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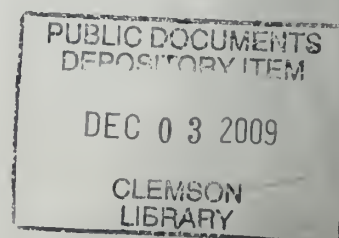
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HISTORIC PRESERVATION RESPONSE METHODOLOGY


Based on the Hurricane Katrina Model



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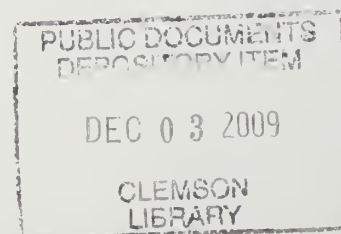
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HISTORIC PRESERVATION RESPONSE METHODOLOGY

Based on the Hurricane Katrina Model



FEMA



2010-0047-P

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Hurricanes Katrina and Rita devastated the Gulf Coast region in August and September 2005 and created the single largest disaster for cultural resources that the United States has witnessed since the inception of the National Historic Preservation Act (NHPA) in 1966. Notably, the NHPA created the National Register of Historic Places, our nation's catalog of important cultural resources. The NHPA also stipulates that any Federal undertaking which may adversely affect National Register eligible resources be mitigated. For the Federal Emergency Management Agency (FEMA), the Katrina/Rita event created the largest compliance project ever under Section 106 of the NHPA.

Although causing a great deal of damage, the event provided an important learning tool in developing processes, identifying challenges and generating solutions in responding to extensive cultural resource issues during a disaster. At the request of FEMA, the National Park Service, Cultural Resources GIS Facility (CRGIS) created a strategy to help FEMA meet its NHPA obligations focusing on New Orleans, LA. Combining GPS and GIS tools, CRGIS constructed a methodology to identify and evaluate all potentially affected properties. Additionally it provided a means for historic preservationists to determine the historic significance of individual resources through GIS. CRGIS incorporated its draft Federal agency-wide cultural resource spatial data standards, allowing the GIS to serve additionally as a management tool, sharing data among all of the Federal, state, local and tribal government entities involved in the recovery.

This document describes that cultural resource disaster response strategy, providing a successful example of how technology can improve Federal agency compliance with Section 106 of the NHPA in a disaster, allowing for a faster and more efficient response. In supplying a framework and guide for executing the methodology described, this document provides the necessary tools for FEMA, its regional offices, other emergency management agencies and other Federal agencies to implement a similar digital Section 106 compliance approach. Because the sizes and types of disasters encountered across the country differ, this document also describes how to adapt the general strategy in other circumstances and to address other regulatory requirements, such as the National Environmental Policy Act (NEPA). Throughout the methodology statement however, explanations of the technological tools available and the innovative techniques developed for all phases of a typical Section 106 response following Katrina illustrate how to duplicate specific portions of the strategy or execute the approach in its entirety for other disaster situations.

Included in this document are explanations of what the draft Federal-agency wide cultural resource spatial data standards are composed of, and the data model through which they were implemented in a disaster response. Additionally, the methodology statement contains information regarding creating infrastructure to support the implementation of the strategy, as well as survey procedures, data collection and processing techniques and alternative treatment measure options. Along with descriptions of procedures established following Katrina, the document contains commentary on the challenges faced, lessons learned and solutions developed, leading to various approaches allowing the strategy to be adapted and scaled to fit other disaster situations. Finally, the document contains reference information including a glossary and lists of resources, as well as practical documents such as data dictionaries, training materials, position descriptions, workflow diagrams, field forms and checklists to serve as starting points for those who wish to implement the strategy in any form.

The National Park Service and FEMA created this document with the objective of presenting a successful large-scale cultural resource disaster response, focusing on demonstrating how the application of GIS and GPS technology contributed to an ultimately positive outcome and a significantly more efficient Section 106 compliance effort. The intended use of the methodology statement is to outline how the strategy generated from the Katrina/Rita event can be adapted to meet the needs of other disaster situations, and other emergency management agencies or Federal agencies required to comply with Section 106. The goal of distributing the methodology statement is to provide the tools, references, contacts and information needed for others to execute the strategy with the same success.

The National Park Service, Cultural Resource GIS Facility wishes to thank the NPS Heritage Documentation Programs Division, FEMA's Office of Environmental Planning and Historic Preservation, as well as the FEMA New Orleans Transitional Recovery Office for their support during the Katrina response and the establishment of the digital Section 106 methodology. Specifically, CRGIS would like to thank Gail Lazaras and Kris Hanusiak of the FEMA New Orleans Transitional Recovery Office for their support in implementing the strategy, expanding upon it and carrying it through to completion. CRGIS also wishes to thank the Louisiana Office of Cultural Development, Division of Historic Preservation as well as the New Orleans Historic District Landmark Commission for their collaboration and partnership throughout the implementation of the methodology.

THE CULTURAL RESOURCE RESPONSE TO HURRICANE KATRINA IN NEW ORLEANS

Hurricanes Katrina and Rita (August, September 2005), although causing a great deal of damage, provided an important learning tool in developing processes, identifying challenges and generating solutions in responding to extensive cultural resource issues in a disaster. Involving technologies such as geographic information systems or global positioning systems in strategies for a large-scale compliance with historic preservation laws proved invaluable in identifying potential cultural resources, in evaluating those resources for their eligibility to the National Register of Historic Places, and in providing important treatment measures during long term recovery efforts. Properly implemented, the same methods can be applied to any size or type of disaster in a cultural resource response, or even extend to compliance with related regulations.

This document examines the background and application of innovative strategies implemented in response to Hurricane Katrina, specifically in New Orleans, providing a good demonstration of how technology can expedite and improve FEMA's cultural resource response in a substantial disaster. This strategy further presents a fully developed plan for applying the same methods in carrying out similar cultural resource responses for any emergency. Using such an approach provides FEMA with an excellent process for collecting extremely accurate cultural resource data to share with other local, state, tribal and Federal agencies, not only to respond to a crisis but to mitigate against any future disasters. Extending the model into other associated fields, this document explores the application of the Katrina cultural resource data management system to environmental issues in the wake of a disaster.

Hurricanes Katrina and Rita devastated the Gulf Coast region and created the single largest disaster for cultural resources that the United States has witnessed since the inception of the National Historic Preservation Act (NHPA). For FEMA, the Katrina/Rita event created the largest compliance project ever, under Section 106 of the NHPA.

In requiring Federal agencies to consider their impact on historic resources, a typical Section 106 process involves several phases including survey and identification of historic resources; assessment of adverse affects to resources; implementation of treatment measures; as well as coordination with other regulations, such as the National Environmental Protection Act (NEPA). Determining resources eligible for the National Register of Historic Places, reviewing those determinations with the appropriate State/Tribal Historic Preservation Offices (SHPO/THPO) and resolving adverse affects on resources must all be accomplished within a 90 day period under normal circumstances.

Hurricanes Katrina and Rita impacted many thousands of historic resources however, and many faced potential demolition as imminent threats

to public health or safety. Although obligated to comply with Section 106, with the massive number of resources involved and the vital need to address the resources quickly, as well as the lack of critical infrastructure, FEMA could not simply follow the typical Section 106 process.

Through technologies such as geographic information systems (GIS) and global positioning systems (GPS) FEMA sought to expedite the Section 106 process and bring organization to the massive amounts of data coming from a variety of sources regarding cultural resources impacted by the storms. These technological tools directly addressed FEMA's specific compliance needs under the extreme circumstances presented in a timely and efficient manner.

At the request of FEMA, the National Park Service, Cultural Resource GIS Facility (CRGIS) created a strategy to help FEMA meet its obligations to all of the cultural resources facing adverse affects through activities involved with rebuilding New Orleans after Katrina. Using a combination of GPS and GIS, CRGIS constructed a methodology to identify and evaluate all of the affected properties in Orleans Parish (including New Orleans) and the

surrounding Parishes, in addition to providing a means for historic preservation professionals to review and determine the historic significance of each property through GIS. CRGIS also took the opportunity to incorporate draft Federal agency-wide cultural resource spatial data standards under construction by CRGIS, hoping to impose some structure in the data, and allow the GIS to truly serve as a management tool, promoting the sharing of data among all of the Federal, state and local government entities involved in the recovery efforts.

To comply with any Section 106 responsibility in a disaster, FEMA must survey and evaluate all potential undertakings for their historic significance, consult with the SHPOs or THPOs to develop concurrence on that significance and determine what actions to take as treatment measures to compensate for destroying historic resources. FEMA needs accurate location information for these possible undertakings to understand the full scope of the problem. In addition, FEMA needs an accurate evaluation of the historic integrity and character of the resources in question. Finally, to place any cultural resource into context, FEMA must have an understanding of the historic nature of the area as a whole and a clear awareness of the interaction of various resources which might contribute to their significance.

In the event of any emergency, and particularly one as large as the Katrina/Rita event, FEMA must quickly gather data regarding known and potential cultural resources to begin Section 106 compliance. However, before the demolition or removal of any resources following a disaster, the entire Section 106 process must be completed. Because developing concurrence with the appropriate SHPO or THPO and public commenting periods play a major role in finalizing Section 106 compliance, expediting these elements of the cultural resource strategy is an important factor.

The key to meeting Section 106 requirements remains quickly and accurately identifying any cultural resources which may suffer as a result of actions taken by FEMA. The majority of data relating to the presence or absence of known resources resides with other sources such as State and Tribal Historic Preservation Offices, certified local governments and local historic preservation

organizations. Following a disaster however, FEMA must evaluate all buildings and locations which withstood damage during the event to determine first if they qualify as a FEMA undertaking and second if they are historic, regardless of whether they appear in known records. In contrast, the information describing what properties experienced damage due to FEMA actions generally originates with the local city or county government where the event occurred, and can change rapidly as surveyors explore new areas after an event, or further damage is incurred as time goes by after an event.

In order to integrate this information generated by state or local governments, as well as preservation organizations, understanding the data spatially and having tools to perform analysis quickly can significantly aide in all response areas and particularly cultural resource or environmental issues. To respond to the disaster most efficiently, to provide a means to carry out the evaluations of resources as well as to provide a means to assess the National Register eligibility of sites, a GIS remains the critical element of the overall cultural resource compliance strategy.

Cultural Resource Spatial Data Standards

Clearly, tools such as GIS can facilitate putting affected resources into context, defining the scope of the areas which require attention, discerning patterns in the distribution of resources to assist in establishing significance, and providing critical reference and background information regarding what existed prior to the disaster. In order to take full advantage of the powerful tool GIS offers cultural resource managers for mitigation, disaster response, disaster recovery and treatment of resources following a disaster, standards must define the spatial data that forms the keystone of the system, allowing data sharing and integration.

Today there are over 5 million cultural resources listed on state inventories of historic structures, archaeological sites, landscapes and objects. Many SHPOs/THPOs manage their resources through GIS, and some now require locational information collected via GPS. At the National level, each Federal land holding agency keeps its own

inventory of historic resources, similar to the states or tribes, and most utilize GPS to help locate those sites. Additionally, each Federal agency, similar to FEMA, that undertakes a project must track resources affected or evaluated during Section 106 compliance.

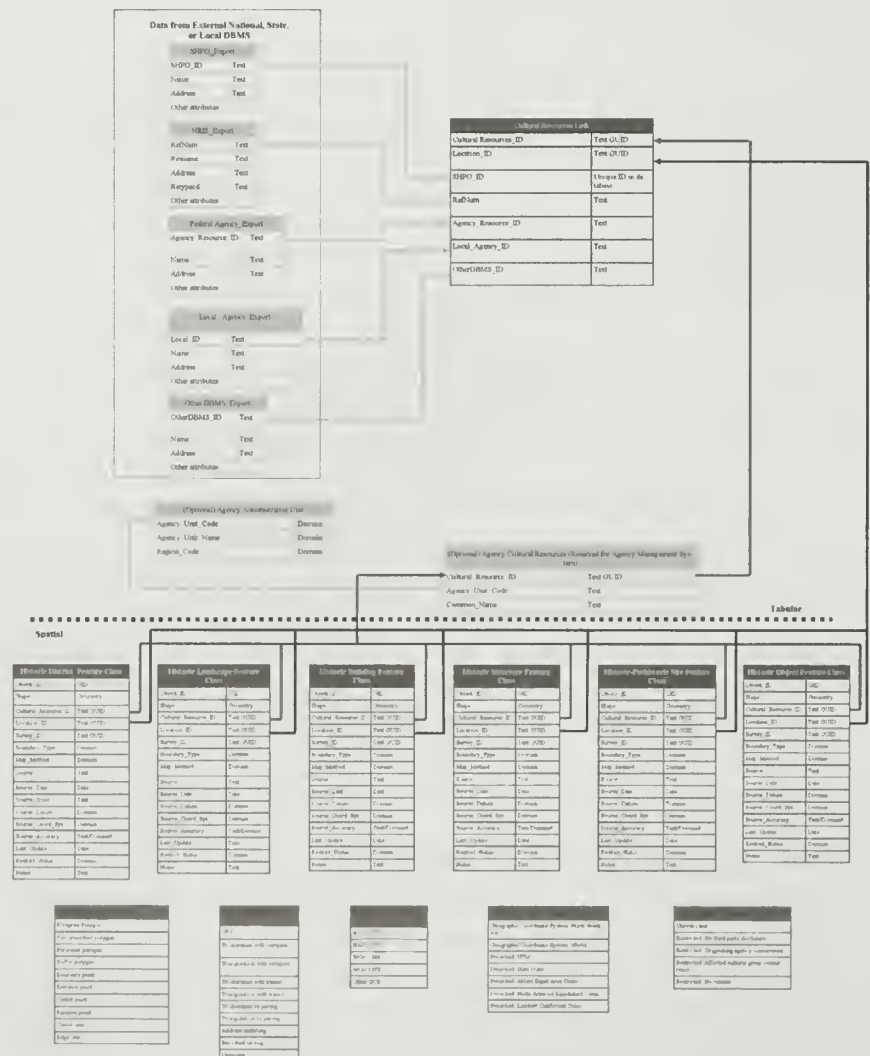
Taken by themselves each of these efforts to manage cultural resources through the use of GIS functions successfully within the separate states and Federal agencies. However, data produced at the state or local level should be shared with Federal agencies and vice versa for truly productive cultural resource management, particularly in the face of a disaster. To better understand the context of each of the resources described in these databases they should share locational information as well. However most of these databases have no way to relate to each other, and many do not require the collection of spatial data for use in a GIS.

If cultural resource specialists can agree that locational information remains a key factor in understanding resources, and their management, GIS then becomes the ultimate tool to bring all of the data from various sources together at local, state and National levels. This integration of data allows cultural resource specialists to immediately visualize the full context of the resources and the damage incurred related to a disaster.

OMB Circular A-16 defines the set of requirements that Federal agencies must follow when they create, manage or distribute spatial data. In 2002, OMB identified the National Park Service (NPS) as the lead agency for developing the cultural resource spatial dataset. Developing this dataset includes a variety of tasks, such as setting data content and metadata standards, monitoring progress toward converting paper inventories into digital data,

coordinating cultural resource databases with spatial data, eliminating duplication of spatial data and disseminating best practices information.

As the cultural resource spatial dataset steward under Circular A-16, the NPS must assess the existing standards, identify where needs exist, as well as develop and implement standards compliant with the Federal Geographic Data Committee (FGDC). These standards would then guide all Federal agencies in the collection and management of their cultural resource spatial data as they create inventories, perform Section 106 activities or nominate resources to the National Register of Historic Places. The standards open the door to share cultural resource data across Federal agencies, as well as with state and local entities through GIS.



GeoDatabase data model diagram, based on draft cultural resource spatial data standards, created by the NPS for FEMA's use in response to Katrina.

The Cultural Resource GIS Facility within the NPS developed a draft set of standards describing how to create cultural resource spatial data, how to link spatial data to external databases, how to safeguard sensitive cultural resource information, and what to include in feature level metadata, based on experience with existing cultural resource databases inside the NPS. In 2005, CRGIS created a data model to describe how these draft standards could be implemented within the NPS, and potentially within other Federal agencies.

When the Katrina/Rita event occurred, CRGIS applied that data model in the form of a GeoDatabase, based on the draft cultural resource spatial data standards, within the framework of the Section 106 survey and evaluation strategy designed for FEMA. The data model functions by using geographic information to link external databases of information together allowing various agencies at all levels of government to share information. By assigning unique IDs to each cultural resource located on the ground, and matching those unique IDs to other records in exterior databases, such as SHPO/THPO inventories, city directories or local preservation organization inventories, all entities can share the same geographic key yet maintain their own proprietary database information.

For FEMA, instituting this data model following Katrina meant that they could integrate existing resource information gathered from SHPO and THPO inventories, damage information obtained from city and Parish governments, and data collected by FEMA surveyors through the GIS. Additionally, both FEMA and the SHPO could evaluate each resource for its National Register eligibility using the GIS, reducing the time spent in survey and assessment as well as the development of concurrence on these evaluations from 90 days to approximately 14 days.

Principles in Using GIS and GPS

More than simply computerized cartography, GIS software represents real world features as individual map layers, according to feature type, such as roads, building footprints, county boundaries or archaeological sites. Stacked on top of each other, these map layers allow users to view all of the data geographically in relationship to

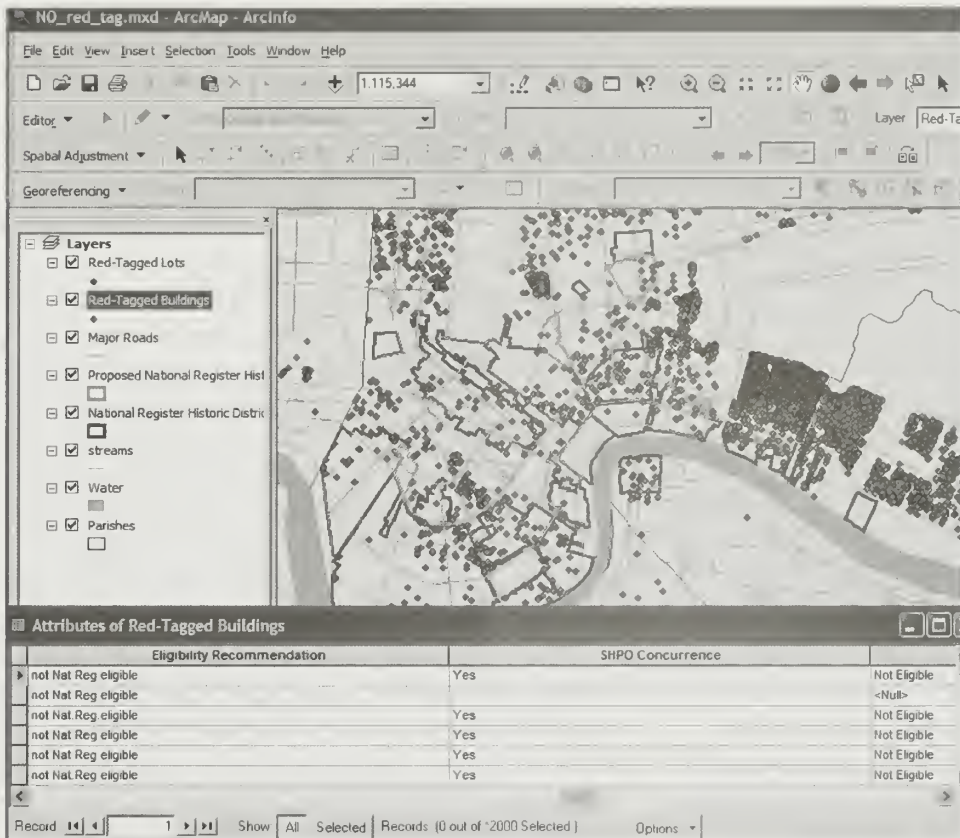
each other and in relationship to the earth. Each map feature is also linked to a database containing attribute information that describes what the feature is, allowing users to query the data like a traditional database, or ask questions based on the geography itself.

Global positioning systems, a satellite-based navigational system, provide one way to collect accurate geographic coordinates for the various map layers inside the GIS software. GPS works by triangulating the position of a receiver on the earth using satellite signals, and can range in accuracy from approximately 20 meters to sub-centimeter detail. Together, GIS and GPS greatly improve the accuracy of cultural resource mapping, in addition to enhancing traditional cultural resource data sets, by allowing users to attach other forms of documentation to geographic locations, providing critical contextual information.

Although these two technologies have existed for many years, their primary uses have been within fields other than cultural resource management. Since the development of the initial GIS software in the 1960s, GIS has grown exponentially into almost every industry and discipline, becoming more sophisticated with every step. In 1993, GPS reached full operational capability, primarily for use by the military, but open to the public. The use of GPS has also grown exponentially since its first limited utility, becoming a part of today's critical commercial and navigational infrastructure, with many applications.

Cultural resource specialists are now beginning to take advantage of these technologies as tools to help them in their daily work. GPS offers a clear alternative to quickly locate important resources with enhanced levels of accuracy, while GIS provides the tools to analyze, organize, interpret as well as integrate a variety of data types. GIS/GPS applications ranging from survey to documentation to predictive modeling can now participate in daily cultural resource management procedures.

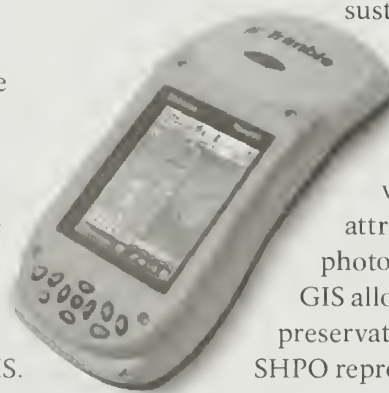
Precisely these types of applications make GIS and GPS technologies the most efficient tools to use when managing cultural resources in response to a disaster, and more specifically to use in Section 106 compliance. Using GPS to digitally collect



Screen capture of the ESRI ArcGIS software, showing the data collected for FEMA's red tag survey, following Katrina.

a location of each resource surveyed, and to record the attributes that describe that resource, including those that determine the historic nature of a resource, greatly accelerate the Section 106 identification and evaluation phases. Rather than sending surveyors into the field, in often difficult circumstances, to write down descriptive information, then transcribe that information into a database, and finally plot the locations on a map, surveyors capture all of the information at once and can immediately incorporate it into a GIS.

The GIS, in turn, stores the locational and attribute information, displaying resources surveyed in relationship to reference information, such as roads or tax parcel boundaries, providing a visual distribution pattern as well as the descriptive data associated with each resource surveyed. Additional documentation, such as photographs, attached to each location provide the information for cultural resource specialists to evaluate each site visited for its potential eligibility for the National Register of Historic Places.



The Trimble GeoExplorer GPS unit used during FEMA's historic preservation response to Katrina.
Source: Trimble Navigation Limited

an adverse affect, and recording the decision digitally in the GIS directly. Using the GIS in this way eliminated the need to create, fill out and send paper forms, copies of photographs and other reference information for each of the thousands of resources affected in the disaster to the SHPO to form consensus, saving additional time throughout the Section 106 process.

In response to the Katrina/Rita event, CRGIS implemented the cultural resource GIS data model it developed to further organize the cultural resource data collected via GPS, allowing FEMA to direct and track survey efforts on a daily basis, providing immediate feedback to the city and Parish governments regarding where FEMA completed surveys and what remained to be collected. Additional reference data in the cultural resource GIS application provided the tools for FEMA cultural resource specialists to perform analysis quickly, determining instantly what resources inside known historic districts sustained damage for instance.

Having the cultural resource data, with its associated attribute information and photographs, inside the GIS allowed FEMA historic preservation specialists and SHPO representatives to evaluate the historic nature of each resource, forming concurrence on a decision regarding whether FEMA's proposed action posed

Steps Taken in Response to Katrina in New Orleans

Establishing Infrastructure

Clearly the idea of expediting Section 106 procedures in the face of such a large disaster makes the use of GIS and GPS technologies attractive and imperative. Further, having the ability to rapidly respond to the needs of local, state and Federal government agencies, providing critical historic resource information to help direct the immediate response activities, to assist in debris removal processes, and to aid in long term recovery activities only enhances the need to have these technologies employed in FEMA field offices for cultural resource staff.

FEMA's standard procedures involve the establishment of a geo-spatial intelligence unit (GIU) within the Joint Field Office (JFO) set up to handle all aspects of the disaster response. The GIUs typically gather existing spatial data relative to all response needs, not simply cultural resources, performing basic data analysis and cartographic output. Because of the need to address immediate health and safety concerns and a general lack of available cultural resource data in a digital GIS format, cultural resources typically stay a lesser priority for the GIU. In response to the Katrina/Rita event, FEMA created a larger than average GIU at the Baton Rouge JFO, with approximately 60 GIS technicians and cartographers tasked primarily with making paper maps necessary to plan various responses, examine levels and distribution of damage, plan for areas of temporary housing, work with debris removal, etc.

Rather than establish a cultural resource data management system within the GIU infrastructure removed from the physical areas in need of survey for the Section 106 identification and evaluation, FEMA cultural resource program managers chose to establish the historic preservation GPS and GIS management strategy at the local field office located in New Orleans. General support from the GIU included a dedicated cultural resource cartographer who worked in partnership with the historic preservation/GIS specialist

hired to administer the system. In this way, those working to comply with Section 106 maintain direct access to the resources, however the GIU can share the data produced helping to create a more comprehensive disaster-wide picture of the cultural resource devastation, response and treatment options.

In New Orleans, once the typical disaster response procedures were underway, including the creation of emergency operation centers and the establishment of the FEMA Joint Field Office, focus could then move to cultural resource stabilization and the Section 106 survey and evaluation phase. The detailed work of implementing a GPS survey, evaluating sites for National Register eligibility, as well as the construction of a GIS to manage the data then took place immediately.

Because of the magnitude of the Katrina/Rita event it quickly became evident that the customary Section 106 techniques would not adequately address the sheer number of resources affected by the disaster. With the scope of the damage caused to historic properties so large, the full magnitude of FEMA's Section 106 compliance needs remained virtually unknown during the initial response period. As a result, FEMA could not perform the usual background research or traditional windshield surveys to assess sites and damage within a timeframe considered reasonable by state and local government agencies. Further, the loss of critical infrastructure within the affected areas required state and local governments to act quickly



The FEMA geo-spatial intelligence unit (GIU) at the Baton Rouge Joint Field Office, Dec. 2005

in debris removal to open streets, restore power and address the sanitary needs of residents.

CRGIS suggested a comprehensive survey strategy utilizing GPS to accurately locate each property visited, and to collect information regarding the historic nature of each site along with the level of damage to each feature. This resulted in an extremely accurate identification and evaluation process done in one step, as opposed to several survey processes, greatly reducing the time spent by FEMA this critical

phase. Without the use of GPS to locate and record attribute information for each site visited, the survey process would have been significantly hampered by difficult working conditions, the lack of direct access to resources, the necessity of filling out cumbersome paper forms, the need to locate resources on base maps with inappropriate scales, and the requirement to convert the paper information into some form of digital data for transmittal to the appropriate officials.

Because of the implementation of a completely digital survey strategy for the preliminary stages of FEMA's cultural resource response (GPS), CRGIS suggested the use of GIS to manage the incoming survey data and produce the essential analysis for all agencies involved. Data coming directly from the field, processed on a daily basis could then create accurate maps of areas with significant destruction illustrating the impact of that damage on the cultural landscape as a whole. Additionally, statistics generated by the GIS regarding the resources surveyed could direct new surveys, and eventually demolition work. Without the use of GIS to manage survey data, FEMA would not have been able to respond to requests from local, city and state officials in a timely manner, or produce any kind of spatial analysis of the incoming data to help develop treatment and mitigation measures to prevent the same problems from occurring in future disasters.



FEMA surveyors conducting the red-tag survey of buildings in New Orleans following Katrina, using a hand held GPS unit, Dec. 2005.

With the advantages offered by the inclusion of GPS and GIS in the cultural resource response to the disaster unmistakable, CRGIS began laying the ground work for a comprehensive historic preservation data management system, which could expand to meet the needs encountered during the entire disaster response and recovery. Mimicking the Section 106 process itself, the concept of identifying resources damaged and making assessments regarding their possible historic nature formed the cornerstone of the strategy.

Building on the basic infrastructure at the FEMA field office, organized before the cultural resource response began in earnest, the CRGIS approach tried to utilize existing resources, personnel and skills to create a more effective way to accomplish the primary assessments. The necessary historic preservation specialists were already in place at the local FEMA field office, however a preservation specialist familiar with GIS and GPS was not. Adding this critical element to FEMA standard operating procedures helped to get the survey and identification phase underway quickly, without the need to add unnecessary levels of management during the early and sometimes confused disaster response.

The survey strategy employed high end hand-held GPS receivers, which FEMA purchased, received



An example of a map produced by the FEMA GIU showing the regions of flooding in New Orleans, Dec. 2005.

data produced to better reflect the landscape. These significant features and the attributes that describe them form the data dictionary. Developing this data dictionary after acquiring the appropriate staff and equipment constitutes the first step in establishing a solid foundation for the survey.

Serving as a digital version of a paper survey form, a data dictionary includes a list of potential features or objects that the surveyor might encounter in the field, such as an historic building, an archaeological site, a landscape feature or a fence. Along with a list of features the data dictionary defines the attributes associated with each of those

on loan from the manufacturer, or borrowed from surveyors to locate resources within +/- three meters of accuracy. Surveyors used a data dictionary, or digital survey form, inside the GPS receiver to collect attribute information, such as historic characteristics, condition, integrity and National Register eligibility. Further, surveyors also used their own digital cameras to collect multiple photographs of each building or site.

At first, surveyors received lists of properties designated as sites posing an imminent danger to health and safety. Generated by city and Parish government offices, the inventories supplied basic locational information, in the form of a street address or occasionally a geographic coordinate. These "red tag" lists frequently changed to reflect updates as owners applied for building permits to reconstruct damaged properties, or abandoned properties left to sit without any rehabilitation became safety hazards. Later stages of the survey efforts included voluntary demolition requests submitted by individuals to city and Parish governments.

Because of limited time and manpower available during an emergency, not all cultural resources or related features can be included in a general survey. By creating a cartographic model, we identify specific features and attributes significant to the survey goals, as well as organize the survey and

features. Creating this tool structures the data collection process, prompting surveyors to look for specific features and guiding surveyors to enter the appropriate descriptive information for each resource they may encounter. Data dictionaries also limit the attribute values surveyors can enter, helping to insure the quality of the data.

In New Orleans, CRGIS created a basic data dictionary using the accepted SHPO windshield survey paper form as a guide, along with a similar survey form from the local New Orleans Historic District Landmark Commission (HDLC). This created a basic outline of the important features, and the required descriptive elements crucial to making evaluations of National Register eligibility. Through a series of meetings the SHPO, HDLC and FEMA representatives refined the preliminary data dictionary, including additional features, attributes and attribute values where necessary and removing redundant options.

Because of the crucial role the data dictionary plays in structuring the survey and the resulting attribute information, it is important to design the data dictionary well, including only those features and attributes that surveyors can observe in the field or that are absolutely necessary for the recognition of a feature. Creating a large data dictionary increases the amount of time spent in data collection and may pose a particular concern in reacting to a disaster

quickly. The data dictionary CRGIS implemented for Katrina included all types of features that surveyors may encounter in the field that could qualify as eligible for the National Register, but limited the attributes to approximately 50 items per feature. (see Appendix A)

By involving all parties interested in cultural resources, not simply for FEMA Section 106 compliance, FEMA and CRGIS anticipated that the data collected would serve a variety of purposes, such as creating a digital database of resources when none existed in the case of HDLC. For the SHPO, collecting information on each resource to the level of detail achieved with the GPS for locational and descriptive purposes produced data previously unavailable expanding the existing state inventories of historic properties.

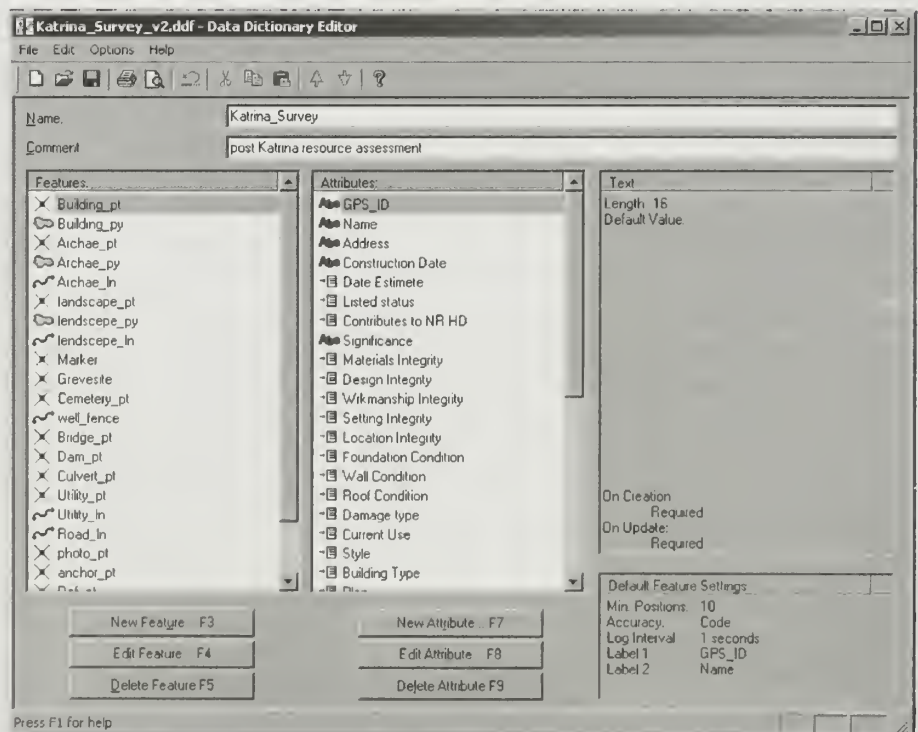
In order to accommodate the flexibility needed to maintain, share, update and manage the data, CRGIS employed the data model based on the draft cultural resource spatial data standards. The data model, represented in a diagram, explains how data will be structured and used to meet those standards (see Appendix B), taking advantage of GeoDatabase technology available in the GIS software. A GeoDatabase consists of a relational database with the geography imbedded within the database structure. Because of this construction, the GeoDatabase becomes a very powerful tool for organizing and manipulating data, but also for linking spatial data to other data types and sources.

CRGIS constructed the GeoDatabase around the features included in the GPS data dictionary, as the second step in establishing the necessary infrastructure for the survey. GPS software converts each different feature represented in the data dictionary into its own data layer for inclusion in the GIS, or in this case, for use in

the GeoDatabase as a feature class. In turn, CRGIS grouped feature classes based on similar resource characteristics, such as buildings, landscape features, etc., to create feature datasets. These feature datasets act as folders to help organize the GeoDatabase, combining data layers of like features into groups that make logical sense and share the same geographic characteristics.

Using this GeoDatabase schema means that all spatial data collected via GPS becomes a point, line or polygon feature class related to the resource identified by the surveyor in the field from the data dictionary, such as a building, archaeological site or landscape feature. Similarly, all descriptive information collected for that resource forms the attribute table for the feature class. CRGIS also included additional a-spatial tables within the GeoDatabase design, such as the National Register Information System, as well as the SHPO and HDLC inventories, to provide background information on any potentially historic resources.

One a-spatial table, the CR_Link table, acts as the key to the functionality of the entire GeoDatabase however, making it a fundamental element in the overall survey methodology. To meet the



Screen capture of the Trimble Pathfinder Office software, showing the data dictionary used in Louisiana following Katrina.

draft cultural resource spatial data standards, all resources included in any of the various feature classes are assigned a globally unique ID (GUID), along with a locational GUID and a survey GUID. The presence of these globally unique IDs allows users to associate each resource to any other representation of that same resource in any other database. As a result, these GUIDs allow for the possibility that a single cultural resource may have more than one geographic depiction, whether part of another GPS survey or in some other inventory. In the case of New Orleans, many buildings floated away from their original foundations, resulting in an original site (a lot point), and an actual position of where the building came to rest (a building point). By associating a single cultural resource GUID with two different locational GUIDs, users can preserve the relationship between those two points in space along with the information that although two locations exist, they represent the same cultural resource.

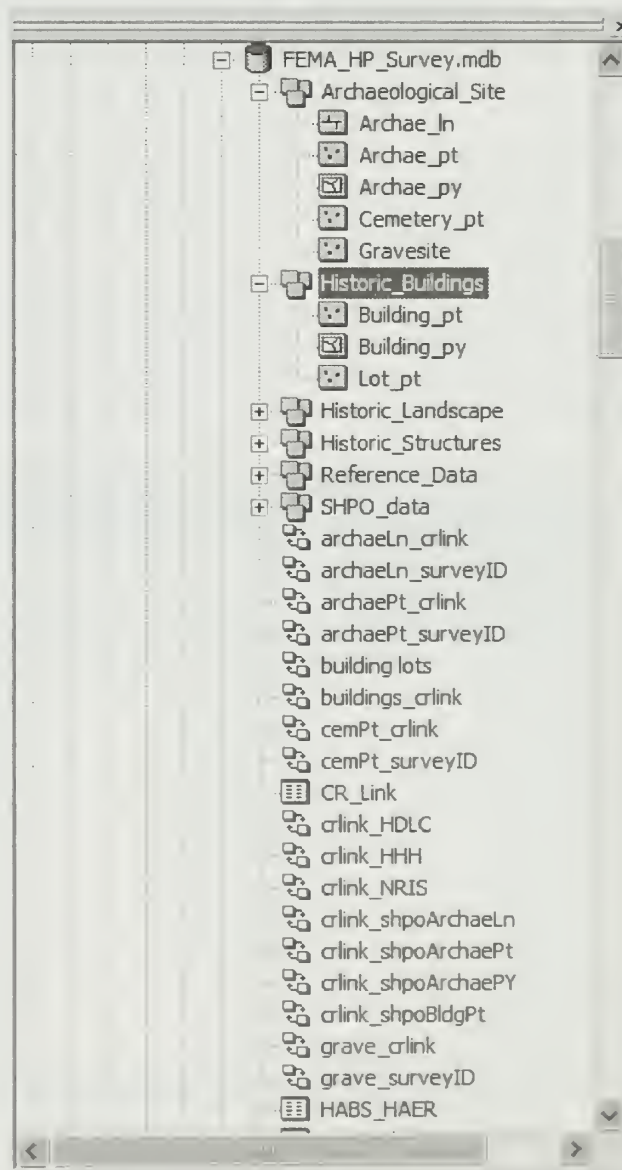
The CR_Link table contains all of the GUIDs, for all resources surveyed, regardless of feature type or feature class. This table in turn behaves as a “switchboard” allowing the historic preservation specialists to find the commonalities or matches between FEMA data and external sources, such as the National Register or SHPO inventories. Unique IDs from those external database sources are associated with each unique cultural resource GUID and entered into fields in the CR_Link table. CRGIS then built

persistent relationships in the GeoDatabase to tie the FEMA GPS data to any external database, utilizing the associations defined in the CR_Link table.

In addition to the GPS data, CRGIS included additional attribute fields with each feature class to meet the cultural resource spatial data standards which call for feature level metadata. The metadata describes how surveyors collected each individual point, line or polygon, the level of accuracy achieved, when the survey took place, who collected the data, whether the locational data is sensitive, among other elements. This vital information tells the story of the data itself and

indicates how users can best understand and take advantage of the data.

To accommodate the concurrence process required for Section 106 compliance, and moving to the next step in the infrastructure development, CRGIS added other attribute fields, to contain the individual determinations of eligibility made by FEMA and the SHPO, the date FEMA and SHPO concurred, and the determination of adverse affect. The presence of these fields allows the FEMA and SHPO historic preservation specialists to examine the attribute data collected with each GPS feature, record their opinions based on the survey data in combination with the external sources, and come to an agreement regarding whether a resource meets National Register criteria.



Screen capture of the ESRI ArcGIS software, showing the structure of the GeoDatabase created for FEMA in Louisiana following Katrina

Contents	Preview	Metadata
Location_ID	Cultural_Resource_ID*	Survey_ID
{017D298D-68EC-4e6a-BE66-706BDFEA56F5}	{CA3C0677-066F-49b5-ADBA-D2345F95BE65}	{58FD1A36-0E60-41d7-8FDF-EC037D60D827}
{F3EC0393-EE20-4293-880D-B5D2BE274620}	{CF73D5D9-F5E3-4405-BFCC-AC947956FA45}	{58FD1A36-0E60-41d7-8FDF-EC037D60D827}
{EFEFC021-0987-41c7-9A53-B8230950BF72}	{27B87B7A-4355-4641-8D84-3EA28F3341B7}	{58FD1A36-0E60-41d7-8FDF-EC037D60D827}
{BC4AC070-2704-4def-BBC8-483B0219E2FA}	{E5C8B5B2-B18C-4926-807D-6A6DFB3B0141}	{58FD1A36-0E60-41d7-8FDF-EC037D60D827}
{A9900A4D-66B1-4503-8BD4-C6B7C770A830}	{829161E7-26EC-41a3-9522-AFC239169CC6}	{58FD1A36-0E60-41d7-8FDF-EC037D60D827}
{2F8018FE-5981-4bd0-8DE9-8058E42FCD1C}	{96B86A8E-F1CB-40e9-87D5-99A68C82F820}	{58FD1A36-0E60-41d7-8FDF-EC037D60D827}
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{B7DAED08-1B2D-42a8-AF41-3E77A1FC2247}	{25B354D2-6612-437d-821F-4C782E9E5032}	{58FD1A36-0E60-41d7-8FDF-EC037D60D827}
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{2B521B4B-CAFA-47ae-BE5E-0D4F2DEB55E7}	{BACC242C-6838-4f37-A545-FDA506689CA5}	{58FD1A36-0E60-41d7-8FDF-EC037D60D827}
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{905D4CF1-7A23-4ea7-B412-48891232EBDE}	{25F8B50B-3F11-4eb5-B2F8-8D9F6FF1CB1E}	{58FD1A36-0E60-41d7-8FDF-EC037D60D827}
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{597A3D32-A73A-4d3a-BDBC-87FE2B626587}	{370D842F-7073-42ea-A199-8484A6FBD3EA}	{58FD1A36-0E60-41d7-8FDF-EC037D60D827}
{231118DA-ED1E-4595-A8A3-4B2EA69F50C6}	{5D162D44-2652-47c9-8470-41CB1A3F8556}	{58FD1A36-0E60-41d7-8FDF-EC037D60D827}
{2BFAA886-AB2A-47e5-A38C-F2442390D9E7}	{7FD811CC-8A05-4587-9E1C-8C438A9BF702}	{58FD1A36-0E60-41d7-8FDF-EC037D60D827}
{39EE44C3-833A-4bb2-89EA-E2D95D7CC88D}	{F08DDC19-71ED-481c-9E51-01381AAAC8F7}	{58FD1A36-0E60-41d7-8FDF-EC037D60D827}
{54DAC938-80A7-49f9-ABB4-2331FC90C8E4}	{ED703B4B-71A6-401a-8F30-333D3795F954}	{58FD1A36-0E60-41d7-8FDF-EC037D60D827}

Screen capture of the ESRI ArcGIS software, showing the a-spatial CR_Link table inside the FEMA GeoDatabase, linking various databases containing descriptive information to each GPS location.

Finally, to aide in the evaluation of each resource, FEMA used the GIS to link digital photographs taken by surveyors to each location visited. Again, these images, together with the descriptive attributes and the knowledge of the resource location allowed the FEMA and SHPO historic preservation specialists to quickly analyze each resource and make a determination of eligibility, as well as conclude if demolition posed an adverse affect on the resource. Completing all of these processes directly through the GIS eliminated the need for FEMA and SHPO historic preservation specialists to review thousands of paper survey forms.

To carry out an efficient GPS survey, and assemble the required associated data, maintaining the survey base of operations in New Orleans was critical. Further, adjusting to the accelerated evaluation and analysis of each potentially eligible site, in addition to sustaining clear and open lines of communication to the appropriate local government data sources, made the local base of operations imperative to respond quickly to requests or additional survey needs.

By building a flexible but ordered GeoDatabase to maintain the digital data with its ability to link to external databases however meant that the

entire cultural resource data management strategy could build off of the existing FEMA paradigm. Following this approach makes data sharing within FEMA and GIU much simpler for providing a disaster-wide view of the cultural resource situation. Once appropriate points of contact can be identified and sustained between the local FEMA field office historic preservation specialists, GIS specialists, the GIU, local governments and the SHPO, little infrastructure change within the standard FEMA organization is required.

Data Collection

With the basic infrastructure established, including a data dictionary, a GeoDatabase design, and the historic preservation/GIS personnel in place, the first step in executing the cultural resource methodology consisted of performing the GPS survey, visiting each resource impacted by the event in order to determine its historic nature or potential. This initial identification process provides the critical digital data that feeds into the GIS to manage and analyze the overall cultural resource response and any of FEMA's Section 106 obligations.

CRGIS utilized common practice field survey procedures, similar to any other standard



FEMA surveyors conducting the red-tag survey of buildings in the Lower Ninth Ward of New Orleans following Katrina, Jan. 2006.

architectural windshield survey, with the exception of the introduction of GPS as the collection tool. The data dictionary inside each GPS receiver serves as the survey form, digital cameras provided by the surveyors supply the photographic documentation, and the locational information collected by the GPS receiver furnishes the information to generate detailed maps locating each potential resource.

The primary survey requests responded to red tag lists provided by city and Parish governments, containing all properties considered an imminent threat to public health or safety. Subsequently, those sites submitted by private citizens to city and Parish governments as potential voluntary demolitions, became the second priority. The final priority for survey remained those sites identified as part of the Section 106 treatment measures, including all sites contributing to existing or newly identified historic districts.

Although these three phases of survey address different needs, the survey procedures remain the same for the most part. In all cases, FEMA contracted field surveyors from established cultural resource management firms that met the Secretary of the Interior's standards for historians or architectural historians. Using local firms and locally based surveyors helped to insure familiarity

with the resource types, the SHPO survey forms, and the larger historical context of the region.

Each of three cultural resource management firms contracted through the US Army Corps of Engineers to FEMA provided at least three two-person teams of surveyors. CRGIS provided the opening orientation to all of the surveyors, explaining the concept of the GPS survey strategy and providing general training in the operation of the GPS receivers. Hands on training with equipment provided surveyors an introduction to the data dictionary, as well as details in how to navigate in the GPS software, troubleshoot problems, and perform offset functions in particular (see Appendix C). Offsetting data collection allows surveyors to remain in the public right of way, but collect an accurate location on the building or property itself, an important consideration when Federal agencies do not have blanket right of entry to properties.

As the survey progressed, new surveyors rotated into the project, while others rotated out. As a result, FEMA historic preservation/GIS specialists provided additional training to new surveyors and discussed new techniques as the survey purposes changed to adapt to the three goals. During all training classes CRGIS and FEMA provided

surveyors with a written methodology statement outlining daily procedures for surveyors and FEMA historic preservation staff, to insure consistency in field techniques and data delivery (see Appendix D). Additionally, CRGIS and FEMA provided detailed definitions describing the information required for each attribute field in the data dictionary, to insure uniformity in data entry and interpretation (see Appendix E).

Training surveyors covered the technical aspects of working with the GPS receivers and the data dictionary, but also addressed common standards and protocols to follow in the field. For instance, FEMA requested that surveyors take four separate photographs of each structure or site, showing an elevation, two oblique views and a street-scape for context. To meet National Register of Historic Places standards, FEMA called for surveyors to use a specific resolution on each digital photograph. Additionally, CRGIS provided a photo log form to track each individual photo, and to act as routine field notes, tracking unique ID numbers and serving as a check against the attribute information entered into the GPS receiver (see Appendix F). Conventions for GPS filenames, photo filenames and unique ID number formats were also established during training classes.

Preliminary orientation and training meetings with surveyors also allowed CRGIS and FEMA to establish protocols for equipment management, as well as institute policies for security of the surveyors and the equipment. Tracking logs filled in by surveyors to check-in and check-out GPS receivers made it easier for the FEMA historic preservation/GIS specialists to determine which team had each piece of equipment, as well as trace any service problems or data issues produced by particular receivers (see Appendix G).

Most importantly, during each of the survey phases personal safety of the surveyors remained paramount. During the first survey efforts, responding to the most devastated areas required the arrangement of formal Federal security to protect surveyors from looters and other residents uneasy with a Federal presence in particular neighborhoods. During other phases of survey, crime and personal safety issues required the need to create a security plan which individual

surveyors could apply to protect themselves in dangerous areas.

Periodic meetings held with the groups of surveyors and FEMA historic preservationists, as well as FEMA GIS staff, allowed open and clear communication from the surveyors in the field to those managing the data in the FEMA field office. These meetings addressed problems or issues generated as new procedures went into effect depending on the goal of the survey. Other issues generated, such as the need to add or remove options or features in the data dictionary proved invaluable in fine-tuning the data dictionary to meet the needs of all parties involved. CRGIS and FEMA consistently encouraged and solicited written comments and feedback from field surveyors to assist in adapting the GPS/GIS methodology to real world field conditions.

The general workflow and set of procedures involved in carrying out the survey tends to follow the flow of the data. In all cases the local FEMA field office, and the historic preservation/GIS specialist in particular, function as the hub through which incoming demolition orders come, survey assignments originate, data processing is performed and analysis or eligibility determinations return to the SHPO (see Appendix H).

During the first survey phase of potential demolitions, city and Parish governments supply the FEMA historic preservation staff at the local field office with lists of properties determined structurally unsound or a threat to public health and safety. Made available to FEMA in a tabular format, these red tag lists specify an address and potentially a geographic coordinate to help restrict the survey effort. FEMA data entry staff cross-check these incoming files against previous lists to find duplicates, additions or sites removed from the red tag list.

Once the data entry staff composes a clean inventory of red tag structures, the FEMA GIS staff generate maps locating the properties either based on the address provided or the geographic coordinate, presenting a visual overview of the survey targets. The FEMA survey coordinator supplies both the tabular list of red tag properties and a paper map to the survey teams before they

enter the field, when surveyors report to the local FEMA field office to pick up GPS equipment and receive their survey assignment or area for the day. At this time, surveyors officially sign out GPS equipment to complete their survey. Daily drop off/pick up of the equipment and reassignment of sites assures the proper working condition of the equipment, allows the FEMA historic preservation/GIS staff to acquire data quickly and check for errors, and additionally allows FEMA data entry staff to continually update the official list of red tag structures for inclusion in the survey.

At the end of a survey day, when surveyors return the GPS equipment, photo logs/field notes and a CD containing the digital photographs taken of each resource the FEMA historic preservation/GIS staff download the GPS data from the individual receivers, combine all files for the day from each receiver and convert the data into a GIS format, loading it into the GeoDatabase schema as feature classes. The FEMA historic preservation/GIS specialist performs basic quality assurance /quality control (QA/QC) measures on the incoming data daily and enters the critical feature level metadata assigning each feature a cultural resource GUID, a locational GUID and a survey GUID.

From the updated GIS, FEMA historic preservation/GIS staff generate daily totals of sites surveyed by all teams to compare to the official red tag list, thus providing immediate statistics regarding the status of what remains to be surveyed. In a typical survey day, each two-person team can collect an average of approximately 30 points with attributes, totaling up to 250-300 sites evaluated per day. The FEMA data entry staff receives these daily totals to compare the numbers and sites visited against the official files, and to compare with new lists to prevent duplication of survey efforts.

At the same time, additional QA/QC measures taken at this stage correct any other obvious errors in the attribute information collected in the field or discovered through the comparison of the data to the original red tag lists, such as misspelled street names, standardized address information, or the assignment of unique GPS IDs. The FEMA historic preservation/GIS specialist performs any updates needed to correct the final copy of the data in the GeoDatabase.

In a parallel process, FEMA GIS staff copy the digital images from each survey team onto the central network into specific directory paths, distinguishing directories by team and by date. Links from individual point locations in the GIS are hard coded to the locations where the GIS staff place the photo files through the attribute tables, allowing reviewers to see the descriptive information and also to click on individual photos of each structure to make evaluations of National Register eligibility.

Once surveyors move further away from the local field office to address other Parishes or resources in other areas, procedures change slightly to allow surveyors to check out equipment for longer periods of time. In order to maintain data reliability and to insure that the GeoDatabase contains the most recent data however, surveyors email GPS files and photographs to the FEMA historic preservation/GIS staff on a daily basis, maintaining continuity with the rest of the general workflow procedures. Photo logs and any other field note information can be provided to the FEMA staff when GPS equipment returns from the field. In this way, the flow of data from the field to FEMA historic preservation/GIS staff and data entry staff for QA/QC procedures may continue uninterrupted and additional data is available to FEMA and SHPO staff to continue making evaluations of National Register eligibility.

In the second phase of survey, based on voluntary demolitions submitted by individual homeowners to the city or Parish government, the same workflow and procedures apply. Surveyors must visit each voluntary demolition site to gather its locational information and attributes to determine if the sites meet National Register criteria. Due to the more dispersed distribution of sites in this phase of survey, the total number of resources recorded by each team tends to decrease to approximately 10-20 sites collected per day. Surveyors still receive tabular lists and maps to insure these sites go through the same identification process. Again data returns to the FEMA historic preservation/GIS specialist on a daily basis for integration with all of the red tag structures.

This phase of survey, coming after the rush of the first phase, may take place while initiating the

third phase of survey. The third phase of survey focuses on the identification of contributing and non-contributing resources to proposed, or existing National Register historic districts as a treatment measure to compensate for the necessary demolition of some historic sites. Due to the relative concentration of survey within a circumscribed area however, the number of resources recorded in any one day will again rise to approximately 30 per day by a single team. Any property on a demolition list takes precedence in terms of survey time and resources over those sites examined as a treatment measure, however the surveys may run simultaneously.

Performed by the FEMA historic preservation/GIS specialist, the last step in daily workflow, regardless of the survey phase, consists of loading the GUID information assigned to each feature into the CR_Link table. Updating the CR_Link table with this information prepares the CR_Link table for the FEMA data entry staff to begin matching features surveyed by FEMA to known resources in SHPO or other local databases. This linking process provides the reference information necessary for evaluation and allows databases from multiple sources to converge in one place, based on the geographic location.

Data Processing

The continual flow of data from the field collection to the FEMA historic preservation/GIS specialist, to the FEMA data entry staff, and back to the field, makes processing the data to verify its quality and consistency on a daily basis a necessity. Processing all of the data requires the participation of FEMA data entry and GIS staff, working together with the FEMA historic preservation/GIS specialist to create the diverse data products needed by local, state and Federal agencies (see Appendix I).

