Louisiana

Date: 7/27/10
Programmatic Agreement
among
the United States Army Corps of Engineers,
the Coastal Protection and Restoration Authority of Louisiana,
the Louisiana State Historic Preservation Officer,
and
the Advisory Council on Historic Preservation,
Regarding the
Louisiana Coastal Area Ecosystem Restoration Plan (LCA Plan)

Execution of this Programmatic Agreement and implementation of its terms evidences that the USACE has taken into account the effects of the LCA Plan upon historic properties and has afforded the ACHP an opportunity to comment.

Signatory:

Louisiana State Historic Preservation Officer

By: [Signature]
Phil Boggan
Deputy Louisiana State Historic Preservation Officer
Louisiana Office of Cultural Development

Date: 7/27/10
Programmatic Agreement
among
the United States Army Corps of Engineers,
the Coastal Protection and Restoration Authority of Louisiana,
the Louisiana State Historic Preservation Officer,
and
the Advisory Council on Historic Preservation,
Regarding the
Louisiana Coastal Area Ecosystem Restoration Plan (LCA Plan)

Execution of this Programmatic Agreement and implementation of its terms evidences that the USACE has taken into account the effects of the LCA Plan upon historic properties and has afforded the ACHP an opportunity to comment.

Signatory:

Advisory Council on Historic Preservation

By: ____________________________ Date: ____________
John M. Fowler
Executive Director
Advisory Council on Historic Preservation
Programmatic Agreement
among
the United States Army Corps of Engineers,
the Coastal Protection and Restoration Authority of Louisiana,
the Louisiana State Historic Preservation Officer,
and
the Advisory Council on Historic Preservation,
Regarding the
Louisiana Coastal Area Ecosystem Restoration Plan (LCA Plan)

Concurring Party:

Alabama Coushatta Tribe of Texas

By: ____________________________ Date: ________________
Carlos Bullock, Tribal Council Chairman
Programmatic Agreement
among
the United States Army Corps of Engineers,
the Coastal Protection and Restoration Authority of Louisiana,
the Louisiana State Historic Preservation Officer,
and
the Advisory Council on Historic Preservation,
Regarding the
Louisiana Coastal Area Ecosystem Restoration Plan (LCA Plan)

Concurring Party:

Mississippi Band of the Choctaw Indians

By: ___________________________ Date: __________
Beasley Denson, Chief
Programmatic Agreement

among

the United States Army Corps of Engineers,
the Coastal Protection and Restoration Authority of Louisiana,
the Louisiana State Historic Preservation Officer,
and
the Advisory Council on Historic Preservation,

Regarding the
Louisiana Coastal Area Ecosystem Restoration Plan (LCA Plan)

Concurring Party:

Caddo Nation of Oklahoma

By: ___________________________ Date: ________________
Brenda Shemaye Edwards, Chairperson
Programmatic Agreement
among
the United States Army Corps of Engineers,
the Coastal Protection and Restoration Authority of Louisiana,
the Louisiana State Historic Preservation Officer,
and
the Advisory Council on Historic Preservation,
Regarding the
Louisiana Coastal Area Ecosystem Restoration Plan (LCA Plan)

Concurring Party:

Chitimacha Tribe of Louisiana

By: _______________________________  Date: __________
John Paul Darden, Chairman
Programmatic Agreement
among
the United States Army Corps of Engineers,
the Coastal Protection and Restoration Authority of Louisiana,
the Louisiana State Historic Preservation Officer,
and
the Advisory Council on Historic Preservation,
Regarding the
Louisiana Coastal Area Ecosystem Restoration Plan (LCA Plan)

Concurring Party:

Choctaw Nation of Oklahoma

By: ________________________________  Date: ________________
Gregory E. Pyle, Chief
Programmatic Agreement
among
the United States Army Corps of Engineers,
the Coastal Protection and Restoration Authority of Louisiana,
the Louisiana State Historic Preservation Officer,
and
the Advisory Council on Historic Preservation,
Regarding the
Louisiana Coastal Area Ecosystem Restoration Plan (LCA Plan)

Concurring Party:

Coushatta Tribe of Louisiana

By: ___________________________ Date: ______________
Kevin Sickey, Chief
Programmatic Agreement
among
the United States Army Corps of Engineers,
the Coastal Protection and Restoration Authority of Louisiana,
the Louisiana State Historic Preservation Officer,
and
the Advisory Council on Historic Preservation,
Regarding the
Louisiana Coastal Area Ecosystem Restoration Plan (LCA Plan)