First to direct the field survey, FEMA data entry staff in the local field office must sort out the incoming lists of red tag properties, and/or voluntary demolitions, submitted to the FEMA historic preservation staff, comparing new and existing lists to identifying properties to survey or eliminating properties already examined. In this procedure, FEMA data entry staff must look at every address submitted, compare them to the

addresses of sites already in the GeoDatabase, and evaluate them against any previous lists submitted. Each survey team receives a resulting spreadsheet containing any information regarding the property at the address submitted to FEMA for demolition as a means to identify their target survey properties.

Similarly, FEMA GIS staff receive addresses or coordinates submitted on a red tag or voluntary demolition list. GIS staff produce paper maps for surveyors to carry with them in the field, helping them to confirm that they are examining the proper site. These paper maps include reference information, such as roads, historic district boundaries and tax parcels. Even if applicants do not submit coordinates, GIS staff generate point locations by interpolating the correct location based on the address information. Any locational information collected by the surveyors via GPS will be far more accurate than either the interpolated address points, or coordinates based on unknown sources, and therefore a greater use to all agencies involved.

Once surveyors return from the field, processing of the geographic information begins, along with the management of the photographs and other field note information provided by surveyors. The FEMA historic preservation/GIS specialist downloads the GPS data and converts the data into GIS files, loading that data into the GeoDatabase. Basic QA/QC removes any features that obviously do not belong and insures that all features have a unique GPS ID. From this data, the FEMA historic preservation/GIS specialist generates spreadsheets that track the daily total of sites surveyed compared to the total number of properties listed on any red tag or voluntary demolition lists. Additionally, the FEMA historic preservation/GIS specialist generates a spreadsheet listing all properties included in the that day's collection for the data entry staff to use in comparing what was surveyed to what must still be surveyed.

FEMA GIS staff collect the digital photographs taken by each survey team, along with the photo logs that document the correlation of each photo file with a particular GPS point. GIS staff copy the digital images into directories on the network and enter those directory paths into the GeoDatabase, for each point collected. Each feature in the



The New Orleans local FEMA field office, environmental and historic preservation staff, Dec. 2005.

GeoDatabase may have up to four photographs associated with it, and therefore the GIS staff must create the links to those pictures through the GeoDatabase before the Section 106 review and consultation can take place. Photologs filled out by the surveyors in the field help the GIS staff confirm that the correct photo is associated with the correct GPS point.

With the preliminary processing of the incoming GPS data completed and daily statistics generated, the FEMA survey coordinator can plan future surveys, and city and Parish officials can track FEMA progress. More detailed QA/QC efforts undertaken with the help of FEMA data entry staff follow this stage. In comparing the incoming GPS data to the existing red tag and voluntary demolition lists, FEMA data entry staff document why a duplicate may appear in the records or in the GeoDatabase. Conversely, the data entry staff document why a site may have been removed from any of the demolition lists, keeping track of when the property was first put on, or removed from a list. Using comments from surveyors submitted on photo log or field note forms, data entry staff can further synchronize survey data with information provided by city and Parish agencies. The point verification and tracking form communicates all of the specifics regarding the inclusion or exclusion of a particular GPS points, and why, to the FEMA historic preservation/GIS specialist (see Appendix J).

Point verification and tracking forms return to the FEMA historic preservation/GIS specialist at the end of this more detailed QA/QC process so that updated information can be incorporated into the GeoDatabase. Ultimately, data entry staff produce revised spreadsheets of target survey properties or areas based on their comparison of the GPS data with the red tag and demolition lists.

These in turn will guide the surveyors in their next field project.

After updating the GeoDatabase following the QA/QC process, the FEMA historic preservation/GIS specialist also adds the feature level metadata and the cultural resource, locational and survey GUIDs, providing a completely unique identification for each feature. With the GUIDs assigned to each individual feature, the FEMA historic preservation/GIS specialist updates the CR_Link table which allows users to connect the locations on the ground to external data bases. The updated CR_Link table returns to the FEMA data entry staff who again examine each individual property and attempt to find matches for those sites in other databases, such as the SHPO inventory. When they do find a match, the data entry staff manually enter the corresponding ID from the external database into the CR_Link table.

With these associations established through the CR_Link table, the data entry staff send the CR_Link table back to the historic preservation/GIS specialist to update the master GeoDatabase. The historic preservation/GIS specialist also builds any persistent relationships required to physically show the association of a GPS point on the ground to any external database. The GeoDatabase stores all of these relationship connections as well as the external database information, allowing users to click on a single point and find information related to the site in multiple locations. At the end of this

data processing workflow, the FEMA historic preservation/GIS specialist can pass along a final GeoDatabase with clean data to the FEMA and SHPO representatives to carry out the Section 106 review and concurrence process.

SHPO Review and Establishing Concurrence

As FEMA contractors conduct their survey and identification, and pass their information along to the FEMA historic preservation/GIS specialist to process, FEMA historic preservation specialists can begin evaluating the incoming data to determine if the sites meet National Register criteria. Under normal circumstances, FEMA historic preservation specialists would make their own determinations of eligibility and assessments of whether those potentially historic sites might suffer an adverse affect given FEMA's proposed undertaking. FEMA would then send this information to the SHPO for their review and concurrence on both eligibility and adverse affects. Because of the magnitude of the Katrina/Rita event, the Louisiana SHPO assigned a SHPO liaison to the FEMA field office to expedite this concurrence process. The ability to have FEMA and SHPO staff work together, with the GIS data, photographs and external databases, allowed the determinations of eligibility and the formation of consensus to occur in the field office, through the GIS in an accelerated fashion.

Without waiting for the completion of all surveys, FEMA and SHPO historic preservation specialists can begin to make their determinations and form official concurrence inside the GIS, as FEMA assimilates new survey information and adds to the overall GeoDatabase. Once thoroughly vetted data advances through the QA/QC process and is verified in the master GeoDatabase by the FEMA historic preservation/GIS specialist, this information leads to the decisions regarding what resources to demolish, what resources to preserve, and what treatment measures compensate for the loss of historic sites.

The final evaluation step begins with the FEMA GIS staff creating a subset of the master GeoDatabase for FEMA and SHPO reviewers to work with (see Appendix K). Based on queries of a specific geographic area, or a particular resource type, this

provides the reviewers with a finite and manageable data set to work with at any one particular time.

The FEMA historic preservation/GIS specialist creates a small GIS project using this subset of data, adding important reference information for context, such as roads, tax parcels, historic district boundaries or aerial photographs. This GIS project is provided to the FEMA and SHPO reviewers so that they may begin to look at each site visited, examine the photographs and make their determinations of National Register eligibility. The FEMA historic preservation/GIS specialist provides basic training in how to use the GIS tools to examine the necessary data and contextual information. Although working together, the FEMA and SHPO reviewers make their own independent assessments, then determine whether they agree.

To assist the reviewers in their process, and assure that each property contained within the GeoDatabase receives the proper review, the FEMA historic preservation/GIS specialist also creates an inventory of the properties contained in the GIS project. This list, in the form of a spreadsheet, allows the reviewers to record their comments and decisions digitally, or manually on paper.

The FEMA and SHPO reviewers work in concert, using the identify tool in the GIS software to select each property one at a time, examine the surveyors observations, photographs and the larger context within which the site exists. The reviewers enter their individual determinations, comments, and assessments into the spreadsheet directly, or on the paper version provided to them. If the reviewers reach concurrence, this is also recorded, along with the reviewer's names and the date. The reviewers then return the paper list, with annotations, or the digital spreadsheet version, to the FEMA historic preservation/GIS specialist.

With this essential National Register eligibility and adverse affect information, along with the specifics of the concurrence determined, the FEMA historic preservation/GIS specialist either enters the data from the annotated paper list into the master GeoDatabase, or imports the digital spreadsheet data produced by the reviewers. Following this procedure, FEMA GIS specialists can begin to

perform analysis with the data, generating paper and electronic lists of properties found eligible or ineligible for the FEMA and SHPO reviewers to confirm, or city/Parish governments to examine as a final measure of quality assurance on the entry of the evaluation for each site. Ultimately, these processed lists go through the FEMA survey coordinator and to the SHPO for final acceptance or resolution of any differences between FEMA and SHPO determinations.

Section 106 Treatment Measures

Inevitably, in the event of a disaster of such magnitude, the demolition of buildings either already listed on the National Register or eligible for the National Register will be necessary. In cases such as this, FEMA and the SHPO work together to develop appropriate treatment measures to compensate for the loss of these historic resources. Treatment measures may range from the rehabilitation of structures to more amicable compromises over structures determined dangerous to public health or safety, to more pro-active measures designed to assist in the event of any future disaster.

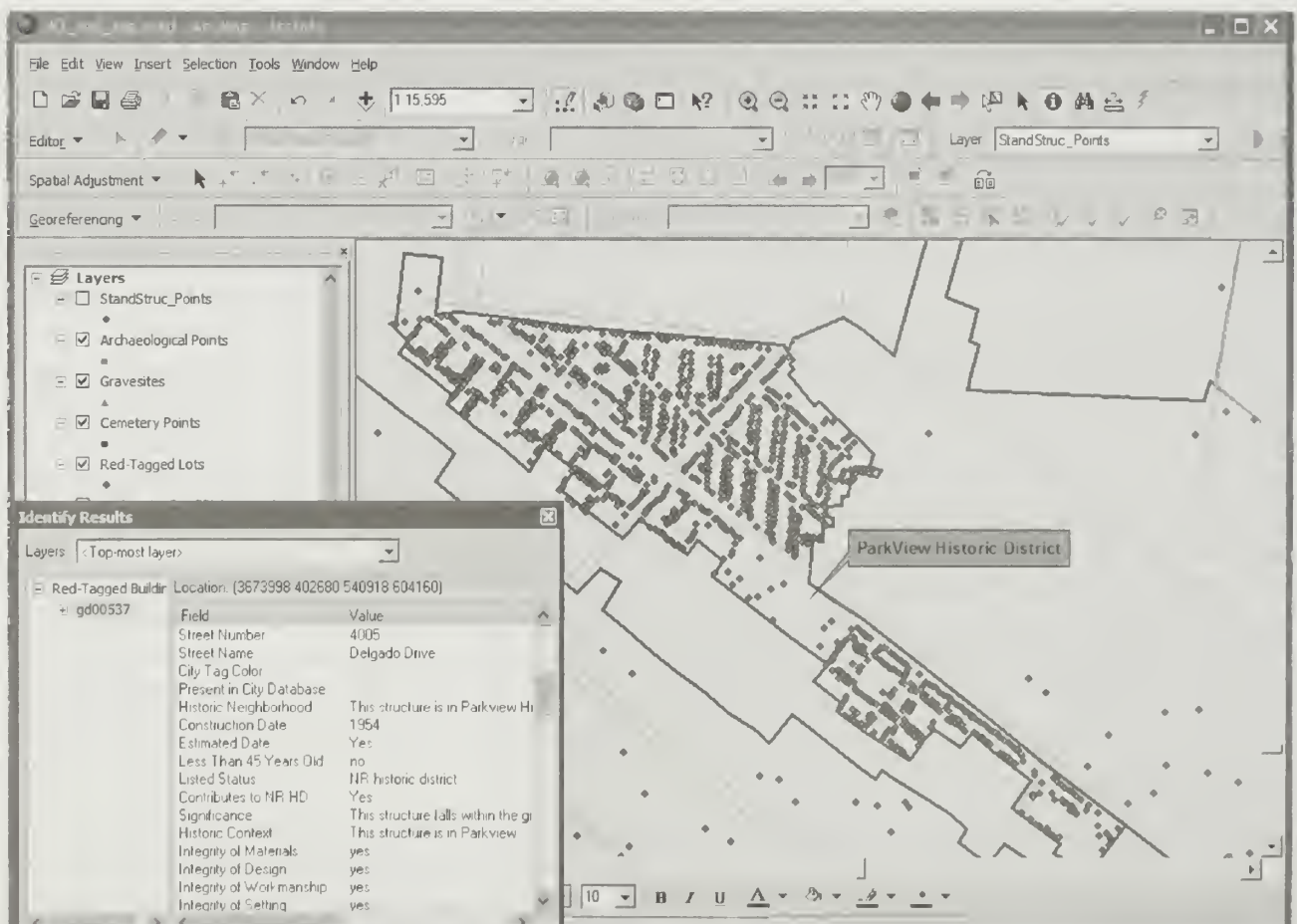
Because of the lack of current geographic data or attribute data related to resources that contribute to recognized National Register historic districts in the city of New Orleans, FEMA and the Louisiana SHPO agreed that one treatment measure would be the accurate resurvey of those districts. Currently, the National Park Service and state sources do not keep information related to resources that may or may not contribute to National Register historic districts. Nominated in the early phases of the National Register of Historic Places many of the districts in New Orleans possess little information that could help identify the most vulnerable or important features within these districts in the event of any future disaster.

FEMA determined that using the same GPS survey strategy to provide highly accurate geographic data for contributing and non-contributing resources, as well as current observations regarding what significant resources remain in these districts, could benefit FEMA in the future and provide the SHPO with otherwise unavailable data. Making the resurvey of known districts part of the same strategy also brings the data furnished to the SHPO into compliance with the draft cultural resource spatial data standards. In order to ensure that the data collected meets the needs of all parties, those districts also under the jurisdiction of HDLC received extra documentation in the form of additional attribute information collection specific to HDLC's regulatory functions.

The survey process to comply with the Section 106 treatment measures closely follows the methodology for potential demolitions (See Appendix L). Instead of individual resources

however, surveyors pursue target historic districts, mapping, photographing and collecting attribute information regarding each building or structure visible. The FEMA survey coordinator assigns teams to specific districts who follow the same procedures and protocols for identifying and evaluating each building as they did in the red tag or voluntary demolition surveys.

Again, with survey completed on any single day, GPS data, photos and photologs are returned to the FEMA historic preservation/GIS specialist for preliminary data processing, downloading of information and QA/QC procedures. Photos and photologs go to the FEMA GIS specialist and FEMA data entry staff to create links to the geography and the FEMA historic preservation/GIS specialist adds all data to the master GeoDatabase, integrating the treatment measure surveys with all of the red tag and voluntary demolition information.



Screen capture of the ESRI ArcGIS software, showing the GPS data collected on contributing and non-contributing resources for the ParkView Historic District as part of treatment measures undertaken by FEMA for the Louisiana State Historic Preservation Office.

OBJECTID*	Survey_ID*	Survey Name
1	{E8865F75-B121-4ce8-96C0-98D18DC6380A}	HANO
2	{58FD1A36-0E60-41d7-8FDF-EC037D60D827}	Red Tag - Orleans
3	{920F7942-4531-4d87-AE6D-090418B74D5C}	Red Tag - Plaquemines Parish
4	{08D291D3-D0A8-4efd-BA1C-4B47C1AD43DD}	Red Tag - St. Bernard Parish
5	{2A998501-BAF3-41b8-8D9A-8E72B382EDB2}	Red Tag - St. Tammany Parish
6	{C7350306-ED2F-4f48-A593-A0A235353709}	Red Tag - Washington Parish
7	{F96F2E74-57F5-48e4-9AB2-61D1AFA3E6C2}	Red Tag - Jefferson Parish
8	{LOS5B80-190D-4a21-9D8E-0B474807AFED}	Los Islentos NHR Proposal
9	{PARK85FC-C93F-44c9-952F-A1BFA63B1F65}	Parkview Historic District Resurvey
10	{LGD1A5FF-7E38-43ff-B694-83E2DC818C85}	Lower Garden District Resurvey
11	{MARE9E56-AEE2-482d-A0D2-85FD1240E073}	Faubourg-Mangny District Resurvey
13	{CARO7D71-0ED5-4dba-AF0A-AE9B9D87ECE6}	Carrollton District Resurvey

Record: 1 Show: All Selected Records: (0 out of 12 Selected) Options

Screen capture of the ESRI ArcGIS software, showing the table identifying each "survey" effort undertaken by FEMA, and its assigned GUID.

The more detailed QA/QC with data collected under the treatment measure survey however involves comparing sites surveyed to known tax parcels and aerial photographs to confirm that all buildings present on the landscape within a particular district appear in the geographic dataset. Additionally, the FEMA historic preservation/GIS specialist joins the extra fields of descriptive information collected for HDLC buildings to the attribute tables in the master GeoDatabase, so all have access to the same data, in the same format.

The resulting data from this treatment measure provides the SHPO and HDLC with a renewed look at each historic district, its contributing and non-contributing resources. Previously unavailable to all parties, including NPS and FEMA, the data collected with this strategy not only serves to compensate for the loss of other historic resources but provides invaluable information for planning and mitigation in the event of any future disasters or Federal undertakings which would similarly trigger Section 106 compliance. All data produced ultimately goes to the SHPO when FEMA completes the treatment measures.

On-Going Maintenance

Clearly the survey efforts, the Section 106 review process, determinations of eligibility and the completion of treatment measures rely on regular updating and maintenance of the master GeoDatabase. The daily pattern of workflow for each of these tasks require the data to pass through

all of the various FEMA staff and helps to reassure a fresh look at the data at each step. However, maintaining the FEMA historic preservation/GIS specialist as the hub through which all of the data ultimately begins the process, gets distributed for QA/QC or review, and finally enters the master GeoDatabase results in uniform data and a means to establish accountability for that data within FEMA.

Procedures created to direct and control the flow of information through each of the various stages of the survey, review and mitigation generally serve as the means to update the GeoDatabase on a regular and reliable basis, to manage new and old data, as well as maintain the structure of the GeoDatabase. If surveyors collect new feature types not already contained within GeoDatabase, new feature classes result and the FEMA historic preservation/GIS specialist must create new relationships inside the GeoDatabase to guarantee connectivity of the new data to the central link table and any subsequent potential exterior tables. Further, as FEMA initiates new surveys, or resurveys of existing historic districts, each of these efforts must receive a unique GUID and a full definition in the GeoDatabase.

Just like any other a-spatial database, the FEMA historic preservation/GIS specialist is responsible for regular database maintenance in the GeoDatabase as well, such as creating back ups, compacting the database to conserve space and improve performance, or carrying out occasional

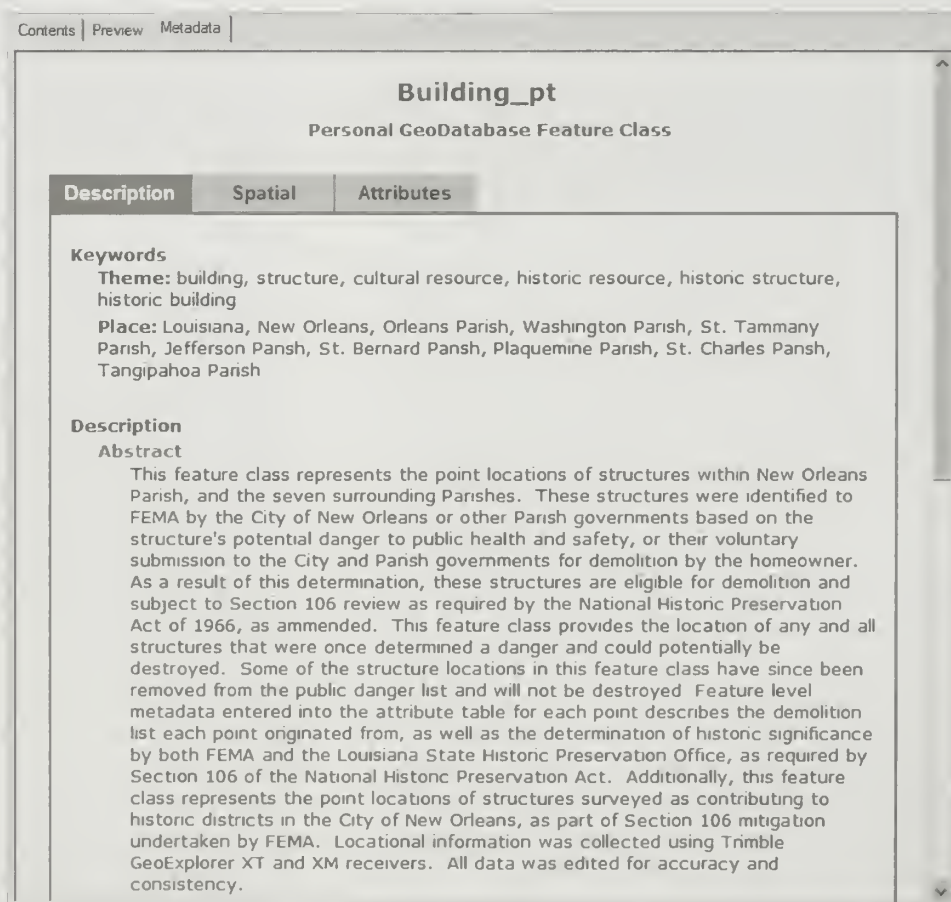
spot checks of the data to guarantee data quality. As the FEMA GIS specialists and data entry staff use the GeoDatabase to generate statistics, create maps or perform analysis, these simple maintenance issues will clearly identify themselves to the FEMA historic preservation/GIS specialist. A regular schedule of back ups (every day) and compaction (every few days) should also be defined based on the amount of incoming data, the number of edits to the GeoDatabase and the progress of building links to external databases in the central link table. The more changes made to the GeoDatabase, either through the addition of new features, new attribute information or new links, the more frequently FEMA GIS staff should back up the GeoDatabase or compact the GeoDatabase.

As a Federal agency however, FEMA must also comply with OMB Circular A-16 which establishes the FGDC and the need for metadata. In order for any FEMA to share the data collected, the FEMA historic preservation/GIS specialist must create metadata for each feature class inside the GeoDatabase, as well as the GeoDatabase itself.

Metadata statements must follow the acknowledged FGDC standards, and can be written inside the GIS application, but they must include the definition of each field in a feature class, a description of the data collection method or any processing of the data, primary contacts for the data set, etc. (see Appendix M). This time consuming and often tedious task supplies potential users of the data with all the necessary information to determine how to use the data and what it may contain, making the metadata statement an indispensable companion to the data itself. As

the FEMA historic preservation/GIS specialist adds new fields and attribute values to the data dictionary based on field surveyor requests, for Section 106 review, or to meet the requirements of established treatment measures, the FEMA historic preservation/GIS specialist must update the metadata statement to define each new item to better reflect what the data contains.

In general, maintaining a consistent schedule of daily updates to the feature classes based on incoming Section 106 survey data, FEMA and SHPO reviewer comments, and incoming treatment measure observations will suffice to keep the GeoDatabase current. These updates remain the first priority in administering the system. Incorporating any edits based on the QA/QC process involved in the Section 106 data, the review comments or the treatment measures should also follow a consistent schedule based on the number of edits and the nature of the changes needed, making it the second priority in



Screen capture of the ESRI ArcGIS software, showing an FGDC compliant metadata statement for the Building Point feature class.

managing the data. Although critical, metadata statements will not change as frequently as the data itself and can remain the last priority in handling the GeoDatabase, however metadata must be completed before FEMA can share any of the data.

Challenges Encountered in the Implementation of the Methodology in New Orleans

Implementing a completely new methodology for survey, identification, and evaluation of cultural resources to comply with regulations during a disaster is a difficult task which brings to light many unexpected issues and challenges and requires a great deal of flexibility on the part of all involved. The need to complete the Section 106 process with speed persists as a top priority for FEMA and for each city or Parish government working with FEMA during the initial disaster response. Accomplishing this task within the confines of Federal, state and local bureaucracies which must cooperate makes the development of an efficient data management system all the more complex.

Under normal circumstances the development of a comprehensive cultural resource data management system using GIS and GPS technologies for FEMA would involve a thorough planning procedure to assess the short and long term needs of FEMA, the needs of any one particular SHPO/THPO who might take part in the process, and the needs of local agencies who may also partner with FEMA. With the pressure on FEMA to respond broadly and efficiently to such a large disaster, and the need to quickly address each potential resource in order to move on with demolition and debris removal, as well as the siting of temporary housing locations, FEMA simply could not afford the luxury of developing a comprehensive plan for the historic preservation response following Katrina.

After documenting the necessity for GPS and GIS technologies in order for FEMA to comply with Section 106 in response to Katrina, CRGIS worked immediately after the storm, to prepare a preliminary data dictionary and GeoDatabase, based on existing data models and basic information from the Louisiana SHPO. With this head start, when CRGIS arrived in Louisiana and began to work on building the infrastructure for

the data management system, these efforts provided a jump start to get the project running quickly and relatively smoothly.

With any disaster the initial response period appears extremely chaotic with many different agencies working at seemingly cross-purposes in order for each to address their own top priorities and to coordinate with FEMA. When CRGIS arrived in Louisiana to begin implementing the cultural resource response methodology, this appearance of chaos exemplified itself in the numerous times a Federal, state or city agency officially visited each damaged property, without adequately recording a location. Clearly, many agencies would benefit from the accurate data FEMA intended to collect during the cultural resource survey and identification phase. As a result of this realization, CRGIS and FEMA focused on getting the survey teams and equipment in place to gather this locational data as quickly as possible.

The lack of GPS equipment, GIS software licenses and computer equipment for use in the red tag surveys, as well as the management of any incoming or available data presented the first challenge encountered with the execution of the methodology. Although FEMA historic preservation staff prepared and submitted purchase orders, and sole-source justifications for high-end GPS equipment immediately after the storm to obtain enough receivers for the already contracted teams of surveyors, the sluggish procurement process in the midst of the disaster resulted in the tools arriving approximately 6 months late. FEMA historic preservation staff accepted GPS receivers on loan from the manufacturer, rented GPS equipment and borrowed receivers from the surveyors until those purchased by FEMA arrived in order to get the Section 106 process started as quickly as possible.

Similarly, because FEMA based the cultural resource response out of the local New Orleans FEMA field office, computer equipment needed to support the GIS software, and licenses of the GIS software, typically housed and utilized at the GIU in the Baton Rouge JFO, were not made available for the historic preservation staff to use outside these standard operating procedures. To assist with this challenge, the NPS donated licenses

of the GIS software to the FEMA field office for use by the FEMA historic preservation/GIS specialist, the data entry staff as well as the FEMA and SHPO reviewers. The FEMA GIU supplied a GIS cartographer dedicated to the historic preservation division in New Orleans to help process data, produce maps and assist the historic preservation/GIS specialist. The general lack of communication with the GIU and the lack of technical support, staffing, software and computer equipment

provided a serious set back for the entire data management system and throughout the entire Section 106 compliance effort however.

Constant turnover in the historic preservation and GIS staff assigned to the project also created some general confusion and contributed to many of the issues that developed as CRGIS and FEMA worked together to employ the methodology. Using contractors deployed for 90 day periods, with the potential for some extension on those periods, presented challenges to CRGIS and to the permanent FEMA historic preservation/GIS specialist requiring both CRGIS and FEMA staff to continually justify the strategy already in place and functioning. Additionally, different perspectives brought to the project by GIS staff assigned by the GIU without any knowledge of cultural resources often created conflict and confusion among the roles of each participant in the project as a whole. With the stabilization of the staff in the field office and the hiring of permanent employees with an interest in both GIS and historic preservation, many of these issues evaporated.

Along the same vein however, working within the typical FEMA response paradigm to deal with a disaster on such a large scale provided unexpected challenges. Under normal circumstances FEMA plans for brief deployment of personnel after



An example of the challenges in accessing resources, moved by the flood waters and often covering roads in the Lower Ninth Ward of New Orleans, Jan. 2006.

a disaster, such as GIS staff and cartographers, centralizing that help in the GIU. Similarly, FEMA takes on shorter term historic preservation specialists to handle Section 106 responses, as that is one of the first steps in the disaster response following life-saving activities because it drives subsequent demolitions and debris removal. With the size of the Katrina/Rita disaster however, this paradigm of relying on short term employees for these critical roles did not apply effectively. Clearly, in order to adequately respond to the immediate survey and evaluation needs, as well as the treatment measures established, a paradigm shift to longer-term, more stable staff familiar with the process and confident in the definition of their various roles would prove much more productive.

As a result of the implementation of this new methodology to respond to cultural resource needs, FEMA found the need to explore new staff positions and roles. For instance, although the GIU typically provides basic cartographic and GIS support during a disaster, in order to better direct and perform analysis with the GIS data within the cultural resource data management system, FEMA needed GIS specialists, not simply cartographers, involved in the cultural resource response. Further, in order to guide the daily activities related to typical Section 106 compliance, the incoming GPS data, as well as the GIS GeoDatabase, FEMA



An example of the challenges in identifying resources often moved off of their original foundations or collapsed as a result of flooding in the Lower Ninth Ward of New Orleans, Feb. 2006.

FEMA field office in New Orleans which presented the reviewers making determinations of eligibility with the opportunity to cooperate, looking at each single resource together and making decisions immediately.

In the early stages of the Section 106 identification, evaluation and determination of eligibility phase, no SHPO liaison existed however,

needed a GIS specialist with knowledge of the Section 106 process and cultural resources to administer the system as whole. Hiring these extended term positions with clearly defined roles, distinguished from other historic preservation specialists at the field office, or GIS staff provided by the GIU, confirmed this as a critical portion of the success of the response approach.

Much like the procurement of equipment however, finding the right staff in the midst of an emergency, or potential hires willing to move to a disaster area, proved very difficult and time consuming. Although the turn-over rate of contractors within FEMA's standard paradigm is high and new staff constantly rotate in, finding the right combination of GIS and historic preservation knowledge took significant time and contributed to sometimes significant delays in the survey and evaluation of resources.

Despite these challenges, many of the delays in the evaluation of resources and the official determinations of eligibility to the National Register, made by the FEMA and SHPO reviewers, could have been avoided if FEMA developed a distributed means of examining the data collected by the surveyors. Because of the magnitude of the Katrina/Rita disaster the Louisiana SHPO felt it prudent to assign a SHPO liaison to work out of the

causing delays in the development of concurrence and generating a lack of confidence in the data management system as a whole on the part of the SHPO and FEMA. Without the opportunity to have a SHPO liaison present in the FEMA field office, this process, although digital through the GIS, would have taken much longer. Using a distributed means of providing access to the data, such as an internet interface where both FEMA and SHPO reviewers could edit their decisions and develop their concurrence, could have eliminated the need for a liaison and delivered the same benefit of speed and efficiency with remote access to the data for the SHPO.

Even with solutions to overcome equipment, staffing and communication challenges in the creation of the infrastructure and the development of an appropriate workflow, other survey difficulties remain. At the beginning of the red tag survey security and simple access to properties, or the identification of the correct property caused disruption in the establishment of adequate field survey procedures. Using data obtained from other agencies to help direct surveyors to the appropriate locations did not always supply the surveyors enough information to determine if they identified the correct site. Further, obstructions such as remaining debris in the roadways, collapsed structures, fallen power lines, open water pipes

and vegetation prevented surveyors from reaching their intended targets. Additionally, the personal security of field surveyors in isolated or high-crime areas warranted the presence of police in some cases. Careful QA/QC measures insured that surveyors found all intended targets, and careful listening to surveyor feedback provided solutions to many security and access issues.

Security of the data itself, locations of sensitive resources and the controlled release of the eligibility information also posed significant challenges to the FEMA historic preservation and GIS staff. Ultimately, all of the locations, attribute information and the entire GeoDatabase, complete with all of its associated links to exterior databases will belong to the SHPO. Determining who has access to the data at the FEMA office and developing a schedule for data delivery to the SHPO to prevent unintended use of the data in various applications, or misinterpretation of the information, was not always simple to agree upon between FEMA and the SHPO, as well as HDLC. Establishing a schedule for data delivery as well as producing detailed and more specific metadata for each data product released helped to control some of the data distribution and potential misinterpretation challenges. Similarly, restricting the use of the actual data and locational information to only those historic preservation specialists, GIS specialists and data entry specialists who had specific need to see the data helped to control potential security issues with release of sensitive location information.

Despite the early challenges in getting the infrastructure, equipment and staff in place to launch the methodology, the now established workflow and processes function quickly and efficiently to the benefit of all parties involved. The development of treatment measures following the same procedures as those developed for the Section 106 survey and evaluation attests to the success of the red tag survey efforts and the willingness of FEMA and the SHPO to explore expanded applications of the same techniques to achieve different goals.

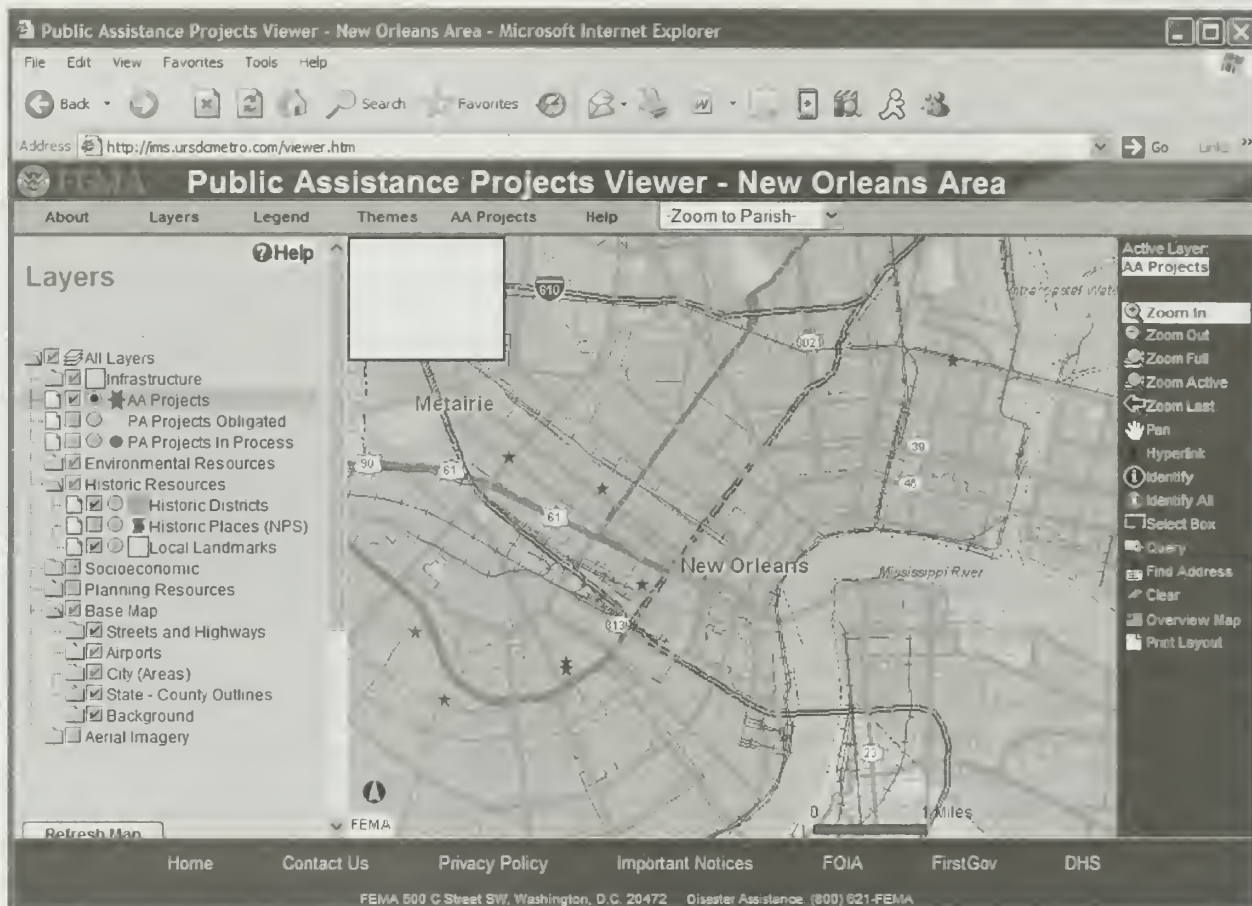


NPS, Cultural Resource GIS Facility staff conducting a GPS field training session.

Potential Solutions to Challenges Encountered and Lessons Learned

For FEMA the concept of incorporating GIS and GPS technologies in the cultural resource response to a disaster such as Katrina/Rita represented a departure from standard operating procedures, and as such many of the challenges encountered in implementing the methodology resulted from a lack of appropriate infrastructure and support to sustain this new approach. Because of the necessity to explore alternatives and find innovative solutions in an accelerated environment with a heavy bureaucracy, such as that encountered in New Orleans, CRGIS worked together with FEMA to overcome the challenges and continue on with the intended strategy to reach a successful goal.

To overcome hurdles such as the slow procurement process during a disaster, which delayed the start of the Section 106 survey and identification process, an investment by the FEMA environmental and historic preservation division into purchasing their own GPS and GIS software or computer equipment could save valuable time. Having a small stockpile of such equipment, such as GPS receivers, available to any region to respond to any type or size of emergency could provide the critical tools to implement the cultural resource GPS/GIS approach immediately, rather than waiting for the procurement process and potentially helping to reach important resources more quickly.



Screen capture of the FEMA ArcIMS application developed for the public to view FEMA projects in New Orleans following Katrina.

Similarly, an investment by the FEMA environmental and historic preservation division into their own GIS staff, whether permanent or contracted, could help local field offices with technical support and GeoDatabase management. Support could come in the form of helping to establish the preliminary infrastructure of a data dictionary or GeoDatabase structure, assisting in writing appropriate position descriptions or facilitating the hiring of the right staff to oversee the cultural resource survey as well as manage the GeoDatabases locally. Providing support like this from a central location would reduce the confusion generated with constantly rotating staff in the field offices or the lack of support from the GIU.

Developing a standard training course in the use of GPS and GIS for all of the historic preservation staff usually called upon by FEMA during an emergency would also supply a basic background in the use of these technologies as new staff rotate in and out of various field offices and respond to different

disasters. This type of training should include a basic foundation in what GPS and GIS technologies are, how to use the GPS equipment, incorporating GPS into standard survey and identification techniques, as well as the basics of querying the resulting data inside the GIS or producing reports and paper maps that may be needed to direct survey work.

Once a data model or GeoDatabase, such as the one constructed in response to Katrina, is found to be successful in meeting the needs of FEMA's Section 106 compliance obligations, expanding that model from a local or personal GeoDatabase structure to an enterprise-wide GeoDatabase structure could benefit FEMA cultural resource staff in every region. Growing the local dataset into a larger nation-wide data set with the ability for multiple people to access and edit the data would allow FEMA staff to access cultural resource data at any time, for any place, in response to any emergency that may arise.

In the same way, escalating the GeoDatabase to the internet would certainly help facilitate the FEMA/SHPO concurrence process. Allowing limited, but distributed, access and edit rights to the data in an emergency would permit FEMA historic preservation staff and any SHPO staff to examine the attributes of resources impacted by the disaster, determine if they are historic and come to agreement on what to do with the resource. This would certainly help to overcome a situation where the SHPO can not provide a liaison to the FEMA field office, and help expedite the determination of eligibility process. Alternatively, once completed, the determinations could be released to the public via the same internet portal, allowing the public to view the information used to make the determinations, submit their comments and participate in the Section 106 review process as intended.

Working to establish standard protocols for handling the data stored in either a local or enterprise GeoDatabase, as well as establishing procedures for granting access to the data itself will ensure that the appropriate staff sees the appropriate data, eliminating security risks in releasing sensitive locational information to the public, regardless of the size or type of disaster. Similarly, creating standing memorandums of agreements between FEMA and SHPOs, THPOs or local organizations that will ultimately own and maintain the data once FEMA has completed

its Section 106 compliance work provides a satisfactory data distribution policy that all parties understand before a or during disaster. Providing such foundations for data security and sharing will ensure that data does not get misinterpreted or misused once FEMA releases it to other organizations and the public through the internet or other means.

In general however, focusing on improving communication among historic preservation and GIS staff particularly at the GIU established for a particular disaster response should be the top priority in addressing many of the challenges faced in implementing the Katrina historic preservation response model. Defining clear roles for staff in the field offices and establishing a good working relationship with the GIU proved extremely important. This, combined with obtaining the appropriate equipment, securing the availability of appropriate staff and garnering consistent and substantial GIS support from the GIU, before responding to a disaster, will certainly help to assure a successful implementation of the overall methodology. The lessons learned by CRGIS and FEMA during the Katrina response point to these key elements as critical needs in carrying out this approach.

Successes with the GIS/GPS Response in Katrina and Resulting Developments

The utilization of the techniques described here, and the introduction of GIS and GPS to the standard historic preservation response by FEMA to a disaster greatly improved the speed and accuracy of the data produced by FEMA to comply with Section 106 regulations. By accurately locating each potential undertaking and recording their historic significance, condition and important characteristics, CRGIS and FEMA essentially produced a new form of documentation acceptable to the SHPO and to the Advisory Council on Historic Preservation as a treatment measure. With the addition of locations collected with GPS as a form of documentation, FEMA can now show what resources existed prior to the hurricane, what received damage, what ultimately required demolition and what affect those demolitions had on the landscape as a whole.



NPS, Cultural Resource GIS Facility staff conducting a GPS field training session.

With all of the data collected by field surveyors in a digital form and access to the GIS, FEMA and SHPO historic preservation reviewers can quickly and confidently come to agreement regarding the potential National Register eligibility of resources. The successful survey strategy and GeoDatabase implementation of the draft cultural resource spatial data standards allowed Federal and state partners to use the GIS to access external data sources and contextual information, as well as photographs of each site, greatly accelerating the process of developing concurrence between FEMA and SHPO, and eliminating the need to produce paper reports on each potential undertaking which significantly simplified the entire Section 106 review process.

As a result of having locational, attribute and eligibility data in a digital format through the GIS, FEMA can now furnish virtually instant feedback to help guide further survey work, or to help other government agencies determine where FEMA stands regarding the progress of Section 106 compliance at any point following a disaster. Partners with an historic preservation interest can also see the process followed by FEMA and SHPO, offering a degree of transparency to the entire Section 106 practice, helping to eliminate potential disagreements.

Further, as a result of the treatment measures agreed to by FEMA and SHPO, the resulting locational and attribute data collected for contributing and non-contributing resources within National Register historic districts provides enhanced information never before available to the SHPO and their local partners. This data not only serves as a treatment measure in exchange for the necessary demolition of some potentially historic properties, but also serves as a type of mitigation against the next potential disaster, offering new and critical information that can be used to respond to a disaster much more efficiently in the future.

The successful application of the data model based on the NPS draft cultural resource spatial data standards, in addition to the successful survey and evaluation procedures enacted led to a inter-agency agreement between the Department of Interior and FEMA to further support the on-going efforts in

response to hurricane Katrina, but also to expand the system to relate to other types of disasters. As part of this agreement, CRGIS will help FEMA to develop a more standardized GIS/GPS training course for their historic preservation staff and field office personnel, and CRGIS will develop a formal methodology statement to help FEMA put the same policies in place to assist in future emergency situations.

Additionally, FEMA recognized as yet another outcome of the Katrina historic preservation response model that all FEMA personnel need the ability to use to the tools provided through GIS applications. As a result FEMA established an enterprise agreement with Environmental Systems Research Institute (ESRI) allowing them access to more software and GIS licenses for all regions and field offices. Further, with the availability of new and different GIS software licenses, such as ArcIMS (Internet Map Server), FEMA has undertaken projects with their own GIS staff to develop a public internet GIS application to assist in the determination of eligibility stages and development of concurrence for Section 106 compliance.

Despite the challenges inherent in the creation and establishment of any new methodology, particularly in an effort to respond to regulatory requirements in the face of a disaster at such a large scale, the strategy for surveying, evaluating and reviewing resources developed by CRGIS with FEMA for Katrina successfully met the needs of FEMA, as well as state and local partners. With a few initial growing pains to create the necessary infrastructure, acquire equipment and work within the FEMA standard operating procedures and protocols, CRGIS applied a sophisticated data model illustrating how the NPS draft cultural resource spatial data standards could function to the benefit of all Federal, state and local partners, with the added benefit of expediting the entire Section 106 review and compliance process, reducing the time spent per resource by approximately 84 percent. Further, the data management system put in place in New Orleans demonstrates that a scaleable and flexible GIS/GPS based scheme is a realistic goal for FEMA to establish as a standard response model for any size or type of disaster.

CARRYING OUT A SIMILAR SECTION 106 GPS/GIS STRATEGY IN RESPONSE TO OTHER DISASTERS

Constructing a data management system with a foundation in GIS and GPS technologies, similar to that put in place in New Orleans, inevitably relies on the adaptability of the strategy to the disaster, the cultural resources impacted, as well as the available infrastructure. Certainly, the nature of the cultural resource response in any disaster depends on the type and extent of the disaster, whether flooding, hurricane, tornado, earthquake, wildfire, etc. Additionally, the range of cultural resources impacted determines the appropriate actions to take in initial response activities and throughout the development of creative treatment measures.

Regardless of the array of resources affected, or the level of technical support available, many steps in the general application of GIS and GPS technologies in any disaster response remain the same. First, defining the overall objectives for the cultural resource policies characterizes the role for GIS and GPS tools, given the magnitude of the disaster. Second, creating the infrastructure and support, in both staff and equipment, provides the foundation on which to build the data management system. Third, gathering the necessary digital data either from existing sources or new data forms the core of the GIS. Fourth, performing analysis using the GIS, whether this includes verifying National Register eligibility with the SHPO/THPO or developing treatment measures, shapes the dynamic flow of information needed on a daily basis during all phases of the disaster recovery. Finally, using the analysis conducted to make new data and presenting those results to the public, or to the SHPO/THPO and local organizations involved, documents the choices made regarding affected cultural resources and mitigates the disturbance any future disasters may pose to the same cultural resources.

In one example of building on this general outline in carrying out a Section 106 GPS/GIS strategy, FEMA adapted the New Orleans methodology in response to Katrina in Mississippi. However, the objectives of this implementation required survey and evaluation of cultural resources only in support of treatment measures, not immediate Section 106 compliance work. The more comprehensive survey

approach of both architectural and archaeological resources across seven counties similarly benefited from the improved digital data collection and management procedures, leading to more wide-ranging analysis of cultural resource trends in the landscape as a whole, and providing yet another instance of applying GIS and GPS technologies following a disaster.

Defining the Role for a GIS/GPS Strategy in Cultural Resource Disaster Response

In any disaster the need to access cultural resource data including descriptive information, locations of known historic properties and areas with a high potential to yield historic sites, remains a top priority, particularly in the early phases of disaster response when compliance with Section 106 may conflict with other activities such as debris removal. It is critical at this early stage in the disaster response to determine the objectives of the specific cultural resource response, the level of detail required, and the physical area within which actions must be carried out, as well as the universe of potential treatment measures presented. Defining such objectives, keeping in mind the type and scope of disaster, determines the role of GIS in each case, and whether GPS is necessary.

Despite planning and mitigation efforts, unique elements in each disaster will require specific adaptations of the data management strategy described here to fit individual situations. In spite of this, many general objectives remain common to all disasters and frame how GIS and GPS technologies become incorporated into the cultural resource disaster response.

These objectives include:

- ▶ Locate the known existing cultural resources as well as areas of high potential to yield historic resources, taking into account the full array of resource types
- ▶ Locate cultural resources or sites potentially eligible for the National Register affected by the disaster, taking into account the full array of resource types

- ▶ Identify the likely adverse affects to National Register eligible or potentially eligible resources given the specifics of the disaster which will trigger Section 106 compliance
- ▶ Establish whether a digital Section 106 compliance effort is necessary or feasible for the circumstances
- ▶ Define the purpose of the dedicated cultural resource GIS effort and its role within Section 106 compliance
- ▶ Determine if collection of additional digital cultural resource locational and descriptive data is an acceptable treatment measure
- ▶ Will the GIS serve as a tool to develop concurrence between FEMA and the SHPOs/THPOs involved?
- ▶ Will the GIS provide a structure for the creation of new cultural resource data which could serve as a treatment measure?
- ▶ Will the GIS serve as a means of communicating cultural resource issues with the public?

Assuming that adverse affects to National Register eligible or potentially eligible sites exist, determining the appropriate actions and the need for GIS or GPS technologies then takes precedence. For example, the extent of the disaster controls the type and duration of FEMA involvement in the recovery process, as well as the characteristics of the cultural resource responsibilities. With a small disaster and a limited number of adversely affected resources, the cultural resource response will be smaller and may involve a narrowly defined Section 106 compliance effort. Depending on the type of disaster however, the range of resources potentially involved may vary from single buildings, to historic districts, to archaeological sites or even traditional cultural properties. Taking all of these factors into consideration, understanding the degree of FEMA involvement establishes the level of support or infrastructure available for implementing a digital GIS Section 106 process and determining whether such an effort is necessary for the situation.

Presuming that GIS would benefit the disaster recovery leads to more detailed questions directly related to the purpose of the GIS with regard to historic properties:

- ▶ Will the GIS provide information to other FEMA programs to help identify areas without cultural resources that can be cleared for other uses?
- ▶ Will the GIS provide tools for planning during the identification and evaluation of cultural resources potentially affected by the disaster?
- ▶ Will the GIS serve as a method of documenting cultural resources as part of Section 106 compliance?

Answering these questions provides the structure for executing the digital Section 106 procedure and clarifies the type of data required. For example, if the purpose of the GIS remains simply to find areas without cultural resources, such as in a wildfire, then no steps need to be taken to develop a digital concurrence process. A simple assessment of the current survey and inventory of the region or perhaps a general windshield survey of the area conducted after a disaster like a flood will provide enough information to guide the placement of debris piles or temporary housing, avoiding the possibility of adversely affecting any resources during FEMA activities.

Equally, if the purpose of the GIS consists of providing a planning tool for the identification and evaluation phase of Section 106 compliance after an earthquake for instance, then the locations of known resources as well as areas of high potential for historic sites need to be available digitally. This data will subsequently inform the development of survey strategies that fit the extent of the disaster, as well as the type of resources affected. Disaster response staff can then use the GIS to decide the appropriate survey type in each affected region, depending on the target resources.

Sites recognized as potentially historic during survey and found to be threatened will require a preliminary assessment of National Register eligibility. If the purpose of the GIS extends to serving as a tool for developing concurrence on National Register eligibility with the SHPO/THPO then provisions must include wider access to the data, and a means of documenting the decision making process via the GIS.

Based on findings that historic resources will suffer adverse impact in some way, treatment measures must compensate for the loss of these

sites. Broadening the purpose of the GIS to include the creation of new data as a treatment measure, such as the collection of contributing and non-contributing resources within an historic district, demands other forms of survey, such as GPS. This new detailed locational data, along with updated existing resource information or other data collected during the identification and evaluation phase of compliance may double as a form of documentation, providing yet another type of treatment measure.

Clearly, selecting the appropriate approach to the cultural resource response following a disaster is an important step in implementing any data management system, whether digital or paper. The suitable procedures will depend on the type and size of disaster, as well as the type of cultural resources affected, the range of adverse affects possible, potential treatment measure options and the level of support available from the FEMA field office. The application of GIS which can perform various functions during each different phase of Section 106 compliance makes it a flexible and valuable asset in any disaster. The addition of GPS to assist in quickly gathering data makes it a crucial partner to the GIS. However, defining the objectives of the cultural resource response and determining the specific needs related to Section 106 compliance directly impacts the role these technologies may play and shapes the extent of their involvement throughout a disaster recovery period.

Creating the Infrastructure for a Cultural Resource GIS/GPS Strategy

With a defined strategy for the cultural resource efforts in place, responders must assemble the required infrastructure, in both staff and equipment to support the GIS. Because the size and type of the disaster, as well as the extent of damage to cultural resources, drives the overall objectives and the specific purpose for the GIS, the essential framework of people and technologies will also adapt to the unique circumstances presented in each disaster scenario. Smaller disasters require less underlying support for a simplified GIS response. Larger disasters with more adverse affect on cultural resources necessitate more communication, staff and equipment to accomplish the goals demanded of

a complicated digital data management system using both GIS and GPS.

Regardless of the chosen GIS-based methodology, establishing a support network with open communication among all of the parties involved is critically important. Identifying all of the potential stakeholders involved in the analysis or use of the resulting GIS data, guides all of the staffing and equipment requirements and informs how the cultural resource response proceeds. Identifying these groups insures their inclusion in the implementation of any GIS/GPS data management system from the beginning, promoting more productive interaction from the outset of the project.

Similarly, fostering a relationship between the FEMA historic preservation and GIS staff determines how the digital system is formulated and who will guide its growth throughout the response and recovery periods. In the case of a large disaster FEMA often sets up a field office GIU. Creating a good working relationship with the GIU, or the FEMA regional GIS staff, governs the availability of GIS staff to participate in the cultural resource response, and the accessibility of equipment. This association defines the role of the GIU for the historic preservation efforts. Ultimately this relationship will determine whether the cultural resource GIS resides in the GIU or with the historic preservation staff, and will dictate the level of technical support historic preservation staff can expect.

Staffing Requirements

In a disaster with little cultural resource impact, the FEMA historic preservation team must meet fewer staffing needs. With a larger cultural resource disaster, the more rapid and comprehensive response called for will demand greater human resources and coordination. Adapting to the disaster scenario may require all or some of the following team members to implement the digital data management system designed to fit the disaster circumstances:

- ◆ *A full-time historic preservation/GIS specialist to manage, update and edit data.*
One staff member, residing in either the

historic preservation or the GIS team, conversant with both Section 106 regulations and GIS promotes synchronization of the objectives among these two groups, fosters better understanding of the cultural resource needs and increases the potential applications GIS can assist with. Duties would include establishing survey and evaluation procedures for a variety of cultural resource types, developing quality control processes and providing technical support for GPS equipment deployed in the field, in addition to supplying GIS and GPS training as needed. This position serves as the critical nexus between historic preservation and GIS staff, linking the technology to the goals of the historic preservation staff. Without such a position created after a disaster, implementing the strategy described here becomes difficult. Preparing generic position descriptions listing the skills required for such a position prior to the disaster may help accelerate the hiring process (see Appendix O and Appendix P).

- ◆ *A full-time GIS specialist to help process data, perform analysis and generate products.* One staff member, paired with the historic preservation/GIS specialist focused exclusively on GIS, processing incoming data, performing queries, making paper maps, creating statistics and tables as needed, or converting data from one format to another helps facilitate the data flow in any digital data management system. This person assists the historic preservation/GIS specialist providing a broader range of GIS skills, including cartography, data analysis, and data editing. In a smaller disaster, the historic preservation/GIS specialist may not need such assistance.
- ◆ *At least one full-time data entry specialist to record data and complete quality control.* Working with the historic preservation/GIS specialist or the GIS specialist, data entry specialists serve critical roles in entering descriptive data not collected in the field, as well as performing any QA/QC procedures insuring that data is consistent and complete. These individuals also assist the historic

preservation/GIS specialist with linking external databases to the cultural resource data either collected with GPS or gathered from existing sources. If a finding of adverse affects on cultural resources exists, a data entry specialist will significantly contribute to the data management system and the efficient dissemination of data for Section 106 compliance.