Concurring Party:

Jena Band of the Choctaw Indians

By: _______________ Date: _______________
Christine Norris, Principal Chief
Programmatic Agreement
among
the United States Army Corps of Engineers,
the Coastal Protection and Restoration Authority of Louisiana,
the Louisiana State Historic Preservation Officer,
and
the Advisory Council on Historic Preservation,
Regarding the
Louisiana Coastal Area Ecosystem Restoration Plan (LCA Plan)

Concurring Party:

Quapaw Tribe of Oklahoma

By: _______________________________ Date: ______________
John Berrey, Chairman
Programmatic Agreement
among
the United States Army Corps of Engineers,
the Coastal Protection and Restoration Authority of Louisiana,
the Louisiana State Historic Preservation Officer,
and
the Advisory Council on Historic Preservation,
Regarding the
Louisiana Coastal Area Ecosystem Restoration Plan (LCA Plan)

Concurring Party:

Seminole Nation of Oklahoma

By: __________________________  Date: ______________
Enoch Kelley Haney, Principal Chief
Programmatic Agreement
among
the United States Army Corps of Engineers,
the Coastal Protection and Restoration Authority of Louisiana,
the Louisiana State Historic Preservation Officer,
and
the Advisory Council on Historic Preservation,
Regarding the
Louisiana Coastal Area Ecosystem Restoration Plan (LCA Plan)

Concurring Party:

Seminole Tribe of Florida

By: ____________________________ Date: ______________
Mitchell Cypress, Chairman
Programmatic Agreement
among
the United States Army Corps of Engineers,
the Coastal Protection and Restoration Authority of Louisiana,
the Louisiana State Historic Preservation Officer,
and
the Advisory Council on Historic Preservation,
Regarding the
Louisiana Coastal Area Ecosystem Restoration Plan (LCA Plan)

Concurring Party:

_Tunica-Biloxi Tribe of Louisiana_

By: _______________________________ Date: _______________

Earl J. Barbry Sr., Chairman
May 19, 2009

Engineering and Construction Division
Curation and Archives Analysis Branch

Mr. Scott Hutcheson
Office of Historic Preservation
Capitol Annex Building
P.O. Box 44247
Baton Rouge, Louisiana  70804

Dear Mr. Hutcheson:

The New Orleans and St. Louis Districts, U.S. Army Corps of Engineers are presently conducting research and planning for a project located in southern Louisiana. The name of the project is "Louisiana Coastal Area, Convey Atchafalaya River Water to Northern Terrebonne Marches" (LCA-ARNTM). This is a feasibility study, developed out of the Louisiana Coastal Area Ecosystem Restoration Study of 2004, to explore a large-scale and long-term restoration project moving fresh water, sediments, and nutrients from the Atchafalaya River and the Gulf Intracoastal Waterway (GIWW). Although the project is still in preliminary planning, when it reaches construction phase it has the potential to impact cultural resources. Therefore, we are contacting you to solicit your comments and any information you care to provide.

As background, the LCA program, of which ARNTM is a portion, was authorized by Title VII of the Water Resources Development Act (WRDA) 2007. The authority includes requirements for comprehensive coastal restoration planning, program governance, project modification investigations, a Science and Technology program, restoration project construction, a program for beneficial use of dredged material, feasibility studies for restoration plan components, and other program elements. The LCA-ARNTM Study Area (see enclosure) comprises approximately 1000 square miles (~660,000 acres) in southern Louisiana in the vicinity of the city of Houma in Terrebonne Parish. The LCA-ARNTM study area fits into the Louisiana coastal Area Ecosystem Restoration Study Area, which has been identified as the Louisiana coastal region from Mississippi to Texas. The overall study area is bounded to the west by the Lower Atchafalaya River, and to the east by the Bayou Lafourche ridge. The study area is further bounded to the north by the Bayou Black ridge, from the Lower Atchafalaya River to the city of Houma, and the Gulf Intracoastal Waterway (GIWW), from the city of Houma to the Bayou Lafourche ridge. The southern boundary of the project was based on a delineation conducted in 2007 of coastal Louisiana vegetation types. This boundary identifies the transition between saline and brackish marsh types.
A site file and records review by District personnel found that nearly four hundred prehistoric and historic sites have been identified in the Terrebonne marshes and along the lobes of the Lafourche-Terrebonne Delta. While the current project is a feasibility study, the anticipated work product for cultural resources is a synthetic GIS-based dataset that will provide guidance for cultural resources planning throughout the subsequent stages of the ecosystem restoration program within the Terrebonne marshes.

We will be keeping you informed regarding the progress of this project as more concrete plans are developed for construction that may impact cultural resources within the study area. If you have any questions or comments, please feel free to contact Susan Malin-Boyce (314-331-8804) at the St. Louis District.

Sincerely,

Michael K. Trimble, Ph.D.
Chief, curation and Archives
Analysis Branch

Enclosure

Barnes
CEMVS-EC-Z

Malin-Boyce
CEMVS-EC-Z

Pulliam
CEMVS-EC-Z

Trimble
CEMVS-EC-Z
Engineering and Construction Division
Curation and Archives Analysis Branch

Principal Chief Oscola Clayton M. Sylestine
Alabama Coushatta Tribe of Texas
571 State Park Road 56
Livingston, Texas  77351

Dear Principal Chief Sylestine:

The New Orleans and St. Louis Districts, U.S. Army Corps of Engineers are presently working together on a project located in southern Louisiana. The St. Louis District is assisting the New Orleans District with their consultation activities. As part of this assistance the St. Louis District is sending out information regarding this project.

The name of the project is "Louisiana Coastal Area, Convey Atchafalaya River Water to Northern Terrebonne Marches" (LCA-ARNTM). The project is located primarily in Terrebonne Parish with a small portion in Lafourche Parish (see attachment 1). This project is a feasibility study, developed out of the Louisiana Coastal Area Ecosystem Restoration Study of 2004, to explore a large-scale and long-term restoration project that will move fresh water, sediments, and nutrients from the Atchafalaya River and the Gulf Intracoastal Waterway (GIWW) into the marshes south of the GIWW. Currently, the feasibility study is limited to literary sources and there are no plans for active archaeological field surveys at this point of the project.

As background, this project was authorized by Title VII of the Water Resources Development Act (WRDA) 2007. The authority includes requirements for comprehensive coastal restoration planning, program governance, project modification investigations, a Science and Technology program, restoration project construction, a program for beneficial use of dredged material, feasibility studies for restoration plan components, and other program elements. The LCA-ARNTM Study Area comprises approximately 1000 square miles (~660,000 acres) in southern Louisiana in the vicinity of the city of Houma in Terrebonne Parish. This study area fits into the Louisiana coastal Area Ecosystem Restoration Study Area, which has been identified as the Louisiana coastal region from Mississippi to Texas. The overall study area is bounded to the west by the Lower Atchafalaya River and to the east by the Bayou Lafourche ridge. The study area is further bounded to the north by the Bayou Black ridge, from the Lower Atchafalaya River to the city of Houma, and the Gulf Intracoastal Waterway, from the city of Houma to the Bayou Lafourche ridge. The southern boundary was based on a 2007 delineation of coastal Louisiana vegetation types. This boundary identifies the transition between saline and brackish marsh types.
This study called for a review of archived records and documents to identify any previously recorded archaeological sites, traditional cultural properties, and or sacred sites located within the project area. A site file and records review by District personnel found that nearly four hundred prehistoric and historic sites have been identified and recorded within the Terrebonne marshes and along the lobes of the Lafourche-Terrebonne Delta.

Most Native American traditional cultural properties, and or sacred sites have not been recorded. These areas cannot be identified without the assistance of the tribes. Thus we are requesting your assistance in identifying such areas within the project boundaries. With this information the New Orleans and St. Louis Districts will be better informed on areas that need to be protected. This information will also allow the New Orleans and St. Louis Districts to begin consultation early and to look at alternative plans if sites are in the path of construction. If the project reaches a construction phase it has the potential to impact cultural resources other than archaeological sites, thus your assistance in identifying such sites would be of great benefit in protecting areas important to your tribe. All of the following tribes are being notified regarding this project as potential interested parties.