- ◆ *Teams of qualified surveyors to locate, describe and evaluate cultural resources.* FEMA must deploy teams of surveyors who meet the Secretary of the Interior's Standards for architectural historians, archaeologists, and historians if an adverse affect on cultural resources in the disaster area is expected. These field surveyors either add to existing cultural resource digital data with updated descriptions and evaluations, or collect new locational data, descriptions and evaluations with GPS. Depending on the data available in a GIS format prior to the disaster, GPS may not be necessary, however FEMA must inspect any potentially eligible resource for an adverse affect regardless. In addition, depending on the treatment measures agreed upon, these same survey teams may collect new data in support of mitigation efforts. The National Park Service posts the Secretary of the Interior's professional qualifications on the internet at: http://www.nps.gov/history/local-law/arch_stnds_9.htm.
- ◆ *At least one qualified architectural historian and one qualified archaeologist.* Following an adverse affect assessment FEMA must document their decision regarding the potential National Register eligibility of these resources. Only architectural historians and archaeologists that meet the Secretary of the Interior Standards should make these preliminary determinations of eligibility and participate in any digital concurrence process with the SHPO/THPO. Disasters that affect few cultural resources may not require such a process to expedite the Section 106 compliance. Larger disasters that impact many cultural resources will significantly benefit from implementing a digital

concurrence system that documents decisions made and accelerates the compliance phase. Comparable to the survey teams, if treatment measures call for additional examination of targeted resources, qualified architectural and archaeological specialists can build survey strategies or develop more in depth historical documentation in support of other mitigation efforts as well.

- ◆ *A GIS programmer to develop applications and support a public cultural resource GIS.* Working in concert with the GIS specialist, a GIS programmer would concentrate on building applications to assist with the digital concurrence process or with the public review portion of Section 106 compliance. In response to smaller cultural resource disasters this level of effort to create customized applications or release GIS data to the public via the internet may not be necessary.

As with any data management system which must draw from various disciplines and combine diverse areas of expertise, achieving a stable collection of staff members with clear definitions for each position and a chain of command aides in institutionalizing the system. This helps ensure a rapid launch of the policy as well as the prompt return of a good product. The methodology outlined here does not always adapt easily to the FEMA paradigm of employing impermanent disaster assistance as contractors and temporary FEMA staff with a high turnover rate. Consistency in the data management staff results in more reliable data and a more uniform reaction to any disaster. Identifying specific individuals or contracting firms familiar with the methodology prior to implementing it in a disaster may provide a better product.

Similarly, cultivating positive rapport and communication with the SHPO/THPO or other local preservation organizations involved in the recovery efforts before instituting the GIS, influences how survey and evaluation of resources proceeds in addition to how any concurrence procedures will take place. Closely examining the standard operating procedures of the SHPO/THPO and incorporating their practices

into the digital data management system insures that the SHPO/THPO will be participating in a familiar methodology and be able to utilize the data produced.

Equipment Requirements

Performing any of the various options envisioned after defining the objectives and purpose of the GIS requires equipment. The overall intention of the GIS, along with the scope of the disaster, the level of FEMA support available, and the potential SHPO/THPO partners will dictate the selection of the right technological tools. If the field office GIU serves as the basis of operation for the implementation of the strategy, the historic preservation staff may already have access to much of the equipment. If the historic preservation division within the field office directs the course of action however, the GIU may need to supply equipment to the historic preservation staff. In all cases, acquiring the fundamental tools and equipment before a disaster considerably improves FEMA's ability to respond and begin executing an expedited Section 106 process. Adapting to the disaster scenario may require all or some of the following equipment:

- ◆ *Computer workstations capable of supporting full GIS software licenses.* Whether the Section 106 GIS strategy is instigated through the field office GIU or the historic preservation staff, computer equipment powerful enough to run the GIS software remains critical. The historic preservation/GIS specialist, the GIS specialist, data entry specialists and qualified architectural historians/archaeologists making determinations of eligibility must access the available tools in the GIS to complete their portions of the methodology. If the size and scope of the disaster call for simply survey and evaluation of resources, not a digital concurrence process or a series of treatment measures, obviously the number of staff and computer workstations required diminishes. Each new objective added to the purpose of the GIS demands additional staff and more equipment.

Keep in mind that hardware and software requirements change frequently with updated versions and modifications in technology. ESRI posts the hardware requirements for ESRI ArcGIS software licenses on its website: www.esri.com. These technical specifications may change with the operating system of the computer, as well as with each new version of the software released. The current specifications are posted on the ESRI website: <http://wikis.esri.com/wiki/display/ag93bsr/ArcInfo+Workstation>.

- ◆ *Licenses of the GIS software required to implement the data management system.* ESRI offers three tiers of license for its ArcGIS software: ArcView, ArcEditor and ArcInfo. ArcView licenses offer the fewest tools and editing functionality, but may suffice for the historic preservation staff performing determinations of eligibility who require minimal operational capacity. ArcEditor licenses furnish more tools and the ability to edit some aspects of the more complicated GeoDatabase structure. ArcEditor licenses will not accommodate editing the file GeoDatabase architecture and would not meet the needs of the historic preservation/GIS specialist, or the GIS specialist, however it would equip data entry specialists with the necessary suite of tools to perform general quality control procedures. ArcInfo licenses provide all of the available tools in ArcGIS and deliver crucial functionality for the historic preservation/GIS specialist and the GIS specialist. ESRI and FEMA support an enterprise license agreement allowing FEMA to request the necessary licenses appropriate for each GIS objective identified for the Section 106 response. ESRI publishes and updates the capabilities of each version of the licenses on its website: www.esri.com. More details regarding the current licenses are posted on the ESRI website: http://www.esri.com/software/arcgis/about/gis_for_me.html.

- ◆ *A large-format plotter to produce the required paper maps.*

Although the goal of implementing this methodology is to carry out a digital Section 106 compliance process, the need for the production of paper maps continues. During the survey and evaluation phases, field surveyors greatly benefit from paper maps showing the detailed locations of known resources, high potential areas, areas cleared of resources, etc. Carrying such maps in the field reduces the amount of time spent directing survey. Similarly, maps for use in public meetings, progress reports to SHPOs/THPOs, and final analysis of the resources impacted by the disaster can send powerful messages illustrating the loss of resources, or conversely the ability of FEMA to save resources. Field office GIU staff or FEMA regional GIS staff should provide access to plotters.

- ◆ *GPS equipment for survey and evaluation teams, as well as treatment measures.*

If the objectives defined include conducting survey and evaluation of cultural resources, collecting new data that meets the draft FGDC cultural resource spatial data standards will demand utilizing survey grade GPS units capable of +/- 3 meters of accuracy. Typically, FEMA provides recreational grade GPS with an accuracy of +/-10 meters, and no capacity for a data dictionary to assist surveyors in the field. Trimble Navigation along with other manufacturers, produce survey grade GPS units which include tools to create data dictionaries, download data, export data, and edit GPS data. Much like the GIS software however, GPS technology constantly changes with the introduction of new and more accurate units. Information regarding the available units can be found at the Trimble website: <http://www.trimble.com/index.aspx>. Detailed specifications for the particular hand held units (the GeoXM and GeoXT) used in response to Katrina can be found at: <http://www.trimble.com/mgis-fcgps.shtml>. Purchasing such equipment may require sole source justification to insure the acquisition of equipment that achieves the necessary level of accuracy. Obtaining this

particular equipment at the FEMA regional level before a disaster greatly accelerates the implementation of the GIS/GPS strategy for Section 106 compliance. Consider that an investment in this type of equipment will allow FEMA to better respond to all disasters in a specific region, regardless of whether a cultural resource response is required.

◆ *Digital cameras for survey and evaluation, as well as treatment measures.*

Working in tandem with the GPS, surveyors utilize digital cameras to capture images of the damage to resources that represent a potential FEMA undertaking, and a potential Section 106 adverse affect. In New Orleans, surveyors employed their own digital cameras and GIS specialists manually linked the photographs to the locational information using the GIS. New developments in GPS/digital camera technology automatically link images to locations, eliminating the manual data entry. Using this new camera equipment in Mississippi for Section 106 treatment measures greatly reduced errors in the data associated with photo hyperlinks. Analogous to the GPS, digital camera technology constantly evolves, particularly with respect to its association with GPS. Information regarding the digital cameras used in Mississippi for treatment measures can be found on the Trimble website: http://www.trimble.com/bp_ricoh.shtml.

◆ *Software and hardware needed to support a public internet application or distributed concurrence process.*

If the objectives defined include developing concurrence regarding the National Register eligibility of resources with the SHPO/THPO, wider distribution of the locational and descriptive information contained with the GIS may play a crucial role in the strategy. In large cultural resource disasters the SHPO/THPO may place a liaison in the FEMA field office to expedite reviews of cultural resources, similar to New Orleans. Smaller disasters however may not require this level of commitment from the SHPO/THPO. In these situations, distributing large amounts of data to the SHPO/THPO and providing

them with the tools to perform their reviews via GIS becomes critical to the Section 106 process. Solutions may include the creation of internet applications which eliminate the need for the SHPO/THPO to invest in GIS software but allows them to view, edit and add information to the GIS database. Additional hardware to support a website, as well as additional software to build these applications, such as ArcServer or ArcIMS are essential. The addition of these capabilities involves specialized staff to build and manage such a distributed data management system. FEMA staff must also design security measures to avoid accidental release of data or misinterpretation of data when placing potentially sensitive locational information on a website.

Applying the correct technology or equipment to each disaster situation, to meet each goal remains just as important as finding the right staff to fit the needs outlined in the objectives delineated. Technology changes quickly however and what may seem appropriate now may not be the best choice for fulfilling that same step during the next implementation. The prudent approach would suggest frequent reexamination of the available tools and how they might fit with each goal.

The importance of creating sufficient infrastructure for a digital data management system based on GIS and GPS technologies prior to and immediately following a disaster can not be overlooked. Defining tangible objectives and outlining firm intentions for the GIS early in the response to any disaster provides a coherent structure for all further cultural resource needs during the disaster recovery. Finding the appropriate staff and the necessary equipment to carry out these objectives remains a key element to the success of the approach and insures a timely reaction that benefits FEMA as well as the resources themselves. Further, maintaining regular and meaningful communication among FEMA participants, as well as SHPO/THPO and outside partners during the disaster recovery promotes cooperation, generates good feedback and contributes to launching the cultural resource operation quickly.

Gathering the Necessary Digital Data

After settling on the staff and equipment required to carry out the a digital Section 106 process, based on the defined role of the GIS, work can begin on gathering the data that forms the backbone of the entire data management system. Without the locational and descriptive information regarding known cultural resources, or cultural resources potentially affected by a FEMA undertaking, the entire strategy fails.

Gathering existing cultural resource data following a disaster declaration involves ascertaining what inventory information SHPOs/THPOs and local preservation organizations may maintain, the format that they keep it in and whether they will share the data for the limited purposes of Section 106 compliance. SHPOs and THPOs remain the definitive source for such cultural resource inventory information, however the condition of the data may range from paper records to sophisticated GIS repositories depending on the state or tribe involved. Additionally, currency of the data may vary from 1966 (when the National Historic Preservation Act went into effect) to the present. To meet any of the potential objectives of a cultural resource disaster response, FEMA must understand what data exists and have access to known sites.

Performing basic GIS operations with existing data to locate areas that FEMA may impact with its undertakings, and identifying potential adverse affects on cultural resources determines what follows for FEMA in implementing a more comprehensive Section 106 strategy. If FEMA actions cause no adverse affects then Section 106 is not triggered, and no further action related to cultural resources is required on the part of FEMA. Conversely, if based on searching the existing data, FEMA anticipates adverse affects, FEMA and SHPO/THPO must agree which objectives to prioritize, and how the GIS can help meet these needs.

Regardless of the state of the existing inventory data, if FEMA expects adverse affects to cultural resources, they must identify those potentially eligible for the National Register and evaluate them for their historic significance. Based on the scope of the disaster, FEMA must define the needs

for immediate survey to determine the extent of potential adverse affects. These choices will guide the remaining decisions regarding whether a digital concurrence process is warranted, or whether the number of potentially affected resources is low enough that a standard Section 106 concurrence process will suffice.

Generating the needs for an immediate survey will necessarily rely on the currency and resolution of the existing data, as well as the format of the data. Without GIS data for instance, employing a GPS survey strategy to locate, describe and document any potentially eligible resources assists FEMA in their Section 106 compliance and provides the SHPO/THPO with enhanced data as a treatment measure. If GIS data exists, the FEMA historic preservation/GIS specialist should examine it carefully to decide if it contains enough locational detail for surveyors to find sites or identify areas of potential interest which may contain as yet unidentified resources.

In performing these assessments FEMA historic preservation staff must choose what type of survey to conduct. One study might target specific resources identified by local authorities as eligible for a FEMA undertaking, while another may explore more comprehensively all potentially eligible resources within a delineated area. Immediate surveys to evaluate the likelihood of FEMA undertakings will usually take the form of targeted surveys, such as those carried out in New Orleans, where a local government provides lists of sites that qualify for FEMA assistance. Surveys executed as treatment measures, such as those carried out in Mississippi, usually take the form of more comprehensive studies of larger landscapes in order to produce historical context statements, populate the SHPO/THPO inventory or study resource trends across a specific area which could be used to mitigate against the next disaster.

Building a Data Dictionary

Assuming that all the data required for FEMA to meet its Section 106 obligations does not exist within a known inventory, and taking into account that FEMA must evaluate any potential undertaking for its National Register eligibility, then performing a targeted survey of specific resources becomes

essential. Finding these resources and assessing their historic significance involves the use of GPS to collect accurate locations and descriptive information that FEMA can use in evaluating each property. Even in a situation where all of the existing data meets FEMA's Section 106 responsibilities, comprehensive surveys conducted as treatment measures may also compel the use of GPS to collect locational and descriptive information.

In all cases, building a data dictionary helps guide the surveyors to collect the appropriate information about each site, regardless of resource type. The nature and extent of data dictionaries varies depending on the type of survey ultimately chosen, either targeted or comprehensive, or a combination of both. Creating any data dictionary takes a significant amount of time, and may require adjustment to meet the specific needs of each disaster, or each state/tribe involved in the recovery process. Certainly some elements of the data dictionary will remain common in all cases, however matching a data dictionary to the specific needs of the state or tribe inventory benefits both FEMA and the SHPO/THPO. Consequently, including all parties who may profit from the collection of the data in the data dictionary construction insures that surveyors collect all the necessary data in a single visit to a site.

Some basic principles, regardless of the type of survey, guide all work to create a data dictionary, helping to achieve strategic goals delineated through discussions and field testing.

These basic tenets in data dictionary construction include:

- ▶ Each feature defined in the data dictionary will become a separate data layer or feature class for use in the GIS
- ▶ The data dictionary should contain only those features that surveyors must focus on as relevant to the goal of the survey itself
- ▶ Each feature defined in the data dictionary will have a series of attribute fields associated with it which contain descriptive information about the cultural resource, as requested by the SHPO/THPO and as needed by FEMA for National Register eligibility assessment purposes

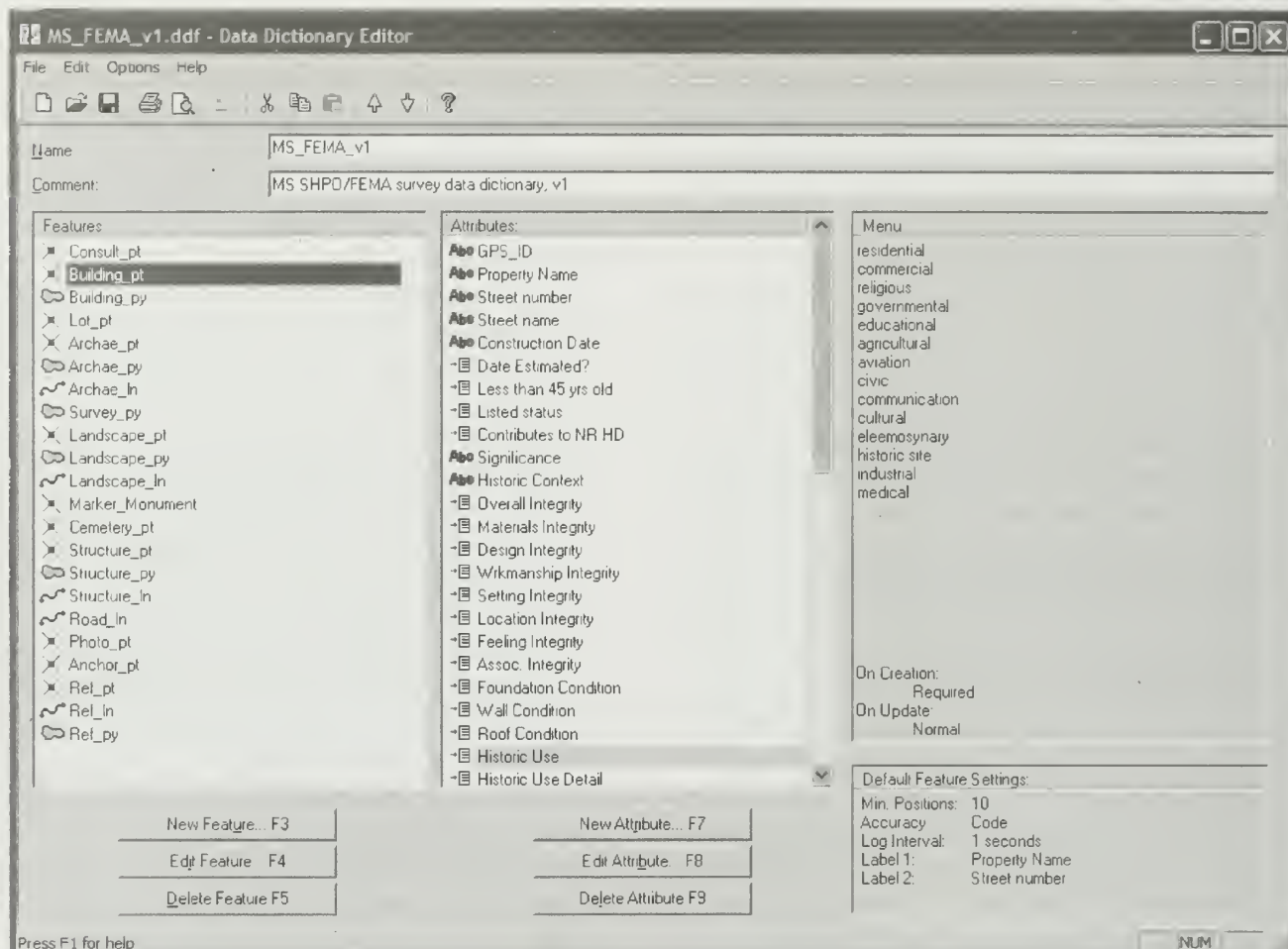
- ▶ The data dictionary should contain only those attribute fields that surveyors can observe in the field, or that uniquely identify a resource. All other descriptive information can be associated to that location from other existing data sources through the GIS following the field work.
- ▶ The data dictionary should be made as flexible as possible, taking into account the eventual needs of any potential stakeholders who may want to share the data collected during the response or recovery periods
- ▶ A data dictionary is iterative in nature and will need to change to better reflect what surveyors find in the field, or what they determine would assist in the survey work itself
- ▶ Because of the iterative nature of a data dictionary, surveyors should field test the data dictionary before its implementation to try to accommodate as many changes as necessary before its final deployment

Comparing the data dictionary created for Mississippi's more comprehensive survey, to New Orleans' targeted survey illustrates some of these common points among data dictionaries. For instance, quickly examining the Mississippi data dictionary shows that many of the same features and attribute fields as in the New Orleans data dictionary appear, however specific attribute values (menus) remain specialized to fit the Mississippi SHPO traditional survey forms (see Appendix Q).

More generic features appear in the Mississippi data dictionary allowing the surveyors more flexibility in recording any potentially eligible resource they may encounter during the course of their wider survey. This broader approach to the data dictionary construction allows surveyors to fulfill the needs of the primary comprehensive analysis and to capture resources as part of a targeted strategy if circumstances call for it.

Constructing a GeoDatabase

Integrating all of the cultural resource data, whether new or existing, through a well structured GeoDatabase imposes organization on the data, making analysis possible and extending the utility of the data. The GeoDatabase model, based on



Screen capture of the Trimble Pathfinder Office software, showing the data dictionary used in Mississippi following Katrina.

New Orleans easily accepts modifications to fit any size or type of disaster (see Appendix B). A simple GeoDatabase design such as this that expands or contracts to meet the circumstances of a disaster presents the most options for flexibility throughout the Section 106 process.

The GeoDatabase constructed in both New Orleans and Mississippi function in the same way, separating the locational information from descriptive attributes contained in external databases. GPS data, including the locational data, survey attributes and critical fields required by the draft FGDC cultural resource spatial data standards documenting the history and origin of the data form the core. Outside databases originating with the SHPO/THPO, the National Park Service, or other preservation organizations provide additional descriptive information.

Unique identifiers assigned to each cultural resource, each spatial representation of that cultural resource, and each survey effort involved in the response, become the key to correlating the locations to external databases. Placing the unique identifiers in an a-spatial table inside the GeoDatabase enables the creation of persistent relationships between data layers and tables. In effect this incorporates a snapshot of an external database and attaches it to the resource location without re-entering the data manually. Structuring the GeoDatabase in this way assimilates outside data when available, but also offers a powerful analysis tool to bring all accessible data together when assessing National Register eligibility.

As with many of the techniques described here in adapting the GIS/GPS Section 106 strategy to other disasters, many common elements involved in planning and building a GeoDatabase exist which can assist in providing a design template.

- ▶ A GeoDatabase consists of a relational database with the geography imbedded inside the database structure, along with descriptive attribute information and other elements.
- ▲ A GeoDatabase structure contains feature classes (data layers) that can be grouped into feature datasets. In addition, the GeoDatabase design may include a spatial tables, images and specific topology rules. Relationship classes create permanent links between feature classes or tables.
- ▲ Each of the various features defined in the GPS data dictionary becomes a separate feature class in the GeoDatabase. As subsequent survey efforts go on, this new data can be loaded into the existing feature classes, combining all resources of a particular type in a single data layer.
- ▲ The attribute fields created for feature classes in the GeoDatabase directly mimic those defined for each feature in the GPS data dictionary, permitting quick and easy loading of GPS data into the GeoDatabase.
- ▲ Because feature classes and their attributes are based on the features defined in the data dictionary, building the GeoDatabase after FEMA finalizes and tests the data dictionary helps eliminate wasted time in redesigning the GeoDatabase.
- ▲ Additional fields of information, such as the unique identifiers for each cultural resource, feature level metadata, documentation regarding eligibility determinations, or links to photographs and documents can be added to the feature classes at any time.
- ▲ If existing data gathered from SHPO/THPO or other sources exists, FEMA can incorporate these data layers into the GeoDatabase as separate feature classes or tables. If this data is compatible with data collected via GPS, existing data and new data may be combined in a single feature class. Feature level metadata will distinguish the source for each individual cultural resource location.

Comparing the GeoDatabase structure for the Mississippi GIS/GPS methodology to that used in New Orleans shows that a simplified configuration of feature classes, grouped into logical feature datasets representing specific cultural resource

types provides the flexibility to accommodate any type of cultural resource encountered in a comprehensive survey, paralleling the Mississippi data dictionary. The same basic model used in New Orleans applies in Mississippi, however the specific data layers describing the features unique to Louisiana have been removed and replaced with more generic resource types.

Most importantly, formulating a data dictionary in concert with a GeoDatabase structure saves time and improves efficiency. Working together with all of the stakeholders to create a data dictionary helps refine the objectives and purpose of the GIS, in addition to insuring that the data, the survey process, and the final GIS products reflect all interests. Setting up the GIS and GPS backbone quickly after a disaster moves the entire GIS/GPS Section 106 process forward significantly, leading to the important data collection phase.

Data Collection

Following any disaster FEMA will undoubtedly need to perform data collection to confirm that no resources potentially eligible for the National Register sustain damage as a result of a FEMA undertaking. Using GPS with a dedicated data dictionary facilitates this survey process, feeding directly into the GeoDatabase intended to store, organize and support all Section 106 compliance activities.

Standard survey techniques change to suit different resource types. For instance, assessing potential adverse affects to buildings or historic districts comprised mainly of buildings varies from procedures used to evaluate impacts on landscape features, archaeological sites or traditional cultural properties. Typically, a reconnaissance survey supplies a general characterization of resources in an area and helps to direct more detailed survey efforts. That more detailed or intensive survey effort captures more precise and comprehensive data about all resources in a specific area. Examining literature and conducting background research accompany both types of survey.

Targeted and comprehensive surveys, as discussed in this methodology, easily correspond to these standard survey types. A targeted survey, such as that conducted in New Orleans for both Section

Contents Preview Metadata NPS Metadata Editor					
Name	Type	Size	Modified	Reac	
Archaeological_Sites	File Geodatabase Feature Dataset				
Historic_Buildings	File Geodatabase Feature Dataset				
Historic_Landscapes	File Geodatabase Feature Dataset				
Historic_Structures	File Geodatabase Feature Dataset				
Reference_Features	File Geodatabase Feature Dataset				
archaealn_crlink	File Geodatabase Relationship Class				
archaept_crlink	File Geodatabase Relationship Class				
archaepy_crlink	File Geodatabase Relationship Class				
bldgpt_crlink	File Geodatabase Relationship Class				
bldgpy_crlink	File Geodatabase Relationship Class				
cempt_crlink	File Geodatabase Relationship Class				
consultpt_crlink	File Geodatabase Relationship Class				
CR_Link	File Geodatabase Table	141.01 KB	7/9/2008 12:17:16 PM	W	
crlink_HHH	File Geodatabase Relationship Class				
crlink_NRIS	File Geodatabase Relationship Class				
crlink_surveylink	File Geodatabase Relationship Class				
Hist_district	File Geodatabase Feature Class	180.91 KB	5/21/2008 3:58:53 PM	W	
histdist_crlink	File Geodatabase Relationship Class				
landln_crlink	File Geodatabase Relationship Class				
landpt_crlink	File Geodatabase Relationship Class				
landpy_crlink	File Geodatabase Relationship Class				
lotpt_crlink	File Geodatabase Relationship Class				
marker_crlink	File Geodatabase Relationship Class				
Marker_Monument	File Geodatabase Feature Class	28.22 KB	8/11/2008 4:04:00 PM	W	
MS_HABS_HAER	File Geodatabase Table	63.04 KB	3/27/2008 11:26:47 AM	W	
MS_NRIS	File Geodatabase Table	302.76 KB	3/27/2008 11:43:48 AM	W	
photopt_crlink	File Geodatabase Relationship Class				
photopt_histdist	File Geodatabase Relationship Class				
refln_crlink	File Geodatabase Relationship Class				
refpt_crlink	File Geodatabase Relationship Class				
refpy_crlink	File Geodatabase Relationship Class				
road_crlink	File Geodatabase Relationship Class				
Road_In	File Geodatabase Feature Class	13.21 KB	8/11/2008 4:04:00 PM	W	
struct_pt	File Geodatabase Relationship Class				

Screen capture of the ESRI ArcGIS software, showing the structure of the GeoDatabase created for FEMA in Mississippi following Katrina.

106 compliance and for the treatment measures equates to an intensive survey where detailed descriptive and location information is collected for each resource visited. The comprehensive surveys carried out in Mississippi incorporate elements of both reconnaissance and intensive survey. Areas with a concentration of known cultural resources receive an intensive survey while reconnaissance surveys cover larger areas never before examined or with a low likelihood to contain cultural resources.

Using GPS and data dictionaries to perform survey blurs the boundaries between standard reconnaissance and intensive survey protocols however. Surveyors spend so little time capturing extremely accurate locational and descriptive information in a digital format for each cultural

resource, that essentially all survey becomes intensive. Some evaluations simply target specific resources identified as a potential undertaking. The inclusion of GPS in survey work results in some special adaptations, although most typical fieldwork practices apply.

- All field surveyors should receive training in the use of the GPS equipment. As survey teams change due to personnel rotations, FEMA should schedule training for each new team member.
- ▲ All field surveyors should receive training with the data dictionary, including a detailed written description of each feature in the data dictionary and each attribute that surveyors must fill out. When changes are made to

the data dictionary, based on input from field surveyors, FEMA should provide new documentation to each surveyor.

- ▲ All field surveyors should receive training, including detailed written instructions regarding general procedures, such as file naming conventions or formatting specific information in attribute fields such as dates or street names.
- ▲ FEMA historic preservation staff should provide all field surveyors with clear methodology statements describing the daily procedures for collecting survey data with GPS, submitting survey data to the FEMA historic preservation/GIS specialist, and caring for the GPS equipment prior to any field data collection.
- ▲ FEMA historic preservation staff should inform surveyors of general survey and safety procedures to follow depending on the disaster circumstances
- ▲ All field surveyors should complement their digital data collection with basic field notes identifying which resources were visited during any given day, providing sketch maps of large landscape resources or historic districts, and documenting each digital file collected to assist in data quality control.
- ▲ FEMA historic preservation staff should encourage field surveyors to provide feedback in a written form if they find that the data dictionary or any daily procedures require changes to fit specific circumstances encountered in the field.
- ▲ FEMA historic preservation/GIS specialists should be prepared to update, edit, or restructure the data dictionary and the GeoDatabase to meet the needs of the field surveyors as they encounter unforeseen situations

Taking into account these factors and understanding that utilizing GPS may obscure the differences in typical survey protocols, the historic preservation staff can develop a clear workflow for the surveyors to follow. Comparing the general survey procedures in Mississippi to those in New Orleans shows a distinct difference in the approach to data collection (see Appendix H and Appendix R). In New Orleans, a targeted survey tactic captured information related to

primarily architectural resources potentially facing demolition based on assessments by local governments. Following this initial survey, FEMA performed intensive surveys in historic districts capturing all contributing and non-contributing resources as a treatment measure. By contrast, in Mississippi, no survey of threatened resources was conducted, however a more comprehensive survey of cultural resources involving both reconnaissance and intensive phases captured architectural, archaeological, ethnographic and traditional cultural properties regionally.

The integral role of GPS and GIS remains the common thread among these survey techniques. Each approach follows the basic data collection steps of assessing existing data sources, determining the need for GPS survey, developing a data dictionary and building a GeoDatabase to manage the incoming data. However, applying these same tools in a manner most appropriate for the Section 106 action called for uniquely distinguishes the two techniques.

Performing Analysis with the GIS

Having created the GeoDatabase structure to house incoming data from GPS field survey and other existing sources, insuring the consistency of the data and performing analysis become the next critical steps in executing the digital Section 106 methodology. Regardless of the extent of the data management system intended, the initial stages of disaster response call for an extremely dynamic data flow on a daily basis. Information from local governments directs FEMA to specific areas or resources of interest for Section 106 compliance. FEMA in turn must record their findings and report their progress every day to various agencies and to their own survey staff to guide further efforts and eliminate areas of potential adverse affects.

Later stages of the expedited Section 106 compliance process also require a quick turnaround in the decisions regarding National Register eligibility. Typically these determinations must be made within 90 days, however during many disasters FEMA must accomplish this much faster to accommodate other recovery activities such as debris removal. In these cases, a digital GIS-based method for establishing concurrence on National

Register eligibility of sites between FEMA and the SHPO/THPO documents the choices made and reduces the time spent in resolving the final disposition of each site. All of the parties required to confer on a resource can view the same data within hours of it being collected and incorporated into the GeoDatabase.

Whether conducting short term analysis needed daily or longer term studies used to inform the SHPO/THPO inventories and perhaps serve as mitigation, the GIS serves as a fundamental tool providing a constantly variable means of exploring the data. The dynamic nature of the system and the constantly changing questions asked by FEMA during any disaster recovery require clean data that can be manipulated to fit each possible scenario.

Data Processing

Clean data derives from sometimes tedious quality control measures, part of the overall progression of raw data into the finished GeoDatabase. Developing these important data processing procedures verifies the reliability of the data and makes it possible for historic preservation staff to assess National Register eligibility and formulate conclusions regarding the significance of individual resources or groups of resources. Without uniformity and completeness in the data, neither FEMA nor the SHPO/THPO involved can perform meaningful analysis.

Data processing techniques will also vary depending on the purpose of the GIS and the objectives defined for the cultural resource response. The adaptability of the GIS/GPS Section 106 strategy to each unique disaster also calls for flexibility in how data processing takes place, depending on the size of the disaster, the amount of staff available, the type of resources involved. Historic preservation and GIS staff will need to develop their own routines specific to their circumstances, however some elements of data processing remain common among all situations.

- ▶ FEMA should check data collected in the field or gathered from existing sources for accuracy and load it into the GeoDatabase on a daily basis.

- ▲ It may help in large disasters to create an interim GeoDatabase for this daily upload of field data, before it is finalized and readied for analysis in a more stable primary GeoDatabase.
- ▲ In the early stages of survey and evaluation for Section 106, FEMA should immediately establish quality control procedures to determine what resources have and have not been surveyed to guide the survey efforts, no matter what type or level of survey is chosen. These procedures may include simply generating spreadsheets to provide a list of addresses or sites visited, compared to the list of addresses or sites representing a FEMA undertaking.
- ▲ Similarly quality assurance processes to ensure surveyors collect and enter data consistently, remove spelling errors, etc., gives the FEMA historic preservation staff a chance to double check the quality and reliability of the fieldwork. These processes involve more in depth examination of the incoming data on a daily basis as well as the development of automated tools in the GIS to check for duplication of data.
- ▲ As FEMA GIS specialists load data into the final GeoDatabase, they should complete feature level metadata for each record to comply with the draft cultural resource spatial data standards. Typically FEMA GIS staff can enter these additional fields of data through automated tools, however they remain a critical element in documenting where each individual point, line or polygon in the GIS originated.
- ▲ With data in the final GeoDatabase checked for accuracy and errors corrected, FEMA historic preservation and GIS staff must determine the extent of the reporting, querying and mapping needs required to satisfy SHPO Section 106 requirements. Like defining the needs of the data management system, resolving the quantity and type of products necessary to comply with Section 106 directs the remaining data processing efforts.
- ▲ Similarly, FEMA historic preservation and GIS staff must settle on reporting, querying and mapping needs to satisfy treatment measures agreed to with the SHPO/THPO.

Analysis conducted to fulfill these goals may be considerably more complex and require additional data processing.

- ▲ Links established in the final GeoDatabase from the geography to exterior data tables should be updated and checked on a daily basis. These critical relationships will provide the additional descriptive information needed by FEMA and SHPO/THPO staff to make determinations of National Register eligibility.

Establishing any data processing procedures entails the development of consistency, not only among the data elements, but with the techniques implemented and the staff performing those operations. Staying current with the incoming data and following the data processing measures daily allows for quick analysis in the early phases of survey and evaluation. Additionally, this provides confidence to the users of any long-term analysis that may incorporate data collected over extended periods of time.

No standard data processing procedures exist to tailor to specific disasters. Each disaster, the accompanying resources and the FEMA staff performing the operations will have unique elements. Comparing the work flow between New Orleans and Mississippi illustrates that different measures must be incorporated to accommodate different approaches to survey, different types of survey, different overall goals for the GIS and the skills of individual staff members (See Appendix I and Appendix S).

Data Analysis and Developing Concurrence

All data processing measures lead to clean and reliable data, for the purpose of conducting analysis in the GIS. This analysis may take the form of simply providing information regarding how many resources over 50 years old may suffer adverse affects, and where they are located. Or, it may require more complexity, examining existing resources and creating predictive models showing where other similar resources may concentrate, particularly in the case of archaeological sites. Each question asked by FEMA during all of the various phases of disaster response will depend on the type and scope of the disaster. These

questions will drive all of the analysis necessary to provide each FEMA division with the appropriate information to avoid adverse impacts as well as compensate for the loss of those resources.

This variability makes it difficult to discuss all of the potential analysis possibilities or scenarios. When a disaster response calls for Section 106 compliance however, some elements of the data analysis will be the same in all situations. Chief among these common elements remains the need to quickly determine the National Register eligibility of resources, and to develop concurrence regarding that eligibility or historic significance with the SHPO/THPO. Using the GIS to assist in these tasks eliminates the need for FEMA to fill out and submit paper forms or photographs, greatly speeding Section 106 compliance. Providing the data and analysis to accomplish this may meet all of the objectives of the particular data management system chosen. Taking the system one step further and allowing FEMA and the SHPO/THPO to enter their eligibility decisions in the GIS for each resource maintains a record of who determined what, and when, in the GeoDatabase, expanding the analysis capabilities.

The New Orleans example outlines one alternative to establishing procedures to develop such concurrence through the GIS. These steps include:

- ▲ The GPS data dictionary will include information describing each resource, its significance, its integrity, its condition and other factors which surveyors will collect for each resource mapped.
- ▲ Through the GIS reviewers access this data to make educated assessments of historic significance and integrity.
- ▲ Linked to each location, photographs of each resource will provide reviewers with the information needed to make an initial determination of eligibility.
- ▲ The process of developing concurrence with the SHPO/THPO is carried out by representatives from FEMA and the SHPO/THPO jointly examining the data and entering their determinations directly into the GIS.

- ▲ With determinations made in the GIS, FEMA can send letters with batches of sites agreed upon to SHPO for final approval.

A second alternative offers the same basic functionality, but allows for reviewers from FEMA and the SHPO/THPO to access the data remotely through the internet, eliminating the need for both to be co-located and potentially eliminating the need for the SHPO/THPO to have GIS capability.

- ▲ The GPS data dictionary will include information describing each resource, its significance, its integrity, its condition and other factors which surveyors will collect for each resource mapped.
- ▲ Through the GIS reviewers access this data to make educated assessments of historic significance and integrity.
- ▲ Linked to each location, photographs of each resource will provide reviewers with the information needed to make an initial determination of eligibility.
- ▲ An accessible internet application can provide both FEMA and SHPO/THPO reviewers data and photos collected in the field, and contextual information
- ▲ The same process of using the GIS to develop concurrence and batch process determinations of eligibility as described in alternative one can be followed remotely

A third alternative offers again, the same basic approach, allowing reviewers from FEMA, SHPO/THPO to be separated during their review process, but eliminates the need for FEMA to invest in costly specialized internet GIS applications.

- ▲ The GPS data dictionary will include information describing each resource, its significance, its integrity, its condition and other factors which surveyors will collect for each resource mapped.
- ▲ Through the GIS reviewers access this data to make educated assessments of historic significance and integrity.
- ▲ Linked to each location, photographs of each resource will provide reviewers with the information needed to make an initial determination of eligibility.

- ▲ FEMA reviewers can perform their initial reviews and pass the digital data directly to the SHPO/THPO via external hard drives or other portable media, who can edit or concur in a separate location or session
- ▲ The same process of using the GIS to develop concurrence and batch process determinations of eligibility as described in alternative one can be followed remotely

No matter what FEMA chooses as the objectives for the data management system, ultimately, defining a means of determining eligibility and developing concurrence remain the goal of all digital Section 106 compliance methods. Designing procedures to accomplish this and providing training to the FEMA and SHPO/THPO staff who participate persist as shared traits in any approach followed for a disaster. Considerations here include:

- ▲ After settling on traditional means of developing concurrence via paper or digital means with the GIS, those using the GIS should receive basic training in how to use the software to ask questions, make selections, or perform edits to the GeoDatabase entering their decisions.
- ▲ When new staff rotates in or FEMA changes general procedures, FEMA should provide additional training to their own staff, as well as SHPO and THPO staff
- ▲ As those determining eligibility enter data manually, FEMA should develop quality control procedures to ensure consistency in the manner of entry and interpretation of the data
- ▲ Anytime FEMA or SHPO/THPO staff enters data manually, they should use an interim version of the GeoDatabase to prevent any overwriting or other errors. With such a system, FEMA GIS staff must establish data check-in/check-out policies and quality control procedures.

Good data analysis and the ability to generate determinations of National Register eligibility as well as generate concurrence on that eligibility among FEMA, SHPO and THPO depends entirely on clean, consistent data. Data processing procedures formalizing a series of steps to remove

duplication, spelling errors, data entry problems and misinterpretation of attribute requirements provides this reliable data. Data analysis may take a variety of forms depending on the type of disaster, however in all cases where FEMA must comply with Section 106, expediting means of creating agreement on the historic significance of each resource will always be a top priority.

Taking advantage of the analysis capabilities with GIS for examining trends in cultural resources across landscapes and in assisting with the compliance process certainly achieves this fundamental goal. A variety of alternatives make this possible, depending on the disaster. In all cases however, FEMA, SHPO, and THPO staff must have the training and tools available to them in order to efficiently utilize the GIS.

Creating New Data and Presenting Results

Performing any analysis may result in the production of new data to answer certain questions. Alternatively, Section 106 compliance may involve the completion of treatment measures to offset the destruction of cultural resources or other adverse affects that FEMA may cause in any of its undertakings. Data generated through either analysis or treatment measures is targeted to a specific audience by nature and may result in a wider distribution than simply the SHPO or THPO, such as certified local governments or even the general public.

All of the data produced by FEMA may serve as mitigation to help reduce potential adverse affects in the future, and help plan for particularly vulnerable resources before another disaster occurs. The appropriate stewardship of this data then becomes extremely important. With the conclusion of FEMA involvement in Section 106 activities for any single disaster, and the potential delivery of data products to the public, all of the partnering agencies along with FEMA must consider the long term maintenance responsibilities to keep the data current. Ultimately, the SHPO or THPO will manage data produced by FEMA within their own inventories.

Treatment Measures

Final stages of disaster recovery may require FEMA to execute treatment measures compensating for the loss of cultural resources. In the New Orleans example, FEMA collected GPS locations and attribute information on all contributing and non-contributing resources inside existing National Register districts. No other agency holds this detailed level of information, however it provides invaluable assistance in future disasters, allowing FEMA responders to assess potential adverse affects and make plans to accommodate resources much more quickly.

In Mississippi, FEMA also collected GPS locations and attribute information on contributing resources in select National Register districts, as well as proposed new districts. Further, FEMA conducted wide-scale county surveys of all cultural resources focusing on archaeological sites and traditional cultural properties in addition to historic buildings and structures.

Using GPS and GIS in the treatment measure phase builds on the defined objectives and role of the GIS during the survey and evaluation phase of compliance work. Here, data can be collected explicitly as a form of documentation, not necessarily to simply determine National Register eligibility. In some cases however, the same type of consultation process required for developing concurrence with the SHPO/THPO can serve as an additional treatment measure, forming preliminary determinations of eligibility and flagging potentially significant resources to focus on in future disaster situations. Many of the same steps followed during the survey and evaluation phase apply in carrying out treatment measures:

- ▲ Define the needs for any further survey to be conducted or GIS products to be created as part of treatment measures or hazard mitigation.
- ▲ Establish check-in/check-out policy as part of quality control procedures for data collected as part of treatment measures
- ▲ Surveyors engaged in survey for treatment measures should receive additional training on any data dictionary changes or procedural changes from previous data collection efforts

- ▲ Establish a clear work flow and data flow for information collected as part of treatment measures. These will most likely parallel the work/data flow established for survey and evaluation, but may involve different steps to create specific products or eliminate others, such as concurrence.
- ▲ Establish a clear understanding with cooperating partners before engaging in any treatment measures regarding what data and products they will receive as a result.

The ability to utilize GPS and GIS for treatment measures and mitigation opens up many new options for Section 106 compliance. Creative use of these technologies will provide SHPOs, THPOs and FEMA with a great deal of data not only functioning as documentation for resources suffering adverse affects, but to record the current state of a resource or landscape. Adding detailed data to SHPO/THPO inventories, not only expands their capabilities, but provides FEMA with much needed locational and descriptive information which allow them to better respond in future disasters.

Options mentioned here, such as recording comprehensive descriptive and locational information for contributing and non-contributing resources inside historic districts, or conducting large-scale intensive level surveys in areas not previously explored represent some of the simplest treatment measures. Other alternatives may involve more exhaustive analysis studying trends across landscapes targeting specific resource types or the creation of predictive models that may indicate areas of high potential for various resource types. Choices of GIS solutions for treatment measures may vary greatly depending on the type of disaster, the resources affected and the willingness of the SHPO/THPO to accept these products.

On-Going Data Maintenance

No matter what data FEMA generates during the survey and evaluation, development of concurrence, analysis or treatment measures stages, FEMA will only need the data for the duration of its Section 106 compliance activities. The utility of the data will far outlive FEMA's involvement in the disaster recovery. As a result, FEMA must develop

short term plans for handing the data over to its ultimate steward, such as the SHPO or THPO. In turn, SHPOs, THPOs and FEMA should outline long term plans for the maintenance, update and integration of the data with the SHPO and THPO inventories.

Short term considerations include:

- ▶ As a Federal agency, FEMA must complete FGDC compliant metadata for all GIS data sets created before sharing the data with other Federal, state, tribal or local entities.
- ▶ FGDC compliant metadata statements should be created for each feature class in the GeoDatabase, each feature dataset, and the GeoDatabase itself.
- ▶ These metadata statements should describe how the data was created, when it was created and by whom. The metadata should also detail what the data contains and what appropriate uses might consist of. Providing complete documentation of the data itself prevents misinterpretation or misuse of data once released to the SHPO, THPO or the general public.
- ▶ Feature level metadata can document the appropriate uses of individual features or feature classes to further insure that sensitive information is not misconstrued.
- ▶ Feature level metadata can document any restrictions on the use of the data to help protect sensitive locational information that should not be released to the public for resources such as archaeological sites and traditional cultural properties
- ▶ To facilitate handing data over to the SHPO or THPO, FEMA should develop agreements regarding final distribution plans, data formats, distribution schedules, etc.

Because FEMA must survey all resources potentially eligible for the National Register which may suffer an adverse impact to comply with Section 106, certainly not all of the data collected during a survey will represent historic resources. FEMA or the SHPO/THPO may determine many sites not eligible for the National Register. Documenting these decisions in the GIS for future reference is important for all the parties involved. Releasing the locations of properties determined not eligible or releasing locations of

properties removed from demolition lists to the public can pose problems. Controlling what data FEMA hands over to the SHPO/THPO and what subset of that data becomes incorporated into the SHPO/THPO inventory requires coordination and understanding on all sides, before distributing any of the data products.

The SHPO/THPO ultimately holds the responsibility for sustaining the data once it moves from FEMA to the SHPO/THPO, with all of the correct metadata and security measures in place. Although not a FEMA obligation after distributing the data, FEMA may want to provide assistance to the SHPO/THPO to insure the currency and availability of the data in the event of future disasters.

Long term considerations:

- ▶ SHPO/THPO should maintain the framework of the GeoDatabase structure to accommodate establishing the same type of digital Section 106 process in the future. Specifically, the a-spatial link table connecting the locations to exterior databases remains a priority.
- ▶ SHPO/THPO should maintain the consistency and currency of the data if conditions change, resources deteriorate, resources lose integrity, or if resources are destroyed through some other means. Keeping a subset of data representing resources once determined eligible for the National Register which have since been destroyed helps produce more accurate statistics regarding numbers of sites lost in any particular disaster.
- ▶ To help the SHPO/THPO better maintain and use the data for their own purposes, FEMA may consider offering GIS or GPS training as a treatment measure.
- ▶ New technologies and new techniques will always influence how SHPOs/THPOs steward the data, and how FEMA may provide data. SHPOs/THPOs and FEMA must remain flexible and adapt to these changes, keeping up to date with the appropriate technological tools available to them.

FEMA will only use or produce cultural resource data for a relatively short period of time during the disaster response and Section 106 compliance processes. However, creating new data during analysis or as a treatment measure, maintaining good quality data and making it available to the public following the disaster all require consideration throughout the development of a GIS/GPS data management system. Ultimately, the SHPO/THPO remains the definitive source for cultural resource data and they will carry the burden for maintaining the resulting data, for their own use as well as any potential future use by other Federal agencies for Section 106.

The primary goals of any Section 106 compliance effort include identifying cultural resources eligible for the National Register which may suffer an adverse affect, documenting those resources before the adverse affect and compensating for the loss of these resources. The GIS/GPS methodology outlined here meets these goals and can adapt to varying sizes and types of disasters, taking into account all manner of cultural resources. In the end, the scope of the disaster, the goals of the Section 106 response, the amount of support, and the type of treatment measures agreed to will all dictate what form the implementation of the GIS/GPS methodology will take. The approach chosen to meet the needs of each unique disaster situation will conversely determine the extent to which GPS is necessary and how to use the GIS to the best advantage of FEMA, SHPO and THPO, as well as the resources themselves. Clearly the addition of these technologies to traditional Section 106 compliance procedures adds value to the resulting products, providing enhanced tools to respond to a disaster in addition to planning for disasters in the future.

APPLYING A GPS/GIS STRATEGY TO NEPA

In helping to foster good environmental practices, promote stewardship of natural resources and reduce damage to the environment, the National Environmental Policy Act (NEPA), also addresses the interconnection of cultural and natural resources and their mutual need for protection. Much like the National Historic Preservation Act (NHPA), NEPA Section 102 stipulates that any Federal agency involved in an undertaking must evaluate the potential impact of that action and complete an environmental impact statement (EIS) that describes any adverse affects to natural and cultural resources as well as propose options to avoid those affects.

Similar to NHPA Section 106, NEPA Section 102 compliance involves the integration of information from various sources and disciplines to better evaluate the potential consequences of a project. Regardless of whether the action involves cultural or natural resources, they all share real world locations. Tools such as GPS to map the resources, and GIS to perform analysis on the resources serve both NHPA and NEPA needs.

The NEPA Compliance Process

The practice of considering the environmental impacts of specific actions, as well as the development of alternatives to those actions closely parallels the NHPA Section 106 compliance process. Both require a Federal agency to fully consider the potential affects of a specific undertaking. If an adverse affect arises, then the agency must propose alternatives or additional actions to compensate for those adverse affects. The Federal agency must further notify the public regarding the potential impacts to natural or cultural resources and potential alternatives. Finally, all the data must be reviewed by local, state, tribal and Federal agencies involved in the undertaking.

The NHPA Section 106 survey and evaluation phase helps a Federal agency determine if any cultural resources will suffer an adverse affect as a result of the actions proposed or required. Similarly, NEPA regulations mandate an environmental assessment to consider whether the proposed Federal action requires the creation of an environmental impact statement (EIS). The environmental assessment will conclude whether the undertaking constitutes a major action necessitating an EIS, or if no significant impact exists.

Analogous to the NHPA Section 106 procedure, if no adverse affect is found then no further action is required of the Federal agency. However, comparable to the determination of National Register eligibility phase of Section 106, if the proposed Federal activity compels an EIS, the document must include a description of those potential as well as unavoidable adverse affects, alternatives to mitigate those impacts, in addition to an evaluation of secondary or cumulative effects resulting from the undertaking. Rather than documenting historic significance and resource integrity as required by NHPA, the EIS records the significance of an adverse affect and its potential for harming the environment.

As part of the general decision making process and the development of an EIS, a Federal agency must also consult with all other Federal, state and local entities that have jurisdiction or special expertise relevant to the proposed undertaking. Corresponding to the concurrence phase of Section 106 compliance, agencies must agree on the possible environmental issues generated by an undertaking and likely alternatives to avoid adverse affects.

As a result of any disaster the potential for an environmental impact during FEMA's response and recovery efforts remains high. The need to address both environmental and cultural resource concerns quickly follows the essential task of dealing with human health and safety no matter the type or scope of the disaster. Applying the same GIS/GPS strategy to cope with either NHPA or NEPA compliance saves time and improves efficiency bringing both sets of data together for analysis, planning and decision making.

The similarities between NHPA and NEPA compliance processes illustrate the common needs which a GIS/GPS methodology can assist with, and where the two purposes overlap:

- ▶ The need to conduct survey and evaluation of environmental or cultural resources potentially impacted by undertakings
- ▶ The need to manage a large amount of data, which changes rapidly
- ▶ The need to perform analysis of data on a daily basis to direct recovery efforts
- ▶ The need to quickly and efficiently consult between FEMA and other Federal, state, tribal and local agencies with interest in environmental or cultural resources

The goals of both NHPA Section 106 and NEPA Section 102 closely relate, requiring the identification of sensitive resources, the documentation of the significance of those resources, the recordation of potential adverse affects and the proposal of alternatives to mitigate against these affects. Because of the interrelation between cultural and natural resources, combining the data in a single GIS-based system makes performing analysis more comprehensive and allows for better, more informed decision making.

Applicability of the GPS/GIS Strategy to NEPA

The flexible nature of a GPS/GIS data management system allows for easy adaptability to other related operations. The NEPA Section 102 compliance strategy must follow the majority of the same procedures required for NHPA Section 106. Because the two follow such similar paths, FEMA can take advantage of the same GIS and GPS methodology, applied to both NHPA and NEPA throughout a disaster response.

- ▲ Both NEPA and NHPA require the survey and evaluation of resources potentially impacted by an undertaking, whether cultural or natural
- ▲ The basic model utilizing GPS to locate resources and GIS to manage the data collected, as well as support consultation remains the same

- ▲ The same processes can be used to accommodate natural or cultural features affected by environmental issues

Following the same principal themes of the cultural resource data management strategy in responding to a disaster with an environmental component begins with the first step: defining the role of the GIS. Defining similar objectives and answering comparable questions generates clarity in the function of the GIS and determines the appropriate approach depending on the unique circumstances of the disaster.

Objectives might include:

- ▶ Location the known natural resources, such as rare or endangered species, environmental sensitive areas, or areas with a high potential to support rare and endangered species
- ▶ Identify the likely adverse affects to sensitive natural resources or areas
- ▶ Identify hazards likely to be introduced by an undertaking which might affect the environment, and any secondary damage that might result
- ▶ Identify any cultural resources that might suffer an adverse affect due to environmental concerns, contamination, secondary damage, etc.
- ▶ Establish whether a digital compliance effort, with cooperation of all necessary state, local, tribal and Federal agencies involved, would assist in completion of an environmental assessment or subsequent EIS
- ▶ Define the purpose of the dedicated natural resource GIS effort and its role within the NEPA compliance effort

Questions related to the purpose of the GIS might include:

- ▶ Will the GIS provide information to other FEMA programs to help identify areas with no significant environmental impact?
- ▶ Will the GIS provide tools for planning alternatives to avoid potential environmental impacts?
- ▶ Will the GIS provide tools for planning during the identification of environmental and natural resources at risk?

- ▶ Will the GIS serve as a method of documenting the existence of sensitive natural resources?
- ▶ Will the GIS serve as a tool to develop consensus among Federal, state, tribal and local entities regarding the proposed undertaking and the alternatives provided?
- ▶ Will the GIS provide a structure for analyzing environmental data and comparing the potential adverse affects of various alternatives?
- ▶ Will the GIS serve as a means of communicating environmental issues to the public?