- Alabama Coushatta Tribe of Texas
- Caddo Nation of Oklahoma
- Chitimacha Tribe of Louisiana
- Choctaw Nation of Oklahoma
- Coushatta Tribe of Louisiana
- Jena Band of Choctaw
- Mississippi band of Choctaw
- Quapaw Tribe of Oklahoma
- Seminole Nation of Oklahoma
- Seminole Tribe of Florida
- Tunica-Biloxi Tribe of Louisiana

The St. Louis District will keep you informed regarding the progress of this project as concrete plans are developed for construction that may impact cultural resources within the study area. If your tribe would like to be a consulting party to this project to help delineate cultural resources please contact Roberta L. Hayworth, St. Louis District, by phone at (314-331-8833) or at the address below by 1 September 2009.
Roberta L. Hayworth  
Native American Coordinator  
USACE St. Louis District  
ATTEN: CEMVS-EC-Z  
1222 Spruce Street  
St. Louis, Missouri  63103  

  e-mail: roberta.l.hayworth@usace.army.mil

If you have further questions or need additional information, please contact Ms. Hayworth, and copy Mr. Gary Demarcay (gary.b.demarcay@usace.army.mil) and Mr. Mike Swanda (michael.l.swanda@usace.army.mil).

Sincerely,

Michael K. Trimble, Ph.D.  
Chief, curation and Archives Analysis Branch

Attachments

Copy Furnished:

Hayworth  
CEMVS-EC-Z

Malin-Boyce  
CEMVS-EC-Z

Pulliam  
CEMVS-EC-Z

Trimble  
CEMVS-EC-Z
Regional Planning and
   Environmental Division, South
New Orleans Environmental Branch

Reid Nelson, Director
Office of Federal Agency Programs
Advisory Council on Historic Preservation
Old Post Office Building
1100 Pennsylvania Avenue, NW, Suite 803
Washington, DC 20004

Dear Mr. Nelson:

The United States Army Corps of Engineers, New Orleans District (USACE), is initiating the process to develop an agreement for the Louisiana Coastal Area Program (LCA), South Louisiana, pursuant to Section 106 of the National Historic Preservation Act. This letter is intended to notify the Advisory Council on Historic Preservation (ACHP) pursuant to 36 CFR Part 800.6(a)(1) of our plan to develop a Programmatic Agreement that governs the Section 106 review of LCA projects. We invite the ACHP to participate in this consultation since it may involve important questions of policy or interpretation and will result in the development of a programmatic agreement that alters the way the Section 106 process is applied to this program.

Title VII of the Water Resources Development Act of 2007 (WRDA 2007) authorizes the Secretary to carry out a program for ecosystem restoration of the LCA, Louisiana, substantially in accordance with the restoration plan set out in the Report of the Chief of Engineers, dated 31 January 2005. WRDA 2007 authorizes fifteen near-term features aimed at addressing the critical restoration needs of coastal Louisiana, with five of the features designated as critical restoration features. In addition, it authorizes demonstration projects, a beneficial use of dredged material program, project modifications, and a science and technology projects. The fifteen near-term ecosystem restoration features, modifications of existing projects, demonstration projects and beneficial use of dredged material projects are all subject to approval by the Assistant Secretary of the Army for Civil Works for feasibility level of detail decision documents (Environmental Impact Statement or Environmental Assessment) as provided for the Chief’s Report.

Additional documentation required under 36 CFR Part 800.11(e) will be provided to the ACHP as it is developed during the consultation. Project fact sheets and a map showing feature locations are attached herein.

The proposed Programmatic Agreement that will establish Section 106 consultation procedures under the accelerated schedules established by the above authorization. The goal of this Section 106 consultation is to seek ways to balance the critical need to protect Louisiana’s vanishing
wetlands against any historic preservation concerns. These procedures will involve Tribal consultation; treatment approaches, resolution of adverse effects; and mitigation of cumulative impacts.

Please notify Gary DeMarcay of my staff if the ACHP wishes to participate in this consultation. You can reach him at the above address or by phone at (504) 862-2039 or by e-mail at gary.b.demarcay@usace.army.mil.

We propose to forward future notices, draft agreements, and other background information with the consulting parties by e-mail to minimize communication delays and expedite the development of the agreement for this critical project. Please let me know if this is impractical so we can make alternative arrangements.

Sincerely,

Joan M. Ennicios
Chief, New Orleans Environmental Branch
March 30, 2010

Regional Planning and Environmental Division, South New Orleans Environmental Branch

Mr./Ms. Name, Title
Organization
Address
City, State Zip

Re: Programmatic Agreement regarding the Louisiana Coastal Area Ecosystem Restoration Plan (LCA Plan), Louisiana.