Identical to the cultural resource strategy, defining the objectives and purpose of the GIS for NEPA compliance determines the necessary infrastructure required to implement a natural resource or environmental methodology. Here again, the nature and extent of the disaster, combined with the goals and objectives of the environmental response will lead to the second step: creating the necessary infrastructure, such as the staffing and equipment needs.

Rather than an historic preservation/GIS specialist, architectural historians or archaeologists, the NEPA compliance process will need staff familiar with NEPA and the procedures required to complete an environmental assessment or EIS. Although other staff needs, such as dedicated GIS specialists, data entry specialists, and teams of qualified surveyors still apply. Forming interdisciplinary teams to identify adverse affects for NEPA may involve the inclusion of cultural resource specialists in particular however. Equipment requirements to support an environmental data management system would mirror those required for the cultural resource strategy.

Staffing requirements might include:

- ▶ A full-time environmental or NEPA/GIS specialist to manage, update and edit data
- ▶ A full-time GIS specialist to help process data, perform analysis and generate products
- ▶ At least one full-time data entry specialist to

- record data and complete quality control
- ▶ Teams of qualified surveyors to locate, describe and evaluate natural resources
- ▶ An interdisciplinary team of qualified professionals to evaluate potential environmental impacts
- ▶ A GIS programmer to develop applications to support a public natural resource GIS

Equipment requirements might include:

- ▶ Computer workstations capable of support full GIS software licenses
- ▶ Licenses of the GIS software required to implement the data management system
- ▶ A large-format plotter to produce the required paper maps
- ▶ GPS equipment for survey and evaluation teams
- ▶ Digital cameras for survey and evaluation teams
- ▶ Software and hardware needed to support a public internet application

Clearly, the substantial overlap in both staffing and equipment requirements hints at the value in sharing these resources. Additionally, integrating the natural and cultural efforts in response to a disaster from the beginning promotes a more interdisciplinary approach, expanding the knowledge base for both groups and potentially better protecting all of the sensitive resources involved in an undertaking.

Sources for the third step in the implementation, gathering the necessary data, will differ from the cultural resource strategy. SHPOs and THPOs do not maintain natural resource GIS data, however other Federal, state, tribal and local government entities readily distribute this data for management, planning and NEPA purposes. Specific data dictionaries to use in survey and identification of natural resources would also differ from those used for cultural resources, and need to reflect the region within which the disaster occurs as well as the unique environmental elements associated with the area affected. This in turn requires modifications to the associated GeoDatabase to echo those unique feature classes collected or created.

The GeoDatabase structure, separating the geography from the descriptive data could remain intact however. Just as with the cultural resource example, many natural resource databases exist to describe the wide range of environmental features tracked and monitored as part of government and private sector programs. The need to maintain the autonomy of these exterior databases, with their individual perspectives and descriptive elements remains just as important with natural resources. Separating the cultural and natural resources into two GeoDatabases does not preclude the use of the data together in the GIS for analysis.

Similarly, GPS data collection practices will remain the same. All field surveyors should receive training, detailed instruction with the data dictionary for the project, and explanation of the general survey procedures as well as specific safety measures, regardless of the survey type or subject matter. Elements standard to any survey, such as the creation of field notes should continue to be stressed.

The fourth step in implementing the strategy, performing analysis with the GIS, will obviously change with the type of data collected: environmental versus cultural. Different questions asked to address NEPA compliance will result in different data processing and analysis procedures, which will once again also depend on the nature of the disaster. The basic procedures to link exterior data sources to the locations collected with GPS will provide a means of consulting with various subject matter specialists and other partner agencies to determine any adverse affects however.

The presence of clean data, which has gone through a structured and formal QA/QC process remains critical to any analysis however. The same holds true with updating the GeoDatabase and maintaining any links to external databases. Without these steps, common to all GIS projects,

any analysis performed will produce incorrect or misleading results. Keeping this in mind, although natural resource surveys and analysis produce different data and products, a parallel workflow similar to that developed for the cultural resource compliance efforts would certainly suffice to guide QA/QC and data processing procedures.

Those results and analysis produced, created and presented in the fifth and final step of the implementation will focus on the development of either an environmental assessment or and EIS, or both. The exact procedures and requirements to create these documents will be based on the specific regulations created by each Federal agency to meet their NEPA obligations, in addition to the type and size of disaster.

Ultimately, public distribution of the decisions made and the data that led to those decisions will complete the NEPA Section 102 compliance process. The defined objectives of the digital environmental data management systems will establish whether the GIS simply provides data to produce paper maps, charts, statistics and reports, or if it serves as an internet-based tool allowing the public to explore all of the proposed alternatives.

Clearly the flexibility of GIS and GPS to adapt to many different applications however lend it to serving double duty in responding to cultural and environmental needs after a disaster. Because the NHPA and NEPA both outline similar pathways involving surveying tangible resources in a defined area, evaluating those resources for adverse affects and performing analysis to provide alternatives to avoid those adverse affects or to compensate for the loss of resources, the same methodological framework applies. The scope and type of disaster, in addition to the range of cultural and natural features involved, will always determine the extent to which that methodological framework is filled out.

CONCLUSIONS

Hurricanes Katrina and Rita highlighted many new elements and needs within the cultural resource community in responding to disasters. As a result of the difficult circumstances presented and the unprecedented amount of damage to cultural resources, FEMA explored new and innovative solutions to meet its obligations as outlined in the National Historic Preservation Act, Section 106. Geographic Information Systems and global positioning systems played a key role in meeting those needs and providing new ways to compensate for the loss of historically significant sites.

The methodology pursued by FEMA incorporated GIS and GPS technologies to greatly improve the process of survey and evaluation of cultural resources. By doing so, FEMA significantly reduced the amount of time needed to generate concurrence with SHPOs and THPOs on the National Register eligibility of resources identified as potentially adversely affected by FEMA actions. Additionally, for the first time, FEMA utilized GPS and GIS as a form of documentation, recording the accurate locations and descriptions of resources before demolition. Further, FEMA took advantage of the same strategy to generate innovative treatment measures creating new and extremely detailed information regarding the contributing and non-contributing resources inside National Register districts, providing much needed data to help prevent harm to these resources in the event of future disasters.

To facilitate the communication among FEMA, SHPOs and THPOs responding to the disaster, FEMA employed the draft cultural resource spatial data standards under construction by the National Park Service, which will apply to all Federal agencies. Serving as a test bed for these standards, FEMA helped illustrate that the standards tolerated great flexibility in bringing various data sets together, allowing all of the parties involved in cultural resource compliance work to access all of the available data about a particular resource easily through a GIS interface.

In establishing the digital data management system to comply with Section 106 requirements,

FEMA and the National Park Service explored many different procedures, eventually settling on an adjustable data collection, data processing and digital data work flow to accommodate the constantly changing analysis and reporting needs. Clearly the unique challenges presented with the Katrina/Rita response for cultural resources demonstrate the dynamic ability of the methodology to transform based on the shifting circumstances which remain a part of any disaster response.

The process of building such a data management system and the subsequent development of a solid and successful methodology underscores the potential of adapting the same tactics in response to other types of disasters which may encompass larger or smaller confines. A clear set of steps generated by the response to Katrina in Louisiana and later applied to Mississippi demonstrate that the same methodology can assist in all the various stages of disaster response and recovery to meet FEMA's Section 106 responsibilities.

By extension, because of the similarities between the National Historic Preservation Act and the National Environmental Policy Act, and their shared concern regarding potential adverse impacts on cultural and natural resources, the methodology developed can further assist in meeting natural resource compliance needs. Ultimately, the two regulations reveal common goals, which easily fit into the paradigm established with the cultural resource data management system created for Katrina.

Although hurricanes Katrina and Rita created the largest cultural resource disaster in the United States since the creation of the National Historic Preservation Act, and the National Environmental Policy Act, the need to react with coherent and sound policies which greatly improve the pace of recovery forced FEMA to explore new options. The resulting methodology will serve FEMA well into the future, allowing them to better counter the harsh realities of the impact any disaster may impose on a cultural or natural landscape.

Adverse effect	Adverse effects, with respect to Section 106 of the National Historic Preservation Act, occur when a Federal undertaking may directly or indirectly alter characteristics of a historic property that qualify it for inclusion in the National Register of Historic Places.
Advisory Council on Historic Preservation (ACHP)	The Advisory Council on Historic Preservation is an independent Federal agency that promotes the preservation, enhancement, and productive use of our Nation's historic resources, and advises the President and Congress on national historic preservation policy. The goal of the National Historic Preservation Act (NHPA), which established ACHP in 1966, is to have Federal agencies act as responsible stewards of our Nation's resources when their actions affect historic properties. ACHP is the only entity with the legal responsibility to encourage Federal agencies to factor historic preservation into Federal project requirements.
ArcGIS	ArcGIS is the name of a group of geographic information system software product lines produced by ESRI. At the desktop GIS level, ArcGIS can include: ArcReader, which allows one to view and query maps created with the other Arc products; ArcView, which allows one to view spatial data, create maps, and perform basic spatial analysis; ArcEditor which includes all the functionality of ArcView, includes more advanced tools for manipulation of shapefiles and geodatabases; or ArcInfo the most advanced version of ArcGIS, which includes added capabilities for data manipulation, editing, and analysis. Extensions can be purchased separately to increase the functionality of ArcGIS.
ArcIMS	ESRI software that allows for centrally hosting and serving GIS maps, data, and applications for use on the Internet. The administrative framework lets users author configuration files, publish maps, design Web pages, and administer ArcIMS spatial servers.
Attribute	A characteristic of a geographic feature taking the form of a field, or column, stored in a tabular format resembling a database. Each attribute is linked to individual map feature through geographic locators (points, lines, or polygons).
Attribute value	A characteristic of a geographic feature described by numbers or characters, stored in an attribute field inside a tabular format resembling a database. Valid values, domains or menus, can be established in a data dictionary and in a GeoDatabase to insure consistent data entry for any one particular attribute.
Cartographic model	A cartographic model is a set of interacting, ordered map operations that act on raw data, as well as derived and intermediate data, to simulate a spatial decision making process.

Cultural resource	A building, site, structure, object or district evaluated as having significance in pre-history or history.
Cultural Resource GIS Facility (CRGIS)	The Cultural Resource GIS Facility is a program within the Heritage Documentation Programs Division of the National Park Service. The mission CRGIS facility is to institutionalize the use of GIS, Global Positioning Systems (GPS), and Remote Sensing technologies in historic preservation within the National Park system as well as with State Historic Preservation Offices (SHPO) and Tribal Historic Preservation Offices (THPO).
Data dictionary	A data dictionary is a description of the features and attributes relevant to a particular project or job. It is used with the GPS receiver in the field to control the collection of features (objects) and attributes (information about those objects). A data dictionary includes a list of features that are collected in the field and, for each feature, a list of attributes that describe the feature. A data dictionary structures data collection but it does not contain the actual information collected in the field. A data dictionary prompts you to enter information and it can also limit what you enter to ensure data integrity and compatibility with your GIS. Although a data dictionary is not always required for fieldwork, having one does make both data collection and processing faster and easier.
Data model	A data model describes the structure of the data within a given GeoDatabase and, by implication, the underlying structure of that GeoDatabase itself. A data model represents classes of entities (kinds of things) about which a user wishes to hold information, the attributes of that information, and relationships among those entities and relationships among those attributes. The model describes the organization of the data to some extent irrespective of how data might be represented in a computer system. Robust data models often identify abstractions of entities. A proper conceptual data model describes the semantics of a subject area. It is a collection of assertions about the nature of the information that is used by one or more organizations. Proper entity classes are named with natural language words instead of technical jargon.
Environmental Systems Research Institute (ESRI)	ESRI was founded as Environmental Systems Research Institute, Inc., in 1969 as a privately held consulting firm that specialized in land use analysis projects. The worldwide headquarters of ESRI are anchored in a multicampus environment in Redlands, California. ESRI designs and develops the world's leading geographic information system (GIS) technology. GIS technology is constantly evolving to meet the changing needs of business, industry, government, and education. Today, ESRI has more than 4,000 skilled employees worldwide who work with hundreds of business partners and tens of thousands of users.
Feature	A feature is a physical object or an event in the real world for which you want to collect position and descriptive information. The GPS data dictionary contains a list of the features for which you want to collect information. Features are represented as points, lines or polygons in the GIS.

Feature class	A feature class in ArcGIS, is a collection of geographic features with the same geometry type (such as point, line, or polygon), with the same attributes, and with the same spatial reference. Feature classes can be stored in geodatabases, shapefiles, coverages, or other data formats. Feature classes allow homogeneous features to be grouped into a single unit for data storage purposes. For example, highways, primary roads, and secondary roads can be grouped into a line feature class named “roads.” In a geodatabase, feature classes can also store annotation and dimensions.
Feature dataset	A feature dataset in ArcGIS, is a collection of feature classes stored together that share the same spatial reference; that is, they share a coordinate system, and their features fall within a common geographic area. Feature classes with different geometry types may be stored in a feature dataset.
Federal Geographic Data Committee (FGDC)	The Federal Geographic Data Committee (FGDC) is an interagency committee that promotes the coordinated development, use, sharing, and dissemination of geospatial data on a national basis. This nationwide data publishing effort is known as the National Spatial Data Infrastructure (NSDI). The NSDI is a physical, organizational, and virtual network designed to enable the development and sharing of this nation’s digital geographic information resources. FGDC activities are administered through the FGDC Secretariat, hosted by the National Geospatial Programs Office (NGPO) of the U.S. Geological Survey. The Office of Management and Budget (OMB) established the FGDC in 1990 and rechartered the committee in its August 2002 revision of Circular A-16, “Coordination of Geographic Information and Related Spatial Data Activities.” The FGDC is a 19 member interagency committee composed of representatives from the Executive Office of the President, and Cabinet level and independent Federal agencies. The Secretary of the Department of the Interior chairs the FGDC, with the Deputy Director for Management, Office of Management and Budget (OMB) as Vice-Chair.
GeoDatabase	A geodatabase is a database with extensions for storing, querying, and manipulating geographic information and spatial data and is also known as a spatial database. Within a spatial database, spatial data is treated as any other data type. Vector data can be stored as point, line or polygon data types, which may have an associated spatial reference system. A geodatabase record can use a geometry data type to represent the location of an object in the physical world and other standard database data types to store the object’s associated attributes. Some geodatabases also include support for storing raster data.
Geographic Information Systems (GIS)	A geographic info system (GIS) is a system for capturing, storing, analyzing and managing data and associated attributes which are spatially referenced to the earth. In the strictest sense, it is a computer system capable of integrating, storing, editing, analyzing, sharing, and displaying geographically-referenced information. In a more generic sense, GIS is a tool that allows users to create interactive queries (user created searches), analyze the spatial information, edit data, maps, and present the results of all these operations.

Geospatial Intelligence Unit (GIU)	One element of the FEMA Joint Field Office, the GIU acquires spatial data and provides critical cartographic and GIS support to first responders in an emergency to assist in planning, recovery, and the immediate needs of other agencies or programs within FEMA.
Global Positioning Systems (GPS)	The Global Positioning System (GPS) is a fully-functional global navigation satellite system. More than two dozen GPS satellites are in medium Earth orbit, transmitting signals allowing GPS receivers to determine the receiver's location, speed and direction. Since the first experimental satellite was launched in 1978, GPS has become an indispensable aid to navigation around the world, and an important tool for map-making and land surveying. GPS also provides a precise time reference used in many applications. Developed by the United States Department of Defense, the satellite constellation is managed by the United State Air Force.
Globally Unique Identifier (GUID)	A Globally Unique Identifier is a pseudo-random number used in software applications. While each generated GUID is not guaranteed to be unique, the total number of unique keys (2128 or $3.40282366 \times 10^{38}$) is so large that the probability of the same number being generated twice is very small. For an application using 10 billion random GUIDs, the probability of a coincidence is on the order of 1 in a quintillion.
Historic District Landmark Committee (HDLC)	There are two different types of historic districts in the City of New Orleans: National Register districts and locally designated districts. Currently, there are seventeen National Register districts and twelve local districts. Boundaries of the National Register Districts and of the local districts often overlap. The New Orleans City Council designates local historic districts which are administered by local historic district commissions. Local historic districts protect the buildings and neighborhoods of New Orleans by providing regulations for changes to the exterior of all buildings within the local historic districts, reviewing new construction, demolition requests, and citing owners for "demolition by neglect." The New Orleans Historic District Landmarks Commission (NO HDLC) has jurisdiction over the nine residential local historic districts. This commission has 15 members, one member from each local district and seven at-large members. The Mayor, with the approval of the City Council, appoints all members. Members serve a four-year term and can be reappointed.
Historic significance	The importance for which a cultural resource has been evaluated and found to meet the National Register of Historic Places criteria for significance.
Identify tool	In ArcGIS, a tool that, when applied to a feature (by clicking it), opens a window showing that feature's attributes.
Integrity	The authenticity of a cultural resource's historic identity, evidenced by the survival of physical characteristics that existed during the resources historic or prehistoric period.
Intensive Survey	An intensive survey consists of a close and careful look at the area being surveyed. The intensive survey identifies precisely and completely all

historic resources in the area, in addition to documenting the resources in the field. Like reconnaissance surveys, intensive surveys also involve detailed background research. This form of survey should produce all the information needed to evaluate the National Register eligibility of a property and prepare a state or tribal inventory form.

Joint Field Office (JFO)

The JFO is a temporary Federal multiagency coordination center established locally by FEMA to facilitate field-level domestic incident management activities related to prevention, preparedness, response and recovery when activated by the Secretary of Homeland Security. The JFO provides a central location for coordination of Federal, State, local, tribal, nongovernmental and private-sector organizations with primary responsibility for activities associated with threat response and incident support.

Metadata

A metadata record is a file of information which captures the basic characteristics of a dataset or information resource. It represents the who, what, when, where, why and how of the resource. Geospatial metadata are used to document geographic digital resources such as GIS files, geospatial databases, and earth imagery. A geospatial metadata record includes core library catalog elements such as Title, Abstract, and Publication Data; geographic elements such as Geographic Extent and Projection Information; and database elements such as Attribute Label Definitions and Attribute Domain Values.

National Environmental Policy Act (NEPA)

Public Law 91-190; 42 U.S.C. 4321. NEPA requires federal agencies to integrate environmental values into their decision making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions. To meet this requirement, federal agencies prepare a detailed statement known as an Environmental Impact Statement (EIS). EPA reviews and comments on EISs prepared by other federal agencies, maintains a national filing system for all EISs, and assures that its own actions comply with NEPA. The NEPA text can be found at: <http://www.eh.doe.gov/nepa/nepaeqia.htm>

National Historic Preservation Act (NHPA)

Public Law 89-665; 16 U.S.C. 470. NHPA is legislation creating the National Register of Historic Places, the list of National Historic Landmarks and the posts of State Historic Preservation Officers with the intent of preserving cultural resources. The NHPA became law in 1966. It requires government agencies to evaluate the impact of all government-funded construction projects through a process known as Section 106 Review. Under the act, agencies maintain their own preservation program. The NHPA text can be found at: <http://www.achp.gov/NHPA.pdf>

National Register of Historic Places

The official Federal list of districts, sites, buildings, structures and objects significant in American history, architecture, archaeology, engineering and culture. Administered by the National Park Service, the Register was authorized under the National Historic Preservation Act of 1966. Its goals are to coordinate and help property owners and groups such as the National Trust for Historic Preservation identify and protect historic sites in the United States.

National Register Information System (NRIS)

The National Register has identified and documented, in partnership with state, federal, and tribal preservation programs more than 76,000 districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. Over 1.2 million contributing resources are included in the boundaries of National Register listings. The NRIS is a database of information about places listed on or determined eligible for the National Register of Historic Places. This computerized index to America's historic places, based upon a more complete paper record housed in Washington, DC, provides descriptive fields about each property. Currently, you can search by name, architect, significant person, multiple property submission name, location, Federal agency, or any of a number of themes used to organize Web pages.

**Quality Assurance/
Quality Control (QA/QC)**

Quality control (QC) is a procedure or set of procedures intended to ensure that a data set adheres to a defined set of quality criteria or meets the requirements of the client. QC is similar to, but not identical with, quality assurance (QA). QA is defined as a procedure or set of procedures intended to ensure that a data set under development (before work is complete, as opposed to afterwards) meets specified requirements. QA is sometimes expressed together with QC as a single expression, quality assurance and control (QA/QC).

Reconnaissance Survey

A reconnaissance survey consists of a general inspection of a survey area, used to characterize the cultural resources. A reconnaissance survey may take several forms, such as a windshield survey for architecture or pedestrian walkover survey for archaeology. A reconnaissance survey provides a basis for developing how to organize and direct more detailed intensive survey efforts. All reconnaissance surveys are accompanied by a general review of literature.

Red-Tag list

List of structures or sites composed by the City of New Orleans or individual Parish governments indicating those properties that pose a threat to public health and safety, and represent a structural or environmental hazard.

Relational database

A relational database is a collection of data items organized as a set of formally-described tables from which data can be accessed or reassembled in many different ways without having to reorganize the database tables. The data structure of a relational database assumes that collections of tables are logically associated with each other by shared fields.

Relationship Class

A relationship class in ArcGIS, is the definition of a persistent relationship between two tables, a table and a feature class or feature classes within a GeoDatabase. Unlike other relationships that can be formed between data layers or tables inside an individual ArcGIS document, a relationship class defined within a GeoDatabase remains attached to the datasets regardless of what GIS document is in use.

Section 106 (of NHPA)

Section 106 of the National Historic Preservation Act granted legal status to historic preservation in Federal planning, decision making, and project execution. Section 106 requires all Federal agencies to take into account

the effects of their actions on historic properties, and provide the Advisory Council on Historic Preservation with a reasonable opportunity to comment on those actions and the manner in which Federal agencies are taking historic properties into account in their decisions.

Spatial data	GIS professionals generally think of spatial data, or geospatial data, as being derived from a series of points, lines, and polygons. These points, lines and polygons are referenced to the earth and are represented as data layers inside a GIS.
Spatial dataset	A spatial dataset constitutes one layer of spatial data and usually contains the geographic representation (points, lines, or polygons) as well as the descriptive attribute information related to a single feature type, such as roads or county boundaries.
State Historic Preservation Office (SHPO)	State Historic Preservation Office is a federally mandated office that is funded by the Historic Preservation Fund (HPF) to carry out the provisions of the National Historic Preservation Act of 1966 (NHPA). Annual appropriations to the HPF provide matching grants to State Historic Preservation Offices (SHPOs). The SHPO is responsible for: locating and recording historic resources; nominating significant historic resources to the National Register of Historic Places; fostering historic preservation programs at the local government level and the creation of preservation ordinances; providing funds for preservation activities; commenting on projects under consideration for the federal historic preservation tax incentive; providing technical assistance on rehabilitation projects and other preservation activities to federal agencies, state and local governments, and the private sector; and reviewing all federal projects for their impact on historic properties in accordance with Section 106 of the NHPA and the regulations of the Advisory Council on Historic Preservation. Section 106 requires all federal agencies, or parties who receive federal funds to consult with the SHPO to determine if a project will have any effects on cultural resources. Any disputes that cannot be resolved between the SHPO and the federal agency are presented to the Advisory Council on Historic Preservation.
Transitional Recovery Office (TRO)	The TRO is a temporary center established by FEMA to facilitate field-level domestic incident management activities related to prevention, preparedness, response and recovery when activated by the Secretary of Homeland Security. Unlike a JFO, a TRO is staffed primarily by FEMA employees and has a longer term function focused mainly on recovery efforts. The TRO takes over the duties of the JFO once the immediate needs are met following a disaster declaration.
Tribal Historic Preservation Office (THPO)	A tribe may assume all or any part of the function of a State Historic Preservation Office, with respect to tribal lands. The THPO is responsible for: locating and recording historic resources; nominating significant historic resources to the National Register of Historic Places; fostering historic preservation programs at the tribal level and the creation of preservation ordinances; providing funds for preservation activities; commenting on projects under consideration for the federal historic

preservation tax incentive; providing technical assistance on rehabilitation projects and other preservation activities to federal agencies, state and local governments, and the private sector; and reviewing all federal projects for their impact on historic properties in accordance with Section 106 of the NHPA and the regulations of the Advisory Council on Historic Preservation. Section 106 requires all federal agencies, or parties who receive federal funds to consult with the THPO to determine if a project will have any effects on cultural resources. Any disputes that cannot be resolved between the THPO and the federal agency are presented to the Advisory Council on Historic Preservation.

Undertaking

A project, activity or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval.

Windshield survey

A cursory visual survey of a community, literally driving around and noting the general distribution of buildings, structures and neighborhoods representing different architectural styles, periods and modes of construction. A windshield survey is one common form of reconnaissance survey.

1. *National Environmental Policy Act of 1969*

The National Environmental Policy Act (NEPA) requires federal agencies to integrate environmental values into their decision making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions. To meet this requirement, federal agencies prepare a detailed statement known as an Environmental Impact Statement (EIS). EPA reviews and comments on EISs prepared by other federal agencies, maintains a national filing system for all EISs, and assures that its own actions comply with NEPA.

<http://www.nepa.gov/nepa/regs/nepa/nepaeqia.htm>

2. *National Historic Preservation Act of 1966*

Legislation creating the National Register of Historic Places, the list of National Historic Landmarks and the posts of State and Tribal Historic Preservation Officers with the intent of preserving historic and archaeological sites.

http://www.cr.nps.gov/local-law/FHPL_HistPrsrvt.pdf

3. *National Park Service, draft Cultural Resource Spatial Data Standards*

Historic Preservation programs throughout the Federal government rely on cultural resource geospatial information to comply with preservation laws, regulations, and guidelines. There are numerous of sources of attribute and spatial data for cultural resources even within a single agency, let alone all Federal agencies and their partners. The proposed standards are designed to fill this gap and provide a framework for Federal agencies to follow when creating, maintaining, and distributing cultural resource spatial data. The proposed standards are an outcome of OMB Circular A-16 (revised in August 2002) which identified the National Park Service as the lead agency to develop spatial standards for cultural resources.

<http://www.cr.nps.gov/hdp/standards/crgisstandards.htm>

4. *National Register Bulletin 16A*

This bulletin contains instructions for completing the National Register of Historic Places Registration Form. The National Register Registration Form is used to document historic properties for nomination to the National Register of Historic Places. It is also used to document properties for determinations of eligibility for listing.

<http://www.cr.nps.gov/nr/publications/bulletins/nrb16a/>

5. *National Register Bulletin 24*

Guidelines for Local Surveys provides guidance to communities, organizations, Federal and State agencies, and individuals interested in undertaking surveys of historic resources.

<http://www.cr.nps.gov/nr/publications/bulletins/nrb24/>

APPENDICES

Appendix A: Data Dictionary for Louisiana

Feature	Attribute	Attribute Value	Required	Description
Building_Pt				Point location of building or structure
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Property Name	text		Resource name, if known
	Street Number	text	Required	Street number of address
	Street Name	text	Required	Street name of address
	City Tag	red	Required	Type of tag assigned by city/Parish
		yellow		
		green		
		none		
		removed		
		changed		
		unknown		
		other		
	City Database	bldg on city list	Required	Whether the structure is on a city/Parish demolition list
		bldg not on city list		
		unknown		
		other		
	Historic Neighborhood	text		Name of historic neighborhood if known
	Construction Date	text		Date of the building construction
	Date Estimated?	yes		Flag to indicate if the construction date is estimated
		no		
	Less than 45 yrs old	yes	Required	Flag to indicate if the building is less than 45 years old
		no		
		unsure		
	Listed Status	National Register		Indicates if the building is recongized officially
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
		other		
		none		
	Contributes to NR HD	yes		Flag to indicate if the building contributes to a historic district
		no		
		unknown		
		other		
	Significance	text		Brief statement of significance
	Historic Context	text		Brief statement of historic context, if known
	Materials Integrity	yes	Required	Evaluation of the National Register materials integrity criteria
		no		
		unsure		
	Design Integrity	yes	Required	Evaluation of the National Register design integrity criteria
		no		
		unsure		
	Wrkmanship Integrity	yes	Required	Evaluation of the National Register workmanship integrity criteria
		no		
	unsure			
Setting Integrity	yes	Required	Evaluation of the National Register setting integrity criteria	
	no			
	unsure			
Location Integrity	yes	Required	Evaluation of the National Register location integrity criteria	
	no			
	unsure			
Foundation Condition	intact	Required	Assessment of the building foundation condition	
	building on			
	building off			
	damaged			
	unknown			
	other			

Feature	Attribute	Attribute Value	Required	Description
	Wall Condition	minor damage	Required	Assessment of the building wall condition
		intact		
		racked		
		partial collapse		
		total collapse		
		unknown		
	Roof Condition	other	Required	Assessment of the building roof condition
		intact		
		damaged		
		partial collapse		
		total collapse		
		missing		
	Damage Type	unknown		Assessment of the type of damage visible
		other		
		water		
		fire		
		wind		
		vandalism		
		deferred maintenance		
		multiple		
	Current Use	none	Required	Description of the use of the building, prior to damage
		unknown		
		other		
		single dwelling		
		multiple dwelling		
		other residential		
		hotel		
		commercial		
		warehouse		
		other storage		
		government		
		prison		
		hospital		
		fire station		
		education		
		library		
		museum		
		religious		
		recreation		
		agricultural		
	Style	animal facility	Required	Description of the primary architectural style
		industrial		
		utility		
		military		
		transportation		
		vacant		
		multiple		
		unknown		
		other		
		20th Cen. Revival		
		Art Deco		
		Beaux Arts		
		Classical Revival		
		Colonial Revival		
		Craftsman		
		Creole		
		Eastlake		
		Federal		
		French Colonial		
		Gothic Revival		
		Greek Revival		
		International		
		Italianate		
		Moderne		
		Queen Anne		
		Spanish Colonial		
		no style		
		unknown		
		other		

Feature	Attribute	Attribute Value	Required	Description
	Building Type	shotgun	Required	Description of the building type
		double shotgun		
		camelback		
		creole cottage		
		central hall		
		side-hall		
		raised basement		
		American townhouse		
		Creole townhouse		
		Queen Anne cottage		
		bungalow		
		plantation house		
		minimal traditional		
		ranch		
		four square		
		gable-ell		
		commercial		
		garage		
		warehouse		
		storage		
		dependency		
		skyscraper		
		unknown		
	Footprint	other		Description of the building plan
		square		
		rectangular		
		L-shaped		
		T-shaped		
		U-shaped		
		H-shaped		
		cruciform		
		cross-gabled		
		irregular		
	Height	unknown		Height of the resource, in stories
		other		
		1		
		1.5		
		2		
		2.5		
		3		
		4		
		5-10		
		10-20		
	Foundation	20+		Description of the type of foundation visible
		other		
		unknown		
		post in ground		
		sill on ground		
		wooden pier		
		wooden piling		
		brick pier		
		stone pier		
		concrete pier		
		concrete block pier		
		concrete pylon pier		
		concrete piling		
	Const Material	continuous brick	Required	Indication of the primary structural material
		continuous stone		
		continuous concrete		
		concrete slab		
		multiple		
		unknown		
		other		
		log		
		frame		
		timber frame		
		balloon frame		
		barge-board		
		stucco		

Feature	Attribute	Attribute Value	Required	Description
Cladding		brick		Description of the exterior cladding of the building
		stone pier		
		concrete block pier		
		poured concrete		
		reinforced concrete		
		steel frame		
		metal		
		multiple		
		unknown		
		other		
Roof Materials		wood	Required	Indication of the primary roof material
		concrete		
		masonry		
		stucco		
		shingle		
		vinyl		
		metal		
		multiple		
		unknown		
		other		
Roof Type		wood shingle	Required	Description of the style of roof construction
		slate		
		asphalt shingle		
		asbestos shingle		
		metal		
		tile		
		multiple		
		unknown		
		other		
		front gable		
Chimneys		side gable		Indication of the location of chimneys
		parapet gable		
		clipped gable		
		cross gable		
		gambrel		
		hip		
		gable on hip		
		pyramidal		
		mansard		
		flat		
Chimney Materials		shed		Description of the primary construction materials of the chimney
		multiple		
		unknown		
		other		
		brick		
		stone		
		concrete		
		unknown		
		multiple		
		unknown		
Porches		none		Description of the type of primary type of porch
		other		
		stoop		
		gallery		
		portico		
		balcony		
		porte-cochere		

Feature	Attribute	Attribute Value	Required	Description
	Outbuildings	full width	Required	Description of the type of outbuildings visible
		partial width		
		wrap		
		none		
		unknown		
		other		
		garage		
		multiple		
		shed		
		stable		
	Point Recorded	none	Required	Description of the location where the GPS point was collected
		other		
		unknown		
		not surveyed		
		north corner		
		south corner		
		east corner		
		west corner		
		northeast corner		
		southeast corner		
	Eligibility Recommend	southwest corner	Required	National Register eligibility recommendation of surveyor
		northwest corner		
		center		
		entrance		
		other		
		Nat. Reg. eligible		
		not Nat. Reg. eligible		
		unknown		
		other		
		agree		
	SHPO concur	disagree		Determination of SHPO liaison regarding eligibility recommendation
		need more info		
		other		
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text	Required	Full filename of first photograph
	Photo2	text		Full filename of second photograph
	Photo3	text		Full filename of third photograph
	Photo4	text		Full filename of fourth photograph
Building_Py	GPS_ID	text	Required	Polygon location (footprint) of building or structure
				Unique ID assigned by field surveyor
				Resource name, if known
				Street number of address
				Street name of address
				Type of tag assigned by city/Parish
	City Database	yellow	Required	Whether the structure is on a city/Parish demolition list
		green		
		none		
		removed		
		changed		
		unknown		
		other		
		bldg on city list		
		bldg not on city list		
		unknown		
	Historic Neighborhood	other		Name of historic neighborhood if known
		text		
		Construction Date		
		text		
		Date Estimated?		
		yes		
		no		
		Less than 45 yrs old		
		yes		
		no		
	Listed Status	unsure	Required	Indicates if the building is recognized officially
		National Register		
		NR historic district		
		NHL		
		local listing		
		local hist district		

Feature	Attribute	Attribute Value	Required	Description
		multiple		
		unknown		
		other		
		none		
	Contributes to NR HD	yes		Flag to indicate if the building contributes to a historic district
		no		
		unknown		
		other		
	Significance	text		Brief statement of significance
	Historic Context	text		Brief statement of historic context, if known
	Materials Integrity	yes	Required	Evaluation of the National Register materials integrity criteria
		no		
		unsure		
	Design Integrity	yes	Required	Evaluation of the National Register design integrity criteria
		no		
		unsure		
	Wrkmanship Integrity	yes	Required	Evaluation of the National Register workmanship integrity criteria
		no		
		unsure		
	Setting Integrity	yes	Required	Evaluation of the National Register setting integrity criteria
		no		
		unsure		
	Location Integrity	yes	Required	Evaluation of the National Register location integrity criteria
		no		
		unsure		
	Foundation Condition	intact	Required	Assessment of the building foundation condition
		building on		
		building off		
		damaged		
		unknown		
		other		
	Wall Condition	minor damage	Required	Assessment of the building wall condition
		intact		
		racked		
		partial collapse		
		total collapse		
		unknown		
		other		
	Roof Condition	intact	Required	Assessment of the building roof condition
		damaged		
		partial collapse		
		total collapse		
		missing		
		unknown		
		other		
	Damage Type	water		Assessment of the type of damage visible
		fire		
		wind		
		vandalism		
		deferred maintenance		
		multiple		
		none		
		unknown		
		other		
	Current Use	single dwelling	Required	Description of the use of the building, prior to damage
		multiple dwelling		
		other residential		
		hotel		
		commercial		
		warehouse		
		other storage		
		government		
		prison		
		hospital		
		fire station		
		education		
		library		
		museum		
		religious		

Feature	Attribute	Attribute Value	Required	Description
Style		recreation		
		agricultural		
		animal facility		
		industrial		
		utility		
		military		
		transportation		
		vacant		
		multiple		
		unknown		
		other		
		20th Cen. Revival		Description of the primary architectural style
		Art Deco		
		Beaux Arts		
		Classical Revival		
		Colonial Revival		
		Craftsman		
		Creole		
		Eastlake		
		Federal		
		French Colonial		
		Gothic Revival		
		Greek Revival		
		International		
		Italianate		
		Moderne		
		Queen Anne		
		Spanish Colonial		
Building Type		no style		
		unknown		
		other		
		shotgun		Description of the building type
		double shotgun		
		camelback		
		creole cottage		
		central hall		
		side-hall		
		raised basement		
		American townhouse		
		Creole townhouse		
		Queen Anne cottage		
		bungalow		
		plantation house		
		minimal traditional		
		ranch		
		four square		
		gable-ell		
		commercial		
		garage		
		warehouse		
		storage		
		dependency		
		skyscraper		
Footprint		unknown		Description of the building plan
		other		
		square		
		rectangular		
		L-shaped		
		T-shaped		
		U-shaped		
		H-shaped		
		cruciform		
		cross-gabled		
		irregular		
		unknown		
Height		other		Height of the resource, in stories
		1		
		1.5		
		2		

Feature	Attribute	Attribute Value	Required	Description
Foundation		2.5		Description of the type of foundation visible
		3		
		4		
		5-10		
		10-20		
		20+		
		other		
		unknown		
		post in ground		
		sill on ground		
		wooden pier		
		wooden piling		
		brick pier		
		stone pier		
		concrete pier		
		concrete block pier		
		concrete pylon pier		
		concrete piling		
Const Material		continuous brick	Required	Indication of the primary structural material
		continuous stone		
		continuous concrete		
		concrete slab		
		multiple		
		unknown		
		other		
		log		
		frame		
		timber frame		
		balloon frame		
		barge-board		
		stucco		
		brick		
		stone pier		
		concrete block pier		
		poured concrete		
Cladding		reinforced concrete		Description of the exterior cladding of the building
		steel frame		
		metal		
		multiple		
		unknown		
		other		
		wood		
		concrete		
		masonry		
		stucco		
		shingle		
		vinyl		
		metal		
		multiple		
		unknown		
		other		
Roof Materials		wood shingle	Required	Indication of the primary roof material
		slate		
		asphalt shingle		
		asbestos shingle		
		metal		
		tile		
		multiple		
		unknown		
		other		
Roof Type		front gable	Required	Description of the style of roof construction
		side gable		
		parapet gable		
		clipped gable		
		cross gable		
		gambrel		
		hip		
		gable on hip		
		pyramidal		

Feature	Attribute	Attribute Value	Required	Description
Chimneys		mansard		Indication of the location of chimneys
		flat		
		shed		
		multiple		
		unknown		
		other		
		gable end exterior		
		gable end interior		
		lateral exterior		
		ridge center		
		slope center		
		slope, off-center		
		ridge, off-center		
		removed		
Chimney Materials		none		Description of the primary construction materials of the chimney
		multiple		
		unknown		
		other		
		brick		
		stone		
		concrete		
Porches		unknown		Description of the type of primary type of porch
		multiple		
		unknown		
		none		
		other		
		stoop		
		gallery		
		portico		
		balcony		
		porte-cochere		
		full width		
Outbuildings		partial width		Description of the type of outbuildings visible
		wrap		
		none		
		unknown		
		other		
Eligibility Recommend		garage	Required	
		multiple		
		shed		
		stable		
SHPO concur		none		Determination of SHPO liaison regarding eligibility recommendation
		other		
		unknown		
		not surveyed		
Comment		Nat. Reg. eligible	Required	National Register eligibility recommendation of surveyor
		not Nat. Reg. eligible		
		unknown		
		other		
Surveyor Name		agree		
		disagree		
		need more info		
		other		
Photographer Name		text	Required	General comment field
		text		
		text		
		text		
Photo1		text	Required	Name of surveyor filling in attribute information
		text		
		text		
		text		
Photo2		text	Required	Name of photographer taking digital pictures
		text		
		text		
		text		
Photo3		text	Required	Full filename of first photograph
		text		
		text		
		text		
Photo4		text	Required	Full filename of second photograph
		text		
		text		
		text		
Lot_Pt		text	Required	Full filename of third photograph
		text		
		text		
		text		
GPS_ID		text	Required	Full filename of fourth photograph
		text		
		text		
		text		
Street Number		text	Required	Point location of empty lot where a building used to stand
		text		
		text		
		text		
Street Name		text	Required	Unique ID assigned by field surveyor
		text		
		text		
		text		
City Tag		red	Required	Street number of address
		yellow		
		green		
		none		
		removed		Street name of address
		removed		
		removed		
		removed		

Feature	Attribute	Attribute Value	Required	Description
	City Database	changed	Required	Whether the lot/parcel is on a city/Parish demolition list
		unknown		
		other		
	Historic Neighborhood	bldg on city list	Required	Name of historic neighborhood if known
		bldg not on city list		
		unknown		
	Significance	other	Required	Brief statement of significance
		text		
		text		
	Materials Integrity	text	Required	Brief statement of historic context, if known
		yes		
		no		
	Design Integrity	yes	Required	Evaluation of the National Register materials integrity criteria
		no		
		unsure		
	Wrkmanship Integrity	yes	Required	Evaluation of the National Register design integrity criteria
		no		
		unsure		
	Setting Integrity	yes	Required	Evaluation of the National Register workmanship integrity criteria
		no		
		unsure		
	Location Integrity	yes	Required	Evaluation of the National Register setting integrity criteria
		no		
		unsure		
	Condition	yes	Required	Evaluation of the National Register location integrity criteria
		no		
		unsure		
	Damage Type	foundation only	Required	Assessment of the overall condition of the lot
		foundation & debris		
		multiple buildings		
	Point Recorded	lot empty	Required	Assessment of the type of damage visible
		other		
		water		
	Eligibility Recommend	fire	Required	National Register eligibility recommendation of surveyor
		wind		
		vandalism		
	SHPO concur	deferred maintenance	Required	Determination of SHPO liaison regarding eligibility recommendation
		multiple		
		none		
	Comment	unknown	Required	General comment field
		other		
		other		
	Surveyor Name	Nat. Reg. eligible	Required	Name of surveyor filling in attribute information
		not Nat. Reg. eligible		
		unknown		
	Photographer Name	other	Required	Name of photographer taking digital pictures
		agree		
		disagree		
Archae_Pt	Photo1	need more info	Required	Full filename of first photograph
		other		
		text		
	Photo2	text	Required	Full filename of second photograph
		text		
		text		
	Photo3	text	Required	Full filename of third photograph
		text		
		text		
	Photo4	text	Required	Full filename of fourth photograph
		text		
		text		
	GPS_ID	text	Required	Unique ID assigned by field surveyor
		text		
		text		
	Street Number	text	Required	Resource name, if known
		text		
		text		
	Street Number	text	Required	Street number of address
		text		
		text		

Feature	Attribute	Attribute Value	Required	Description
	Street Name	text		Street name of address
	Historic Neighborhood	text		Name of historic neighborhood if known
	Listed Status	National Register		Indicates if the site is recongized officially
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
		other		
		none		
	Significance	text		Brief statement of significance
	Historic Context	text		Brief statement of historic context, if known
	Landform	knoll		Description of the primary land form the site is on
		ridge		
		bench		
		pimple mound		
		salt dome		
		swamp		
		backswamp		
		marsh		
		beach		
		underwater		
		natural levee		
		chenier		
		nat relic scar		
		batture		
		unknown		
		other		
	Soil Area	coastal plain		Description of the soil type the site is found in
		coastal marsh		
		flatwoods		
		Miss. Terrace		
		recent alluvium		
		coastal prairies		
		unknown		
		other		
	Cultural Features	historic ruins		Description of the type of cultural features found at the site
		standing structure		
		historic scatter		
		hist. sheet midden		
		single artifact		
		mound/earthwork		
		historic earthwork		
		other earthwork		
		shipwreck		
		prehistoric scatter		
		shell midden		
		earth midden		
		lithic scatter		
		burials		
		dump		
		urban landfill		
		unknown		
		other		
	Cultural Affiliation	prehistoric-unknown		Description of the cultural affiliation associated with the site
		historic-unknown		
		prehist & hist-unkwn		
		Paleo-Indian		
		Meso-Indian/Archaic		
		Neo-Indian-unknown		
		Poverty Point		
		Tchefuncte		
		Marksville		
		Issaquena		
		Baytown		
		Troyville		
		Coles Creek		
		Plaquemine		

Feature	Attribute	Attribute Value	Required	Description
Site Function	Site Function	Mississippian	Required	Description of the primary function indicated at the site
		Caddo		
		Hist Indian Contact		
		Hist Exploration		
		Antebellum		
		War & Aftermath		
		Industrial & Modern		
		unknown		
		other		
		prehistoric-unknown		
		historic-unknown		
		chipping station		
		camp		
		extraction locale		
		hamlet/village		
		ceremonial center		
		farmstead		
		watercraft P&H		
		plantation		
Material	Material	Hist. town/village	Required	Description of the material found at the site
		urban		
		cemetery (mort.)		
		Hist. transportation		
		commercial/service		
		institution (Rel&Ed)		
		governmental		
		industrial		
		dump		
		military		
		unknown		
		other		
		ceramics, aboriginal		
		ceramics, historic		
		chipped stone		
		projectile points		
		ground stone		
		human bone		
		shell midden		
Investigation Method	Investigation Method	PPO's	Required	Description of the method used to investigate the site
		glass		
		metal		
		construction mat.		
		worked bone		
		unmodified bone-faun		
		flora		
		wood		
		unknown		
		other		
		grab surface collect		
		systematic collect		
		shovel testing		
		auger testing		
		test units		
		excavation		
		remote sensing		
		diver investigations		
		other		
Disturbance Agent	Disturbance Agent	unknown	Required	Description of the type primary disturbance at the site
		potted		
		none		
		agriculture (plow)		
		timber industry		
		natural		
		development (urban)		
		construction, water		
		construction, other		
		other		

Feature	Attribute	Attribute Value	Required	Description
	Disturbance Degree	minor impact	Required	Indication of the degree of damage to the site
		major impact		
		destroyed		
		innundated		
		none		
		unknown		
	Point Recorded	other	Required	Description of the location where the GPS point was collected
		north corner		
		south corner		
		east corner		
		west corner		
		northeast corner		
		southeast corner		
		southwest corner		
		northwest corner		
		center		
		random		
	Comment	other	Required	General comment field
		text		
		Surveyor Name		
		Photographer Name		
Archae_Py	Photo1	text	Required	Full filename of first photograph
	Polygon location (boundary) of archaeological site			
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Name	text		Resource name, if known
	Street Number	text		Street number of address
	Street Name	text		Street name of address
	Historic Neighborhood	text		Name of historic neighborhood if known
	Listed Status	National Register		Indicates if the site is recongized officially
		NR historic district		
		NHL		
		local listing		
	Significance	local hist district		Brief statement of significance
		multiple		
		unknown		
		other		
	Historic Context	none		Brief statement of historic context, if known
		text		
	Landform	text		Description of the primary land form the site is on
		knoll		
		ridge		
		bench		
		pimple mound		
		salt dome		
		swamp		
		backswamp		
		marsh		
		beach		
		underwater		
		natural levee		
		chenier		
		nat relic scar		
		batture		
		unknown		
		other		
	Soil Area	coastal plain		Description of the soil type the site is found in
		coastal marsh		
		flatwoods		
		Miss. Terrace		
		recent alluvium		
		coastal prairies		
	Cultural Features	unknown		Description of the type of cultural features found at the site
		other		
		historic ruins		
		standing structure		
		historic scatter		
		hist. sheet midden		
		single artifact		
		mound/earthwork		

Feature	Attribute	Attribute Value	Required	Description
Cultural Affiliation		historic earthwork		
		other earthwork		
		shipwreck		
		prehistoric scatter		
		shell midden		
		earth midden		
		lithic scatter		
		burials		
		dump		
		urban landfill		
		unknown		
		other		
		prehistoric-unknown		Description of the cultural affiliation associated with the site
		historic-unknown		
		prehist & hist-unkwn		
		Paleo-Indian		
		Meso-Indian/Archaic		
		Neo-Indian-unknown		
		Poverty Point		
		Tchefuncte		
		Marksville		
		Issaquena		
		Baytown		
		Troyville		
		Coles Creek		
		Plaquemine		
		Mississippian		
		Caddo		
		Hist Indian Contact		
		Hist Exploration		
		Antebellum		
		War & Aftermath		
		Industrial & Modern		
Site Function		unknown		
		other		
		prehistoric-unknown	Required	Description of the primary function indicated at the site
		historic-unknown		
		chipping station		
		camp		
		extraction locale		
		hamlet/village		
		ceremonial center		
		farmstead		
		watercraft P&H		
		plantation		
		Hist. town/village		
		urban		
		cemetery (mort.)		
		Hist. transportation		
		commercial/service		
		institution (Rel&Ed)		
		governmental		
		industrial		
		dump		
Material		military		
		unknown		
		other		
		ceramics, aboriginal		Description of the material found at the site
		ceramics, historic		
		chipped stone		
		projectile points		
		ground stone		
		human bone		
		shell midden		
		PPO's		
		glass		
		metal		
		construction mat.		
		worked bone		

Feature	Attribute	Attribute Value	Required	Description
Archae_Ln	Investigation Method	unmodified bone-faun	Required	Description of the method used to investigate the site
		flora		
		wood		
		unknown		
		other		
		grab surface collect		
		systematic collect		
		shovel testing		
		auger testing		
		test units		
	Disturbance Agent	excavation	Required	Description of the type primary disturbance at the site
		remote sensing		
		diver investigations		
		other		
		unknown		
		unknown		
		potted		
		none		
		agriculture (plow)		
		timber industry		
	Disturbance Degree	natural	Required	Indication of the degree of damage to the site
		development (urban)		
		construction, water		
		construction, other		
		other		
		minor impact		
		major impact		
		destroyed		
		innundated		
		none		
	Comment	unknown	Required	General comment field
		other		
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph
	GPS_ID	text	Required	Linear location of archaeological site
	Name	text		Unique ID assigned by field surveyor
	Street Number	text		Resource name, if known
	Street Name	text		Street number of address
	Historic Neighborhood	text		Street name of address
	Listed Status	National Register		Name of historic neighborhood if known
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
		other		
		none		
		text		
	Significance	text		Brief statement of significance
	Historic Context	text		Brief statement of historic context, if known
	Landform	knoll		Description of the primary land form the site is on
		ridge		
		bench		
		pimple mound		
		salt dome		
		swamp		
		backswamp		
		marsh		
		beach		
		underwater		
		natural levee		
		chenier		
		nat relic scar		
		batture		
		unknown		
		other		

Feature	Attribute	Attribute Value	Required	Description
	Soil Area	coastal plain coastal marsh flatwoods Miss. Terrace recent alluvium coastal prairies unknown		Description of the soil type the site is found in
	Cultural Features	other historic ruins standing structure historic scatter hist. sheet midden single artifact mound/earthwork historic earthwork other earthwork shipwreck prehistoric scatter shell midden earth midden lithic scatter burials dump urban landfill unknown other		Description of the type of cultural features found at the site
	Cultural Affiliation	prehistoric-unknown historic-unknown prehist & hist-unkwn Paleo-Indian Meso-Indian/Archaic Neo-Indian-unknown Poverty Point Tchefuncte Marksville Issaquena Baytown Troyville Coles Creek Plaquemine Mississippian Caddo Hist Indian Contact Hist Exploration Antebellum War & Aftermath Industrial & Modern unknown other		Description of the cultural affiliation associated with the site
	Site Function	prehistoric-unknown historic-unknown chipping station camp extraction locale hamlet/village ceremonial center farmstead watercraft P&H plantation Hist. town/village urban cemetery (mort.) Hist. transportation commercial/service institution (Rel&Ed) governmental industrial dump military	Required	Description of the primary function indicated at the site

Feature	Attribute	Attribute Value	Required	Description
	Material	unknown		Description of the material found at the site
		other		
		ceramics, aboriginal		
		ceramics, historic		
		chipped stone		
		projectile points		
		ground stone		
		human bone		
		shell midden		
		PPO's		
		glass		
		metal		
		construction mat.		
		worked bone		
		unmodified bone-faun		
	Investigation Method	flora	Required	Description of the method used to investigate the site
		wood		
		unknown		
		other		
		grab surface collect		
		systematic collect		
		shovel testing		
		auger testing		
		test units		
		excavation		
		remote sensing		
		diver investigations		
		other		
		unknown		
		unknown		
	Disturbance Agent	potted	Required	Description of the type primary disturbance at the site
		none		
		agriculture (plow)		
		timber industry		
		natural		
		development (urban)		
		construction, water		
		construction, other		
		other		
		minor impact		
		major impact		
		destroyed		
		innundated		
		none		
		unknown		
	Disturbance Degree	other	Required	Indication of the degree of damage to the site
		minor impact		
		major impact		
		destroyed		
		innundated		
		none		
		unknown		
		other		
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph
Landscape_Pt	GPS_ID	text	Required	Point location of a landscape feature
		text		
		text		
		text		
		text		
		text		
		text		
		text		
		text		
		text		
		text		
		text		
		text		
		text		
		text		
	Design Date	yes	Required	Flag to indicate if the design date is estimated
		no		
		yes		
		no		
		yes		
		no		
		yes		
		no		
		yes		
		no		
		yes		
		no		
		yes		
		no		
		yes		
	Less than 45 yrs old	no	Required	Flag to indicate if the feature is less than 45 years old
		yes		
		no		
		yes		
		no		
		yes		
		no		
		yes		
		no		
		yes		
		no		
		yes		
		no		
		yes		
		no		
	Listed Status	unsure		Indicates if the landscape feature is recongized officially
		National Register		
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
		unknown		
		unknown		
		unknown		
		unknown		
		unknown		
		unknown		
		unknown		

Feature	Attribute	Attribute Value	Required	Description
	Contributes to NR HD	other		Flag to indicate if the landscape feature contributes to a historic district
		none		
		yes		
		no		
	Significance	unknown		Brief statement of significance
		other		
		text		
	Historic Context	text		Brief statement of historic context, if known
	Condition	intact		Description of the current condition of the resource
		degraded		
		remnant		
		destroyed		
		other		
	Materials Integrity	yes	Required	Evaluation of the National Register materials integrity criteria
		no		
	Design Integrity	unsure	Required	Evaluation of the National Register design integrity criteria
		yes		
	Wrkmanship Integrity	no	Required	Evaluation of the National Register workmanship integrity criteria
		unsure		
		yes		
	Setting Integrity	no	Required	Evaluation of the National Register setting integrity criteria
		unsure		
		yes		
	Location Integrity	no	Required	Evaluation of the National Register location integrity criteria
		unsure		
		yes		
	Feeling Integrity	no	Required	Evaluation of the National Register feeling integrity criteria
		unsure		
		yes		
	Assoc. Integrity	no	Required	Evaluation of the National Register association integrity criteria
		unsure		
		yes		
	Damage Type	water	Required	Assessment of the type of damage visible
		fire		
		wind		
		vandalism		
		deferred maintenance		
		multiple		
		none		
		unknown		
		other		
		no damage		
	Damage Extent	portions damaged	Required	Assessment of the extent of the damage
		destroyed		
		unknown		
	Type	other		Description of the type of landscape feature
		tree/shrub		
		ornamental planting		
		veg/flower garden		
		defined open space		
		cultural		
		scenic overlook		
		other		
	Landscape Features Point Recorded	text	Required	Description of the features within the larger landscape
		north corner		Description of the location where the GPS point was collected
		south corner		
		east corner		
		west corner		
		northeast corner		
		southeast corner		
		southwest corner		
		northwest corner		
		center/base of plant		
		random		
		other		