Dear Mr./Ms. Last Name:

The United States Army Corps of Engineers, New Orleans District (CEMVN), is initiating consultation to develop a Programmatic Agreement for the Louisiana Coastal Area Ecosystem Restoration Plan (LCA Plan) pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended. The LCA Plan is the recommended plan of the Louisiana Coastal Area (LCA), Louisiana Ecosystem Restoration Study (LCA Study), which was completed in November 2004 and recommended to the Congress by a Chief of Engineers report dated January 31, 2005. The proposed undertakings of the LCA Plan have the potential to impact historic properties. We invite the Name of Organization/Person to participate in this consultation.

The LCA Plan calls for a coordinated, feasible solution to the identified critical water resource problems and opportunities in coastal Louisiana. The 2004 LCA Study included the following recommendations: 1) five near-term critical restoration features that have some planning and design already underway; 2) ten additional near-term critical restoration features; 3) beneficial use of dredged material; 4) authority to initiate studies of modifications to existing water control structures; 5) science and technology program demonstration projects; 6) science and technology program; and 7) studies on long-term, large-scale restoration concepts. Section 7006 of the Water Resources Development Act (WRDA) of 2007 includes conditional authorization for the LCA projects described in the 2004 report. Section 7006(e) of WRDA 2007 requires that an additional feasibility report for six of the ten near-term critical restoration features identified in the 2004 LCA Study be submitted to the Congress by the Secretary of the Army on or before December 31, 2010. Additional information can be found on the web at http://www.mvn.usace.army.mil/environmental/lca.asp. A map showing the 15 critical restoration features of the LCA Plan is enclosed herein.
The CEMVN proposes to develop a Programmatic Agreement that will establish Section 106 consultation procedures under the accelerated schedules required by the above authorization. The goal of this Section 106 consultation is to seek ways to balance the critical need to reverse the current trend of coastal ecosystem degradation against any historic preservation concerns to come out in the public interest. These procedures will involve consultation, treatment approaches, resolution of adverse effects, and mitigation of impacts.

Please notify Rebecca Hill of my staff if the Name of Organization/Person or any other interested party you may know wishes to participate in this consultation. You can reach her at the above address or by phone at (504) 862-1474 or by e-mail at Rebecca.Hill@usace.army.mil.

We propose to forward future notices, draft agreements, and other background information to the consulting parties by email to minimize communication delays and expedite the development of the Programmatic Agreement for this critical coastal Louisiana ecosystem restoration plan. Please let me know if this is impractical so that we can make alternative arrangements. The CEMVN will distribute a draft Programmatic Agreement by email to consulting parties prior to a teleconference that will be held during the week of April 12, 2010. The proposed date for the teleconference will be confirmed upon notification of your participation.

Sincerely,

Joan M. Exnicios
Chief, New Orleans Environmental Branch

Enclosure
Interested Parties notified for the LCA Plan Programmatic Agreement:

LOCAL GOVERNMENTS

Ascension Parish
Mr. Tommy Martinez, Parish President
Ascension Parish
208 East Railroad Avenue
Gonzales, LA 70737

Assumption Parish
Mr. Martin S. Triche, Parish President
Assumption Parish Police Jury
P.O. Box 520, 4813 Highway One
Napoleonville, LA 70390

Calcasieu Parish
Mr. Bryan C. Beam, Parish Administrator
Calcasieu Parish Police Jury
1015 Pithon Street, P.O. Box 1583
Lake Charles, LA 70602

Cameron Parish
Ms. Earnestine "Tina" Horn, Parish Administrator
Cameron Parish Police Jury
P.O. Box 1280
Cameron, LA 70631

Iberia Parish
Mr. Ernest Freyou, Parish President
Iberia Parish
300 Iberia Street, Suite 400
New Iberia, LA 70560

Jefferson Parish
Mr. Steve J. Theriot, Parish President
Jefferson Parish
1221 Elmwood Park Boulevard, Suite 1002
Jefferson, LA 70123

Lafourche Parish
Ms. Charlotte A. Randolph, Parish President
Lafourche Parish
402 Green Street, P.O. Drawer 5548
Thibodaux, LA 70302

F-64


**Livingston Parish**  
Mr. Mike Grimmer, Parish President  
Livingston Parish  
P.O. Box 427  
Livingston, LA 70754  

**Orleans Parish**  
Mr. C. Ray Nagin, Mayor  
City of New Orleans  
1300 Perdido Street  
New Orleans, LA 70112  

**Plaquemines Parish**  
Mr. Billy Nungesser, Parish President  
Plaquemines Parish  
8056 Highway 23, Suite 200  
Belle Chasse, LA 70037  