Feature	Attribute	Attribute Value	Required	Description
	Eligibility Recommend	Nat. Reg. eligible not Nat. Reg. eligible unknown other	Required	National Register eligibility recommendation of surveyor
	SHPO concur	agree disagree need more info other		Determination of SHPO liaison regarding eligibility recommendation
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph
	Landscape_Py			Polygon location (boundary) of a landscape feature
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Name	text		Resource name, if known
	Street Number	text	Required	Street number of address
	Street Name	text	Required	Street name of address
	Historic Neighborhood	text		Name of historic neighborhood if known
	Design Date	text		Date of the landscape feature design
	Date Estimated?	yes no		Flag to indicate if the design date is estimated
	Less than 45 yrs old	yes no unsure	Required	Flag to indicate if the feature is less than 45 years old
	Listed Status	National Register NR historic district NHL local listing local hist district multiple unknown other none		Indicates if the landscape feature is recognized officially
	Contributes to NR HD	yes no unknown other		Flag to indicate if the landscape feature contributes to a historic district
	Significance	text		Brief statement of significance
	Historic Context	text		Brief statement of historic context, if known
	Condition	intact degraded remnant destroyed other		Description of the current condition of the resource
	Materials Integrity	yes no unsure	Required	Evaluation of the National Register materials integrity criteria
	Design Integrity	yes no unsure	Required	Evaluation of the National Register design integrity criteria
	Workmanship Integrity	yes no unsure	Required	Evaluation of the National Register workmanship integrity criteria
	Setting Integrity	yes no unsure	Required	Evaluation of the National Register setting integrity criteria
	Location Integrity	yes no unsure	Required	Evaluation of the National Register location integrity criteria
	Feeling Integrity	yes no unsure	Required	Evaluation of the National Register feeling integrity criteria
	Assoc. Integrity	yes no unsure	Required	Evaluation of the National Register association integrity criteria
	Damage Type	water fire wind vandalism	Required	Assessment of the type of damage visible

Feature	Attribute	Attribute Value	Required	Description
		deferred maintenance		
		multiple		
		none		
		unknown		
		other		
	Damage Extent	no damage	Required	Assessment of the extent of the damage
		portion damaged		
		destroyed		
		unknown		
		other		
	Type	tree/shrub		Description of the type of landscape feature
		ornamental planting		
		veg/flower garden		
		defined open space		
		cultural		
		scenic overlook		
		other		
	Landscape Features	text		Description of the features within the larger landscape
	Eligibility Recommend	Nat. Reg. eligible	Required	National Register eligibility recommendation of surveyor
		not Nat. Reg. eligible		
		unknown		
		other		
	SHPO concur	agree		Determination of SHPO liasion regarding eligibility recommendation
		disagree		
		need more info		
		other		
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph
Landscape_Ln				Linear location of a landscape feature
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Name	text		Resource name, if known
	Street Number	text	Required	Street number of address
	Street Name	text	Required	Street name of address
	Historic Neighborhood	text		Name of historic neighborhood if known
	Design Date	text		Date of the landscape feature design
	Date Estimated?	yes		Flag to indicate if the design date is estimated
		no		
	Less than 45 yrs old	yes	Required	Flag to indicate if the feature is less than 45 years old
		no		
		unsure		
	Listed Status	National Register		Indicates if the landscape feature is recongized officially
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
		other		
		none		
	Contributes to NR HD	yes		Flag to indicate if the landscape feature contributes to a historic district
		no		
		unknown		
		other		
	Significance	text		Brief statement of significance
	Historic Context	text		Brief statement of historic context, if known
	Condition	intact		Description of the current condition of the resource
		degraded		
		remnant		
		destroyed		
		other		
	Materials Integrity	yes	Required	Evaluation of the National Register materials integrity criteria
		no		
		unsure		
	Design Integrity	yes	Required	Evaluation of the National Register design integrity criteria
		no		
		unsure		

Feature	Attribute	Attribute Value	Required	Description
	Wrkmanship Integrity	yes no unsure	Required	Evaluation of the National Register workmanship integrity criteria
	Setting Integrity	yes no unsure	Required	Evaluation of the National Register setting integrity criteria
	Location Integrity	yes no unsure	Required	Evaluation of the National Register location integrity criteria
	Feeling Integrity	yes no unsure	Required	Evaluation of the National Register feeling integrity criteria
	Assoc. Integrity	yes no unsure	Required	Evaluation of the National Register association integrity criteria
	Damage Type	water fire wind vandalism deferred maintenance multiple none unknown other	Required	Assessment of the type of damage visible
	Damage Extent	no damage portion damaged destroyed unknown other	Required	Assessment of the extent of the damage
	Type	tree/shrub ornamental planting veg/flower garden defined open space cultural scenic overlook other		Description of the type of landscape feature
	Landscape Features	text		Description of the features within the larger landscape
	Eligibility Recommend	Nat. Reg. eligible not Nat. Reg. eligible unknown other	Required	National Register eligibility recommendation of surveyor
	SHPO concur	agree disagree need more info other		Determination of SHPO liasion regarding eligibility recommendation
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph
Marker				Point location of a historical marker or sign
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Name	text	Required	Name or title of marker
	Text	text		Text written on marker
	Type	statue monument/memorial plaque/tablet boundary marker interpretive sign other	Required	Description of the type of marker or monument
	Condition	intact/legible degraded/illegible missing destroyed other		Assessment of the condition of the marker/monument
	Damage Extent	no damage portions damaged destroyed unknown other	Required	Assessment of the extent of the damage

Feature	Attribute	Attribute Value	Required	Description
	Materials	earth		Description of the primary construction material of the marker
		masonry		
		stone		
		metal		
		wood/frame		
		unknown		
		other		
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
Gravesite	Photo1	text		Full filename of first photograph
				Point location of known graves
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Name	text		Name of decedent, if known
	Text	text		Text written on grave marker
	Date Range	text		Indication of the range of dates on grave marker
	Date Estimated?	yes		Flag to indicate if the date range is estimated
		no		
	Less than 45 yrs old	yes	Required	Flag to indicate if the grave is less than 45 years old
		no		
	Type	unsure		Description of the type of grave marker
		single grave		
		multiple grave		
		single monument		
		multiple monument		
		single mausoleum		
		multiple mausoleum		
	Material	cenotaph		Description of the primary construction material of the grave marker
		other		
		marble		
		granite		
		sandstone		
		limestone		
		slate		
	Condition	concrete		Assessment of the condition of the grave marker
		unknown		
		other		
		intact/legible		
		degraded/illegible		
	Listed Status	missing		Indicates if the gravesite is recongized officially
		destroyed		
		other		
		National Register		
		NR historic district		
		NHL		
		local listing		
	Contributes to NR HD	local hist district		Flag to indicate if the gravesite contributes to a historic district
		multiple		
		unknown		
		other		
		none		
	Significance	yes		Brief statement of significance
		no		
		unknown		
	Historic Context	text		Brief statement of historic context, if known
	Materials Integrity	other		Evaluation of the National Register materials integrity criteria
		yes	Required	
	Design Integrity	no		Evaluation of the National Register design integrity criteria
		unsure		
		yes	Required	
	Wrkmanship Integrity	no		Evaluation of the National Register workmanship integrity criteria
		yes	Required	
	Setting Integrity	unsure		Evaluation of the National Register setting integrity criteria
		yes	Required	
		no		
		unsure		

Feature	Attribute	Attribute Value	Required	Description
	Location Integrity	yes	Required	Evaluation of the National Register location integrity criteria
		no		
		unsure		
	Feeling Integrity	yes	Required	Evaluation of the National Register feeling integrity criteria
		no		
		unsure		
	Assoc. Integrity	yes	Required	Evaluation of the National Register association integrity criteria
		no		
		unsure		
	Damage Type	water	Required	Assessment of the type of damage visible
		fire		
		wind		
		vandalism		
		weathering		
		multiple		
		trees		
		none		
		unknown		
	Damage Extent	other	Required	Assessment of the extent of the damage
		no damage		
		portion damaged		
		destroyed		
	Internment	unknown		Description of the status of the internment at the gravesite
		other		
		intact		
		moved		
		missing		
		exposed		
	Eligibility Recommend	unknown	Required	National Register eligibility recommendation of surveyor
		other		
		not Nat. Reg. eligible		
		Nat. Reg. eligible		
	SHPO concur	other		Determination of SHPO liaison regarding eligibility recommendation
		agree		
		disagree		
		need more info		
Cemetery_Pt	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph
	GPS_ID	text	Required	Point location of known cemetery
	Name	text		Unique ID assigned by field surveyor
	Oldest Grave	pre 1700		Name of cemetery, if known
		1700-1750		Indication of the date range of the oldest grave found in the cemetery
		1750-1800		
		1800-1850		
		1850-1900		
		1900-1950		
	Date Estimated?	1950-Present		Flag to indicate if the date range is estimated
		unknown		
	Less than 45 yrs old	other	Required	Flag to indicate if the cemetery is less than 45 years old
		yes		
		no		
	Status	unsure		
		active		
		maintained		
		abandoned		
		unknown		
	Number_graves	other		Estimated number of graves found in the cemetery
		number		
		National Register		
		NR historic district		
	Listed Status	NHL		Indicates if the cemetery is recongized officially
		local listing		

Feature	Attribute	Attribute Value	Required	Description	
	Historic District	local hist district		Flag to indicate if the cemetery is a historic district	
		multiple			
		unknown			
		other			
		none			
	Significance	yes		Brief statement of significance	
		no			
		unknown			
		text			
		text			
Historic Context	excellent		Brief statement of historic context, if known		
	good/fair				
	deteriorated				
	ruin				
	destroyed/burned				
Condition	other		Assessment of the condition of the cemetery		
	yes				
	no				
	unsure				
	text				
Materials Integrity	yes	Required	Evaluation of the National Register materials integrity criteria		
	no				
	unsure				
Design Integrity	yes	Required	Evaluation of the National Register design integrity criteria		
	no				
	unsure				
Wrkmanship Integrity	yes	Required	Evaluation of the National Register workmanship integrity criteria		
	no				
	unsure				
Setting Integrity	yes	Required	Evaluation of the National Register setting integrity criteria		
	no				
	unsure				
Location Integrity	yes	Required	Evaluation of the National Register location integrity criteria		
	no				
	unsure				
Feeling Integrity	yes	Required	Evaluation of the National Register feeling integrity criteria		
	no				
	unsure				
Assoc. Integrity	yes	Required	Evaluation of the National Register association integrity criteria		
	no				
	unsure				
Damage Type	water		Assessment of the type of damage visible		
	fire				
	wind				
	vandalism				
	weathering				
	multiple				
	trees				
	none				
	unknown				
	other				
Damage Extent	no damage		Assessment of the extent of the damage		
	destroyed vegetation				
	displaced markers				
	sink holes				
	displace internment				
	debris				
	unknown				
	other				
	Nat. Reg. eligible			Required	National Register eligibility recommendation of surveyor
	not Nat. Reg. eligible				
unknown					
SHPO concur	other		Determination of SHPO liasion regarding eligibility recommendation		
	agree				
	disagree				
	need more info				
Comment	other		General comment field		
	text				
Surveyor Name	text	Required	Name of surveyor filling in attribute information		
Photographer Name	text	Required	Name of photographer taking digital pictures		
Photo1	text		Full filename of first photograph		

Feature	Attribute	Attribute Value	Required	Description
Wall_Fence				Linear location of a wall or fence feature
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Name	text		Resource name, if known
	Street Number	text	Required	Street number of address
	Street Name	text	Required	Street name of address
	Historic Neighborhood	text		Name of historic neighborhood if known
	Design Date	text		Date of the wall or fence feature
	Date Estimated?	yes		Flag to indicate if the design date is estimated
		no		
	Less than 45 yrs old	yes	Required	Flag to indicate if the feature is less than 45 years old
		no		
		unsure		
	Listed Status	National Register		Indicates if the feature is recongized officially
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
		other		
		none		
	Contributes to NR HD	yes		Flag to indicate if the feature contributes to a historic district
		no		
		unknown		
		other		
	Significance	text		Brief statement of significance
	Historic Context	text		Brief statement of historic context, if known
	Materials Integrity	yes	Required	Evaluation of the National Register materials integrity criteria
		no		
		unsure		
	Design Integrity	yes	Required	Evaluation of the National Register design integrity criteria
		no		
		unsure		
	Wrkmanship Integrity	yes	Required	Evaluation of the National Register workmanship integrity criteria
		no		
		unsure		
	Setting Integrity	yes	Required	Evaluation of the National Register setting integrity criteria
		no		
		unsure		
	Location Integrity	yes	Required	Evaluation of the National Register location integrity criteria
		no		
		unsure		
	Feeling Integrity	yes	Required	Evaluation of the National Register feeling integrity criteria
		no		
		unsure		
	Assoc. Integrity	yes	Required	Evaluation of the National Register association integrity criteria
		no		
		unsure		
	Damage Type	water		Assessment of the type of damage visible
		fire		
		wind		
		vandalism		
		treefall		
		debris		
		multiple		
		none		
		unknown		
	Damage Extent	no damage	Required	Assessment of the extent of the damage
		portions damaged		
		destroyed		
		collapsed		
		undermined		
		unknown		
		other		
	Type	masonry wall		Indication of the type of wall or fence
		concrete wall		
		wooden fence		
		metal fence		
		chain barrier		

Feature	Attribute	Attribute Value	Required	Description
Bridge_Pt	Eligibility Recommend	other	Required	National Register eligibility recommendation of surveyor
		Nat. Reg. eligible		
		not Nat. Reg. eligible		
	SHPO concur	unknown		Determination of SHPO liaison regarding eligibility recommendation
		other		
		agree		
	Comment	disagree		General comment field
		need more info		
		other		
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph
	Bridge_Pt			Point location of a bridge, indicating the center point
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Name	text		Resource name, if known
	Location	text		Description of the basic location of the bridge
	Historic Neighborhood	text		Name of historic neighborhood if known
	Construction Date	text		Indicates the date of construction for the bridge
	Date Estimated?	yes		Flag to indicate if the construction date is estimated
	Less than 45 yrs old	no	Required	Flag to indicate if the feature is less than 45 years old
		yes		
		no		
	Listed Status	unsure		Indicates if the feature is recongized officially
		National Register		
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
		other		
	Contributes to NR HD	none		Flag to indicate if the feature contributes to a historic district
		yes		
		no		
	Significance	unknown		Brief statement of significance
		other		
		text		
	Historic Context	text		Brief statement of historic context, if known
	Materials Integrity	yes	Required	Evaluation of the National Register materials integrity criteria
		no		
		unsure		
	Design Integrity	yes	Required	Evaluation of the National Register design integrity criteria
		no		
		unsure		
	Wrkmanship Integrity	yes	Required	Evaluation of the National Register workmanship integrity criteria
		no		
		unsure		
	Setting Integrity	yes	Required	Evaluation of the National Register setting integrity criteria
		no		
		unsure		
	Location Integrity	yes	Required	Evaluation of the National Register location integrity criteria
		no		
		unsure		
	Structural Integrity	aesthetic damage	Required	Indication of the structural integrity of the bridge based on visible check
		minor struc damage		
		major struc damage		
		collapse		
		unknown		
		other		
	Material	stone		Indication of the primary structural material of the bridge
		wood		
		metal		
		concrete		
		unknown		
		other		
	Type	arch		Indicates the type of bridge construction
		suspension		
		truss		

Feature	Attribute	Attribute Value	Required	Description
	Eligibility Recommend	moveable	Required	National Register eligibility recommendation of surveyor
		girder		
		slab		
		box culvert		
		rigid frame		
		unknown		
		other		
	SHPO concur	Nat. Reg. eligible	Required	Determination of SHPO liasion regarding eligibility recommendation
		not Nat. Reg. eligible		
		unknown		
	Comment	other	Required	General comment field
		agree		
		disagree		
	Surveyor Name	need more info	Required	Name of surveyor filling in attribute information
		other		
		text		
	Photographer Name	text	Required	Name of photographer taking digital pictures
		text		
	Photo1	text		Full filename of first photograph
Dam_Pt	GPS_ID	text	Required	Point location of a dam, indicating the center point
		text		Unique ID assigned by field surveyor
	Name	text		Resource name, if known
		text		Description of the basic location of the dam
	Location	text		Name of historic neighborhood if known
		text		Indicates the date of construction for the dam
	Historic Neighborhood	text		Flag to indicate if the construction date is estimated
		text		
	Construction Date	yes	Required	Flag to indicate if the feature is less than 45 years old
		no		
	Date Estimated?	yes		
		no		
	Less than 45 yrs old	yes		
		no		
	Listed Status	unsure		Indicates if the feature is recongized officially
		National Register		
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
		other		
		none		
	Contributes to NR HD	yes		Flag to indicate if the feature contributes to a historic district
		no		
		unknown		
		other		
	Significance	text		Brief statement of significance
	Historic Context	text		Brief statement of historic context, if known
	Materials Integrity	yes	Required	Evaluation of the National Register materials integrity criteria
		no		
		unsure		
		yes		
	Design Integrity	no	Required	Evaluation of the National Register design integrity criteria
		unsure		
	Wrkmanship Integrity	yes	Required	Evaluation of the National Register workmanship integrity criteria
		no		
		unsure		
		yes		
	Setting Integrity	no	Required	Evaluation of the National Register setting integrity criteria
		unsure		
	Location Integrity	yes	Required	Evaluation of the National Register location integrity criteria
		no		
		unsure		
		aesthetic damage		
	Structural Integrity	minor struc damage	Required	Indication of the structural integrity of the dam based on visible check
		major struc damage		
		collapse		
		unknown		
		other		
		arch		
	Type	buttress		Indicates the type of dam construction
		embankment		

Feature	Attribute	Attribute Value	Required	Description
	Material	gravity		Indicates the primary construction material of the dam
		unknown		
		other		
		earth		
		stone		
	Eligibility Recommend	concrete	Required	National Register eligibility recommendation of surveyor
		unknown		
		other		
		Nat. Reg. eligible		
		not Nat. Reg. eligible		
	SHPO concur	unknown		Determination of SHPO liasion regarding eligibility recommendation
		other		
		agree		
		disagree		
		need more info		
	Comment	other	Required	General comment field
	Surveyor Name	text		Name of surveyor filling in attribute information
	Photographer Name	text		Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph
Culvert_Pt	GPS_ID	text	Required	Point location of a culvert
		text		Unique ID assigned by field surveyor
		text		Resource name, if known
	Name	text		Description of the basic location of the culvert
	Location	text		Name of historic neighborhood if known
	Historic Neighborhood	text		Indicates the date of construction for the culvert
	Construction Date	text		Flag to indicate if the construction date is estimated
	Date Estimated?	yes		Flag to indicate if the feature is less than 45 years old
	Less than 45 yrs old	no		
		yes		
	Listed Status	no	Required	Indicates if the feature is recongized officially
		unsure		
		National Register		
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
		other		
		none		
		yes		
	Contributes to NR HD	no		Flag to indicate if the feature contributes to a historic district
		unknown		
		other		
	Significance	text		Brief statement of significance
	Historic Context	text		Brief statement of historic context, if known
	Materials Integrity	yes		Evaluation of the National Register materials integrity criteria
		no	Required	Evaluation of the National Register design integrity criteria
		unsure		
		yes		
	Design Integrity	no	Required	Evaluation of the National Register workmanship integrity criteria
	Wrkmanship Integrity	unsure		
		yes		
		no	Required	Evaluation of the National Register setting integrity criteria
		unsure		
		yes		
	Setting Integrity	no	Required	Indication of the structural integrity of the culvert based on visible check
		unsure		
		aesthetic damage		
	Structural Integrity	minor struc damage	Required	
		major struc damage		
		collapse		
		unknown		
		other		
		box culvert		
	Type	multiple culvert		Indication of the type of culvert
		12-24 inch culvert		
		unknown		
		other		
		other		

Feature	Attribute	Attribute Value	Required	Description
	Material	earth metal masonry concrete unknown other		Indicates the primary construction material of the culvert
	Eligibility Recommend	Nat. Reg. eligible not Nat. Reg. eligible unknown other	Required	National Register eligibility recommendation of surveyor
	SHPO concur	agree disagree need more info other		Determination of SHPO liaison regarding eligibility recommendation
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph
	Utility_Pt			Point location of a utility feature
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Name	text		Resource name, if known
	Location	text		Description of the basic location of the utility
	Historic Neighborhood	text		Name of historic neighborhood if known
	Construction Date	text		Indicates the date of construction for the utility
	Date Estimated?	yes no		Flag to indicate if the construction date is estimated
	Less than 45 yrs old	yes no	Required	Flag to indicate if the feature is less than 45 years old
	Listed Status	unsure National Register NR historic district NHL local listing local hist district multiple unknown other none		Indicates if the feature is recongized officially
	Contributes to NR HD	yes no unknown other		Flag to indicate if the feature contributes to a historic district
	Significance	text		Brief statement of significance
	Historic Context	text		Brief statement of historic context, if known
	Materials Integrity	yes no unsure	Required	Evaluation of the National Register materials integrity criteria
	Design Integrity	yes no unsure	Required	Evaluation of the National Register design integrity criteria
	Wrkmanship Integrity	yes no unsure	Required	Evaluation of the National Register workmanship integrity criteria
	Setting Integrity	yes no unsure	Required	Evaluation of the National Register setting integrity criteria
	Location Integrity	yes no unsure	Required	Evaluation of the National Register location integrity criteria
	Structural Integrity	aesthetic damage minor struc damage major struc damage collapse unknown other	Required	Indication of the structural integrity of the utility based on visible check
	Type	admin building power house pump station water treatment		Indicates the type of utility feature being recorded

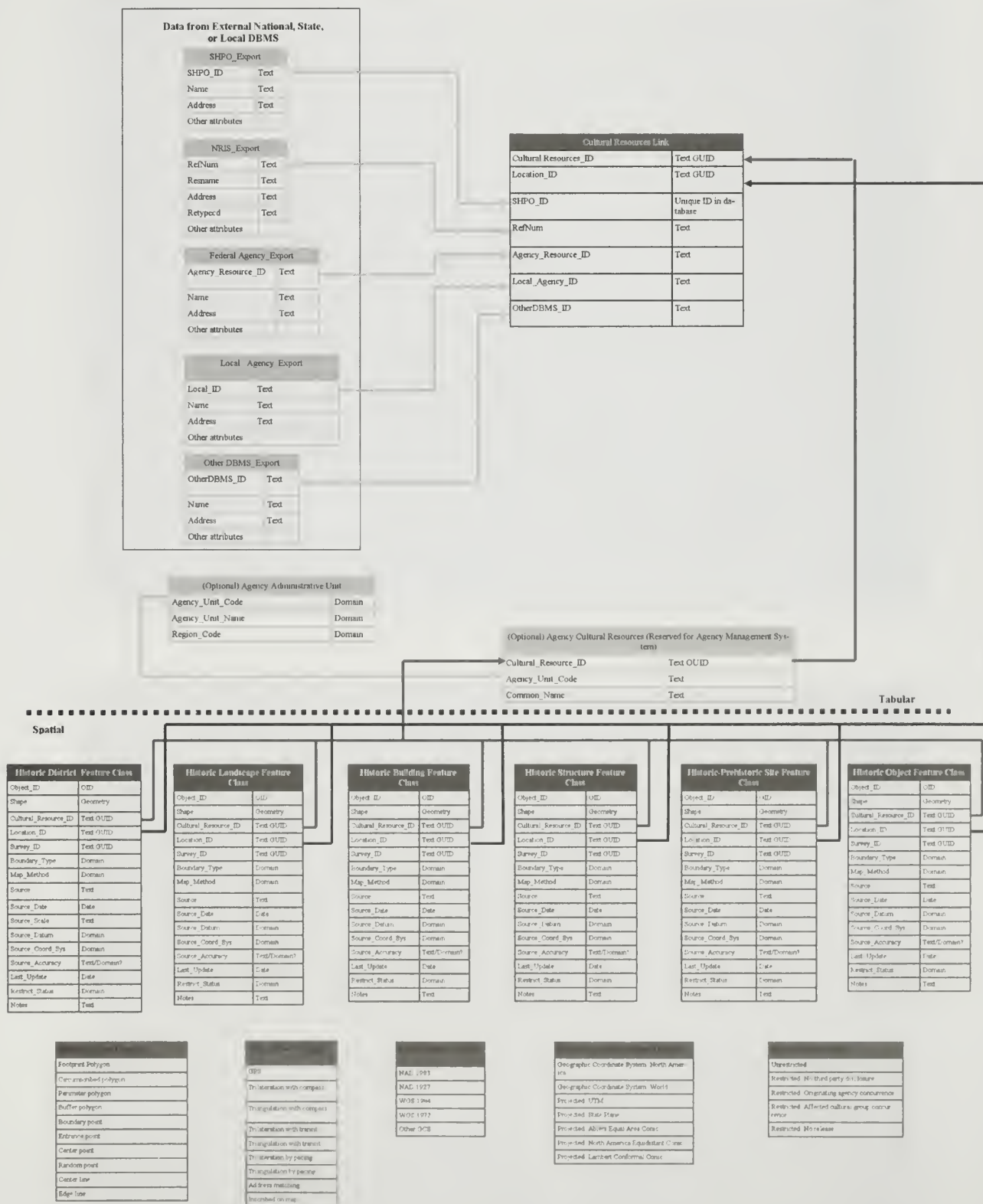
Feature	Attribute	Attribute Value	Required	Description
Utility_Ln	Material	storage		Indicates the primary construction material of the utility feature
		workshop/fabrication		
		control buildings		
		maintenance		
		unknown		
		other		
		earth		
		wood		
		metal		
		masonry		
	Point Recorded	concrete	Required	Description of the location where the GPS point was collected
		unknown		
		other		
		north corner		
		south corner		
		east corner		
		west corner		
		northeast corner		
		southeast corner		
		southwest corner		
	Eligibility Recommend	northwest corner	Required	National Register eligibility recommendation of surveyor
		center		
		entrance		
	SHPO concur	other		Determination of SHPO liaison regarding eligibility recommendation
		Nat. Reg. eligible		
		not Nat. Reg. eligible		
		unknown		
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph
	GPS_ID	text	Required	Linear location of a utility feature
	Name	text		Unique ID assigned by field surveyor
	Location	text		Resource name, if known
	Historic Neighborhood	text		Description of the basic location of the utility
	Construction Date	text		Name of historic neighborhood if known
	Date Estimated?	yes		Indicates the date of construction for the utility
		no		Flag to indicate if the construction date is estimated
	Less than 45 yrs old	yes	Required	Flag to indicate if the feature is less than 45 years old
		no		
		unsure		
	Listed Status	National Register		Indicates if the feature is recongized officially
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
		other		
		none		
	Contributes to NR HD	yes		Flag to indicate if the feature contributes to a historic district
		no		
		unknown		
		other		
	Significance	text		Brief statement of significance
	Historic Context	text		Brief statement of historic context, if known
	Materials Integrity	yes	Required	Evaluation of the National Register materials integrity criteria
		no		
		unsure		
	Design Integrity	yes	Required	Evaluation of the National Register design integrity criteria
		no		
		unsure		

Feature	Attribute	Attribute Value	Required	Description
	Wrkmanship Integrity	yes	Required	Evaluation of the National Register workmanship integrity criteria
		no		
		unsure		
	Setting Integrity	yes	Required	Evaluation of the National Register setting integrity criteria
		no		
		unsure		
	Location Integrity	yes	Required	Evaluation of the National Register location integrity criteria
		no		
		unsure		
	Structural Integrity	aesthetic damage	Required	Indication of the structural integrity of the utility based on visible check
		minor struc damage		
		major struc damage		
		collapse		
		unknown		
	Type	other		Indicates the type of linear utility feature being recorded
		canal		
		water line		
		sewer line		
		unknown		
	Material	other		Indicates the primary construction material of the utility feature
		earth		
		wood		
		metal		
		masonary		
		concrete		
		clay		
	Eligibility Recommend	unknown	Required	National Register eligibility recommendation of surveyor
		Nat. Reg. eligble		
		not Nat. Reg. eligible		
		other		
	SHPO concur	agree		Determination of SHPO liasion regarding eligibility recommendation
		disagree		
		need more info		
	Comment	other		
	Surveyor Name	text	Required	General comment field
	Photographer Name	text	Required	Name of surveyor filling in attribute information
	Photo1	text	Required	Name of photographer taking digital pictures
Road_Ln				Full filename of first photograph
				Linear location of a road
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Name	text		Resource name, if known
	Location	text		Description of the basic location of the road
	Historic Neighborhood	text		Name of historic neighborhood if known
	Construction Date	text		Indicates the date of construction for the road
	Date Estimated?	yes		Flag to indicate if the construction date is estimated
		no		
	Less than 45 yrs old	yes	Required	Flag to indicate if the feature is less than 45 years old
		no		
		unsure		
	Listed Status	National Register		Indicates if the feature is recongized officially
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
	Contributes to NR HD	other		Flag to indicate if the feature contributes to a historic district
		none		
		yes		
		no		
		unknown		
	Significance	other		
	Historic Context	text		Bnef statement of significance
	Materials Integrity	text	Required	Brief statement of historic context, if known
		yes		
		no		
		unsure		Evaluation of the National Register materials integrity criteria

Feature	Attribute	Attribute Value	Required	Description
	Design Integrity	yes no	Required	Evaluation of the National Register design integrity criteria
	Wrkmanship Integrity	unsure yes no	Required	Evaluation of the National Register workmanship integrity criteria
	Setting Integrity	unsure yes no	Required	Evaluation of the National Register setting integrity criteria
	Structural Integrity	unsure aesthetic damage minor struc damage major struc damage collapse unknown other	Required	Indication of the structural integrity of the road based on visible check
	Type	access road residential street minor traffic artery major traffic artery highway freeway interstate unknown other		Indicates the type of road being recorded
	Material	earth gravel asphalt concrete unknown other		Indicates the primary construction material of the road
	Eligibility Recommend	Nat. Reg. eligible not Nat. Reg. eligible unknown other	Required	National Register eligibility recommendation of surveyor
	SHPO concur	agree disagree need more info other		Determination of SHPO liasion regarding eligibility recommendation
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph
	Photo_Pt			Point location of any picture taken, unrelated to a specific resource
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Subject	text		Identification of the subject of the photo
	Film Type	color slide color print black & white print digital		Description of the type of photo taken
	Direction	north south east west northeast southeast southwest northwest other		Identification of the cardinal direction the photo was taken in
	Roll_filename	text		Identification of the film roll or digital filename of the photo
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Anchor_Pt			Point location taken as a reference point to help in editing data
	Type	begin end angle intersection other		Indicates what type of anchor or reference point is being collected

Feature	Attribute	Attribute Value	Required	Description
Ref_Pt	Comment	text		General comment field
				Reference point taken to identify a feature not included elsewhere
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Feature Type	text		Indicates the type of feature being recorded
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
Ref_Ln	Photo1	text		Full filename of first photograph
				Reference line taken to identify a feature not included elsewhere
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Feature Type	text		Indicates the type of feature being recorded
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
Ref_Py	Photo1	text		Full filename of first photograph
				Reference polygon taken to identify a feature not included elsewhere
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Feature Type	text		Indicates the type of feature being recorded
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph

Appendix B: Cultural Resources Data Model



Overview of Global Positioning Systems (GPS) and Historic Resource Survey Methods for Katrina Recovery Effort

Harahan Joint Field Office

January 2006

Deidre McCarthy

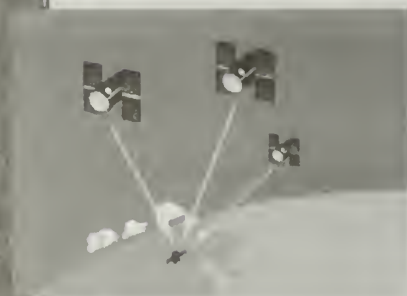
Cultural Resource GIS Facility

National Park Service



Applying Global Positioning Systems

- GPS provides navigational aides
 - ◆ Locating a single point
 - ◆ Navigating between points
- GPS provides the basis for mapping
 - ◆ Tracking changing locational information
 - ◆ Collecting coordinates of features for use in GIS
 - ◆ Collecting information about features for use in GIS



- GPS works by triangulating your position on the earth, based on satellite signals
- Satellites broadcast radio signals
- Receivers pick up the signals
- Receivers calculate geographic coordinates from the satellite signals

Satellites

- xx GPS satellites are controlled and operated by the Dept. of Defense, but it is an open system
- xx 28 satellites in orbit dedicated to GPS
- xx At least 6 satellites are within view of any location at one time, provided that physical terrain, or structures do not block them
- xx Satellites constantly transmit their locational information, and time data



Receivers

- xx Receiver picks up signals broadcast from satellites in known orbits
- xx Radio signals travel near the speed of light
- xx Receiver calculates how long the signal takes to reach the earth
- xx Using velocity of the signal and time, receivers calculate distance to satellite



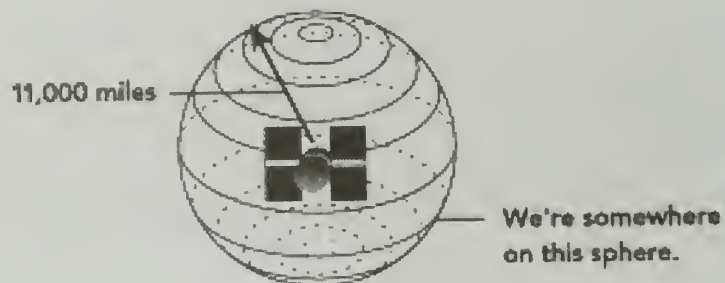
Calculating Distance with Speed and Time

- xx **Speed x time = distance**
- xx Satellite radio transmission consists of a series of dots and dashes in a "pseudo-random" code
- xx All satellites transmit a unique code with a time stamp, synchronized by atomic clocks
- xx Receivers decode each signal to determine which satellite the signal is originating from
- xx Receiver compares time stamps with code to determine the time difference between satellite and ground position
- xx The more satellites used to calculate distance, the more accurate your position will be - a minimum of 4 satellites is recommended



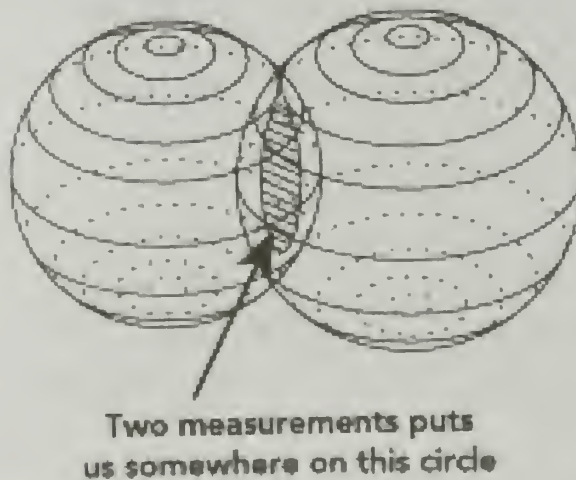
The Mathematics

- ✖ Once the first satellite distance is calculated, the receiver has narrowed its location down to a sphere with the radius of that distance.



The Mathematics

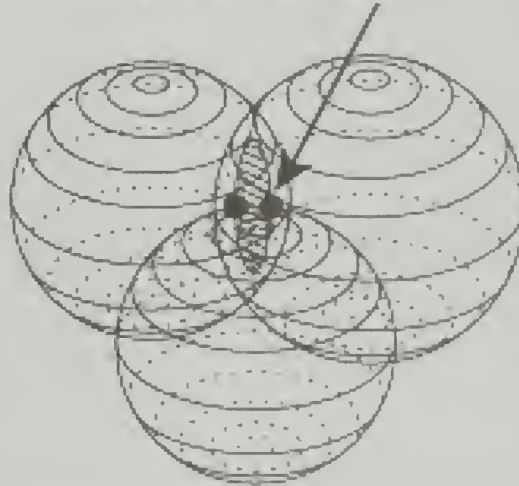
- ✖ From the second satellite, the receiver can narrow its position to the intersection of the two possible spheres.



The Mathematics

- ✖ Adding a third satellite narrows the receiver position down to two possible locations.
- ✖ The fourth satellite will provide more accuracy, narrowing to a single location.

Three measurements puts us at one of two points

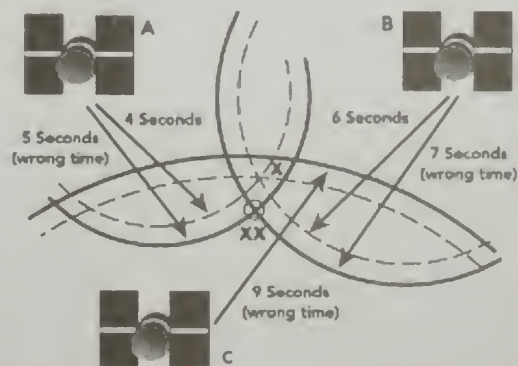


Position Calculations

- ✖ Adding a fourth satellite into the calculations helps calibrate timing of the atomic clocks
- ✖ The fourth satellite also greatly improves the level of accuracy on your positional data

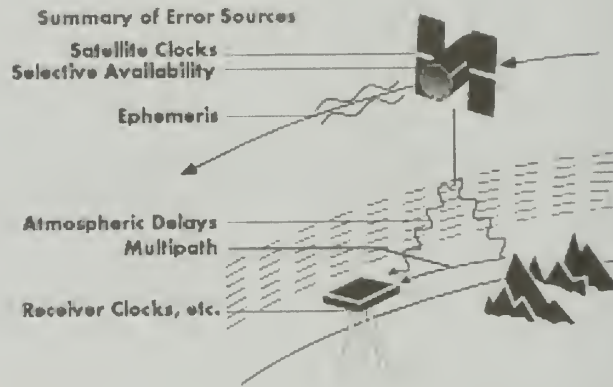
• Four satellites = **3-D data collection** Accuracy +/- 1 meter

• Three satellites = **2-D data collection** Accuracy +/- 200 meters: **NOT RECOMMENDED**



Sources of Error

- ✖ Atmosphere slows down the satellite signals
- ✖ Multi-pathing -- signals bounce off metal fences, large trees, buildings
- ✖ Static and interference
- ✖ Atomic clock errors



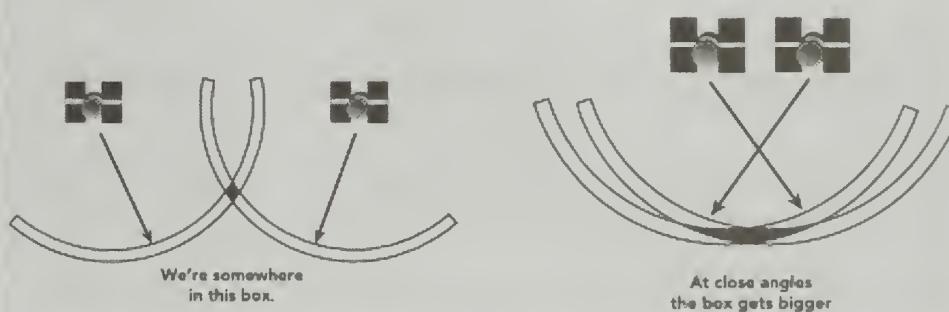
Vocabulary

- ✖ Position: Set of x,y,z coordinates collected by the GPS unit
- ✖ Feature: Specific object or place on the ground to be mapped; a collection of positions. May be a point, line, or area
- ✖ File: format in which positions and descriptions are stored in the GPS unit and transferred to the PC
- ✖ Data Dictionary: Selected list of features to be mapped
- ✖ Attribute: Descriptive information collected for features, i.e.: feature = road; attribute = name of road
- ✖ Attribute Value: List of possible values to answer the attribute, i.e.: attribute = road surface; attribute values = paved, unpaved



Vocabulary: PDOP

- ☒ Positional Dilution of Precision
- ☒ Measure of the quality of the GPS calculations
- ☒ Based on the geometry of the visible satellites
- ☒ Best geometry is with satellites spread evenly across the sky
- ☒ Low PDOP = high accuracy



Our Equipment



Trimble XT or XM GPS receiver



Charging/download cradle and cables

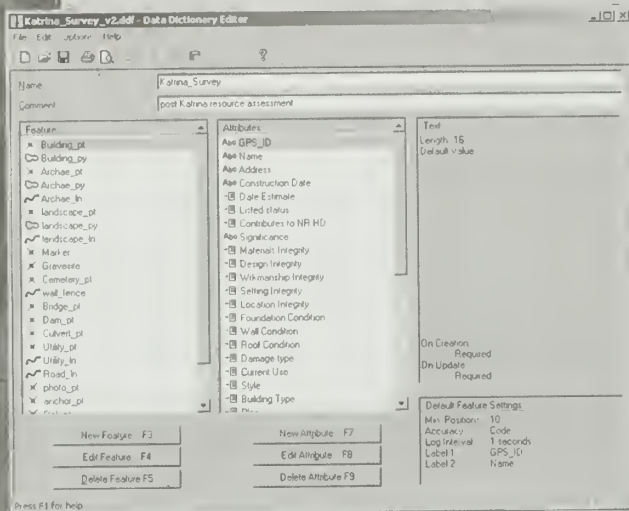
People to conduct fieldwork and collect locational data



People and computers to correct and edit data



Using a Data Dictionary



One way to make your GPS data collection more efficient and helpful in cultural resource management, is to employ a data dictionary

Data dictionaries are a way of organizing the features collected in the field, allowing surveyors to describe what they see, and storing this data together with the locational information

This data can be used directly in a GIS for manipulating data, asking questions, performing analysis, etc.

- ✖ Users create data dictionaries in an editor, with software designed to work with your receiver type
- ✖ Data dictionaries are loaded onto the receiver and can be changed and reloaded at any time

Basic Steps in Collecting and Using GPS Data



- ✖ Determine the goals and purpose of your GPS survey
- ✖ Decide on the level of accuracy required to reach your goals
- ✖ Create a data dictionary
- ✖ Conduct fieldwork to gather locational and attribute data
- ✖ Bring your edited data into a GIS for analysis and use with other data sets

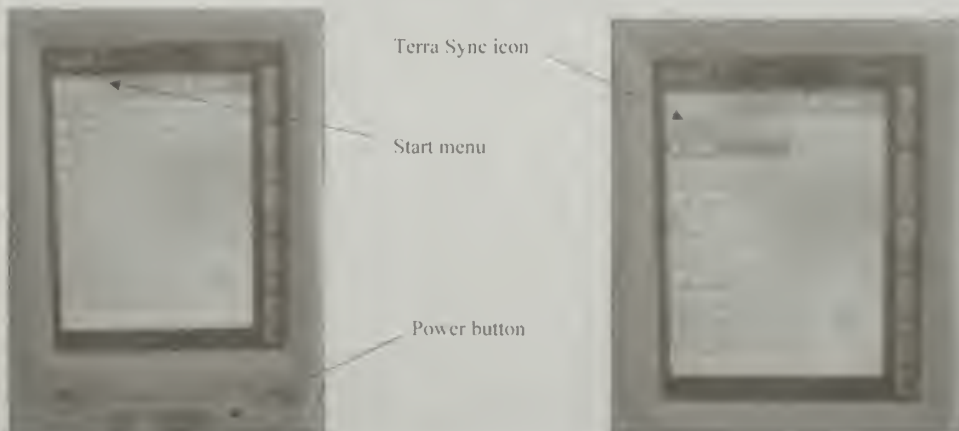
Preparing the GPS Receiver for Use



- ✂ Leave the GPS Unit in its cradle to keep the battery charged
 - ◆ The unit is constantly keeping time (even when it is "off") and it will drain the battery
 - ◆ The battery should last all day without needing a charge under normal circumstances
- ✂ Settings have already been made on the GPS receiver and through the data dictionary itself
 - ◆ No data will be collected from a satellite with a signal strength below 6
 - ◆ No data will be collected from a satellite that is below 15 degrees on the horizon
 - ◆ No data will be collected when you have fewer than 4 satellites that meet these criteria
 - ◆ No data will be collected when your PDOP is above 6

Using the GPS Unit

- ✂ Turn the unit on with the power button located at the bottom center of the unit itself
- ✂ At the opening screen, use the stylus to click on the "Start" menu to get to the software that will run the GPS itself
- ✂ Use the stylus to click on the rotating globe icon at the top of the Start menu to launch Terra Syne, the software you will be using on the GPS receiver
- ✂ All of your data collection will take place inside Terra Syne



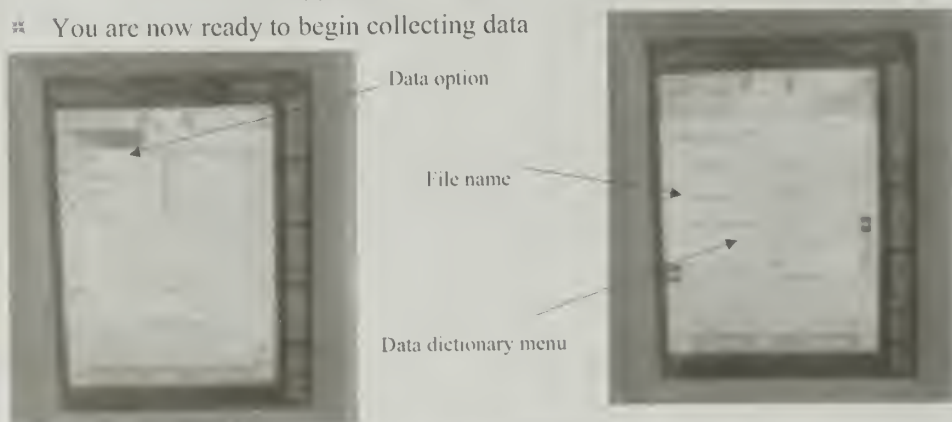
Using the GPS Unit

- ☛ When Terra Sync opens you will see the Skyplot view
 - ◆ This indicates what satellites are visible, what their signal strength is, and what your PDOP is
- ☛ You can always return to the Status/Skyplot while in the field recording data if you find the receiver is not recording data for some reason
- ☛ Once you have acquired enough satellites you can begin collecting data



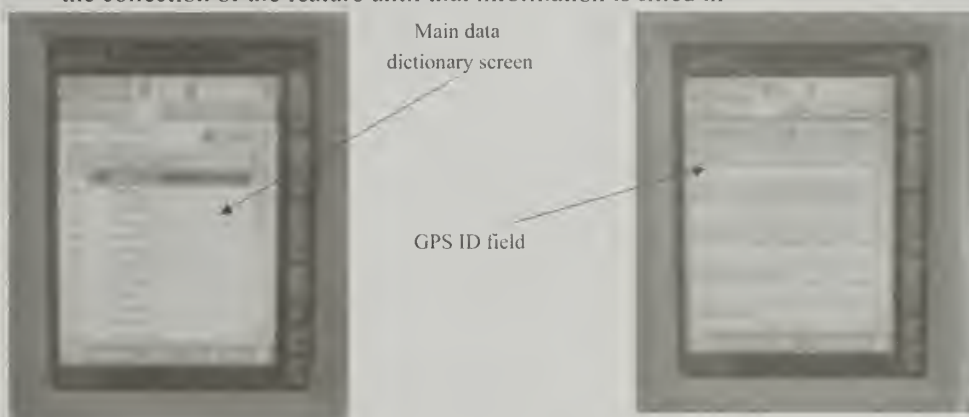
Using the GPS Unit

- ☛ Choose Data from the top left menu
 - ◆ This will allow you to create a new rover file and begin collecting data
- ☛ Give your rover file a name following this convention:
 - ◆ [team letter][month][day]F01
 - ◆ Example: D1206F01
 - ◆ As you create multiple files through the day, increase the file number: D1206F02
- ☛ Choose Katrina_Survey_v3 from the data dictionary drop down menu
- ☛ Choose Create in the upper right corner
- ☛ You are now ready to begin collecting data



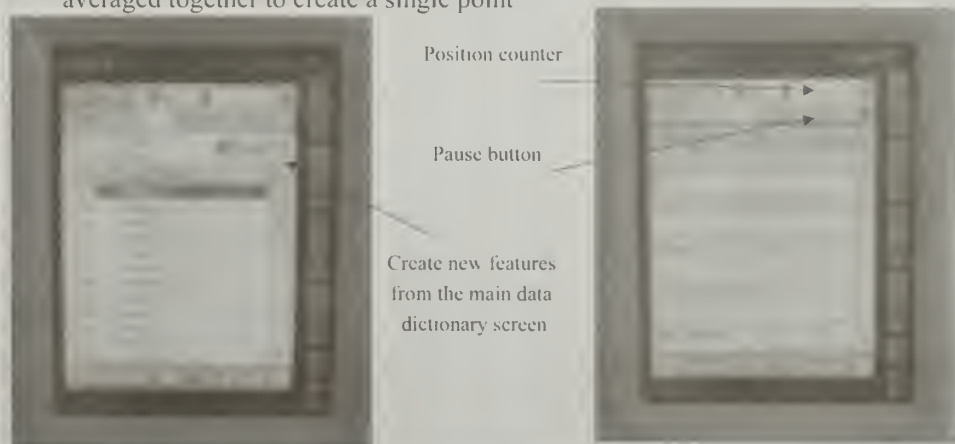
Using the Data Dictionary

- ✎ The opening screen in the Data Dictionary will list all of the available types of features you may need to collect
 - ◆ We anticipate that you will use the Building_pt feature the most in this survey
- ✎ Give each feature you collect a GPS_ID following this convention:
 - ◆ [team letter]00001
 - ◆ Example: D00001
 - ◆ As you create new features throughout the day, increase the number: D00002
- ✎ Some fields in the data dictionary are REQUIRED and you can not complete the collection of the feature until that information is filled in



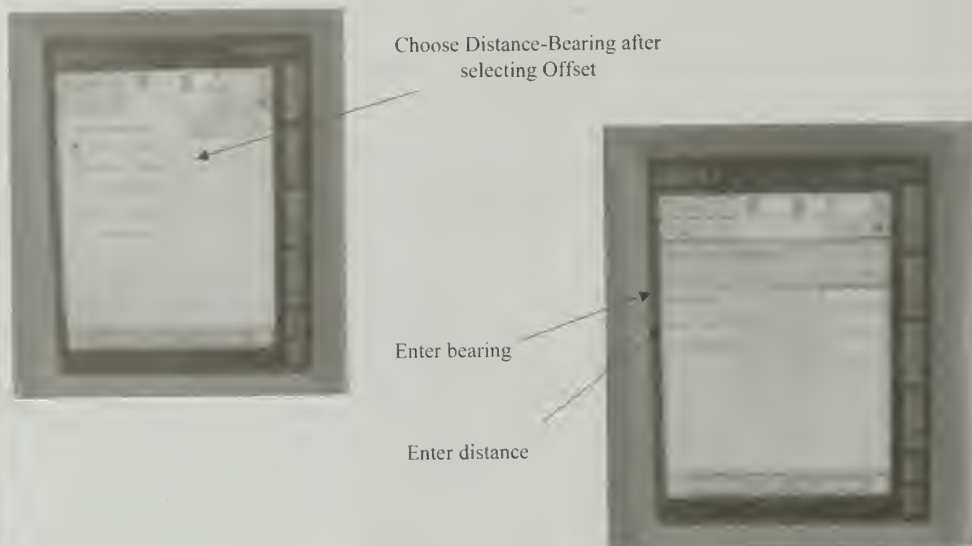
Tips for Data Collection

- ✎ You must have 10 positions to create a "point" feature
 - ◆ The total count of positions you have collected is listed at the top center of the data entry screen.
- ✎ Remember that you can pause your collection of positions once you have reached at least 10, while you are filling out the information in the data dictionary
- ✎ DO NOT move while you are collecting a point, your positions are being averaged together to create a single point



Tips for Data Collection

- ✱ Under the “Options” button menu you will find the Offset function while you are collecting a feature (point, line or polygon)
 - ◆ Here you can estimate a distance and provide a compass bearing to offset the point from where you are to the building or resource you need to document



Tips for Data Collection

- ✱ When collecting a line or polygon feature, you must walk the line or the perimeter of the area. Watch the position count while you are walking to make sure it continues to go up. Unlike a point, there is no minimum number of positions needed to make a line or polygon
- ✱ DO NOT stand still while you are collecting a line or polygon
- ✱ Remember that you can use Anchor Points to indicate beginning or ending points, as well as angle points on lines or polygons
 - ◆ You must exit the line/polygon feature you are collecting to “nest” a point
 - ◆ Choose Options from the main data entry screen to Continue a feature after you have collected the anchor point

After nesting a feature, use Continue to go back to your original line or polygon

DO NOT collect all your features in one file. We suggest creating at least 2 files per day.



Using the GPS Unit

- ✎ Close your rover file when you are ready, you can always reopen it to add more features to it if you need to.
- ✎ Close Terra Sync at the end of the day, or if you take a break for a period of time, using the “X” in the upper right corner of the screen. This will return you to the main Windows screen.
- ✎ Remember to replace the receiver in its cradle to charge the battery or to download the data you have collected.



Close Terra Sync to quit

Basics of our Survey Methodology

- ✎ Get a GPS receiver from the Joint Field Office to begin a survey day
- ✎ Open and create files as needed to collect our primary features
 - ◆ Red tagged buildings inside the city
- ✎ Turn the receivers off at the end of the day and return them to their charging cradles at the Joint Field Office
- ✎ GIS staff at the Joint Field Office will download your files from the day and process them
- ✎ Processing the data will turn the GPS information into shapefiles, which the GIS can read
- ✎ These shapefiles will be loaded into a GeoDatabase that can be used for all cultural resource features

Appendix D: Red Tag GPS Survey Methodology

Data Collection

- ▶ Field surveyors pick up GPS equipment from the Harahan Joint Field Office at 7:30a.
 - ▷ A single member of the team, or a single member from a contracting firm could pick up the equipment for all of the teams associated with that firm
- ▶ Field surveyors go to their assigned areas (determined by the surveyors) to carry out the surveys of red tagged structures, collecting primarily Building Points, as well as photographs of each resource.
 - ▷ It is requested that field survey teams keep a photo log to indicate what photos were taken of each resource, in addition to cataloging the GPS ID for that resource to help prevent repeating GPS IDs by accident.
- ▶ At 4:00p, the field surveyors will return the GPS units to their charging cradles in the Harahan Joint Field Office.
 - ▷ Again, a single member of a team, or a single member from a contracting firm can return all of the equipment that their teams used during the day
- ▶ The field surveyors will download their picture files and place them onto CD, or some other digital media after completing their survey for the day, and turn those files in to the FEMA preservation staff (Deidre, or her replacement) the morning following the day of collection.
- ▶ NPS GIS/GPS staff (Deidre) will provide technical support to the surveyors in the field for any GPS questions that arise.
- ▶ NPS GIS/GPS staff (Deidre) or FEMA staff (Rita) will provide technical support to the surveyors in the field for any logistical or methodological questions that arise in the field.

Initial Data Processing

- ▶ Once the units have been returned to the Harahan Joint Field Office the GIS staff (Kris) will download the data files collected on the GPS receivers during that day.
- ▶ Following the download of the GPS data, the Harahan GIS staff (Kris) will email or otherwise electronically transfer the raw GPS data to the NPS GIS staff (Deidre).
- ▶ Following the receipt of the GPS data, the NPS GIS staff (Deidre) will export the GPS data into GIS shapefiles, and upload these shapefiles into the GeoDatabase created for the cultural resource data collection
- ▶ The NPS GIS staff (Deidre, or her replacement) will perform quality control checks on the data to eliminate as many problems as possible.
- ▶ The FEMA staff (Rita) will collect the picture files submitted by the field surveyors, for inclusion in the review process, copy the photo files into the appropriate place on the FEMA network and insure the correct photo file names have been used.
- ▶ The NPS GIS staff (Deidre, or her replacement) will return the updated GeoDatabase on a daily basis to the Harahan GIS staff, for use in data analysis and site review.

Data Analysis

- ▶ Based on the lists of tabular and spatial products created by the FEMA preservation staff (David Livingstone), the Harahan GIS staff (Kris) will produce paper maps and tabular reports.
- ▶ FEMA GIS staff (Kris) will update and manage an ArcReader application so that FEMA preservation staff can review site information and form concurrence with the SHPO
- ▶ NPS GIS staff (Deidre, or her replacement) will act as the liaison between FEMA preservation staff reviewers and FEMA GIS staff (Kris) to clarify any tabular or spatial requests where there is confusion.

Completion of GeoDatabase to meet National Standards

- ▶ In order to meet the needs of the cultural resource spatial data standards, additional fields of feature-level metadata have been added into the GeoDatabase and must be filled out for each building point created. The NPS GIS staff (Deidre) will fill these fields out and generate the required unique ID fields for each location, each cultural resource and each survey effort. These unique ID fields will be used to link to outside databases, such as the SHPO resource database.
- ▶ Once the unique IDs have been assigned to each location/resource, Harahan field office staff (Rita) can work to fill in a link table contained within the GeoDatabase that will match the red tag buildings to any resource ID already existing within the SHPO database. When additional databases, such as the City red tag database are available, these additional IDs can be entered into the same table to allow further linking to other external databases.

Survey Feedback and Follow-up

- ▶ Field surveyors should be encouraged to continue providing comments on the survey strategy and methodology based on their experiences in the field. These written comments should be provided to Kris, Rita, Deidre (and her replacement), and David Livingstone on a regular basis.
- ▶ The survey team, consisting of David Livingstone, Deidre, Kris, and any others requested, will participate in a weekly conference call to maintain communication and insure the survey strategy is working satisfactorily.
- ▶ FEMA GIS staff (Kris) should contact NPS GIS staff (Deidre) if a question arises regarding the data products that the preservation staff require.
- ▶ FEMA preservation staff (reviewers and Rita) should contact NPS GIS staff (Deidre) if a question arises regarding the GPS survey strategy, or any changes or problems that field surveyors raise.

Appendix E: Attribute Field Definitions - Building Points

GPS_ID (required)

The GPS ID field should be composed of your team designation and a consecutive number (example: CA00001). **DO NOT** repeat the GPS ID number, **DO NOT** add dashes or any other character to the number, and **DO NOT** exceed 7 characters. When beginning survey work on consecutive days, do not start over with 00001, continue to keep a consecutive number. Example: AA00009 precedes AA00010; AA00099 precedes AA00100; etc.

Property Name

The name of the structure, if known. If you do not know the name of the structure, you may leave this field blank.

Street Number (required)

This field should contain the street number **ONLY** of the structure. Example: 1234, or 1234-1236

Street Name (required)

This field should contain the street name of the structure, as evident on the structure, or debris, or on the City information that has been provided to each survey team. **Please spell out each portion of the address** (Example: North Saint Peter Street).

City Tag (required)

This field should indicate the color or presence/absence of a city red tag on the structure. You may use this field to indicate if the structure does not have any tag, or if a tag has been removed, etc.

City Database (required)

This field indicates whether the structure being surveyed is entered onto the City list of red-tagged structures. Each survey team should have a list of structures that are known by the City. If you see a red tagged structure that is not on that list, please indicate that it is not on the list in this field.

Historic Neighborhood

This field is an open text field containing 100 characters for surveyors to enter any information or common knowledge provided by informants about the historic name or nature of any neighborhood, regardless of whether it is a designated historic district.

Costruction Date

The date of construction, or date range of construction for the structure.

Date Estimated?

This field indicates if the construction date you provided is an estimate. In most cases you will not know the exact date of construction for the structure, so the default is Yes.

Less than 45 yrs old (required)

This field will allow surveyors to clarify their date ranges and indicate if a building is less than 45 years old. If the building is less than 45 years old, please select YES. If the building is not less than 45 years old, please select NO. If you are unsure of the date altogether, please select UNSURE.

Listed Status

This field indicates if a structure was listed in a National or local historic district, **PRIOR TO KATRINA**. The maps you will be provided with on a daily basis to guide your survey work for the day

indicate the boundaries of National Register Historic Districts. If the building you are surveying falls within one of these boundaries, we are considering it part of the district until further information about contributing resources can be gathered from the SHPO. If the building you are surveying is outside a historic district and is clearly on the National Register (visible plaque, etc.), please indicate that it is on the National Register. If a building is inside a historic district, and also listed individually, please indicate that it is listed MULTIPLE times.

Contributing to a Historic District

This field indicates if a structure was contributing to a National or local historic district, PRIOR TO KATRINA. All structures inside the boundaries of National Register historic districts are being considered contributing at this time, until further information is obtained from the SHPO, or it is otherwise obvious from your observation that the building is infill to a district.

Significance (required)

This is an open text field containing 100 characters to indicate what the significance of the structure is, PRIOR TO KATRINA. For the most part, structures inside an already existing district will be significant for architecture. If you observe some feature in the field that contributes to the significance of the structure, please also include that in the text field. Please enter at least one sentence to describe the potential significance, or lack of significance.

Historic Context (required)

This is an open text field containing 100 characters to indicate what the historic context of the structure or neighborhood is, PRIOR TO KATRINA. Please enter at least one sentence to describe the historic context of the structure, or lack of historic context to help provide a fuller idea of what the environment of the structure resembles.

Materials Integrity (required)

This field refers to the National Register integrity criteria for materials. Indicate if the structure retains integrity of materials under its CURRENT CONDITIONS.

Design Integrity (required)

This field refers to the National Register integrity criteria for design. Indicate if the structure retains integrity of design under its CURRENT CONDITIONS.

Workmanship Integrity (required)

This field refers to the National Register integrity criteria for workmanship. Indicate if the structure retains integrity of design under its CURRENT CONDITIONS.

Setting Integrity (required)

This field refers to the National Register integrity criteria for setting. Indicate if the structure retains integrity of setting under its CURRENT CONDITIONS.

Location Integrity (required)

This field refers to the National Register integrity criteria for location. Indicate if the structure retains integrity of location under its CURRENT CONDITIONS. Unless you know the structure has been moved from its original location, it should retain its location integrity.

Foundation Condition (required)

This field refers to the CURRENT CONDITION of the structure foundation. If the foundation is not visible due to debris, please indicate that the condition is unknown.

Wall Condition (required)

This field refers to the CURRENT CONDITION of the structure walls. If the walls are collapsed, please indicate that they are collapsed.

Roof Condition (required)

This field refers to the CURRENT CONDITION of the structure roof. If the structure is collapsed, and the roof is not visible or is missing, please indicate this.

Damage Type

This field refers to the damage seen on the structure in its CURRENT CONDITION. If you observe evidence of multiple causes of damage, such as fire, water and wind damage, please indicate that there are MULTIPLE causes of damage.

Current Use (required)

This field refers to the use of the structure PRIOR TO KATRINA. Please indicate what the primary use of the structure was, rather than the structure is currently vacant.

Style (required)

This field refers to the architectural style of the structure PRIOR TO KATRINA. If there is evidence of what the original style of the structure was, please indicate this. If the structure does not retain enough integrity, or if it is collapsed, please indicate that the style is unknown.

Building Type (required)

This field refers to the type of building the structure represents, PRIOR TO KATRINA. If there is evidence of what the original building type was, please indicate this. If the structure does not retain enough integrity, or if it is collapsed, please indicate that the building type is unknown.

Footprint

This field refers to the original building footprint of the structure, PRIOR TO KATRINA. If there is evidence of what the original plan of the building was, please indicate this. If the structure does not retain enough integrity, is obscured by debris, or is collapsed, please indicate that the plan is unknown.

Height

This field refers to the original height of the structure, in stories, PRIOR TO KATRINA. If enough of the structure is extant to determine the original height, please indicate this. If the structure is collapsed, or partially collapsed, please indicate this by using the other option.

Foundation

This field refers to the type of foundation evident on the structure, PRIOR TO KATRINA. If enough of the structure is extant to determine the original foundation type, please indicate this. If the structure is collapsed or obscured by debris, please indicate that the foundation type is unknown.

Const Material (required)

This field refers to the primary materials used for the construction of the structure, PRIOR TO KATRINA. If enough of the structure is extant to determine the type of construction or material of construction, please indicate this. If the structure is collapsed or obscured by debris, please indicate that the materials are unknown. If a primary material can not be identified, but multiple building materials are present, please indicate this by using the multiple option.

Cladding

This field refers to the primary cladding materials used to cover the building, PRIOR TO KATRINA. If enough of the structure is extant to determine the cladding materials, please indicate this. If the structure is collapsed or obscured by debris, please indicate that the materials are unknown.

Roof Type (required)

This field refers to the roof type evident on the structure, PRIOR TO KATRINA. If enough of the structure is extant to determine the type of roof, please indicate this. If the roof is collapsed or missing, please indicate that the roof type is unknown.

Roof Materials (required)

This field refers to the type of materials used to cover the roof, PRIOR TO KATRINA. If enough of the roof is extant to determine the primary roofing materials, please indicate this. If the roof is collapsed or missing, please indicate that the roof materials are unknown. If roofing materials are evident in debris surrounding the structure, please do not assume that these materials belong to the structure you are surveying; they may have originated from another building altogether.

Chimneys

This field refers to the type of chimneys evident on the structure, PRIOR TO KATRINA. If enough of the structure is extant to determine the chimney placement, please indicate this. If the structure is collapsed, please indicate that the chimney placement is unknown. If no chimneys are evident on an extant structure, please indicate that none existed.

Chimney Materials

This field refers to the primary construction materials of the evident chimneys, PRIOR TO KATRINA. If enough of the structure is extant to determine the primary construction materials, please indicate this. If the structure is collapsed please indicate that the materials are unknown.

Porches

This field refers to the type of porch evident on the primary elevation of the structure, PRIOR TO KATRINA. If enough of the structure is extant to determine the type of porch, or if a porch existed, please indicate this. If the structure is collapsed, or obscured by debris, please indicate that the type of porch is unknown.

Point Recorded (required)

This field refers to the point on the structure that you recorded with the GPS during your survey. The primary entrance is the preferred point to collect. However, if multiple entry ways exist on the primary elevation of the structure, please collect the point in the center of the building. If you choose a corner, remember to indicate the cardinal direction of the point you recorded, not that it is the left or right corner of the structure.

Eligibility Recomend (required)

This field is your opportunity to make a recommendation to FEMA regarding whether the structure is eligible for the National Register, based on its CURRENT CONDITION and INTEGRITY. The answer you provide in this field will be reviewed by the FEMA staff, based on the information and the photographs you provide. This field may be changed by FEMA staff in order to obtain concurrence with the SHPO.

SHPO Concur

This field indicates whether the SHPO concurs with the FEMA determination of eligibility for the structure. In the majority of cases, you will not have SHPO staff accompanying your survey team, and you will not be able to fill out this field. Please leave this field blank if you do not have SHPO staff with you. Information will be filled into this field by the FEMA staff once concurrence has been reached.

Comment

This is an open text field containing 100 characters. You may use this field to capture any additional notes, or add any additional information regarding any of the fields in the data dictionary.

Surveyor Name (required)

Surveyors should use this field to indicate the name of the member of their team that is making the architectural observations and eligibility recommendations for the structure or lot.

Photographer Name (required)

Surveyors should use this field to indicate the name of the member of their team that is taking photographs of the structure or lot.

Photo1 (required)

Please type in the FULL FILENAME of the photograph you take of the structure (Example: DSC_003.jpg). These file names will be used to link your photos to the correct location and must be accurate to do so, including the file extension, .jpg.. You must take at least one photograph of the structure during your survey, although you may take more.

Photo2

Please type in the filename of the photograph you take of the structure. These file names will be used to link your photos to the correct location.

Photo3

Please type in the filename of the photograph you take of the structure. These file names will be used to link your photos to the correct location.

Photo4

Please type in the filename of the photograph you take of the structure. These file names will be used to link your photos to the correct location.

Appendix F: Red Tag Survey - Photo Log

US Department of Homeland Security
Federal Emergency Management Agency

Photograph Log

Page of

Company Name:

GPS_ID

Day

Month

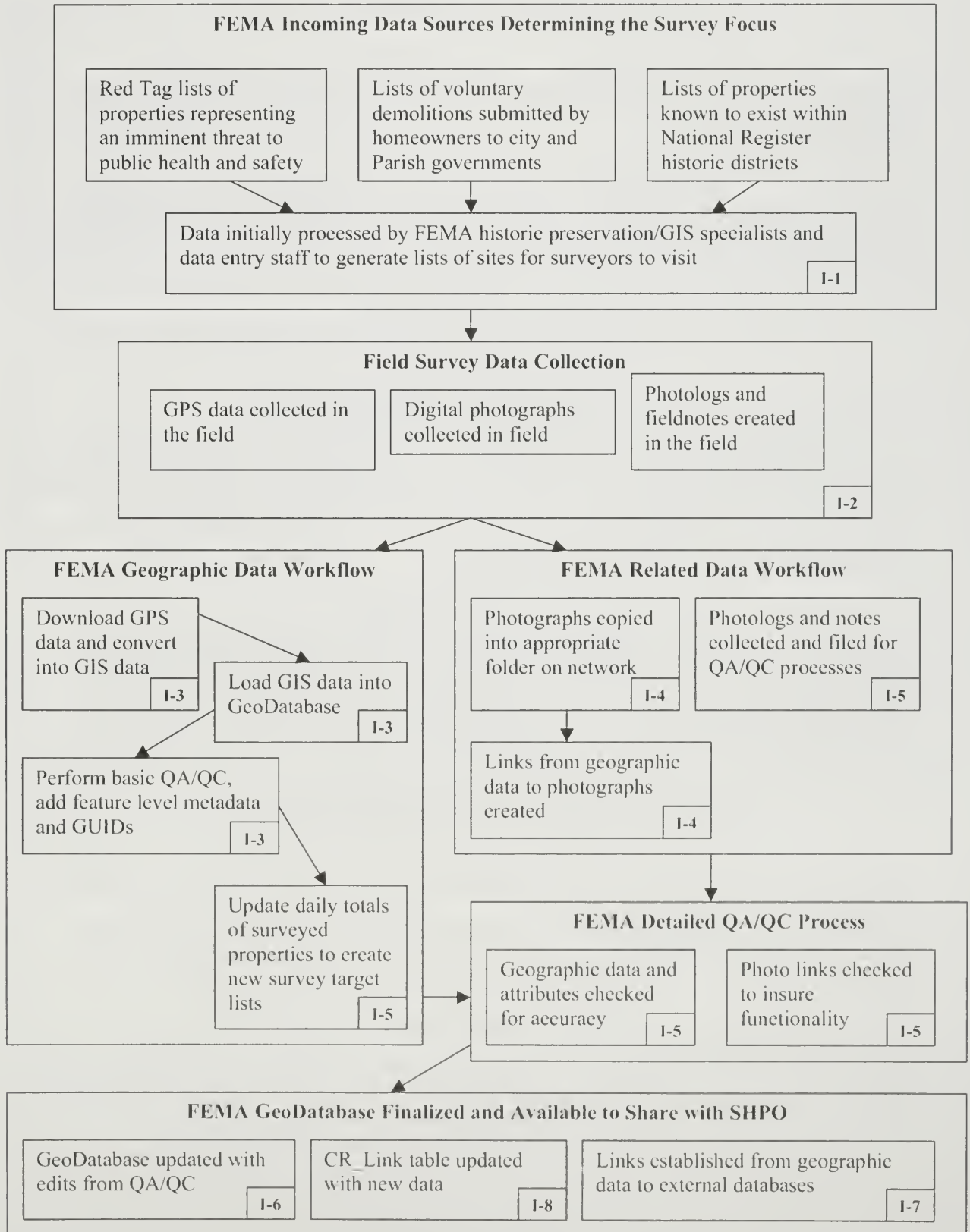
Filename

Subject/Description	Score
1. Introduction	
2. Background	
3. Methodology	
4. Results	
5. Conclusion	
6. References	
7. Appendix	
8. Summary	
9. Discussion	
10. Future Work	
11. Acknowledgments	
12. References	
13. Appendix	
14. Summary	
15. Discussion	
16. Future Work	
17. Acknowledgments	
18. References	
19. Appendix	
20. Summary	
21. Discussion	
22. Future Work	
23. Acknowledgments	
24. References	
25. Appendix	
26. Summary	
27. Discussion	
28. Future Work	
29. Acknowledgments	
30. References	
31. Appendix	
32. Summary	
33. Discussion	
34. Future Work	
35. Acknowledgments	
36. References	
37. Appendix	
38. Summary	
39. Discussion	
40. Future Work	
41. Acknowledgments	
42. References	
43. Appendix	
44. Summary	
45. Discussion	
46. Future Work	
47. Acknowledgments	
48. References	
49. Appendix	
50. Summary	
51. Discussion	
52. Future Work	
53. Acknowledgments	
54. References	
55. Appendix	
56. Summary	
57. Discussion	
58. Future Work	
59. Acknowledgments	
60. References	
61. Appendix	
62. Summary	
63. Discussion	
64. Future Work	
65. Acknowledgments	
66. References	
67. Appendix	
68. Summary	
69. Discussion	
70. Future Work	
71. Acknowledgments	
72. References	
73. Appendix	
74. Summary	
75. Discussion	
76. Future Work	
77. Acknowledgments	
78. References	
79. Appendix	
80. Summary	
81. Discussion	
82. Future Work	
83. Acknowledgments	
84. References	
85. Appendix	
86. Summary	
87. Discussion	
88. Future Work	
89. Acknowledgments	
90. References	
91. Appendix	
92. Summary	
93. Discussion	
94. Future Work	
95. Acknowledgments	
96. References	
97. Appendix	
98. Summary	
99. Discussion	
100. Future Work	
101. Acknowledgments	
102. References	
103. Appendix	
104. Summary	
105. Discussion	
106. Future Work	
107. Acknowledgments	
108. References	
109. Appendix	
110. Summary	
111. Discussion	
112. Future Work	
113. Acknowledgments	
114. References	
115. Appendix	
116. Summary	
117. Discussion	
118. Future Work	
119. Acknowledgments	
120. References	
121. Appendix	
122. Summary	
123. Discussion	
124. Future Work	
125. Acknowledgments	
126. References	
127. Appendix	
128. Summary	
129. Discussion	
130. Future Work	
131. Acknowledgments	
132. References	
133. Appendix	
134. Summary	
135. Discussion	
136. Future Work	
137. Acknowledgments	
138. References	
139. Appendix	
140. Summary	
141. Discussion	
142. Future Work	
143. Acknowledgments	
144. References	
145. Appendix	
146.	

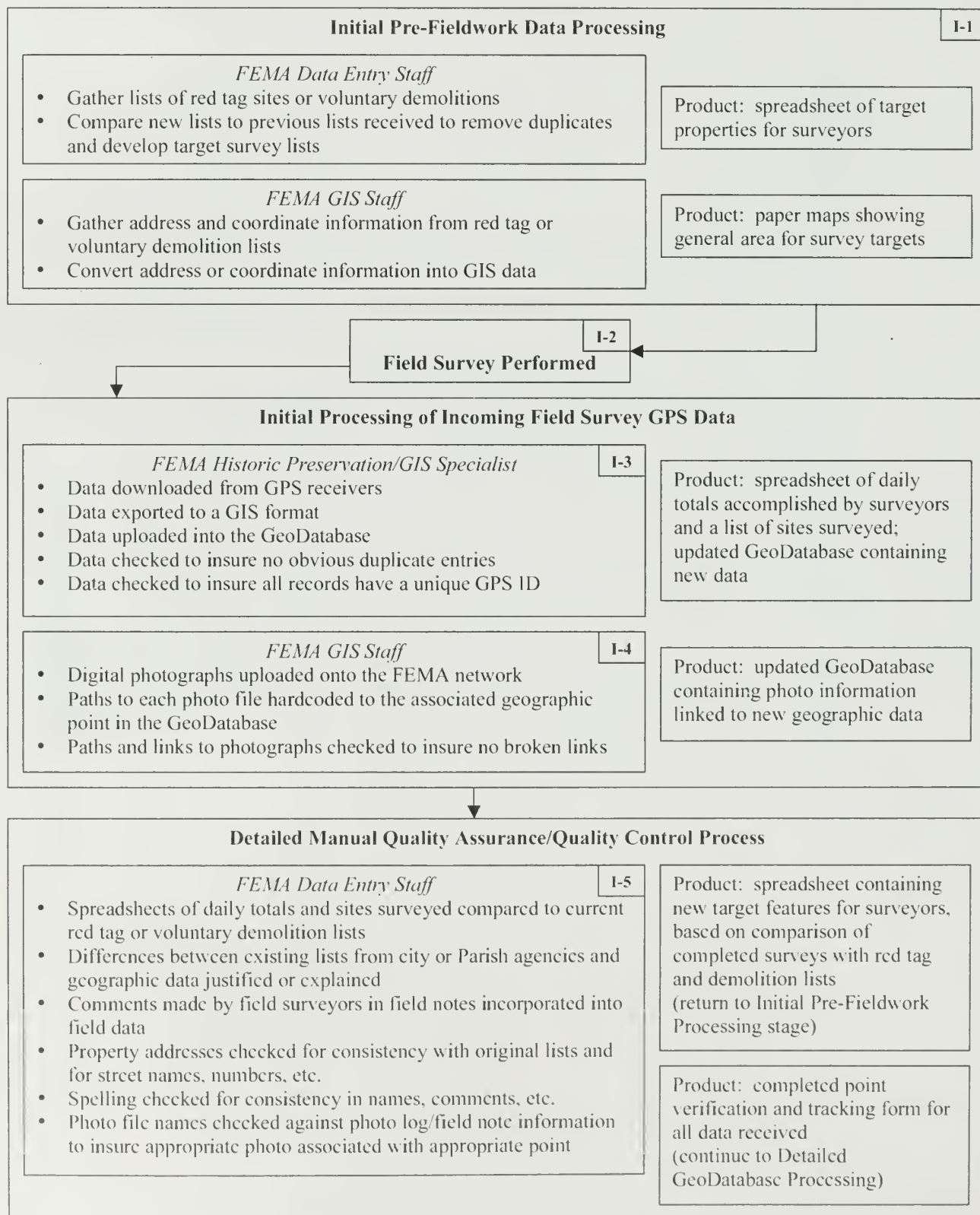
SIGN OUT SHEET
TRIMBLE GEOEXPLORER GPS 2005 SERIES
Harahan P.A.P.C.

Barcode Number	Cradle	Power Cord	USB Cord	% Battery Charge	Print Name Out	Initials Out	Time	Print Name In	Initials In	STRAP??	Time	Additional Comments
1189869												
1189870												
1189871												
1189872												
1189873												
1189874												
1189875												
1189876												
1189877												
1189878												
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Appendix H: General Historic Preservation GPPS Survey Workflow



Appendix I: Data Processing Workflow for Survey Data



Detailed Manual Processing in the FEMA GeoDatabase*FEMA Historic Preservation/GIS Specialist***I-6**

- Feature level metadata entered for each geographic feature received
- Cultural resource, locational and survey GUIDs assigned to each feature received
- Edits made as indicated on the point verification and tracking form generated by the data entry staff
- All new features and GUIDs added to the CR_Link table

Product: updated GeoDatabase corrected attribute information, metadata and GUIDs; updated CR_Link table

**Subsequent Data Processing of the CR_Link Table to Establish Connections to Exterior Data Sources***FEMA Data Entry Staff***I-7**

- Examine CR_Link table to find matches for surveyed properties to external databases, such as the SHPO inventory
- Manually enter matching ID numbers from external databases into appropriate record in the CR_Link table

Product: updated CR_Link table containing live links to external data sources

**Updating of FEMA GeoDatabase and Preparation for Completion of Section 106 Process***FEMA Historic Preservation/GIS Specialist***I-8**

- Update FEMA GeoDatabase with edited CR_Link table
- Establish persistent relationships between CR_Link table and external data sources

Product: updated GeoDatabase for use with Section 106 concurrence process

Appendix J: Point Verification and Tracking Form

xxx Parish List ___ Point Verification and Tracking Date Completed/2007

The locations of (#) proposed demolition properties were provided to FEMA on date/2007. (#) duplicates were removed from this list, and FEMA deployed (#) properties to be surveyed. After on the ground verification conducted by the Historic Preservation surveyors on date(s)/2007, the total number of properties surveyed for review was (#).

Number from Parish	Less Duplicates	Number Deployed	Less TABLE A Points Not Reviewed	Number Reviewed
	-	0	-	0

TABLE A

Points not reviewed due to inability to verify the structure at a given address:

	Street Number	Street Name	Surveyor's Comments - Justification for Point Not Surveyed
1			
2			

TABLE B

The following points do not generate a net difference in numbers. The addresses on this list were not found on site. The surveyors made a judgment call in the field as to the probable origin of the address that they were not able to find. The surveyors then surveyed that point.

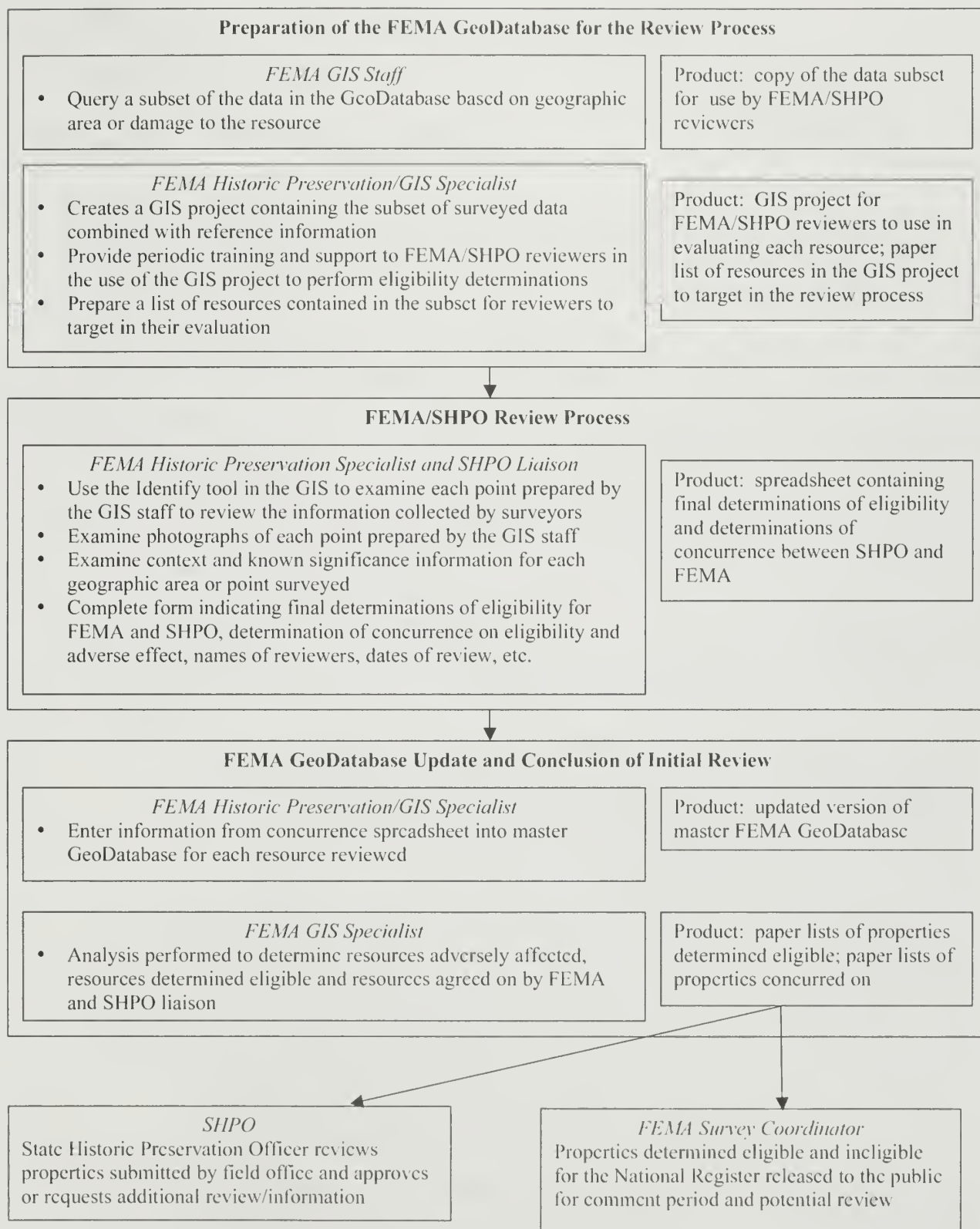
	Street Number	Street Name	Surveyed Differently than on Parish List
1			
2			

TABLE C

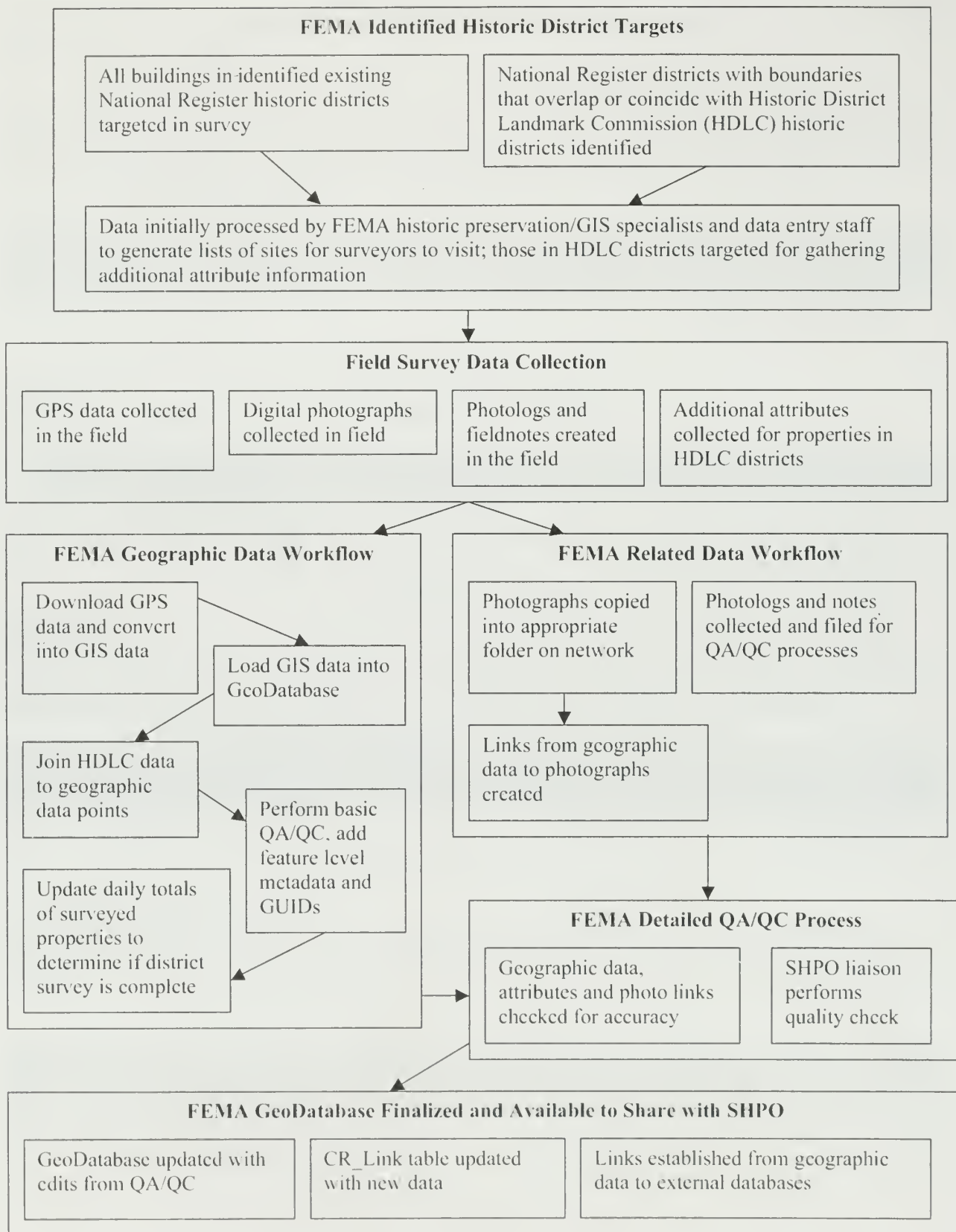
The following comments were received from the surveyors and do not reflect a determination by FEMA.

	Street Number	Street Name	Surveyor's Comments
1			
2			

Appendix K: Data Workflow for Section 106 Review and Determination of Eligibility



Appendix L: General GPS Survey for Section 106 Treatment Measures



Building_pt

Metadata also available as

Metadata:

- [Identification Information](#)
- [Data Quality Information](#)
- [Spatial Data Organization Information](#)
- [Spatial Reference Information](#)
- [Entity and Attribute Information](#)
- [Distribution Information](#)
- [Metadata Reference Information](#)

Identification Information:

Citation:

Citation Information:

Originator:

Federal Emergency Management Agency, Department of Homeland Security

Publication Date: 2006

Publication Time: Unknown

Title: Building_pt

Geospatial Data Presentation Form: vector digital data

Online Linkage:

\\INP2270MCCARTHD\CS\projects\katrina\la\la_databases\FEMA_HP_survey.mdb

Description:

Abstract:

This feature class represents the point locations of structures within New Orleans Parish, and the seven surrounding Parishes. These structures were identified to FEMA by the City of New Orleans or other Parish governments based on the structure's potential danger to public health and safety, or their voluntary submission to the City and Parish governments for demolition by the homeowner. As a result of this determination, these structures are eligible for demolition and subject to Section 106 review as required by the National Historic Preservation Act of 1966, as amended. This feature class provides the location of any and all structures that were once determined a danger and could potentially be destroyed. Some of the structure locations in this feature class have since been removed from the public danger list and will not be destroyed. Feature level metadata entered into the attribute table for each point describes the demolition list each point originated from, as well as the determination of historic significance by both FEMA and the Louisiana State Historic Preservation Office, as required by Section 106 of the National Historic Preservation Act. Additionally, this feature class represents the point locations of structures surveyed as contributing to historic districts in the City of New Orleans, as part of Section 106 mitigation undertaken by FEMA. Locational information was collected using Trimble GeoExplorer XT and XM receivers. All data was edited for accuracy and consistency.

Purpose:

This feature class was created to assist FEMA in meeting its legal obligations under Section 106 of the National Historic Preservation Act of 1966, as amended, as a result of hurricanes Katrina and Rita. This feature class provides the location of any and all structures that were once determined a danger and could potentially be destroyed, as well as those identified as contributing to historic districts during Section 106 mitigation efforts. As such, it serves to document the survey and

evaluation phase of Section 106 compliance, as well as providing a form of documentation for those structures which will be demolished.

Supplemental_Information:

Although created for the use of FEMA to meet its legal obligations following hurricanes Katrina and Rita, this feature class will be shared with and maintained by the Louisiana State Historic Preservation Office following final delivery by FEMA.

Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 2006

Time_of_Day: unknown

Currentness_Reference: publication date

Status:

Progress: In work

Maintenance_and_Update_Frequency: As needed

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -90.274406

East_Bounding_Coordinate: -77.286138

North_Bounding_Coordinate: 38.898734

South_Bounding_Coordinate: 29.358872

Keywords:

Theme:

Theme_Keyword_Thesaurus: National Register of Historic Places

Theme_Keyword: building

Theme_Keyword: structure

Theme_Keyword: cultural resource

Theme_Keyword: historic resource

Theme_Keyword: historic structure

Theme_Keyword: historic building

Place:

Place_Keyword: Louisiana

Place_Keyword: New Orleans

Place_Keyword: Orleans Parish

Place_Keyword: Washington Parish

Place_Keyword: St. Tammany Parish

Place_Keyword: Jefferson Parish

Place_Keyword: St. Bernard Parish

Place_Keyword: Plaquemine Parish

Place_Keyword: St. Charles Parish

Place_Keyword: Tangipahoa Parish

Access_Constraints:

The Louisiana State Historic Preservation Office will determine all access constraints to this feature class.

Use_Constraints:

Users of this feature class should be aware that the buildings represented were suggested for demolition by the city of New Orleans and other Parish governments or submitted voluntarily by homeowners. The lists of buildings suggested for demolition change as owners apply for building permits and seek to rebuild their property. The locations in this feature class do not represent all buildings that have been or will be demolished as a result of hurricanes Katrina and Rita, however they do represent all those buildings that were at one point considered for demolition. Additionally, users of the this feature class should be aware that some locations represent the current location of buildings that were moved from their original location as a result of hurricanes Katrina and Rita. Attribute information associated with each point location does

indicate whether a building retains its integrity of location. Further, building locations collected as part of mitigation efforts are not suggested for demolition, and are so identified in the attribute information.

Point_of_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Angela Gladwell

Contact_Organization:

Federal Emergency Management Agency, Department of Homeland Security

Contact_Position: Team Administrator, Environmental/Historic Preservation

Contact_Address:

Address_Type: mailing address

Address: 500 C St., SW room 417

City: Washington

State_or_Province: DC

Postal_Code: 20472

Country: USA

Contact_Voice_Telephone: 202-646-3193

Contact_Facsimile_Telephone: 202-646-3055

Contact_Electronic_Mail_Address: Angela.Gladwell@dhs.gov

Data_Set_Credit:

Environmental and Historic Preservation Division, Federal Emergency Management Agency, Department of Homeland Security

Security_Information:

Security_Classification: Sensitive

Security_Handling_Description:

Locational and attribute information contained within this feature class may be considered sensitive information by either the Federal Emergency Management Agency, or the Louisiana State Historic Preservation Office. When requesting this information, users should follow the handling instructions provided by the Louisiana State Historic Preservation Office.

Native_Data_Set_Environment:

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.1.0.722

Data_Quality_Information:

Attribute_Accuracy:

Attribute_Accuracy_Report:

Attributes collected in the field are based on physical assessments at the building location, made by surveyors that meet the Secretary of Interior's Standards for architectural history. Other attributes regarding the determinations of historical significance were made by designated architectural historians representing FEMA and the Louisiana State Historic Preservation Office. Attributes have been reviewed by the FEMA historic preservation and Louisiana State Historic Preservation Office representatives for accuracy and consistency. A data dictionary for use in the GPS receivers was prepared prior to the survey in cooperation with FEMA, the Louisiana State Historic Preservation Office and the city of New Orleans Historic District Landmark Commission, to insure consistency in attribute entry. No further tests were performed on the data.

Logical_Consistency_Report:

Buildings identified by city of New Orleans and other Parish governments as being a danger to public health and safety, or a public nuisance, or voluntarily submitted by homeowners for demolition, were collected as part of this feature class. Additionally, buildings identified as contributing to historic districts in the City of New Orleans, and not scheduled for demolition, are included in this feature class. All features within this feature class are represented as points, with coordinate information being generated from GPS sources. Trimble GeoExplorer XT and XM receivers were used to collect all data. The data was corrected using

WAAS, when available. The correction status of each feature is entered in feature level metadata for each point location. All points fall within the stated accuracy of the GPS equipment (+/- 3 meters). No further tests were performed on the data.

Completeness_Report:

Building locations contained within this feature class were collected based on address lists provided by the city of New Orleans and other Parish governments. Addresses on the lists provided represent buildings which are considered a danger to public health and safety, or are a public nuisance, or those buildings voluntarily submitted by homeowners for demolition. Further, buildings included in this feature class that represent those historic structures contributing to historic districts in the City of New Orleans were identified by surveyors meeting the Secretary of the Interior's Standards for architectural historians. Due to the conditions following hurricanes Katrina and Rita some buildings were not in their original locations and had to be determined by surveyor observation. Additionally, some buildings were too badly damaged to determine their true address. However, all data has been checked for accuracy and completion by FEMA historic preservation staff, comparing this feature class to the lists provided by Parish governments. All locational and attribute information has been reviewed for completeness and accuracy by FEMA historic preservation staff to help insure data quality. No further tests were performed on the data set.

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

Data contained within this feature class was collected with Trimble GeoExplorer XT and XM receivers, with correction by WAAS when available. The rated accuracy of this equipment is +/- 3 meters. Points that were corrected are indicated in the attribute information for each individual feature, along with the method of correction.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Title: none

Type_of_Source_Media: paper

Source_Time_Period_of_Content:

Time_Period_Information:

Range_of_Dates/Times:

Beginning_Date: 2005

Beginning_Time: unknown

Ending_Date: on-going

Ending_Time: unknown

Source_Currentness_Reference: ground condition

Source_Citation_Abbreviation: list

Source_Contribution:

Lists of addresses and locations which the city of New Orleans and other Parish governments considered dangers to public health and safety, or voluntarily submitted by homeowners, were provided to historic preservation representatives at FEMA. These lists were used as source information to guide the surveyors to the appropriate locations to collect GPS data and attribute information for each building. Building locations collected as part of Section 106 mitigation efforts inside historic districts were determined by existing National Register of Historic Places documentation and surveyor observations.

Source_Information:

Source_Citation:

Citation_Information:

Title: none

Type_of_Source_Media: observation

Source_Time_Period_of_Content:

*Time_Period_Information:**Range_of_Dates/Times:**Beginning_Date:* 2005*Beginning_Time:* unknown*Ending_Date:* on-going*Ending_Time:* unknown*Source_Currentness_Reference:* ground condition*Source_Citation_Abbreviation:* GPS*Source_Contribution:*

All locational information contained within this feature class is based on field observation and physical survey of the buildings designated as dangers to public health and safety, or voluntarily submitted by homeowners for demolition. Additional building locations representing those structures contributing to historic districts inside the City of New Orleans were collected based on field observation and physical survey.

*Process_Step:**Process_Description:*

Data was downloaded from GPS receivers and exported into a shapefile format for use in a GIS.

Source_Used_Citation_Abbreviation: GPS*Process_Date:* daily based on survey*Process_Time:* unknown*Process_Contact:**Contact_Information:**Contact_Person_Primary:**Contact_Person:* Deidre McCarthy*Contact_Organization:* Cultural Resource GIS Facility, National Park Service*Contact_Position:* Historian/GIS Specialist*Contact_Address:**Address_Type:* mailing address*Address:* 1849 C St., NW (2270)*City:* Washington*State_or_Province:* DC*Postal_Code:* 20240*Country:* USA*Contact_Voice_Telephone:* 202-354-2141*Contact_Facsimile_Telephone:* 202-371-6473*Contact_Electronic_Mail_Address:* Deidre_McCarthy@nps.gov*Process_Step:**Process_Description:*

Shapefiles created from GPS data were combined on a daily basis and loaded into the building point feature class.

Source_Used_Citation_Abbreviation: GPS*Process_Date:* daily based on survey*Process_Time:* unknown*Process_Contact:**Contact_Information:**Contact_Person_Primary:**Contact_Person:* Deidre McCarthy*Contact_Organization:* Cultural Resource GIS Facility, National Park Service*Contact_Position:* Historian/GIS Specialist*Contact_Address:**Address_Type:* mailing address

Address: 1849 C St., NW (2270)

City: Washington

State_or_Province: DC

Postal_Code: 20240

Country: USA

Contact_Voice_Telephone: 202-354-2141

Contact_Facsimile_Telephone: 202-371-6473

Contact_Electronic_Mail_Address: Deidre_McCarthy@nps.gov

Process_Step:

Process_Description:

Attribute information was reviewed, corrected and edited for consistency and accuracy on a daily basis.

Source_Used_Citation_Abbreviation: lists

Process_Date: daily based on survey

Process_Time: unknown

Process_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Deidre McCarthy

Contact_Organization: Cultural Resource GIS Facility, National Park Service

Contact_Position: Historian/GIS Specialist

Contact_Address:

Address_Type: mailing address

Address: 1849 C St., NW (2270)

City: Washington

State_or_Province: DC

Postal_Code: 20240

Country: USA

Contact_Voice_Telephone: 202-354-2141

Contact_Facsimile_Telephone: 202-371-6473

Contact_Electronic_Mail_Address: Deidre_McCarthy@nps.gov

Process_Step:

Process_Description:

Information related to the FEMA and Louisiana State Historic Preservation Office determinations of National Register of Historic Places eligibility for each structure was entered into the attribute table by designated historic preservation staff.

Process_Date: daily based on survey

Process_Time: unknown

Process_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Gail Lazaras

Contact_Organization:

Environmental/Historic Preservation, Federal Emergency Management Agency

Contact_Position: Historic Preservation/GIS Coordinator

Contact_Address:

Address_Type: mailing and physical address

Address: 800 W. Commerce Road

City: Harahan

State_or_Province: LA

Postal_Code: 70123

Country: USA

Contact_Voice_Telephone: 832-851-3919

Contact_Electronic_Mail_Address: Gail.Lazaras@associates.dhs.gov

Process_Step:

Process_Description: Metadata imported.

Source_Used_Citation_Abbreviation: C:\DOCUME~1\MCCART~1\LOCALS~1\Temp\xml88.tmp

Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method: Vector

Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: Entity point

Point_and_Vector_Object_Count: 7672

Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Geographic:

Latitude_Resolution: 0.000001

Longitude_Resolution: 0.000001

Geographic_Coordinate_Units: Decimal degrees

Geodetic_Model:

Horizontal_Datum_Name: North American Datum of 1983

Ellipsoid_Name: Geodetic Reference System 80

Semi-major_Axis: 6378137.000000

Denominator_of_Flattening_Ratio: 298.257222

Vertical_Coordinate_System_Definition:

Altitude_System_Definition:

Altitude_Resolution: 0.000010

Altitude_Encoding_Method:

Explicit elevation coordinate included with horizontal coordinates

Entity_and_Attribute_Information:

Detailed_Description:

Entity_Type:

Entity_Type_Label: Building_pt

Entity_Type_Definition:

Buildings determined to be a danger to public health and safety or a public nuisance

Entity_Type_Definition_Source: City of New Orleans and Parish governments

Attribute:

Attribute_Label: OBJECTID

Attribute_Definition: Internal feature number.

Attribute_Definition_Source: ESRI

Attribute_Domain_Values:

Unrepresentable_Domain:

Sequential unique whole numbers that are automatically generated.

Attribute:

Attribute_Label: SHAPE

Attribute_Definition: Feature geometry.

Attribute_Definition_Source: ESRI

Attribute_Domain_Values:

Unrepresentable_Domain: Coordinates defining the features.