**St. Bernard Parish**  
Mr. Craig P. Taffaro, Jr., Parish President  
St. Bernard Parish  
8201 West Judge Perez Drive  
Chalmette, LA 70043  

**St. Charles Parish**  
Mr. V.J. St. Pierre, Jr., Parish President  
St. Charles Parish  
P.O. Box 302, 15045 Highway 18  
Hahnville, LA 70057  

**St. James Parish**  
Mr. Dale Hymel, Jr., Parish President  
St. James Parish  
5800 Highway 44  
Convent, LA 70723  

**St. John Baptist Parish**  
Mr. Pat McTopy, Parish President  
St. John Baptist Parish  
1801 West Airline Highway  
LaPlace, LA 70068  

**St. Martin Parish**  
Mr. Guy Cormier, Parish President  
St. Martin Parish  
301 Port Street, P.O. Box 9  
St. Martinville, LA 70582
St. Mary Parish
Honorable Paul P. Naquin, Jr., Parish President
St. Mary Parish
Fifth Floor Courthouse Building
Franklin, LA 70538

St. Tammany Parish
Mr. Kevin Davis, Parish President
St. Tammany Parish
P.O. Box 628
Covington, LA 70434

Tangipahoa Parish
Mr. Gordon Burgess, Parish President
Tangipahoa Parish
P.O. Box 215, 206 East Mulberry Street
Amite, LA 70422

Terrebonne Parish
Honorable Michel Claudet, Parish President
Terrebonne Parish
8026 Main Street, Suite 700
Houma, LA 70360

Vermilion Parish
Mr. Chris Theriot, Parish Administrator
Vermilion Parish Police Jury
100 North State Street, Suite 200
Abbeville, LA 70510

LEVEE DISTRICTS

Atchafalaya Basin Levee District
Mr. John Grezaffi, President
Board of Commissioners
P.O. Box 170
Port Allen, LA 70767

Pontchartrain Levee District
Mr. Steven C. Wilson, President
Board of Commissioners
P.O. Box 426
Lutcher, LA 70071
**Lafourche Basin Levee District**  
Mr. Robert LeBlanc, President  
Board of Commissioners  
P.O. Box 670  
Vacherie, LA 70090

**East Jefferson Levee District**  
Ms. Fran Campbell, Executive Director  
203 Plauche Court  
Harahan, LA 70123

**Orleans Levee District**  
Mr. Gerard J. Gillen, III, P.E.  
Director of Hurricane and Flood Protection  
6920 Franklin Ave  
New Orleans, LA 70122

**West Jefferson Levee District**  
Mr. Giuseppe Miserendino, Director of Operations  
7001 River Road  
Marrero, LA 70072

**Plaquemines Parish Government**  
Mr. Billy Nungesser, Parish President  
8056 Highway 23, Suite 200  
Belle Chasse, LA 70037

**Lake Borgne Basin Levee District**  
Ms. Peggy Sembera, Executive Director  
P.O. Box 216  
Violet, LA 70092

**St. Mary Parish Council**  
Mr. Paul Naquin, Parish President  
Fifth Floor, Courthouse  
Franklin, LA 70538

**South Lafourche Levee District**  
Mr. Ronald Callais, President  
Board of Commissioners  
P.O. Box 426  
Galliano, LA 70354

**Town of Berwick**  
Honorable Louis Ratcliff  
Mayor of Berwick  
P.O. Box 486  
Berwick, LA 70342
City of Morgan City
Honorable Tim Matte
Mayor of Morgan City
P.O. Box 1218
Morgan City, LA 70381

Grand Isle Independent Levee District
Mayor David Camardelle, President
Board of Commissioners
P.O. Box 757
Grand Isle, LA 70358

Terrebonne Levee and Conservation District
Mr. Reggie Dupre, Jr., Executive Director
Board of Commissioners
220-A Clendenning Road
Houma, LA 70363

North Lafourche Conservation Levee and Drainage District
Mr. Dwayne Bourgeois
P.O. Drawer 230
Raceland, LA 70394