Attribute:

Attribute_Label: GPS_ID

Attribute_Definition: unique alpha-numeric ID

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain: unique alpha-numeric ID, assigned by the individual surveyor

Attribute:

Attribute_Label: Cultural_Resource_ID

Attribute_Definition: globally unique ID for each building represented

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain:

globally unique ID for each building represented, created through a GUID generator

Attribute:

Attribute_Label: Location_ID

Attribute_Definition:

globally unique ID for each location of each building represented

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain:

globally unique ID for each location of each building represented, created by a GUID generator

Attribute:

Attribute_Label: Survey_ID

Attribute_Definition:

globally unique ID for each separate applicant (Parish) or historic district survey represented

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain:

globally unique ID for each separate applicant (Parish) or historic district survey represented, created by a GUID generator

Attribute:

Attribute_Label: Boundary_Type

Attribute_Definition: boundary type for each cultural resource or building

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Footprint Polygon

Enumerated_Domain_Value_Definition: polygon describing a building footprint

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Circumscribed Polygon

Enumerated_Domain_Value_Definition: polygon circumscribing a cultural resource

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Perimeter Polygon

Enumerated_Domain_Value_Definition: polygon describing the perimeter of a cultural resource

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,

National Park Service

*Enumerated_Domain:**Emmerated_Domain_Value:* Buffer Polygon*Emmerated_Domain_Value_Definition:*

polygon describing a buffered point, line or polygon representing a cultural resource

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

*Enumerated_Domain:**Enumerated_Domain_Value:* Boundary Point

Enumerated_Domain_Value_Definition: point representing the boundary of a cultural resource

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

*Enumerated_Domain:**Enumerated_Domain_Value:* Entrance Point

Enumerated_Domain_Value_Definition: point representing the entrance of a structure or resource

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

*Enumerated_Domain:**Enumerated_Domain_Value:* Center Point

Emumerated_Domain_Value_Definition: point representing the center of a cultural resource

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

*Enumerated_Domain:**Enumerated_Domain_Value:* Random Point

Enumerated_Domain_Vahie_Definition: point representing a location on a cultural resource

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

*Emumerated_Domain:**Emumerated_Domain_Value:* Center Line

Enumerated_Domain_Vahie_Definition: line representing the center of a linear cultural resource

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

*Emmerated_Domain:**Emmerated_Domain_Value:* Edge Line

Enumerated_Domain_Value_Definition: line representing the edge of a linear cultural resource

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

*Attribute:**Attribute_Label:* Map_Method*Attribute_Definition:* method used to generate spatial data in the feature class*Attribute_Definition_Source:* Cultural Resource GIS Facility, National Park Service*Attribute_Domain_Values:**Enumerated_Domain:**Enumerated_Domain_Value:* GPS

Enumerated_Domain_Value_Definition: data collected with global positioning

systems

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Trilateration with compass

Enumerated_Domain_Value_Definition: data created by trilateration with compass

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Triangulation with compass

Enumerated_Domain_Value_Definition: data created by triangulation with compass

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Trilateration with transit

Enumerated_Domain_Value_Definition: data created by trilateration with a transit

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: triangulation with transit

Enumerated_Domain_Value_Definition: data created by triangulation with a transit

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Trilateration by pacing

Enumerated_Domain_Value_Definition: data created by trilateration through pacing

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Triangulation by pacing

Enumerated_Domain_Value_Definition: data created by triangulation through pacing

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Address matching

Enumerated_Domain_Value_Definition: data generated through geo-coding or
address matching

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Inscribed on map

Enumerated_Domain_Value_Definition: data created by digitizing off of an existing
map

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Digitized from other source

Enumerated_Domain_Value_Definition:

data created from digitizing off of a source other than a map, such as an aerial
photograph

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

*Emmerated_Domain:**Emmerated_Domain_Value:* unknown*Emmerated_Domain_Value_Definition:* unknown data creation process*Emmerated_Domain_Value_Definition_Source:* Cultural Resource GIS Facility,
National Park Service*Attribute:**Attribute_Label:* Source*Attribute_Definition:* Source of the original data*Attribute_Definition_Source:* Cultural Resource GIS Facility, National Park Service*Attribute_Domain_Values:**Unrepresentable_Domain:*

source of the original data, such as a topographic map, an aerial photograph or GPS

*Attribute:**Attribute_Label:* Source_Date*Attribute_Definition:* original date of the source data*Attribute_Definition_Source:* Cultural Resource GIS Facility, National Park Service*Attribute_Domain_Values:**Unrepresentable_Domain:*original date of the source data; usually the same as the data creation date, except if
source data is historic*Attribute:**Attribute_Label:* Source_Datum*Attribute_Definition:* Datum associated with source data collection method*Attribute_Definition_Source:* Cultural Resource GIS Facility, National Park Service*Attribute_Domain_Values:**Emmerated_Domain:**Emmerated_Domain_Value:* NAD 1983*Emmerated_Domain_Value_Definition:* North American Datum 1983*Emmerated_Domain_Value_Definition_Source:* Cultural Resource GIS Facility,
National Park Service*Emmerated_Domain:**Emmerated_Domain_Value:* NAD 1927*Emmerated_Domain_Value_Definition:* North American Datum 1927*Emmerated_Domain_Value_Definition_Source:* Cultural Resource GIS Facility,
National Park Service*Emmerated_Domain:**Emmerated_Domain_Value:* WGS 1984*Emmerated_Domain_Value_Definition:* World Geodetic System 1984*Emmerated_Domain_Value_Definition_Source:* Cultural Resource GIS Facility,
National Park Service*Emmerated_Domain:**Emmerated_Domain_Value:* WGS 1972*Emmerated_Domain_Value_Definition:* World Geodetic System 1972*Emmerated_Domain_Value_Definition_Source:* Cultural Resource GIS Facility,
National Park Service*Emmerated_Domain:**Emmerated_Domain_Value:* Other GCS*Emmerated_Domain_Value_Definition:* other datum*Emmerated_Domain_Value_Definition_Source:* Cultural Resource GIS Facility,
National Park Service*Attribute:**Attribute_Label:* Photo3

Attribute_Definition: filename of digital photograph

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain: filename of digital photograph taken of building

Attribute:

Attribute_Label: Photo4

Attribute_Definition: filename of digital photograph

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain: filename of digital photograph taken of building

Attribute:

Attribute_Label: Comment

Attribute_Definition: general comment field

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain: open text field for surveyors to make general comments

Attribute:

Attribute_Label: Significan

Attribute_Definition: historic significance of the building

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain:

open text field for the surveyors to describe the historic significance of each building

Attribute:

Attribute_Label: Property_N

Attribute_Definition: property or building name

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain:

open text field for surveyors to write in a historic or current name of the building

Attribute:

Attribute_Label: Street_Num

Attribute_Definition: the street number associated with each building

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain:

open text field for surveyors to enter the street number of the building

Attribute:

Attribute_Label: Source_Coord_Sys

Attribute_Definition: coordinate system of the source data

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Geographic Coordinate System: North America

Enumerated_Domain_Value_Definition: coordinate system of the source data, unprojected data

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Geographic Coordinate System: World

Enumerated_Domain_Value_Definition: coordinate system of the source data, unprojected data

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Projected: UTM

Enumerated_Domain_Value_Definition: coordinate system of the source data,
projected data

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Projected: State Plane

Enumerated_Domain_Value_Definition: coordinate system of the source data,
projected data

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Projected: Albers Equal Area Conic

Enumerated_Domain_Value_Definition: coordinate system of the source data,
projected data

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Projected: North America Equidistant Conic

Enumerated_Domain_Value_Definition: coordinate system of the source data,
projected data

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Projected: Lambert Conformal Conic

Enumerated_Domain_Value_Definition: coordinate system of the source data,
projected data

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Attribute:

Attribute_Label: Source_Accuracy

Attribute_Definition: level of accuracy of the source data

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain:

open text field to describe the level of accuracy for each feature in the feature class

Attribute:

Attribute_Label: Street_Nam

Attribute_Definition: the street name associated with each building

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain:

open text field for surveyors to enter the full street name associated with each building

Attribute:

Attribute_Label: City_Tag

Attribute_Definition:

color or type of tag placed on each building by the city or Parish to indicate level of safety

Attribute_Definition_Source: city of New Orleans and Parish government

Attribute_Domain_Values:

*Emmmerated_Domain:**Emmmerated_Domain_Value:* red*Emmmerated_Domain_Value_Definition:*

the building poses a danger to public health and safety and should be demolished

Emmmerated_Domain_Value_Definition_Source: city of New Orleans and Parish government*Emmmerated_Domain:**Emmmerated_Domain_Value:* yellow*Emmmerated_Domain_Value_Definition:*

the building poses a danger to public health and safety unless significant problems are fixed

Emmmerated_Domain_Value_Definition_Source: city of New Orleans and Parish government*Emmmerated_Domain:**Emmmerated_Domain_Value:* green*Emmmerated_Domain_Value_Definition:* the building poses no danger to public health and safety*Emmmerated_Domain_Value_Definition_Source:* city of New Orleans and Parish government*Emmmerated_Domain:**Emmmerated_Domain_Value:* none*Emmmerated_Domain_Value_Definition:* there is no visible tag placed on the building*Emmmerated_Domain_Value_Definition_Source:* Cultural Resource GIS Facility, National Park Service*Emmmerated_Domain:**Emmmerated_Domain_Value:* removed*Emmmerated_Domain_Value_Definition:*

the visible tag on the building has been removed, and traces are visible

Emmmerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service*Emmmerated_Domain:**Emmmerated_Domain_Value:* changed*Emmmerated_Domain_Value_Definition:* the visible tag has been changed from one color to another*Emmmerated_Domain_Value_Definition_Source:* Cultural Resource GIS Facility, National Park Service*Emmmerated_Domain:**Emmmerated_Domain_Value:* unknown*Emmmerated_Domain_Value_Definition:*

it is not possible for the surveyor to view a tag, or whether there was once a tag on the building

Emmmerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service*Emmmerated_Domain:**Emmmerated_Domain_Value:* other*Emmmerated_Domain_Value_Definition:* the building has some other tag, not listed*Emmmerated_Domain_Value_Definition_Source:* Cultural Resource GIS Facility, National Park Service*Attribute:**Attribute_Label:* Last_Update*Attribute_Definition:* the date of when the feature class was last updated

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain:

the date of when the feature class or individual feature was last updated

Attribute:

Attribute_Label: Restrict_Status

Attribute_Definition: level of data restriction for each feature

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Unrestricted

Enumerated_Domain_Value_Definition: the data is unrestricted and can be shared without constraints

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Restricted: No third party

Enumerated_Domain_Value_Definition:

the data is restricted to the use of those collecting the data, and the party they are collecting the data for

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Restricted: Originating agency concurrence

Enumerated_Domain_Value_Definition:

the data is restricted unless the originating agency agrees to share the data

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Restricted: Affected cultural group concurrence

Enumerated_Domain_Value_Definition:

the data is restricted unless the affected cultural group agrees to share the data

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Restricted: No release

Enumerated_Domain_Value_Definition: the data is restricted and should not be shared

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute:

Attribute_Label: City_Datab

Attribute_Definition:

indicates if the building is on one of the lists provided by the City or Parish government

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: building on city list

Enumerated_Domain_Value_Definition:

indicates that the building has been included on a demolition list by the City of New Orleans or another Parish

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,

National Park Service

*Enumerated_Domain:**Enumerated_Domain_Value:* Building not on city list*Enumerated_Domain_Value_Definition:*

indicates that the building has not been included on a demolition list by the City of New Orleans or another Parish, but still has a red tag

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

*Enumerated_Domain:**Enumerated_Domain_Value:* unknown*Enumerated_Domain_Value_Definition:*

it is not possible for the surveyor to determine if the building is on one of the city or Parish demolition lists

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

*Enumerated_Domain:**Enumerated_Domain_Value:* other*Enumerated_Domain_Value_Definition:*

some other situation exists and the building may be on one list, but not another, or on multiple lists

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

*Attribute:**Attribute_Label:* Constructi*Attribute_Definition:* date or date range of construction for the building*Attribute_Definition_Source:* Cultural Resource GIS Facility, National Park Service*Attribute_Domain_Values:**Unrepresentable_Domain:*

open text for the surveyors to enter a firm construction date if known, or a date range

*Attribute:**Attribute_Label:* Date_Estim*Attribute_Definition:*

indicates if the date of construction is an estimate, or based on firm knowledge of the resource

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service*Attribute_Domain_Values:**Enumerated_Domain:**Enumerated_Domain_Value:* yes

Enumerated_Domain_Value_Definition: indicates that the date of construction is an estimate

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

*Enumerated_Domain:**Enumerated_Domain_Value:* no*Enumerated_Domain_Value_Definition:*

indicates that the date of construction is not an estimate, but based on firm knowledge

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

*Attribute:**Attribute_Label:* Listed_sta*Attribute_Definition:*

indicates if the building has been officially recognized and listed on an historic register

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: National Register

Enumerated_Domain_Value_Definition:

indicates the building has been listed individually on the National Register of Historic Places

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: NR historic district

Enumerated_Domain_Value_Definition:

indicates that the building has been listed on the National Register of Historic Places as part of an historic district

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: NHL

Enumerated_Domain_Value_Definition: indicates that the building is a National Historic Landmark

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Local listing

Enumerated_Domain_Value_Definition:

indicates that the building has been recognized individually with a local historic designation

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: local hist district

Enumerated_Domain_Value_Definition:

indicates that the building has been recognized as part of a local historic district

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: multiple

Enumerated_Domain_Value_Definition:

indicates that the building may be recognized in multiple districts or in multiple ways designated as historic

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: unknown

Enumerated_Domain_Value_Definition:

indicates that the surveyor did not know whether the building was recognized as historic

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: other

Enumerated_Domain_Value_Definition:

indicates that the building is recognized in some other way than is listed

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,

National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: none

Enumerated_Domain_Value_Definition: indicates that the building is not recognized as historic

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,

National Park Service

Attribute:

Attribute_Label: Contribute

Attribute_Definition:

indicates whether a building is contributing to an historic district

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: yes

Enumerated_Domain_Value_Definition:

indicates that the building does contribute to a National or local historic district

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,

National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: no

Enumerated_Domain_Value_Definition:

indicates that the building is a non-contributing element of a National or local historic district

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,

National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: unknown

Enumerated_Domain_Value_Definition:

indicates that the surveyor was unable to determine if the building contributes to a historic district

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,

National Park Service

Attribute:

Attribute_Label: Materials

Attribute_Definition: indicates if the building retains its integrity of materials

Attribute_Definition_Source: National Register of Historic Places

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: yes

Enumerated_Domain_Value_Definition:

indicates that the building does retain the integrity of its materials, as defined by the National Register criteria

Enumerated_Domain_Value_Definition_Source: National Register of Historic Places

Enumerated_Domain:

Enumerated_Domain_Value: no

Enumerated_Domain_Value_Definition:

indicates that the building does not retain the integrity of its materials, as

defined by the National Register criteria

Enumerated_Domain_Value_Definition_Source: National Register of Historic Places

Enumerated_Domain:

Enumerated_Domain_Value: unsure

Enumerated_Domain_Value_Definition:

indicates that the surveyor is unsure if the building retains its integrity of its materials, as defined by the National Register criteria

Enumerated_Domain_Value_Definition_Source: National Register of Historic Places

Attribute:

Attribute_Label: Design_Int

Attribute_Definition: indicates if the building retains its integrity of design

Attribute_Definition_Source: National Register of Historic Places

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: yes

Enumerated_Domain_Value_Definition:

indicates that the building does retain the integrity of its design, as defined by the National Register criteria

Enumerated_Domain_Value_Definition_Source: National Register of Historic Places

Enumerated_Domain:

Enumerated_Domain_Value: no

Enumerated_Domain_Value_Definition:

indicates that the building does not retain the integrity of its design as defined by the National Register criteria

Enumerated_Domain_Value_Definition_Source: National Register of Historic Places

Enumerated_Domain:

Enumerated_Domain_Value: unsure

Enumerated_Domain_Value_Definition:

indicates that the surveyor is unsure if the building retains its integrity of its design, as defined by the National Register criteria

Enumerated_Domain_Value_Definition_Source: National Register of Historic Places

Attribute:

Attribute_Label: Workmanship

Attribute_Definition: indicates if the building retains its integrity of workmanship

Attribute_Definition_Source: National Register of Historic Places

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: yes

Enumerated_Domain_Value_Definition:

indicates that the building does retain the integrity of its workmanship, as defined by the National Register criteria

Enumerated_Domain_Value_Definition_Source: National Register of Historic Places

Enumerated_Domain:

Enumerated_Domain_Value: no

Enumerated_Domain_Value_Definition:

indicates that the building does not retain the integrity of its workmanship as defined by the National Register criteria

Enumerated_Domain_Value_Definition_Source: National Register of Historic Places

Enumerated_Domain:

Enumerated_Domain_Value: unsure

Enumerated_Domain_Value_Definition:

indicates that the surveyor is unsure if the building retains its integrity of

workmanship, as defined by the National Register criteria

Emmnerated_Domain_Value_Definition_Source: National Register of Historic Places

Attribute:

Attribute_Label: Setting_In

Attribute_Definition: indicates if the building retains its integrity of setting

Attribute_Definition_Source: National Register of Historic Places

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: yes

Enumerated_Domain_Value_Definition:

indicates that the building does retain the integrity of its setting, as defined by the National Register criteria

Enumerated_Domain_Value_Definition_Source: National Register of Historic Places

Enumerated_Domain:

Enumerated_Domain_Value: no

Enumerated_Domain_Value_Definition:

indicates that the building does not retain the integrity of its setting as defined by the National Register criteria

Enumerated_Domain_Value_Definition_Source: National Register of Historic Places

Enumerated_Domain:

Enumerated_Domain_Value: unsure

Enumerated_Domain_Value_Definition:

indicates that the surveyor is unsure if the building retains its integrity of setting, as defined by the National Register criteria

Enumerated_Domain_Value_Definition_Source: National Register of Historic Places

Attribute:

Attribute_Label: Location_1

Attribute_Definition: indicates if the building retains its integrity of location

Attribute_Definition_Source: National Register of Historic Places

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: yes

Enumerated_Domain_Value_Definition:

indicates that the building does retain the integrity of its location, as defined by the National Register criteria

Enumerated_Domain_Value_Definition_Source: National Register of Historic Places

Enumerated_Domain:

Enumerated_Domain_Value: no

Enumerated_Domain_Value_Definition:

indicates that the building does not retain the integrity of its location as defined by the National Register criteria

Enumerated_Domain_Value_Definition_Source: National Register of Historic Places

Emmnerated_Domain:

Enumerated_Domain_Value: unsure

Enumerated_Domain_Value_Definition:

indicates that the surveyor is unsure if the building retains its integrity of location, as defined by the National Register criteria

Enumerated_Domain_Value_Definition_Source: National Register of Historic Places

Attribute:

Attribute_Label: Foundatio2

Attribute_Definition:

indicates the current condition of the foundation, as observed by the surveyors

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: intact

Enumerated_Domain_Value_Definition:

indicates that the foundation is intact and without visible damage

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: building on

Enumerated_Domain_Value_Definition:

indicates that the building remains on the foundation, but there is damage to
the foundation

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: building off

Enumerated_Domain_Value_Definition: indicates that the building has come off its
foundation

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: damaged

Enumerated_Domain_Value_Definition: indicates that the foundation is damaged, but
remains in place

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: unknown

Enumerated_Domain_Value_Definition:

indicates that the surveyor can not see or get to the foundation to make an
observation of its condition

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: other

Enumerated_Domain_Value_Definition:

indicates that the building foundation is in some other condition than those
listed

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Attribute:

Attribute_Label: Wall_Condi

Attribute_Definition:

indicates the current condition of the building walls, as observed by the surveyors

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: intact

Enumerated_Domain_Value_Definition: indicates that the building walls are intact
and standing

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,

National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: racked

Enumerated_Domain_Value_Definition: indicates that the building's walls are racked or leaning

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: partial collapse

Enumerated_Domain_Value_Definition:

indicates that the building's walls are partially collapsed or fallen in

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: total collapse

Enumerated_Domain_Value_Definition: indicates that the building's walls have completely collapsed

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: unknown

Enumerated_Domain_Value_Definition:

indicates that the surveyor could not get to or see the walls of the building to determine their condition

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: other

Enumerated_Domain_Value_Definition:

indicates that the walls are in some other condition than those listed

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute:

Attribute_Label: Roof_Condi

Attribute_Definition:

indicates the current condition of the building roof, as observed by the surveyors

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: intact

Enumerated_Domain_Value_Definition: indicates that the building's roof remains intact

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: damaged

Enumerated_Domain_Value_Definition:

indicates that the building's roof remains in place, but is damaged

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: total collapse

Enumerated_Domain_Value_Definition:

indicates that the building's roof has collapsed into the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: missing

Enumerated_Domain_Value_Definition:

indicates that the building's roof is missing or completely removed

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: unknown

Enumerated_Domain_Value_Definition:

indicates that the surveyor could not get to or see the building's roof to
determine its condition

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: other

Enumerated_Domain_Value_Definition:

indicates that the building's roof is in some other condition than those listed

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Attribute:

Attribute_Label: Historic_N

Attribute_Definition:

indicates the name of the established or historic neighborhood the building is located within

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

*Attribute_Domain_Values:**Unrepresentable_Domain:*

open text for surveyors to enter the name of an established or historic neighborhood
associated with the building point

Attribute:

Attribute_Label: Damage_Typ

Attribute_Definition:

indicates the type of damage that the building sustained as a result of hurricanes Katrina and
Rita

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

*Attribute_Domain_Values:**Enumerated_Domain:*

Enumerated_Domain_Value: water

Enumerated_Domain_Value_Definition:

water, in the form of flooding or some other means is the major cause of
damage for the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: fire

Enumerated_Domain_Value_Definition: fire is the major cause of damage for the
building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

*Enumerated_Domain:**Enumerated_Domain_Value:* wind*Enumerated_Domain_Value_Definition:* wind is the major cause of damage for the building*Enumerated_Domain_Value_Definition_Source:* Cultural Resource GIS Facility, National Park Service*Enumerated_Domain:**Enumerated_Domain_Value:* vandalism*Enumerated_Domain_Value_Definition:* vandalism is the major cause of damage for the building*Enumerated_Domain_Value_Definition_Source:* Cultural Resource GIS Facility, National Park Service*Enumerated_Domain:**Enumerated_Domain_Value:* deferred maintenance*Enumerated_Domain_Value_Definition:*

deferred maintenance, or benign neglect, is the major cause of damage for the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service*Enumerated_Domain:**Enumerated_Domain_Value:* multiple*Enumerated_Domain_Value_Definition:*

multiple forms of damage contribute to the overall damage on the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service*Enumerated_Domain:**Enumerated_Domain_Value:* none*Enumerated_Domain_Value_Definition:* there is no visible damage to the building*Enumerated_Domain_Value_Definition_Source:* Cultural Resource GIS Facility, National Park Service*Enumerated_Domain:**Enumerated_Domain_Value:* unknown*Enumerated_Domain_Value_Definition:*

the primary form of damage to the building is not known or identifiable by the surveyor

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service*Enumerated_Domain:**Enumerated_Domain_Value:* other*Enumerated_Domain_Value_Definition:*

some other form of damage, other than those listed, is the major cause of damage to the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service*Attribute:**Attribute_Label:* Current_Use*Attribute_Definition:*

indicates the current or present use of the building, as observed by the surveyors

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service*Attribute_Domain_Values:**Enumerated_Domain:**Enumerated_Domain_Value:* single dwelling

Enumerated_Domain_Value_Definition: the building functions primarily as a single dwelling

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: multiple dwelling

Enumerated_Domain_Value_Definition:

the building functions primarily as a multiple dwelling, such as a duplex

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: other residential

Enumerated_Domain_Value_Definition:

the building functions primarily as some other type of residential structure, such as an apartment complex

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: hotel

Enumerated_Domain_Value_Definition:

the building functions primarily as a hotel or motel, or other temporary housing

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: commercial

Enumerated_Domain_Value_Definition:

the building functions primarily as a commercial establishment, such as a store

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: warehouse

Enumerated_Domain_Value_Definition:

the building functions primarily as a large, open storage facility

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: other storage

Enumerated_Domain_Value_Definition:

the building functions primarily as some other type of storage facility

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: government

Enumerated_Domain_Value_Definition:

the building functions primarily to house Federal, state or local government functions

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: prison

Enumerated_Domain_Value_Definition: the building functions primarily as a prison

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,

National Park Service

Emumerated_Domain:

Emumerated_Domain_Value: hospital

Emumerated_Domain_Value_Definition: the building functions primarily as a hospital facility

Emumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Emumerated_Domain:

Emumerated_Domain_Value: fire station

Emumerated_Domain_Value_Definition: the building functions primarily as a fire station

Emumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Emumerated_Domain:

Emumerated_Domain_Value: education

Emumerated_Domain_Value_Definition:

the building functions primarily as an educational facility, such as a school

Emumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Emumerated_Domain:

Emumerated_Domain_Value: library

Emumerated_Domain_Value_Definition:

the building functions primarily as a public or private library facility

Emumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Emumerated_Domain:

Emumerated_Domain_Value: museum

Emumerated_Domain_Value_Definition:

the building functions primarily as a museum, holding artifacts, materials, documents or records

Emumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Emumerated_Domain:

Emumerated_Domain_Value: religious

Emumerated_Domain_Value_Definition:

the building functions primarily in a religious capacity, such as a church

Emumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Emumerated_Domain:

Emumerated_Domain_Value: recreation

Emumerated_Domain_Value_Definition: the building functions as a recreation facility

Emumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Emumerated_Domain:

Emumerated_Domain_Value: agricultural

Emumerated_Domain_Value_Definition:

the building functions primarily in as an agricultural facility, such as a barn

Emumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Emumerated_Domain:

Emumerated_Domain_Value: animal facility

Emumerated_Domain_Value_Definition: the building functions primarily to house or

process animals

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: industrial

Enumerated_Domain_Value_Definition: the building functions primarily as an
industrial facility

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: utility

Enumerated_Domain_Value_Definition:
the building functions primarily as a facility housing utilities, such as a power
plant

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: military

Enumerated_Domain_Value_Definition:
the building functions primarily for the use of military purposes

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: transportation

Enumerated_Domain_Value_Definition:
the building functions primarily as a transportation facility, such as a train
station

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: vacant

Enumerated_Domain_Value_Definition: the building is currently vacant

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: multiple

Enumerated_Domain_Value_Definition: the building has several primary uses, as
observed

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: unknown

Enumerated_Domain_Value_Definition: surveyors could not determine the current
use of the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: other

Enumerated_Domain_Value_Definition:
the building primarily functions as something other than those listed

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

*Attribute:**Attribute_Label:* Less_than_*Attribute_Definition:* indicates that the building is less than 45 years old*Attribute_Definition_Source:* Cultural Resource GIS Facility, National Park Service*Attribute_Domain_Values:**Enumerated_Domain:**Enumerated_Domain_Value:* yes*Enumerated_Domain_Value_Definition:* indicates that the building is more than 45 years*Enumerated_Domain_Value_Definition_Source:* Cultural Resource GIS Facility, National Park Service*Enumerated_Domain:**Enumerated_Domain_Value:* no*Enumerated_Domain_Value_Definition:* indicates that the building is not more than 45 years old*Enumerated_Domain_Value_Definition_Source:* Cultural Resource GIS Facility, National Park Service*Enumerated_Domain:**Enumerated_Domain_Value:* unsure*Enumerated_Domain_Value_Definition:* indicates that the surveyors are unsure of whether the building is older than 45 years*Enumerated_Domain_Value_Definition_Source:* Cultural Resource GIS Facility, National Park Service*Attribute:**Attribute_Label:* Listed_Sta*Attribute_Definition:*

indicates if the building has been officially recognized and listed on an historic register

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service*Attribute_Domain_Values:**Enumerated_Domain:**Enumerated_Domain_Value:* National Register*Enumerated_Domain_Value_Definition:*

indicates the building has been listed individually on the National Register of Historic Places

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service*Enumerated_Domain:**Enumerated_Domain_Value:* NR historic district*Enumerated_Domain_Value_Definition:*

indicates that the building has been listed on the National Register of Historic Places as part of an historic district

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service*Enumerated_Domain:**Enumerated_Domain_Value:* NHL*Enumerated_Domain_Value_Definition:* indicates that the building is a National Historic Landmark*Enumerated_Domain_Value_Definition_Source:* Cultural Resource GIS Facility, National Park Service*Enumerated_Domain:**Enumerated_Domain_Value:* local listing

Enumerated_Domain_Value_Definition:

indicates that the building has been recognized individually with a local historic designation

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: local hist district

Enumerated_Domain_Value_Definition:

indicates that the building has been recognized as part of a local historic district

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: multiple

Enumerated_Domain_Value_Definition:

indicates that the building may be recognized in multiple districts or in multiple ways designated as historic

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: unknown

Enumerated_Domain_Value_Definition:

indicates that the surveyor did not know whether the building was recognized as historic

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: other

Enumerated_Domain_Value_Definition:

indicates that the building is recognized in some other way than is listed

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: none

Enumerated_Domain_Value_Definition: indicates that the building is not recognized as historic

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute:

Attribute_Label: Style

Attribute_Definition: indicates the primary architectural style of the building

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: French Colonial

Enumerated_Domain_Value_Definition:

indicates that the primary architectural style of the building is French Colonial

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: Federal

Enumerated_Domain_Value_Definition:

indicates that the primary architectural style of the building is Federal

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: Greek Revival

Enumerated_Domain_Value_Definition:

indicates that the primary architectural style of the building is Greek Revival

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: Beaux Arts

Enumerated_Domain_Value_Definition:

indicates that the primary architectural style of the building is Beaux Arts

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: Colonial Revival

Enumerated_Domain_Value_Definition:

indicates that the primary architectural style of the building is Colonial Revival

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: Queen Anne Revival

Enumerated_Domain_Value_Definition:

indicates that the primary architectural style of the building is Queen Anne Revival

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: Gothic Revival

Enumerated_Domain_Value_Definition:

indicates that the primary architectural style of the building is Gothic Revival

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: Eastlake

Enumerated_Domain_Value_Definition:

indicates that the primary architectural style of the building is Eastlake

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: Italianate

Enumerated_Domain_Value_Definition:

indicates that the primary architectural style of the building is Italianate

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: Craftsman

Enumerated_Domain_Value_Definition:

indicates that the primary architectural style of the building is Craftsman

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

*Enumerated_Domain:**Enumerated_Domain_Value:* Creole*Enumerated_Domain_Value_Definition:*

indicates that the primary architectural style of the building is Creole

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office*Enumerated_Domain:**Enumerated_Domain_Value:* Art Deco*Enumerated_Domain_Value_Definition:*

indicates that the primary architectural style of the building is Art Deco

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office*Enumerated_Domain:**Enumerated_Domain_Value:* 20th Cen. Revival*Enumerated_Domain_Value_Definition:*

indicates that the primary architectural style of the building is 20th Cen. Revival

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office*Enumerated_Domain:**Enumerated_Domain_Value:* unknown*Enumerated_Domain_Value_Definition:*

indicates that the surveyor can not determine the primary architectural style of the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service*Enumerated_Domain:**Enumerated_Domain_Value:* other*Enumerated_Domain_Value_Definition:*

the primary architectural style of the building is something other than what is listed

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service*Attribute:**Attribute_Label:* Building_T*Attribute_Definition:*

indicates the primary building type of the structure, as observed by the surveyor

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service*Attribute_Domain_Values:**Enumerated_Domain:**Enumerated_Domain_Value:* shotgun*Enumerated_Domain_Value_Definition:*

indicates that the primary building type of the structure is a shotgun

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office*Enumerated_Domain:**Enumerated_Domain_Value:* double shotgun*Enumerated_Domain_Value_Definition:*

indicates that the primary building type of the structure is a double shotgun

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office*Enumerated_Domain:*

Enumerated_Domain_Value: camelback

Enumerated_Domain_Value_Definition:

indicates that the primary building type of the structure is a camelback

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: creole cottage

Enumerated_Domain_Value_Definition:

indicates that the primary building type of the structure is a creole cottage

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: central hall

Enumerated_Domain_Value_Definition:

indicates that the primary building type of the structure is a central hall

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: French colonial

Enumerated_Domain_Value_Definition:

indicates that the primary building type of the structure is a French colonial

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: Spanish colonial

Enumerated_Domain_Value_Definition:

indicates that the primary building type of the structure is a Spanish colonial

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: side-hall

Enumerated_Domain_Value_Definition:

indicates that the primary building type of the structure is a side-hall

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: raised basement

Enumerated_Domain_Value_Definition:

indicates that the primary building type of the structure is a raised basement

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: American townhouse

Enumerated_Domain_Value_Definition:

indicates that the primary building type of the structure is an American townhouse

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: Creole townhouse

Enumerated_Domain_Value_Definition:

indicates that the primary building type of the structure is a Creole townhouse

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: bungalow

Enumerated_Domain_Value_Definition:

indicates that the primary building type of the structure is a bungalow

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: plantation house

Enumerated_Domain_Value_Definition:

indicates that the primary building type of the structure is a plantation house

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: minimal traditional

Enumerated_Domain_Value_Definition:

indicates that the primary building type of the structure is a minimal traditional type

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: ranch

Enumerated_Domain_Value_Definition:

indicates that the primary building type of the structure is a ranch

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: commercial

Enumerated_Domain_Value_Definition:

indicates that the primary building type of the structure is commercial

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: garage

Enumerated_Domain_Value_Definition:

indicates that the primary building type of the structure is a garage

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: warehouse

Enumerated_Domain_Value_Definition:

indicates that the primary building type of the structure is a warehouse

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: storage

Enumerated_Domain_Value_Definition:

indicates that the primary building type of the structure is for storage

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Emmerated_Domain_Value: dependency

Emmerated_Domain_Value_Definition:

indicates that the primary building type of the structure is a dependency to another building

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: skyscraper

Emmerated_Domain_Value_Definition:

indicates that the primary building type of the structure is a skyscraper

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: unknown

Emmerated_Domain_Value_Definition:

indicates that the surveyor is unable to determine the building type

Emmerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Emmerated_Domain:

Emmerated_Domain_Value: other

Emmerated_Domain_Value_Definition:

indicates that the primary building type is something other than those listed

Emmerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute:

Attribute_Label: Height

Attribute_Definition: indicates the height of the building in stories

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Emmerated_Domain:

Emmerated_Domain_Value: 1

Emmerated_Domain_Value_Definition: indicates that the building is one story tall

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: 1.5

Emmerated_Domain_Value_Definition: indicates that the building is one and a half stories tall

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: 2

Emmerated_Domain_Value_Definition: indicates that the building is two stories tall

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: 2.5

Emmerated_Domain_Value_Definition: indicates that the building is two and a half stories tall

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Enumerated_Domain_Value: 3

Enumerated_Domain_Value_Definition: indicates that the building is three stories tall

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: 4

Enumerated_Domain_Value_Definition: indicates that the building is four stories tall

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: 5-10

Enumerated_Domain_Value_Definition: indicates that the building is five to ten stories tall

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: 10-20

Enumerated_Domain_Value_Definition: indicates that the building is ten to twenty stories tall

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: 20+

Enumerated_Domain_Value_Definition: indicates that the building is over twenty stories tall

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: other

Enumerated_Domain_Value_Definition:

indicates that the building height is something other than those listed

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: unknown

Enumerated_Domain_Value_Definition:

indicates that the surveyor is unable to determine the height of the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute:

Attribute_Label: Historic_C

Attribute_Definition:

indicates the historic context within which the building is significant, based on National Register criteria, as observed by the surveyors

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain:

open text for surveyors to enter a statement referencing the historic context within which the building is significant for

Attribute:

Attribute_Label: Foundation

Attribute_Definition:

indicates the type of foundation associated with the building, as observed by the surveyors

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Emmerated_Domain:

Emmerated_Domain_Value: post in ground

Emmerated_Domain_Value_Definition: indicates that the building sits on a post in ground foundation

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: sill on ground

Emmerated_Domain_Value_Definition: indicates that the building sits on a sill on ground foundation

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: wooden pier

Emmerated_Domain_Value_Definition: indicates that the building sits on a wooden pier foundation

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: brick pier

Emmerated_Domain_Value_Definition: indicates that the building sits on a brick pier foundation

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: stone pier

Emmerated_Domain_Value_Definition: indicates that the building sits on a stone pier foundation

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: concrete pier

Emmerated_Domain_Value_Definition: indicates that the building sits on a concrete pier foundation

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: concrete block

Emmerated_Domain_Value_Definition: indicates that the building sits on a concrete block foundation

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: continuous brick

Emmerated_Domain_Value_Definition:

indicates that the building sits on a continuous brick foundation

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Enumerated_Domain_Value: continuous stone

Enumerated_Domain_Value_Definition:

indicates that the building sits on a continuous stone foundation

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: continuous concrete

Enumerated_Domain_Value_Definition:

indicates that the building sits on a continuous concrete foundation

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: concrete slab

Enumerated_Domain_Value_Definition: indicates that the building sits on a concrete slab foundation

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: concrete pylon

Enumerated_Domain_Value_Definition: indicates that the building sits on a concrete pylon foundation

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: multiple

Enumerated_Domain_Value_Definition:

indicates that the building sits on a foundation composed of multiple types

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: unknown

Enumerated_Domain_Value_Definition:

indicates that the surveyor could not determine the type of foundation associated with the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: other

Enumerated_Domain_Value_Definition:

indicates that the building sits on a foundation other than those listed

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute:

Attribute_Label: Roof_Type

Attribute_Definition:

indicates the type or style of roof construction on the building

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: front gable

Enumerated_Domain_Value_Definition:

indicates that the building is covered with a front gable roof type

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: side gable

Emmerated_Domain_Value_Definition:

indicates that the building is covered with a side gable roof type

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: parapet gable

Emmerated_Domain_Value_Definition:

indicates that the building is covered with a parapet gable roof type

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: clipped gable

Emmerated_Domain_Value_Definition:

indicates that the building is covered with a clipped gable roof type

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: cross gable

Emmerated_Domain_Value_Definition:

indicates that the building is covered with a cross gable roof type

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: gambrel

Emmerated_Domain_Value_Definition: indicates that the building is covered with a gambrel roof type

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: hip

Emmerated_Domain_Value_Definition: indicates that the building is covered with a hip roof type

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: gable on hip

Emmerated_Domain_Value_Definition:

indicates that the building is covered with a gable on hip roof type

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: pyramidal

Emmerated_Domain_Value_Definition:

indicates that the building is covered with a pyramidal roof type

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: mansard

Enumerated_Domain_Value_Definition: indicates that the building is covered with a mansard roof type

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: flat

Enumerated_Domain_Value_Definition: indicates that the building is covered with a flat roof type

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: shed

Enumerated_Domain_Value_Definition: indicates that the building is covered with a shed roof type

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: multiple

Enumerated_Domain_Value_Definition: indicates that the building is covered with multiple roof types

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: unknown

Enumerated_Domain_Value_Definition:

indicates that the surveyor was unable to determine what type of roof is associated with the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: other

Enumerated_Domain_Value_Definition:

indicates that the building is covered with some other type of roof than those listed

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute:

Attribute_Label: Roof_Mate

Attribute_Definition:

indicates the primary materials covering the roof, as observed by the surveyors

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: wood shingle

Enumerated_Domain_Value_Definition: indicates that the roof is primarily covered by wood shingles

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: slate

Enumerated_Domain_Value_Definition: indicates that the roof is primarily covered by slate

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: asphalt shingle

Enumerated_Domain_Value_Definition:

indicates that the roof is primarily covered by asphalt shingles

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: asbestos shingle

Enumerated_Domain_Value_Definition:

indicates that the roof is primarily covered by asbestos shingles

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: metal

Enumerated_Domain_Value_Definition: indicates that the roof is primarily covered by metal

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: tile

Enumerated_Domain_Value_Definition: indicates that the roof is primarily covered by tile

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: multiple

Enumerated_Domain_Value_Definition: indicates that the roof is covered in multiple materials

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: unknown

Enumerated_Domain_Value_Definition:

indicates that the surveyors were unable to determine the primary materials covering the roof

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: other

Enumerated_Domain_Value_Definition:

indicates that the roof is primarily covered with some other material than those listed

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute:

Attribute_Label: Footprint

Attribute_Definition:

indicates the general building footprint or building plan of the building, as observed by the surveyors

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

*Attribute_Domain_Values:**Enumerated_Domain:**Enumerated_Domain_Value:* square*Enumerated_Domain_Value_Definition:*

indicates that the general building footprint of the building is square

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office*Enumerated_Domain:**Enumerated_Domain_Value:* rectangular*Enumerated_Domain_Value_Definition:*

indicates that the general building footprint of the building is rectangular

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office*Enumerated_Domain:**Enumerated_Domain_Value:* L-shaped*Enumerated_Domain_Value_Definition:*

indicates that the general building footprint of the building is L-shaped

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office*Enumerated_Domain:**Enumerated_Domain_Value:* T-shaped*Enumerated_Domain_Value_Definition:*

indicates that the general building footprint of the building is T-shaped

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office*Enumerated_Domain:**Enumerated_Domain_Value:* U-shaped*Enumerated_Domain_Value_Definition:*

indicates that the general building footprint of the building is U-shaped

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office*Enumerated_Domain:**Enumerated_Domain_Value:* H-shaped*Enumerated_Domain_Value_Definition:*

indicates that the general building footprint of the building is H-shaped

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office*Enumerated_Domain:**Enumerated_Domain_Value:* cross-gabled*Enumerated_Domain_Value_Definition:*

indicates that the general building footprint of the building is cross-gabled

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office*Enumerated_Domain:**Enumerated_Domain_Value:* irregular*Enumerated_Domain_Value_Definition:*

indicates that the general building footprint of the building is irregular

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office*Enumerated_Domain:**Enumerated_Domain_Value:* unknown*Enumerated_Domain_Value_Definition:*

indicates that the surveyors were unable to determine the general building footprint or plan of the building

Emumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Emumerated_Domain:

Emumerated_Domain_Value: other

Emumerated_Domain_Value_Definition:

indicates that the general building footprint of the building is something other than those listed

Emumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute:

Attribute_Label: Chimneys

Attribute_Definition:

indicates the location or placement of chimneys on the building, as observed by surveyors

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Emumerated_Domain:

Emumerated_Domain_Value: gable end exterior

Emumerated_Domain_Value_Definition:

indicates that the primary chimney or chimneys are located at the gable end exterior location

Emumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emumerated_Domain:

Emumerated_Domain_Value: gable end interior

Emumerated_Domain_Value_Definition:

indicates that the primary chimney or chimneys are located at the gable end interior location

Emumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emumerated_Domain:

Emumerated_Domain_Value: lateral exterior

Emumerated_Domain_Value_Definition:

indicates that the primary chimney or chimneys are located at the lateral exterior location

Emumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emumerated_Domain:

Emumerated_Domain_Value: ridge center

Emumerated_Domain_Value_Definition:

indicates that the primary chimney or chimneys are located at the ridge center location

Emumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emumerated_Domain:

Emumerated_Domain_Value: slope center

Emumerated_Domain_Value_Definition:

indicates that the primary chimney or chimneys are located at the slope center location

Emumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

*Enumerated_Domain:**Enumerated_Domain_Value:* slope, off-center*Enumerated_Domain_Value_Definition:*

indicates that the primary chimney or chimneys are located at the slope off-center location

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office*Enumerated_Domain:**Enumerated_Domain_Value:* ridge, off-center*Enumerated_Domain_Value_Definition:*

indicates that the primary chimney or chimneys are located at the ridge off-center location

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office*Enumerated_Domain:**Enumerated_Domain_Value:* removed*Enumerated_Domain_Value_Definition:*

indicates that the chimney or chimneys have been removed, as observed by the surveyors

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service*Enumerated_Domain:**Enumerated_Domain_Value:* none*Enumerated_Domain_Value_Definition:* indicates that the building does not have any chimneys*Enumerated_Domain_Value_Definition_Source:* Louisiana State Historic Preservation Office*Enumerated_Domain:**Enumerated_Domain_Value:* multiple*Enumerated_Domain_Value_Definition:*

indicates that the building has several chimneys in multiple locations

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service*Enumerated_Domain:**Enumerated_Domain_Value:* unknown*Enumerated_Domain_Value_Definition:*

indicates that the surveyors were unable to determine the placement or presence of chimneys

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service*Enumerated_Domain:**Enumerated_Domain_Value:* other*Enumerated_Domain_Value_Definition:*

indicates that the chimney or chimneys are placed at some other location than those listed

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service*Attribute:**Attribute_Label:* Porches*Attribute_Definition:* indicates the primary type of porch observed by surveyors*Attribute_Definition_Source:* Cultural Resource GIS Facility, National Park Service*Attribute_Domain_Values:*

*Emmnerated_Domain:**Emmnerated_Domain_Value:* stoop*Emmnerated_Domain_Value_Definition:* indicates that the primary porch on the building is a stoop*Emmnerated_Domain_Value_Definition_Source:* Louisiana State Historic Preservation Office*Emmnerated_Domain:**Emmnerated_Domain_Value:* gallery*Emmnerated_Domain_Value_Definition:* indicates that the primary porch on the building is a gallery*Emmnerated_Domain_Value_Definition_Source:* Louisiana State Historic Preservation Office*Emmnerated_Domain:**Emmnerated_Domain_Value:* portico*Emmnerated_Domain_Value_Definition:* indicates that the primary porch on the building is a portico*Emmnerated_Domain_Value_Definition_Source:* Louisiana State Historic Preservation Office*Emmnerated_Domain:**Emmnerated_Domain_Value:* balcony*Emmnerated_Domain_Value_Definition:* indicates that the primary porch on the building is a balcony*Emmnerated_Domain_Value_Definition_Source:* Louisiana State Historic Preservation Office*Emmnerated_Domain:**Emmnerated_Domain_Value:* porte-cochere*Emmnerated_Domain_Value_Definition:*

indicates that the primary porch on the building is a porte-cochere

Emmnerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office*Emmnerated_Domain:**Emmnerated_Domain_Value:* full width*Emmnerated_Domain_Value_Definition:*

indicates that the primary porch on the building is a full width, covering the entire width of the main elevation

Emmnerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office*Emmnerated_Domain:**Emmnerated_Domain_Value:* partial width*Emmnerated_Domain_Value_Definition:*

indicates that the primary poreh on the building is a partial width, partially covering the entire width of the main elevation

Emmnerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office*Emmnerated_Domain:**Emmnerated_Domain_Value:* wrap*Emmnerated_Domain_Value_Definition:*

indicates that the primary poreh on the building is a wrap, wrapping around two or more elevations of the building

Emmnerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office*Emmnerated_Domain:*

Enumerated_Domain_Value: none

Enumerated_Domain_Value_Definition: indicates that the building does not have a porch of any kind

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: unknown

Enumerated_Domain_Value_Definition:

indicates that the surveyors were unable to determine the primary type of porch on the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: other

Enumerated_Domain_Value_Definition:

indicates that the primary porch type on the building is something other than those listed

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute:

Attribute_Label: Const_Mate

Attribute_Definition:

indicates the primary structural material of the building, as observed by surveyors

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: log

Enumerated_Domain_Value_Definition: indicates that the building is primarily constructed of log

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: frame

Enumerated_Domain_Value_Definition: indicates that the building is primarily constructed of frame

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: timber frame

Enumerated_Domain_Value_Definition:

indicates that the building is primarily constructed of timber frame

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: balloon frame

Enumerated_Domain_Value_Definition:

indicates that the building is primarily constructed of balloon frame

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: barge-board

Enumerated_Domain_Value_Definition:

- indicates that the building is primarily constructed of barge-board
Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office
- Enumerated_Domain*:
Enumerated_Domain_Value: stucco
Enumerated_Domain_Value_Definition: indicates that the building is primarily constructed of stucco
Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office
- Enumerated_Domain*:
Enumerated_Domain_Value: brick
Enumerated_Domain_Value_Definition: indicates that the building is primarily constructed of brick
Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office
- Enumerated_Domain*:
Enumerated_Domain_Value: stone
Enumerated_Domain_Value_Definition: indicates that the building is primarily constructed of stone
Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office
- Enumerated_Domain*:
Enumerated_Domain_Value: concrete block
Enumerated_Domain_Value_Definition:
indicates that the building is primarily constructed of concrete block
Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office
- Enumerated_Domain*:
Enumerated_Domain_Value: poured concrete
Enumerated_Domain_Value_Definition:
indicates that the building is primarily constructed of poured concrete
Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office
- Enumerated_Domain*:
Enumerated_Domain_Value: reinforced concrete
Enumerated_Domain_Value_Definition:
indicates that the building is primarily constructed of reinforced concrete
Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office
- Enumerated_Domain*:
Enumerated_Domain_Value: steel frame
Enumerated_Domain_Value_Definition:
indicates that the building is primarily constructed of steel frame
Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office
- Enumerated_Domain*:
Enumerated_Domain_Value: metal
Enumerated_Domain_Value_Definition: indicates that the building is primarily constructed of metal
Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office
- Enumerated_Domain*:

Enumerated_Domain_Value: multiple

Enumerated_Domain_Value_Definition:

indicates that the building is constructed with multiple materials

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: unknown

Enumerated_Domain_Value_Definition:

indicates that surveyors were unable to determine the primary building material

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: other

Enumerated_Domain_Value_Definition:

indicates that the primary construction materials of the building consist of
something other than those listed

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Attribute:

Attribute_Label: Cladding

Attribute_Definition:

indicates the primary exterior cladding of the building, as observed by the surveyors

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: wood

Enumerated_Domain_Value_Definition:

indicates that the primary exterior cladding material on the building is wood

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation
Office

Enumerated_Domain:

Enumerated_Domain_Value: concrete

Enumerated_Domain_Value_Definition:

indicates that the primary exterior cladding material on the building is concrete

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation
Office

Enumerated_Domain:

Enumerated_Domain_Value: masonry

Enumerated_Domain_Value_Definition:

indicates that the primary exterior cladding material on the building is masonry

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation
Office

Enumerated_Domain:

Enumerated_Domain_Value: stucco

Enumerated_Domain_Value_Definition:

indicates that the primary exterior cladding material on the building is stucco

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation
Office

Enumerated_Domain:

Enumerated_Domain_Value: shingle

Enumerated_Domain_Value_Definition:

indicates that the primary exterior cladding material on the building is shingle

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: vinyl

Emmerated_Domain_Value_Definition:

indicates that the primary exterior cladding material on the building is vinyl

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: metal

Emmerated_Domain_Value_Definition:

indicates that the primary exterior cladding material on the building is metal

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: multiple

Emmerated_Domain_Value_Definition:

indicates that surveyors observed multiple exterior cladding types

Emmerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Emmerated_Domain:

Emmerated_Domain_Value: unknown

Emmerated_Domain_Value_Definition:

indicates that surveyors were unable to determine the primary exterior cladding type on the building

Emmerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Emmerated_Domain:

Emmerated_Domain_Value: other

Emmerated_Domain_Value_Definition:

indicates that the primary exterior cladding materials are something other than those listed

Emmerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute:

Attribute_Label: Chimney_Ma

Attribute_Definition:

indicates the primary construction materials of the chimney or chimneys associated with the building

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Emmerated_Domain:

Emmerated_Domain_Value: brick

Emmerated_Domain_Value_Definition:

indicates that the primary construction material of the chimney or chimneys is brick

Emmerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Emmerated_Domain:

Emmerated_Domain_Value: stone

Emmerated_Domain_Value_Definition:

indicates that the primary construction material of the chimney or chimneys is

stone

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: concrete

Enumerated_Domain_Value_Definition:

indicates that the primary construction material of the chimney or chimneys is concrete

Enumerated_Domain_Value_Definition_Source: Louisiana State Historic Preservation Office

Enumerated_Domain:

Enumerated_Domain_Value: multiple

Enumerated_Domain_Value_Definition:

indicates that chimneys associated with the building are constructed from multiple materials

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: unknown

Enumerated_Domain_Value_Definition:

indicates that surveyors were not able to determine the primary construction materials of the chimney or chimneys associated with the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: none

Enumerated_Domain_Value_Definition:

indicates that there are no chimneys associated with the building, and therefore no primary construction material

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: other

Enumerated_Domain_Value_Definition:

indicates that the primary construction material of the chimney or chimneys is something other than those listed

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute:

Attribute_Label: Eligibilit

Attribute_Definition:

indicates the National Register eligibility recommendation, made by the field surveyors

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Nat. Reg. eligible

Enumerated_Domain_Value_Definition:

indicates that the surveyor feels that the building is eligible for the National Register of Historic Places

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: not Nat.Reg.eligible

Enumerated_Domain_Value_Definition:

indicates that the surveyor feels that the building is not eligible for the
National Register of Historic Places

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: unknown

Enumerated_Domain_Value_Definition:

indicates that the surveyor is unsure if building is eligible for the National
Register of Historic Places

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: other

Enumerated_Domain_Value_Definition:

indicates that surveyor chooses something other than the options listed to
describe the National Register eligibility of the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Attribute:

Attribute_Label: SHPO_Reviewer

Attribute_Definition:

indicates the name of the Section 106 reviewer designated by the Louisiana SHPO to
determine National Register eligibility

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain:

open text to enter the name of the Section 106 reviewer designated by the Louisiana
SHPO to make National Register eligibility determinations

Attribute:

Attribute_Label: FEMA_Reviewer

Attribute_Definition:

indicates the name of the Section 106 reviewer designated by FEMA to determine National
Register eligibility

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain:

open text to enter the name of the Section 106 reviewer designated by FEMA to make
National Register eligibility determinations

Attribute:

Attribute_Label: Concur_Date

Attribute_Definition:

indicates the date on which FEMA and the Louisiana SHPO designees concurred on the
eligibility of each structure

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain:

open text to enter the date that the Section 106 reviewers designated by FEMA and the
Louisiana SHPO concurred on the National Register eligibility determination of the
building

Attribute:

Attribute_Label: Review_Comment

Attribute_Definition:

open text field for SHPO and FEMA Section 106 reviewers to make comments about the building, or their process

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain:

open text field for the Louisiana SHPO and FEMA Section 106 reviewers to make comments about the building, or their process

Attribute:

Attribute_Label: Point_Reco

Attribute_Definition:

indicates the location at which the surveyors collected the GPS point relative to the building itself

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: north corner

Enumerated_Domain_Value_Definition:

indicates that the surveyor collected a GPS point on the north corner of the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: south corner

Enumerated_Domain_Value_Definition:

indicates that the surveyor collected a GPS point on the south corner of the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: east corner

Enumerated_Domain_Value_Definition:

indicates that the surveyor collected a GPS point on the east corner of the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: west corner

Enumerated_Domain_Value_Definition:

indicates that the surveyor collected a GPS point on the west corner of the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: northeast corner

Enumerated_Domain_Value_Definition:

indicates that the surveyor collected a GPS point on the northeast corner of the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: southeast corner

Enumerated_Domain_Value_Definition:

indicates that the surveyor collected a GPS point on the southeast corner of the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: southwest corner

Enumerated_Domain_Value_Definition:

indicates that the surveyor collected a GPS point on the southwest corner of the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: northwest corner

Enumerated_Domain_Value_Definition:

indicates that the surveyor collected a GPS point on the northwest corner of the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: center

Enumerated_Domain_Value_Definition:

indicates that the surveyor collected a GPS point in the center of the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: entrance

Enumerated_Domain_Value_Definition:

indicates that the surveyor collected a GPS point at the entrance of the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: other

Enumerated_Domain_Value_Definition:

indicates that the surveyor collected a GPS point at some other point on the building, other than those listed

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,
National Park Service

Attribute:

Attribute_Label: FEMA_Deter

Attribute_Definition:

indicates the final decision of the FEMA Section 106 reviewer describing the National Register eligibility of each building

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Eligible

Enumerated_Domain_Value_Definition:

indicates that the building is eligible for the National Register, based on the decision of the designated FEMA Section 106 reviewer

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility,

National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: Not eligible

Enumerated_Domain_Value_Definition:

indicates that the building is not eligible for the National Register, based on the decision of the designated FEMA Section 106 reviewer

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: not applicable

Enumerated_Domain_Value_Definition:

indicates that a determination of National Register eligibility is not needed, based on the decision of the designated FEMA Section 106 reviewer

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: other

Enumerated_Domain_Value_Definition:

indicates that some other decision, other than those listed, has been made by the designated FEMA Section 106 reviewer for the building

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute:

Attribute_Label: SHPO_Concu

Attribute_Definition:

indicates if the surveyor knows that the FEMA reviewer and the SHPO reviewer have already established concurrence on the eligibility of each building

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: agree

Enumerated_Domain_Value_Definition:

indicates that the SHPO agrees with the FEMA recommendation on National Register eligibility

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: disagree

Enumerated_Domain_Value_Definition:

indicates that the SHPO does not agree with the FEMA recommendation on National Register eligibility

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: need more info

Enumerated_Domain_Value_Definition:

indicates that more information is needed to determine if the SHPO agrees with the FEMA recommendation for National Register eligibility

Enumerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Enumerated_Domain:

Enumerated_Domain_Value: other

Emmerated_Domain_Value_Definition:

indicates that some other decision has been made regarding SHPO and FEMA concurrence, other than those listed

Emmerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute:

Attribute_Label: Photo1

Attribute_Definition: filename of digital photograph

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain: filename of digital photograph taken of building

Attribute:

Attribute_Label: Collapsed_PA

Attribute_Definition:

indicates if the building meets the criteria set out in the Programmatic Agreement established between the Louisiana SHPO and FEMA, defining buildings that have fully collapsed

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Emmerated_Domain:

Emmerated_Domain_Value: collapsed

Emmerated_Domain_Value_Definition:

indicates that the building meets the criteria set out in the Programmatic Agreement between the Louisiana SHPO and FEMA defining a building which is totally collapsed

Emmerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Emmerated_Domain:

Emmerated_Domain_Value: not collapsed

Emmerated_Domain_Value_Definition:

indicates that the building does not meet the criteria set out in the Programmatic Agreement between the Louisiana SHPO and FEMA defining a building which is totally collapsed

Emmerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Emmerated_Domain:

Emmerated_Domain_Value: not applicable

Emmerated_Domain_Value_Definition:

indicates that it is not necessary to assess whether the building meets the criteria set out in the Programmatic Agreement between the Louisiana SHPO and FEMA regarding collapsed buildings

Emmerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Emmerated_Domain:

Emmerated_Domain_Value: other

Emmerated_Domain_Value_Definition:

indicates that some other decision has been made regarding the condition of the building, other than those listed

Emmerated_Domain_Value_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute:

Attribute_Label: Pub_Comment_Rec

Attribute_Definition:

indicates whether a public comment regarding the National Register eligibility of a property has been received by FEMA

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain:

open text to indicate if any public comments regarding the building or property and its eligibility status have been received by FEMA

Attribute:

Attribute_Label: Surveyor_N

Attribute_Definition:

indicates the name of the surveyor who collected the GPS and attribute data for the building

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain:

open text field to enter the name of the surveyor that collected the GPS data and filled in all attribute values in the field

Attribute:

Attribute_Label: Photograph

Attribute_Definition:

indicates the name of the surveyor who took the digital photographs of the building

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain:

open text field to enter the name of the surveyor that took the photographs of each building in the field

Attribute:

Attribute_Label: Photo1path

Attribute_Definition:

full path on the FEMA network to the first photograph of each building

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain:

open text field to enter the full path on the FEMA network to the first photograph taken of each building, allowing for photo hyperlinks

Attribute:

Attribute_Label: Photo2path

Attribute_Definition:

full path on the FEMA network to the second photograph of each building

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain:

open text field to enter the full path on the FEMA network to the second photograph taken of each building, allowing for photo hyperlinks

Attribute:

Attribute_Label: Photo3path

Attribute_Definition:

full path on the FEMA network to the third photograph of each building

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service

Attribute_Domain_Values:

Unrepresentable_Domain:

open text field to enter the full path on the FEMA network to the third photograph taken of each building, allowing for photo hyperlinks

*Attribute:**Attribute_Label:* Photo4path*Attribute_Definition:*

full path on the FEMA network to the fourth photograph of each building

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service*Attribute_Domain_Values:**Unrepresentable_Domain:*

open text field to enter the full path on the FEMA network to the fourth photograph taken of each building, allowing for photo hyperlinks

*Attribute:**Attribute_Label:* Photofile*Attribute_Definition:*

indicates the file identification each digital photo is stored in, on the FEMA network

Attribute_Definition_Source: Cultural Resource GIS Facility, National Park Service*Attribute_Domain_Values:**Unrepresentable_Domain:*

open text field to enter the filename and date associated with each photofile on the FEMA network