Southeast Louisiana Flood Protection Authority - East
Mr. Timothy P. Doody, President
East Jefferson, Orleans and Lake Borgne Levee Districts
6508 Spanish Fort Boulevard
New Orleans, LA 70124

Southeast Louisiana Flood Protection Authority - West
Mr. Giuseppe R. Miserendino, C.P.A.
West Jefferson and Algiers Levee Districts
7001 River Road
Marrero, LA 70072

HISTORICAL SOCIETIES

Louisiana Genealogical and Historical Society
Irma Lee Jackson, President
P.O. Box 82060
Baton Rouge, LA 70884

LAGenWeb Project
Edward Hayden, Coordinator
P.O. Box 7165
Pasadena, TX 77508
Ark-La-Tex Genealogical Association, Inc.
Jim Johnson, President
P.O. Box 4463
Shreveport, LA 71134

Canary Islanders Heritage Society of Louisiana
Rose Marie Powell, President
13190 Legacy Court
Baton Rouge, LA 70816

Genealogical Research Society of New Orleans
Sidney J. Mazerat, III, President
P.O. Box 51791
New Orleans, LA 70151

Louisiana Archaeological Society
John H. Guy, Jr., President-Elect
P.O. Box 503, 4105 Main Street
Anacoco, LA 71403

The Louisiana Division of Archaeology
Dr. Charles McGimsey, Director
P.O. Box 44247
Baton Rouge, LA 70804

Southeast Archeological Center
David Morgan, Director
2035 East Paul Dirac Drive, Johnson Building Suite 120
Tallahassee, FL 32310

Louisiana Landmarks Society
Susan Lloyd McClamroch, Pitot House Director
1440 Moss Street
New Orleans, LA 70119

Louisiana Creole Heritage Center
Janet Ravare Colson, Executive Director
Northwestern State University, Box 5675
Natchitoches, LA 71497

Louisiana Historical Association
Mark Fernandez, President
P.O. Box 42808
Lafayette, LA 70504
Louisiana Historical Society
G. Howard Hunter, President
5615 Perrier Street
New Orleans, LA 70115

Foundation for Historical Louisiana
Mark Upton, Chairman
P.O. Box 908
Baton Rouge, LA 70821

Division of Historic Preservation
Nicole Hobson-Morris, Executive Director
1051 North Third Street
Baton Rouge, LA 70804

National Trust for Historic Preservation Southern Office
William Aiken House
456 King Street
Charleston, SC 29403

The Southwest Louisiana Genealogical Society, Inc.
P.O. Box 5652
Lake Charles, LA 70606

Genealogy West
5644 Abbey Drive
New Orleans, LA 70130

Louisiana Roots
105 North Main Street
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Louisiana Trust for Historic Preservation
Michelle Meche, Executive Director
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National Trust for Historic Preservation, New Orleans Field Office
923 Tchoupitoulas Street
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Ascension Heritage Association
Pam Gregoire, President
P.O. Box 404
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P.O. Box 1006
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Calcasieu Historical Preservation Society
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Jefferson Historical Society of Louisiana
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Westwego Historical Society
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The Gretna Historical Society
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Francaise Comite Louisiana
2717 Massachusetts Street
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Historical Society of Grand Isle
P.O. Box 275
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Lafourche Heritage Society
P.O. Box 567
Thibodaux, LA 70393

Edward Livingston Historical Association
P.O. Box 67
Livingston, LA 70754

French Settlement Historical Society
P.O. Box 365
French Settlement, LA 70733
The Historic New Orleans Collection
533 Royal Street
New Orleans, LA 70130

The Historic District Landmarks Commission
C. Elliott Perkins, Executive Director
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Preservation Resource Center
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St. James Historical Society
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Los Isleños Heritage and Cultural Society
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German-Acadian Coast Historical and Genealogical Society
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The Godchaux-Reserve House Historical Society
P.O. Box 234
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St. Mary Genealogical and Historical Society
P.O. Box 662
Morgan City, LA 70381

St. Tammany Parish Historical Society
P.O. Box 1251
Mandeville, LA 70470
St. Tammany Genealogy Society
P.O. Box 1904
Covington, LA 70434

Tangipahoa Parish Historical Society
77139 North River Road
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Amite Genealogical Club
739 West Oak
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Terrebonne Genealogical Society
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The Terrebonne Historical & Cultural Society, Inc.
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Vermilion Historical Society
P.O. Box 877
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**LOUISIANA STATE RECOGNIZED TRIBES**

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