*Attribute:**Attribute_Label:* Corr_Type*Attribute_Definition:* type of correction applied to each point collected with GPS*Attribute_Definition_Source:* Pathfinder Office 3.1 software*Attribute_Domain_Values:**Emmmerated_Domain:**Emmmerated_Domain_Value:* real-time code*Emmmerated_Domain_Value_Definition:* indicates a point code corrected in real time*Emmmerated_Domain_Value_Definition_Source:* Pathfinder Office 3.1 software*Emmmerated_Domain:**Emmmerated_Domain_Value:* real-time SBAS corrected*Emmmerated_Domain_Value_Definition:* indicates a point corrected by SBAS in real time*Emmmerated_Domain_Value_Definition_Source:* Pathfinder Office 3.1 software*Emmmerated_Domain:**Emmmerated_Domain_Value:* real-time WAAS corrected*Emmmerated_Domain_Value_Definition:* indicates a point corrected by WAAS in real time*Emmmerated_Domain_Value_Definition_Source:* Pathfinder Office 3.1 software*Emmmerated_Domain:**Emmmerated_Domain_Value:* uncorrected*Emmmerated_Domain_Value_Definition:* indicates an uncorrected point*Emmmerated_Domain_Value_Definition_Source:* Pathfinder Office 3.1 software*Attribute:**Attribute_Label:* Rcvr_Type*Attribute_Definition:*

indicates the type of GPS receiver that the point was collected with

Attribute_Definition_Source: Pathfinder Office 3.1 software*Attribute_Domain_Values:**Emmmerated_Domain:**Emmmerated_Domain_Value:* GeoXT*Emmmerated_Domain_Value_Definition:* indicates GPS data was collected with a GeoXT receiver*Emmmerated_Domain_Value_Definition_Source:* Pathfinder Office 3.1 software

*Enumerated_Domain:**Enumerated_Domain_Value:* GeoXM*Enumerated_Domain_Value_Definition:* indicates GPS data was collected with a GeoXM receiver*Enumerated_Domain_Value_Definition_Source:* Pathfinder Office 3.1 software*Enumerated_Domain:**Enumerated_Domain_Value:* 10X and 400*Enumerated_Domain_Value_Definition:* indicates GPS data was collected with a 10X and 400 receiver*Enumerated_Domain_Value_Definition_Source:* Pathfinder Office 3.1 software*Enumerated_Domain:**Enumerated_Domain_Value:* unknown*Enumerated_Domain_Value_Definition:* indicates the GPS point was taken with an unknown GPS receiver*Enumerated_Domain_Value_Definition_Source:* Pathfinder Office 3.1 software*Attribute:**Attribute_Label:* GPS_Date*Attribute_Definition:* indicates the date the GPS data was collected*Attribute_Definition_Source:* Pathfinder Office 3.1 software*Attribute_Domain_Values:**Unrepresentable_Domain:*

open text field populated automatically by Pathfinder Office, indicating the date the GPS data was collected

*Attribute:**Attribute_Label:* GPS_Time*Attribute_Definition:* indicates the time the GPS data was collected*Attribute_Definition_Source:* Pathfinder Office 3.1 software*Attribute_Domain_Values:**Unrepresentable_Domain:*

open text field populated automatically by Pathfinder Office, indicating the time the GPS data was collected

*Attribute:**Attribute_Label:* Update_Sta*Attribute_Definition:* indicates whether the GPS data has been updated*Attribute_Definition_Source:* Pathfinder Office 3.1 software*Attribute_Domain_Values:**Enumerated_Domain:**Enumerated_Domain_Value:* yes*Enumerated_Domain_Value_Definition:*

indicates that the GPS data has been updated, populated automatically by Pathfinder Office software

Enumerated_Domain_Value_Definition_Source: Pathfinder Office 3.1 software*Attribute:**Attribute_Label:* Feat_Nam*Attribute_Definition:*

indicates the feature name in the GPS data dictionary that the point and attribute information was generated from to create the feature class

Attribute_Definition_Source: Pathfinder Office 3.1 software*Attribute_Domain_Values:**Enumerated_Domain:**Enumerated_Domain_Value:* buildin2*Enumerated_Domain_Value_Definition:*

indicates that the GPS and attribute data associated with the point location was generated from the Building Point feature in the GPS data dictionary and exported to create the Building Point feature class

Enumerated_Domain_Value_Definition_Source: Pathfinder Office 3.1 software

Attribute:

Attribute_Label: Datafile

Attribute_Definition:

indicates the name of the GPS rover file the GPS data was originally collected in

Attribute_Definition_Source: Pathfinder Office 3.1 software

Attribute_Domain_Values:

Unrepresentable_Domain:

open text field, automatically populated by Pathfinder Office software, indicating the rover filename associated with the original GPS data collection

Attribute:

Attribute_Label: Unfilt_Pos

Attribute_Definition:

indicates the total number of unfiltered GPS positions averaged together to create each point feature

Attribute_Definition_Source: Pathfinder Office 3.1 software

Attribute_Domain_Values:

Range_Domain:

Range_Domain_Minimum: 10

Range_Domain_Maximum: 200

Attribute_Units_of_Measure: positions

Attribute:

Attribute_Label: Data_Dicti

Attribute_Definition:

indicates the filename of the data dictionary used with each GPS receiver to collect attribute information

Attribute_Definition_Source: Pathfinder Office 3.1 software

Attribute_Domain_Values:

Enumerated_Domain:

Enumerated_Domain_Value: Katrina_Survey_v2

Enumerated_Domain_Value_Definition:

indicates points and attributes collected with the GPS receivers using the second version of the Katrina Survey data dictionary; automatically populated by Pathfinder Office software

Enumerated_Domain_Value_Definition_Source: Pathfinder Office 3.1 software

Enumerated_Domain:

Enumerated_Domain_Value: Katrina_Survey_v3

Enumerated_Domain_Value_Definition:

indicates points and attributes collected with the GPS receivers using the third version of the Katrina Survey data dictionary; automatically populated by Pathfinder Office software

Enumerated_Domain_Value_Definition_Source: Pathfinder Office 3.1 software

Attribute:

Attribute_Label: Latitude

Attribute_Definition: latitude coordinate of each point location

Attribute_Definition_Source: Pathfinder Office 3.1 software

Attribute_Domain_Values:

Unrepresentable_Domain:

latitude coordinate of each point location, automatically generated by Pathfinder

Office software in decimal degrees

*Attribute:**Attribute_Label:* Longitude*Attribute_Definition:* longitude coordinate of each point location*Attribute_Definition_Source:* Pathfinder Office 3.1 software*Attribute_Domain_Values:**Unrepresentable_Domain:*

longitude coordinate of each point location, automatically generated by Pathfinder

Office software in decimal degrees

*Attribute:**Attribute_Label:* NHD*Attribute_Definition:*

indicates the National Register of Historic Places historic district associated with each point location, as generated by ArcGIS

Attribute_Definition_Source: Federal Emergency Management Agency*Attribute_Domain_Values:**Unrepresentable_Domain:*

open text field containing the name of National Register districts points fall within;

generated through a spatial join using historic district boundaries created by the SHPO

*Attribute:**Attribute_Label:* Prob_Zone*Attribute_Definition:*

indicates the archaeological probability zone each point falls within, as generated by ArcGIS

Attribute_Definition_Source: Federal Emergency Management Agency*Attribute_Domain_Values:**Unrepresentable_Domain:*

open text field containing the archaeological probability zone identification each point falls within; generated through a spatial join using probability zone boundaries created by the SHPO

*Attribute:**Attribute_Label:* D_Zone*Attribute_Definition:* indicates the demolition zone that each point falls within*Attribute_Definition_Source:* Federal Emergency Management Agency*Attribute_Domain_Values:**Unrepresentable_Domain:*

open text field containing the demolition zone identification each point falls within;

entered by FEMA based on information provided by city and Parish governments

*Attribute:**Attribute_Label:* Photo2*Attribute_Definition:* filename of digital photograph*Attribute_Definition_Source:* Cultural Resource GIS Facility, National Park Service*Attribute_Domain_Values:**Unrepresentable_Domain:* filename of digital photograph taken of building*Attribute:**Attribute_Label:* D_List*Attribute_Definition:*

indicates the demolition list that each building was identified on

Attribute_Definition_Source: Federal Emergency Management Agency*Attribute_Domain_Values:**Unrepresentable_Domain:*

open text field containing the name of the demolition list each building was originally listed on; entered based on information provided by city and Parish governments

*Attribute:**Attribute_Label:* SHPO_Consult*Attribute_Definition:*

indicates the date a formal Section 106 consultation letter was sent to the Louisiana SHPO, for each building

Attribute_Definition_Source: Federal Emergency Management Agency*Attribute_Domain_Values:**Unrepresentable_Domain:*

open text field containing the date a formal consultation letter for each building is sent to the Louisiana State Historic Preservation Office

*Attribute:**Attribute_Label:* Arch_Tier*Attribute_Definition:* indicates the archaeological tier each point falls within*Attribute_Definition_Source:* Federal Emergency Management Agency*Attribute_Domain_Values:**Unrepresentable_Domain:*

open text field to assign and track properties monitored by archaeological staff, according to the Programmatic Agreement between the Louisiana State Historic Preservation Office and FEMA

*Attribute:**Attribute_Label:* Zipcode*Attribute_Definition:*

indicates the zipcode each point falls within, as generated by ArcGIS

Attribute_Definition_Source: Federal Emergency Management Agency*Attribute_Domain_Values:**Unrepresentable_Domain:*

open text field containing the postal zipcode each point falls within; generated through a spatial join based on zipcode boundaries generated by outside data sources

*Detailed_Description:**Entity_Type:**Entity_Type_Label:* buildings_crlink*Entity_Type_Definition:*

Relationship class linking building points to a table of resource ID numbers, enabling the GeoDatabase to link to external databases

Entity_Type_Definition_Source: Cultural Resource GIS Facility, National Park Service*Detailed_Description:**Entity_Type:**Entity_Type_Label:* building lots*Entity_Type_Definition:*

Relationship class linking the building points feature class to the lot point feature class, to enable users to see the lot a building originated from, and where the building was moved to

Entity_Type_Definition_Source: Cultural Resource GIS Facility*- Detailed_Description:**Entity_Type:**Entity_Type_Label:* Survey_ID_bldgs*Entity_Type_Definition:*

Relationship class linking building points to a table defining each separate survey conducted by FEMA

Entity_Type_Definition_Source: Cultural Resource GIS Facility, National Park Service*Overview_Description:**Entity_and_Attribute_Overview:*

This feature class represents the point locations of buildings determined by the New Orleans city and

other Parish governments to be a danger to public health and safety, or a public nuisance, or those submitted voluntarily by homeowners for demolition. As a result of this determination, these structures are eligible for demolition and subject to Section 106 review as required by the National Historic Preservation Act of 1966, as amended. Additional point locations contained within this feature class indicate those structures which contribute to historic districts inside the City of New Orleans, as part of FEMA's Section 106 mitigation efforts. Attribute information contained within the feature class provides information gathered in the field by surveyors to indicate the historic nature, physical characteristics, and condition of each structure, as well as other descriptive information for each building. Additionally, attribute information contained within the feature class provides feature level metadata generated by FEMA and Pathfinder Office describing the accuracy of each point, as well as how it was generated. Further attribute information has been entered by FEMA and Louisiana State Historic Preservation Office staff regarding the National Register of Historic Places eligibility of each building.

Distribution_Information:

Distributor:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization: Louisiana Division of Historic Preservation

Contact_Address:

Address_Type: mailing address

Address: PO Box 44247

City: Baton Rouge

State_or_Province: LA

Postal_Code: 70804

Country: USA

Contact_Voice_Telephone: 225-342-8160

Resource_Description:

Point locations of buildings determined by the New Orleans city and other Parish governments to be a danger to public health and safety, or a public nuisance, or voluntarily submitted by homeowners for demolition and therefore eligible for demolition and subject to Section 106 review as required by the National Historic Preservation Act of 1966, as amended. Additional point locations indicate those building which contribute to historic districts in the City of New Orleans.

Distribution_Liability:

The Federal Emergency Management Agency, the National Park Service and the Louisiana State Historic Preservation Office shall not be held liable for improper or incorrect use of the data described and/or contained herein. These data are not legal documents and are not intended to be used as such. The information contained in these data is dynamic and may change over time. It is the responsibility of the data user to use the data appropriately and consistently within the limitations of geospatial data in general. The Federal Emergency Management Agency, the National Park Service and the Louisiana State Historic Preservation Office give no warranty, expressed or implied, as to the accuracy, reliability or completeness of these data.

Standard_Order_Process:

Digital_Form:

Digital_Transfer_Information:

Format_Name: shapefile or geodatabase

Digital_Transfer_Option:

Offline_Option:

Offline_Media: CD-ROM

Fees: unknown

Ordering_Instructions:

contact the Louisiana State Historic Preservation Office for ordering and distribution information

Turnaround: unknown

Custom_Order_Process:

contact the Louisiana State Historic Preservation Office for ordering and distribution information

Available_Time_Period:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: unknown

Time_of_Day: unknown

Metadata_Reference_Information:

Metadata_Date: 20060718

Metadata_Review_Date: 20060717

Metadata_Future_Review_Date: as needed

Metadata_Contact:

Contact_Information:

Contact_Person_Primary:

Contact_Person: Deidre McCarthy

Contact_Organization: Cultural Resource GIS Facility, National Park Service

Contact_Position: Historian

Contact_Address:

Address_Type: mailing address

Address: 1849 C St., NW (2270)

City: Washington

State_or_Province: DC

Postal_Code: 20240

Country: USA

Contact_Voice_Telephone: 202-354-2141

Contact_Facsimile_Telephone: 202-371-6473

Contact_Electronic_Mail_Address: Deidre_McCarthy@nps.gov

Metadata_Standard_Name: FGDC Content Standards for Digital Geospatial Metadata

Metadata_Standard_Version: FGDC-STD-001-1998

Metadata_Time_Convention: local time

Metadata_Access_Constraints: none

Metadata_Use_Constraints: none

Metadata_Security_Information:

Metadata_Security_Classification: Unclassified

Metadata_Extensions:

Online_Linkage: <<http://www.esri.com/metadata/esriprof80.html>>

Profile_Name: ESRI Metadata Profile

Metadata_Extensions:

Online_Linkage: <<http://www.esri.com/metadata/esriprof80.html>>

Profile_Name: ESRI Metadata Profile

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Appendix N: Checklist for Carrying Out GIS/GPS Historic Preservation Response Strategy

Establishing Infrastructure

- ☐ Determine the need for inclusion of cultural resource data in GIS
- ☐ Determine the need for a GPS survey to collect cultural resource data
 - ☐ Determine the level of precision required in collecting cultural resource locational data
- ☐ Determine the stakeholders and partners outside of FEMA interested in the cultural resource response
 - ☐ Define the needs of partners in spatial data precision
 - ☐ Define the needs of partners in attribute data and determine where needs overlap with FEMA
- ☐ Establish a support network inside FEMA infrastructure
 - ☐ Identify key historic preservation staff to lead the Section 106 response
 - ☐ Identify key GIS staff at FEMA headquarters or at the GIU to support the response strategy
 - ☐ Hire necessary historic preservation/GIS specialist to manage data and equipment
 - ☐ Hire necessary data entry staff for QA/QC procedures and establishing links to external data
- ☐ Determine needs for the initial survey and identification portion of Section 106 response
 - ☐ Determine what cultural resource spatial and attribute exists data and acquire for use in GIS
 - ☐ Determine scope of disaster and how many surveyors may be required
- ☐ Develop a data dictionary
 - ☐ Examine existing data to determine what can be standardized and what may be required
 - ☐ Gather survey forms from SHPO and partners to help define features and attributes to collect
- ☐ Develop a GeoDatabase based on the data dictionary features identified
 - ☐ Examine existing GeoDatabase models to find where standardization can accelerate process
 - ☐ Examine cultural resource spatial data standards to insure compatibility

Data Collection

- ☐ Acquire GPS equipment required to meet accuracy needs defined by partners and FEMA
- ☐ Locate and hire qualified surveyors
- ☐ Provide attribute field definitions, methodology statements and clear directions to surveyors
- ☐ Provide training in GPS and methodology to surveyors as needed
- ☐ Schedule regular meetings with surveyors to exchange ideas and procedures
- ☐ Create check-in/check-out policy for data and equipment
- ☐ Define specific survey areas for each survey team

Data Processing

- ☐ Define a clear workflow for incoming survey data
- ☐ Define daily data intake procedures
- ☐ Define daily QA/QC procedures and GeoDatabase update procedures
- ☐ Define daily reporting/map creation needs to direct further survey work
- ☐ Define daily reporting needs for Section 106 compliance
- ☐ Define reporting needs for treatment measures
- ☐ Define process for linking survey data to external data sources

Section 106 Evaluation and Review

- ☐ Define a clear workflow for determinations of eligibility and development of concurrence
- ☐ Define procedures for incorporating edits and comments from reviewers into the GeoDatabase
- ☐ Establish procedures for reporting decisions to the SHPO

Position Description
Historic Preservation Specialist/Geographic Information System Specialist

Major Duties and Responsibilities:

Serve as a FEMA coordinator and facilitator for the implementation of the Historic Preservation data management system for the Metropolitan New Orleans area (7 Parishes). Developed by FEMA strategists in consultation with the State Historic Preservation Office and the New Orleans Historic District Landmark Commission in order to meet FEMA's Section 106 requirements, the system is based on accurate GPS survey of structures and integration of historic preservation data into a GIS. The coordinator would serve to carry out the established strategy designed to identify and evaluate the National Register eligibility of historic properties, evaluate the integrity of damaged historic properties, and to outline potential treatment measures for certain types of anticipated adverse effects as a result of Hurricane Katrina.

Responsibilities would include the oversight of the data management system to meet short and long-term needs of FEMA's Section 106 requirements. Additionally, the coordinator would provide oversight to all contract work associated with the system development and maintenance, including day-to-day management of the GPS data collection and integration into the established GeoDatabase and GIS. The coordinator will serve as the principle interface with the FEMA IT and GIS staff, FEMA Historic Preservation staff at the joint and area field offices, the State Historic Preservation Office, the Historic District Landmark Commission, other external stakeholders, and other program staff involved in the historic preservation data management system.

Knowledge, Skills, and Experience Required:

- Knowledgeable in implementing the requirements of selected federal environmental and historic preservation laws, Executive Orders, and regulations in a Federal/state/local context, which may include, but is not limited to: the National Environmental Policy Act (NEPA), the National Historic Preservation Act (NHPA), Executive Order 12898 (Environmental Justice).
- Knowledge of FEMA's disaster program operations and associated historic preservation requirements.
- Knowledge of ESRI's ArcGIS software, and familiarity with the functioning of GeoDatabases as part of ArcGIS operations.
- Knowledge of Trimble GPS handheld data collection units, data dictionaries, and the ability to process GPS data into GIS data.
- Written communication and computer skills to generate general and technical reports, briefings, correspondence and review documentation.
- Superb project management skills
- Ability to work efficiently in a stressful, changing and politically sensitive environment.
- Ability to work effectively either independently or as part of a team.
- Good interpersonal, communication and instructional skills.
- Ability to conduct project site visits

Geographic Information Systems Specialist for the Historic Preservation Unit in Mississippi TRO Position Description

Basic Nature of Assignment:

Serve as GIS support to the FEMA Historic Preservation Large Survey Team staff, for the implementation of the Historic Preservation data management system required under the Secondary Programmatic Agreement signed by FEMA, MEMA, the Mississippi State Historic Preservation Officer and the Advisory Council on Historic Preservation as well as other consulting parties. This Secondary Programmatic agreement serves to outline the treatment measures needed for FEMA to compensate for the adverse effects to historic properties caused by FEMA Public Assistance funded demolitions throughout Mississippi.

The data management system is based on the integration of historic preservation data into a specific historic preservation GIS application. The GIS Specialist would serve to provide technical support to the MSTRO Historic Preservation staff, helping to sustain and provide upkeep to the GeoDatabase designed by the MSTRO by the National Park Service Cultural Resource GIS Facility. The GIS Specialist will report to MSTRO historic preservation staff and actively interface with NPS and MSTRO GIS staff on the daily maintenance of the GIS system.

Responsibilities would include providing technical support to the GeoDatabase already created for use in the historic preservation GIS application, assist MSTRO historic preservation staff to perform analysis in the GIS to help plan for survey activities, as well as respond to cartographic requests made by the historic preservation staff involved in large surveys.

Knowledge, Skills and Experience Required:

- Detailed knowledge and experience with ESRI products, specifically ArcGIS 9.2, and database management systems, such as Access or SQL
- Ability to interpret and follow GIS cartographic models already developed by FEMA and National Park Service staff to address historic preservation issues
- Ability to interpret and implement the National Park Service cultural resource spatial data standards utilized in the existing data model and GeoDatabase
- Ability to expand or develop flexibility of tools for use in data processing and quality control procedures, as well as ability to solve technical issues that arise in the GeoDatabase, in Pathfinder Office software or with Trimble GPS units.
- Ability to quickly and proficiently geo-reference required historic maps, as well as geo-code addresses to help identify resources which must be included in the survey processes.
- Ability to create cartographic products on an as needed basis based on requests from the historic preservation staff, in support of data analysis, reporting to other entities, reporting to internal FEMA entities and for publication.
- Ability to acquire, create and manage geospatial data required for historic preservation compliance with the secondary programmatic agreement obligations.
- Ability to maintain hardware required to run the GIS system, as well as the ability to maintain the GIS software and serve as a source of technical information for ESRI products, updates and tools.
- Ability to download and manage data from Trimble GeoXM GPS units and Ricoh cameras employed during large scale historic property surveys.
- Ability to serve as a point of coordination between FEMA historic preservation staff, NPS GIS staff, and the FEMA Geographic Information Systems staff.
- Ability to remain flexible, willing to learn and comfortable with accommodating themselves to different GIS oriented tasks.

Appendix Q: Data Dictionary fo Mississippi

Feature	Attribute	Attribute Value	Required	Description
Consult Pt				Point location of resource or area of interest identified during recon
	GPS ID	text	Required	Unique ID assigned by field surveyor
	Feature Type	text		Indicates the type of feature being recorded
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
Building Pt	Photo1	text		Full filename of first photograph
				Point location of building
	GPS ID	text	Required	Unique ID assigned by field surveyor
	Property Name	text		Resource name, if known
	Street Number	text	Required	Street number of address
	Street Name	text	Required	Street name of address
	Construction Date	text		Date of the building construction
	Date Estimated?	yes		Flag to indicate if the construction date is estimated
		no		
	Less than 45 yrs old	yes	Required	Flag to indicate if the building is less than 45 years old
		no		
		unsure		
	Listed Status	National Register		Indicates if the building is recognized officially
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
		other		
		none		
	Contributes to NR HD	yes		Flag to indicate if the building contributes to a historic district
		no		
		unknown		
		other		
	Significance	text	Required	Brief statement of significance
	Historic Context	text		Brief statement of historic context, if known
	Overall Integrity	very intact	Required	Evaluation of the MS SHPO integrity criteria
		some changes		
		extensive changes		
		deteriorated		
		ruins		
		no visible remains		
	Materials Integrity	yes	Required	Evaluation of the National Register materials integrity criteria
		no		
		unsure		
		not applicable		
	Design Integrity	yes	Required	Evaluation of the National Register design integrity criteria
		no		
		unsure		
		not applicable		
	Workmanship Integrity	yes	Required	Evaluation of the National Register workmanship integrity criteria
		no		
		unsure		
		not applicable		
	Setting Integrity	yes	Required	Evaluation of the National Register setting integrity criteria
		no		
		unsure		
		not applicable		
	Location Integrity	yes	Required	Evaluation of the National Register location integrity criteria
		no		
		unsure		
		not applicable		

Feature	Attribute	Attribute Value	Required	Description
	Feeling Integrity	yes	Required	Evaluation of the National Register feeling integrity criteria
		no		
		unsure		
		not applicable		
	Assoc. Integrity	yes	Required	Evaluation of the National Register association integrity criteria
		no		
		unsure		
		not applicable		
	Foundation Condition	intact	Required	Assessment of the building foundation condition
		building on		
		building off		
		damaged		
		unknown		
	Wall Condition	other	Required	Assessment of the building wall condition
		intact		
		minor damage		
		racked		
		partial collapse		
	Roof Condition	total collapse	Required	Assessment of the building roof condition
		unknown		
		other		
		intact		
		damaged		
	Historic Use	partial collapse	Required	Description of the general historic use of building, if known
		total collapse		
		missing		
		unknown		
		other		
		residential		
		commercial		
		religious		
		governmental		
		educational		
		agricultural		
		aviation		
		civic		
		communication		
		cultural		
		eleemosynary		
		historic site		
		industrial		
		medical		
		military		
	Historic Use Detail	organizational		Description of the detailed historic use of building, if known
		recreational		
		science		
		slave related		
		transportation		
		multiple		
		unknown		
		other		
		single dwelling		
		apartment building		
		commercial building		
		church		
		county courthouse		
		city hall		
		post office		
		school, public		
		school, religious		

Feature	Attribute	Attribute Value	Required	Description
		airport		
		armory		
		auditorium		
		auto dealership		
		auto repair-		
		bank		
		barn		
		boarding house		
		bottling plant		
		brickyard or kiln		
		bus station		
		cabin		
		clinic		
		club house		
		college		
		convent		
		cotton compress		
		cotton gin		
		cotton mill		
		cotton oil mill		
		country club		
		dairy or creamery		
		department store		
		duplex		
		fairgrounds		
		farmstead		
		federal building		
		fire station		
		fortification		
		foundry or machine shop		
		garage		
		grist mill		
		gymnasium		
		hangar		
		hospital		
		hotel		
		ice plant		
		library		
		lodge hall		
		lumber mill		
		manufacturing plant		
		meat processing plant		
		meeting hall		
		military base		
		mobile home		
		munitions plant		
		museum		
		newspaper office		
		night club		
		nursing home		
		office building		
		orphanage		
		pavilion		
		plantation		
		police station		
		power plant		
		radio or tv station		
		railroad depot		
		rectory		
		research facility		

Feature	Attribute	Attribute Value	Required	Description
		resort		
		restaurant		
		school complex		
		school, private		
		shopping center		
		slave quarter		
		stadium		
		synagogue		
		tenant house		
		theater		
		townhouse		
		veterinary clinic		
		warehouse		
		water-powered mill		
		multiple		
		unknown		
		other		
	Historic Use Comment	text		Comment field related to historic use
	Current Use	residential	Required	Description of the general current use of building, prior to damage
		commercial		
		religious		
		governmental		
		educational		
		agricultural		
		aviation		
		civic		
		communication		
		cultural		
		eleemosynary		
		historic site		
		industrial		
		medical		
		military		
		organizational		
		recreational		
		science		
		slave related		
		transportation		
		multiple		
		unknown		
		other		
	Current Use Detail	single dwelling	Required	Description of the detailed current use of building, prior to damage
		apartment building		
		commercial building		
		church		
		county courthouse		
		city hall		
		post office		
		school, public		
		school, religious		
		airport		
		armory		
		auditorium		
		auto dealership		
		auto repair		
		bank		
		barn		
		boarding house		
		bottling plant		
		brickyard or kiln		

Feature	Attribute	Attribute Value	Required	Description
		bus station		
		cabin		
		clinic		
		club house		
		college		
		convent		
		cotton compress		
		cotton gin		
		cotton mill		
		cotton oil mill		
		country club		
		dairy or creamery		
		department store		
		duplex		
		fairgrounds		
		farmstead		
		federal building		
		fire station		
		fortification		
		foundry or machine shop		
		garage		
		grist mill		
		gymnasium		
		hangar		
		hospital		
		hotel		
		ice plant		
		library		
		lodge hall		
		lumber mill		
		manufacturing plant		
		meat processing plant		
		meeting hall		
		military base		
		mobile home		
		munitions plant		
		museum		
		newspaper office		
		night club		
		nursing home		
		office building		
		orphanage		
		pavilion		
		plantation		
		police station		
		power plant		
		radio or tv station		
		railroad depot		
		rectory		
		research facility		
		resort		
		restaurant		
		school complex		
		school, private		
		shopping center		
		slave quarter		
		stadium		
		synagogue		
		tenant house		
		theater		

Feature	Attribute	Attribute Value	Required	Description
Style		townhouse		
		veterinary clinic		
		warehouse		
		water-powered mill		
		multiple		
		unknown		
		other		
		Art Deco	Required	Description of the primary architectural style
		Art Moderne		
		Beaux Arts		
		Colonial Revival		
		Craftsman		
		Dutch Colonial		
		Eastlake		
		Eclectic, Composite		
		Exotic		
		Federal		
		Free Classical		
		French Eclectic		
		Georgian		
		Gothic Revival		
		Greek Revival		
		International		
		Italian Renaissance		
		Italianate		
		Lustron House		
		Mediterranean		
		Minimal Traditional		
		Mission		
		Modern		
		Moorish		
		Neo-Classical		
		Post Modern		
		Prairie		
		Queen Anne		
		Ranch		
		Romanesque		
		Rustic		
		Second Empire		
		Shingle		
		Spanish		
		Tudor		
		vernacular		
		no style		
		unknown		
		other		
Building Form		American foursquare		Description of the building type or form
		Biloxi cottage		
		bungalow		
		Cape Cod		
		creole cottage		
		cruciform		
		dog trot		
		double corner towers		
		double-entry		
		dbl entry, gable end		
		double-pen		
		English cottage		
		Four-over-four		
		front-gabled cottage		

Feature	Attribute	Attribute Value	Required	Description
		Georgian cottage		
		hall-and-parlor		
		I-house		
		L-front		
		Octagonal		
		planter's cottage		
		pyramidal cottage		
		raised cottage		
		saddlebag		
		shotgun		
		shotgun, double		
		shotgun, L-galleried		
		sidehall townhouse		
		single center tower		
		single corner tower		
		sngl entry, gable end		
		single pen		
		split level		
		temple-form house		
		T-front		
		3-bay cottage		
		bayed cottage		
		Composite cottage		
		multiple		
		unknown		
		other		
Height		1		Height of the resource, in stories
		1.5		
		2		
		2.5		
		3		
		4		
		5-10		
		10-20		
		20+		
		other		
Foundation		unknown		Description of the type of foundation visible
		post in ground		
		sill on ground		
		wooden pier		
		wooden piling		
		brick pier		
		stone pier		
		concrete pier		
		concrete block pier		
		concrete pylon pier		
		concrete piling		
		continuous brick		
		continuous stone		
		continuous concrete		
		concrete slab		
Const Material		multiple		Indication of the primary structural material
		unknown		
		other		
		log		
		frame		
		timber frame		
		balloon frame		
		barge-board		
		stucco		

Feature	Attribute	Attribute Value	Required	Description
		brick		
		stone pier		
		concrete block pier		
		poured concrete		
		reinforced concrete		
		steel frame		
		metal		
		multiple		
		unknown		
		other		
	Cladding	clapboard		Description of the exterior cladding of the building
		board and batten		
		shiplap		
		wood		
		Dutch		
		concrete		
		masonry		
		stucco		
		shingle		
		vinyl		
	Roof Materials	metal		Indication of the primary roof material
		novelty		
		multiple		
		unknown		
		other		
		wood shingle		
		slate		
		asphalt shingle		
		asbestos shingle		
		metal		
Roof Type		tile	Required	Description of the style of roof construction
		multiple		
		unknown		
		other		
		cross-gable		
		flat		
		gable		
		gable on hip		
		gambrel		
		hip		
		jerkinhead		
		mansard		
		pyramidal		
		saltbox		
		shed		
Porch Design		multiple		Description of the type of primary type of porch
		unknown		
		other		
		colonnaded		
		galleried: double		
		galleried: single		
		porticoed		
		projecting porch		
		inset porch		
		wraparound		
		none		
		multiple		
		unknown		
		other		

Feature	Attribute	Attribute Value	Required	Description
Outbuildings		garage	Required	Description of the type of outbuildings visible
		multiple		
		shed		
		stable		
		none		
		multiple		
		other		
		unknown		
		not surveyed		
Distinctive Features		brickwork, decorative		Indication of any distinctive features visible on the building
		detached columns		
		fencing iron		
		gallery gate		
		gaslight reflector		
		ironwork		
		log construction		
		octagonal columns		
		Captl portico relief		
		pierced columns		
		pressed metal		
		shinglewrk, decorativ		
		thin, rect columns		
		tower bell		
		tower mansard		
		none		
		multiple		
		other		
		unknown		
Ethnic Association		African-American		Indication of any historic ethnic association with the building
		Cajun		
		Chickasaw		
		Chinese		
		Choctaw		
		Czechoslovakian		
		Danish		
		Historic Indian		
		Italian		
		Jewish		
		Lebanese		
		Natchez		
		Native American		
		Norwegian		
		Polish		
		unknown aboriginal		
		Vietnamese		
		Yugoslavian		
		multiple		
		unknown		
		other		
Ethnic Assoc Comment		text		Comment field related to Ethnic association
Associated Event		Blues music		Indication of any specific historic event associated with the building
		Civil Rights Movement		
		Civil War		
		Civil War Memorial		
		CCC		
		Cold War		
		Creek Indian War		
		Federal Public Works		
		French Colonial period		
		Mexican War		

Feature	Attribute	Attribute Value	Required	Description
		War of 1812		
		Spanish Colonial period		
		Spanish-American war		
		Territorial period		
		World War I		
		World War II		
		World War I Memorial		
		World War II Memorial		
		multiple		
		none		
		unknown		
		other		
	Point Recorded	north corner	Required	Description of the location where the GPS point was collected
		south corner		
		east corner		
		west corner		
		northeast corner		
		southeast corner		
		southwest corner		
		northwest corner		
		center		
		entrance		
		façade center		
		random		
		other		
	Eligibility Recommend	Nat. Reg. eligible	Required	National Register eligibility recommendation of surveyor
		not Nat. Reg. eligible		
		unknown		
		other		
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text	Required	Full filename of first photograph
	Photo2	text		Full filename of second photograph
	Photo3	text		Full filename of third photograph
	Photo4	text		Full filename of fourth photograph
	Building_Py			Polygon location (footprint) of building
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Property Name	text		Resource name, if known
	Street Number	text	Required	Street number of address
	Street Name	text	Required	Street name of address
	Construction Date	text		Date of the building construction
	Date Estimated?	yes		Flag to indicate if the construction date is estimated
		no		
	Less than 45 yrs old	yes	Required	Flag to indicate if the building is less than 45 years old
		no		
		unsure		
	Listed Status	National Register		Indicates if the building is recognized officially
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
		other		
	Contributes to NR HD	none		
		yes		Flag to indicate if the building contributes to a historic district
		no		
		unknown		
		other		

Feature	Attribute	Attribute Value	Required	Description
Significance	Significance	text	Required	Brief statement of significance
	Historic Context	text		Brief statement of historic context, if known
Overall Integrity	Overall Integrity	very intact	Required	Evaluation of the MS SHPO integrity criteria
		some changes		
		extensive changes		
		deteriorated		
		ruins		
Materials Integrity		no visible remains		
	Materials Integrity	yes	Required	Evaluation of the National Register materials integrity criteria
		no		
		unsure		
Design Integrity		not applicable		
	Design Integrity	yes	Required	Evaluation of the National Register design integrity criteria
		no		
Wrkmanship Integrity		unsure		
		not applicable		
	Wrkmanship Integrity	yes	Required	Evaluation of the National Register workmanship integrity criteria
		no		
Setting Integrity		unsure		
		not applicable		
	Setting Integrity	yes	Required	Evaluation of the National Register setting integrity criteria
		no		
Location Integrity		unsure		
		not applicable		
	Location Integrity	yes	Required	Evaluation of the National Register location integrity criteria
		no		
Feeling Integrity		unsure		
		not applicable		
	Feeling Integrity	yes	Required	Evaluation of the National Register feeling integrity criteria
		no		
Assoc. Integrity		unsure		
		not applicable		
	Assoc. Integrity	yes	Required	Evaluation of the National Register association integrity criteria
		no		
Foundation Condition		unsure		
		not applicable		
	Foundation Condition	intact	Required	Assessment of the building foundation condition
		building on		
		building off		
		damaged		
Wall Condition		unknown		
		other		
	Wall Condition	intact	Required	Assessment of the building wall condition
		minor damage		
		racked		
		partial collapse		
Roof Condition		total collapse		
		unknown		
		other		
	Roof Condition	intact	Required	Assessment of the building roof condition
		damaged		
		partial collapse		
Historic Use		total collapse		
		missing		
		unknown		
		other		
	Historic Use	residential	Required	Description of the general historic use of building, if known
		commercial		
		religious		
		governmental		

Feature	Attribute	Attribute Value	Required	Description
		educational		
		agricultural		
		aviation		
		civic		
		communication		
		cultural		
		eleemosynary		
		historic site		
		industrial		
		medical		
		military		
		organizational		
		recreational		
		science		
		slave related		
		transportation		
		multiple		
		unknown		
		other		
	Historic Use Detail	single dwelling		Description of the detailed historic use of building, if known
		apartment building		
		commercial building		
		church		
		county courthouse		
		city hall		
		post office		
		school, public		
		school, religious		
		airport		
		armory		
		auditorium		
		auto dealership		
		auto repair		
		bank		
		barn		
		boarding house		
		bottling plant		
		brickyard or kiln		
		bus station		
		cabin		
		clinic		
		club house		
		college		
		convent		
		cotton compress		
		cotton gin		
		cotton mill		
		cotton oil mill		
		country club		
		dairy or creamery		
		department store		
		duplex		
		fairgrounds		
		farmstead		
		federal building		
		fire station		
		fortification		
		foundry, machine shop		
		garage		
		grist mill		

Feature	Attribute	Attribute Value	Required	Description
		gymnasium		
		hangar		
		hospital		
		hotel		
		ice plant		
		library		
		lodge hall		
		lumber mill		
		manufacturing plant		
		meat processing plant		
		meeting hall		
		military base		
		mobile home		
		munitions plant		
		museum		
		newspaper office		
		night club		
		nursing home		
		office building		
		orphanage		
		pavilion		
		plantation		
		police station		
		power plant		
		radio or tv station		
		railroad depot		
		rectory		
		research facility		
		resort		
		restaurant		
		school complex		
		school, private		
		shopping center		
		slave quarter		
		stadium		
		synagogue		
		tenant house		
		theater		
		townhouse		
		veterinary clinic		
		warehouse		
		water-powered mill		
		multiple		
		unknown		
		other		
	Historic Use Comment	text		Comment field related to historic use
	Current Use	residential	Required	Description of the general current use of building, prior to damage
		commercial		
		religious		
		governmental		
		educational		
		agricultural		
		aviation		
		civic		
		communication		
		cultural		
		eleemosynary		
		historic site		
		industrial		
		medical		

Feature	Attribute	Attribute Value	Required	Description
		military		
		organizational		
		recreational		
		science		
		slave related		
		transportation		
		multiple		
		unknown		
		other		
	Current Use Detail	single dwelling	Required	Description of the detailed current use of building, prior to damage
		apartment building		
		commercial building		
		church		
		county courthouse		
		city hall		
		post office		
		school, public		
		school, religious		
		airport		
		armory		
		auditorium		
		auto dealership		
		auto repair		
		bank		
		barn		
		boarding house		
		bottling plant		
		brickyard or kiln		
		bus station		
		cabin		
		clinic		
		club house		
		college		
		convent		
		cotton compress		
		cotton gin		
		cotton mill		
		cotton oil mill		
		country club		
		dairy or creamery		
		department store		
		duplex		
		fairgrounds		
		farmstead		
		federal building		
		fire station		
		fortification		
		foundry, machine shop		
		garage		
		grist mill		
		gymnasium		
		hangar		
		hospital		
		hotel		
		ice plant		
		library		
		lodge hall		
		lumber mill		
		manufacturing plant		
		meat processing plant		

Feature	Attribute	Attribute Value	Required	Description
		meeting hall		
		military base		
		mobile home		
		munitions plant		
		museum		
		newspaper office		
		night club		
		nursing home		
		office building		
		orphanage		
		pavilion		
		plantation		
		police station		
		power plant		
		radio, tv station		
		railroad depot		
		rectory		
		research facility		
		resort		
		restaurant		
		school complex		
		school, private		
		shopping center		
		slave quarter		
		stadium		
		synagogue		
		tenant house		
		theater		
		townhouse		
		veterinary clinic		
		warehouse		
		water-powered mill		
		multiple		
		unknown		
		other		
Style		Art Deco	Required	Description of the primary architectural style
		Art Moderne		
		Beaux Arts		
		Colonial Revival		
		Craftsman		
		Dutch Colonial		
		Eastlake		
		Eclectic, Composite		
		Exotic		
		Federal		
		Free Classical		
		French Eclectic		
		Georgian		
		Gothic Revival		
		Greek Revival		
		International		
		Italian Renaissance		
		Italianate		
		Lustron House		
		Mediterranean		
		Minimal Traditional		
		Mission		
		Modern		
		Moorish		
		Neo-Classical		

Feature	Attribute	Attribute Value	Required	Description
		Post Modern		
		Prarie		
		Queen Anne		
		Ranch		
		Romanesque		
		Rustic		
		Second Empire		
		Shingle		
		Spanish		
		Tudor		
		vernacular		
		no style		
		unknown		
		other		
	Building Form	American foursquare		Description of the building type or form
		Biloxi cottage		
		bungalow		
		Cape Cod		
		creole cottage		
		cruciform		
		dog trot		
		double corner towers		
		double-entry		
		dbl entry, gable end		
		double-pen		
		English cottage		
		Four-over-four		
		front-gabled cottage		
		Georgian cottage		
		hall-and-parlor		
		I-house		
		L-front		
		Octagonal		
		planter's cottage		
		pyramidal cottage		
		raised cottage		
		saddlebag		
		shotgun		
		shotgun: double		
		shotgun: L-gallened		
		sidehall townhouse		
		single center tower		
		single corner tower		
		sngl entry, gable end		
		single pen		
		split level		
		temple-form house		
		T-front		
		3-bay cottage		
		bayed cottage		
		Composite cottage		
		multiple		
		unknown		
		other		
	Height	1		Height of the resource, in stories
		1.5		
		2		
		2.5		
		3		
		4		

Feature	Attribute	Attribute Value	Required	Description
Foundation		5-10		Description of the type of foundation visible
		10-20		
		20+		
		other		
		unknown		
		post in ground		
		sill on ground		
		wooden pier		
		wooden piling		
		brick pier		
		stone pier		
		concrete pier		
		concrete block pier		
		concrete pylon pier		
		concrete piling		
		continuous brick		
		continuous stone		
		continuous concrete		
		concrete slab		
		multiple		
		unknown		
		other		
Const Material		log		Indication of the primary structural material
		frame		
		timber frame		
		balloon frame		
		barge-board		
		stucco		
		brick		
		stone pier		
		concrete block pier		
		poured concrete		
		reinforced concrete		
		steel frame		
		metal		
		multiple		
		unknown		
		other		
Cladding		clapboard		Description of the exterior cladding of the building
		board and batten		
		shiplap		
		wood		
		Dutch		
		concrete		
		masonry		
		stucco		
		shingle		
		vinyl		
		metal		
		novelty		
		multiple		
		unknown		
		other		
Roof Materials		wood shingle		Indication of the primary roof material
		slate		
		asphalt shingle		
		asbestos shingle		
		metal		
		tile		
		multiple		

Feature	Attribute	Attribute Value	Required	Description
Roof Type		unknown	Required	Description of the style of roof construction
		other		
		cross-gable		
		flat		
		gable		
		gable on hip		
		gambrel		
		hip		
		jerkinhead		
		mansard		
		pyramidal		
		saltbox		
		shed		
		multiple		
		unknown		
		other		
Porch Design		collonaded		Description of the type of primary type of porch
		galleried double		
		galleried single		
		porticoed		
		projecting porch		
		inset porch		
		wraparound		
		none		
		multiple		
		unknown		
		other		
Outbuildings		garage	Required	Description of the type of outbuildings visible
		multiple		
		shed		
		stable		
		none		
		other		
		unknown		
		not surveyed		
Distinctive Features		brickwork, decorative		Indication of any distinctive features visible on the building
		detached columns		
		fencing, iron		
		gallery gate		
		gaslight reflector		
		ironwork		
		log construction		
		octagonal columns		
		Captl portico relief		
		pierced columns		
		pressed metal		
		shinglewrk, decorativ		
		thin, rect columns		
		tower - bell		
		tower - mansard		
		none		
Ethnic Association		multiple		Indication of any historic ethnic association with the building
		other		
		unknown		
		African-American		
		Cajun		
		Chickasaw		
		Chinese		
		Choctaw		
		Czechoslovakian		

Feature	Attribute	Attribute Value	Required	Description
		Danish		
		Historic Indian		
		Italian		
		Jewish		
		Lebanese		
		Natchez		
		Native American		
		Norwegian		
		Polish		
		Unknown Aboriginal		
		Vietnamese		
		Yugoslavian		
		multiple		
		unknown		
		other		
	Ethnic Assoc Comment	text		Comment field related to Ethnic association
	Associated Event	Blues music		Indication of any specific historic event associated with the building
		Civil Rights Movement		
		Civil War		
		Civil War Memorial		
		CCC		
		Cold War		
		Creek Indian War		
		Federal Public Works		
		French Colonial period		
		Mexican War		
		War of 1812		
		Spanish Colonial period		
		Spanish-American war		
		Territorial period		
		World War I		
		World War II		
		World War I Memorial		
		World War II Memorial		
		multiple		
		none		
		unknown		
		other		
	Eligibility Recommend	Nat. Reg. eligible	Required	National Register eligibility recommendation of surveyor
		not Nat. Reg. eligible		
		unknown		
		other		
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text	Required	Full filename of first photograph
	Photo2	text		Full filename of second photograph
	Photo3	text		Full filename of third photograph
	Photo4	text		Full filename of fourth photograph
	Lot_Pt			Point location of empty lot where a building used to stand
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Street Number	text	Required	Street number of address
	Street Name	text	Required	Street name of address
	Historic Neighborhood	text		Name of historic neighborhood if known
	Significance	text	Required	Brief statement of significance
	Historic Context	text		Brief statement of historic context, if known
	Overall Integrity	very intact	Required	Evaluation of the MS SHPO integrity criteria
		some changes		
		extensive changes		
		deteriorated		

Feature	Attribute	Attribute Value	Required	Description
Materials Integrity		ruins	Required	Evaluation of the National Register materials integrity criteria
		no visible remains		
		yes		
		no		
Design Integrity		not applicable	Required	Evaluation of the National Register design integrity criteria
		unsure		
		yes		
		no		
Wrkmanship Integrity		not applicable	Required	Evaluation of the National Register workmanship integrity criteria
		unsure		
		yes		
		no		
Setting Integrity		not applicable	Required	Evaluation of the National Register setting integrity criteria
		unsure		
		yes		
		no		
Location Integrity		not applicable	Required	Evaluation of the National Register location integrity criteria
		unsure		
		yes		
		no		
Feeling Integrity		not applicable	Required	Evaluation of the National Register feeling integrity criteria
		unsure		
		yes		
		no		
Assoc. Integrity		not applicable	Required	Evaluation of the National Register association integrity criteria
		unsure		
		yes		
		no		
Condition		not applicable		Assessment of the overall condition of the lot
		unsure		
		foundation only		
		foundation & debris		
		multiple buildings		
Point Recorded		lot empty	Required	Description of the location where the GPS point was collected
		other		
		north corner		
		south corner		
		east corner		
		west corner		
		northeast corner		
		southeast corner		
		southwest corner		
		northwest corner		
Eligibility Recommend		center	Required	National Register eligibility recommendation of surveyor
		entrance		
		random		
		other		
Comment		other	Required	General comment field
		Nat. Reg. eligible		
		not Nat. Reg. eligible		
		unknown		
Surveyor Name	text		Required	Name of surveyor filling in attribute information
Photographer Name	text		Required	Name of photographer taking digital pictures
Photo1	text		Required	Full filename of first photograph
Photo2	text			Full filename of second photograph
Photo3	text			Full filename of third photograph
Photo4	text			Full filename of fourth photograph

Feature	Attribute	Attribute Value	Required	Description
Archae_Pt				Point location of archaeological site
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Name	text		Resource name, if known
	Street Number	text		Street number of address
	Street Name	text		Street name of address
	Historic Neighborhood	text		Name of historic neighborhood if known
	Listed Status	National Register		Indicates if the site is recognized officially
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
		other		
		none		
	Significance	text	Required	Brief statement of significance
	Historic Context	text		Brief statement of historic context, if known
	Natural Setting	bluff	Required	Description of the natural setting the site is on
		bluff shelter		
		chenier		
		dune		
		floodplain		
		tidal flat		
		shoreline		
		first terrace		
		knoll on terrace		
		upland (ridge)		
		estuary		
		natural levee		
		backswamp		
		flooded, underwater		
		unknown		
		other		
	Vegetation Cover	active cultivation	Required	Description of the vegetation covering or activity on the site
		fallow field		
		pasture		
		orchard		
		domestic yard		
		pine forest		
		hardwood forest		
		pine plantation		
		pine, hardwood forest		
		kudzu		
		denuded		
		garden		
		recreation		
		unknown		
		other		
	Cover Estimate	number		Estimated percentage of site in primary vegetation cover
	Disturbance Type	cultivation	Required	Description of the type of primary disturbance at the site
		natural		
		sci excavation		
		unsci excavation		
		extensively collected		
		construction		
		land leveled		
		bured site		
		redeposited site		
		forestry		
		periodic flooding		

Feature	Attribute	Attribute Value	Required	Description
		indefinitely flooded		
		multiple		
		unknown		
		other		
	Disturbance Comment	text	Required	Comment field related to disturbance type
	Disturbance Degree	number		Estimated percentage of degree of disturbance
	SCS Soil Type	text		Description of the soil type the site is located within
	SCS Soil Code	text		Code describing the soil type the site is located within
	Artifact Density	heavy		Description of the impression of number of artifacts at the site
		medium		
		light		
		single artifact		
		none		
		unknown		
		other		
	Surface Area	number		Estimated size of site in square meters
	Maximum Length	number		Estimated maximum length of site in meters
	Maximum Width	number		Estimated maximum width of site in meters
	Culture	Poverty Point		Culture associated with the site
		Tchula		
		Miller		
		Marksville		
		Baytown		
		Coles Creek		
		Plaquemine		
		Non Ceramic		
		Post Archaic		
		multiple		
		none		
		unknown		
		other		
	Chronology	Paleo Indian	Required	Time period associated with site
		Early Archaic		
		Middle Archaic		
		Late Archaic		
		Early Woodland		
		Middle Woodland		
		Late Woodland		
		Early Mississippian		
		Middle Mississippian		
		Late Mississippian		
		Protohistoric		
		Historic Indian		
		Unknown Aboriginal		
		Gulf Formational		
		Historic		
		Colonial		
		Early 18th Century		
		Late 18th Century		
		Early 19th Century		
		Mid 19th Century		
		Civil War		
		Lath 19th Century		
		Early 20th Century		
		Mid 20th Century		
		Late 20th Century		
		multiple		
		unknown		
		other		

Feature	Attribute	Attribute Value	Required	Description	
	Chronology Comment	text		Comment field related to chronology	
	Associated Event	Blues music		Indication of any specific historic event associated with the building	
		Civil Rights Movement			
		Civil War			
		Civil War Memorial			
		CCC			
		Cold War			
		Creek Indian War			
		Federal Public Works			
		French Colonial period			
		Mexican War			
		War of 1812			
		Spanish Colonial period			
		Spanish-American war			
		Territorial period			
		World War I			
		World War II			
		World War I Memorial			
		World War II Memorial			
		multiple			
		none			
unknown					
Mounds	other		Type of mounds found at the site		
	conical				
	pyramidal				
	indeterminate				
	multiple				
	none				
	unknown				
	other				
	Earthworks	yes			Flag indicating the presence of earthworks at the site
		no			
unsure					
Earthworks Comment	text		Comment field related to earthworks		
Material Identified	ceramic, abo-undeco		Description of the material found at the site		
	ceramic, abo-deco				
	ceramic, abo-incised				
	ceramic, abo-stamped				
	ceramic, abo-punctuate				
	ceramic, abo-pinched				
	ceramic, abo-cordmark				
	ceramic, abo-scallopd				
	ceramic, abo-combed				
	ceramic, abo-multidec				
	ceramic, abo-other				
	ceramic, hist-crs ert				
	ceramic, hist-steware				
	ceramic, hist-ref ert				
	ceramic, hist-porceln				
	ceramics hist-other				
	chipped stone				
	proj point, knife				
	ground stone				
	unmod bone-fauna				
	worked bone-fauna				
	human bone				
	shell midden				
	PPO's				
	stone beads				
	clay beads				

Feature	Attribute	Attribute Value	Required	Description
		glass beads		
		glass		
		container glass		
		pane glass		
		amethyst glass		
		aluminum		
		brass		
		iron		
		lead		
		steel		
		metal-other		
		brick		
		construction matrial		
		flora		
		wood		
		gun part		
		bullet		
		clay figure, object		
		multiple		
		none		
		unknown		
		other		
	Material Comment	text		Comment field related to materials
	Raw Lithic Material	gravel chert		Description of the raw materials used in artifacts at the site
		non local chert		
		Tallahatta Quartzite		
		Novaculite		
		Kosciusko Quartzite		
		Gravel Quartzite		
		Ferruginous Sandstone		
		Coastal Plains Agate		
		Tuscaloosa Gravel		
		steatite		
		not applicable		
		unknown		
		other		
	Features	midden		Description of the type of features found at the site
		post mold		
		hearth		
		bunial		
		multiple		
		none		
		not applicable		
		unknown		
		other		
	Investigation Method	gen surface collect	Required	Description of the method used to investigate the site
		systematic collect		
		shovel testing		
		auger testing		
		test units		
		excavation		
		remote sensing		
		diver investigations		
		other		
		unknown		
	Investigation Comment	text		Comment field related to type of investigation
	Depth	number	Required	Description of the depth of investigation method (meters)
	Depth Comment	text		Comment field related to depth of investigation
	STP number	number	Required	Description of the total number of STPs dug on the site

Feature	Attribute	Attribute Value	Required	Description
	Ethnic Association	African-American		Indication of any historic ethnic association with the site
		Cajun		
		Chickasaw		
		Chinese		
		Choctaw		
		Czechoslovakian		
		Danish		
		Historic Indian		
		Italian		
		Jewish		
		Lebanese		
		Natchez		
		Native American		
		Norwegian		
		Polish		
		Vietnamese		
		Yugoslavian		
		Unknown Aboriginal		
		multiple		
		none		
		unknown		
		other		
	Ethic Assoc Comment	text	Required	Comment field related to ethnic association
	Point Recorded	easternmost		Description of the location where the GPS point was collected
		westernmost		
		northernmost		
		southernmost		
		center		
		random		
		other		
	Comment	text	Required	General comment field
	Surveyor Name	text		Name of surveyor filling in attribute information
	Photographer Name	text		Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph
				Polygon location (boundary) of archaeological site
Archae_Py	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Name	text		Resource name, if known
	Street Number	text		Street number of address
	Street Name	text		Street name of address
	Historic Neighborhood	text		Name of historic neighborhood if known
	Listed Status	National Register		Indicates if the site is recognized officially
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
		other		
		none		
	Significance	text	Required	Brief statement of significance
	Historic Context	text		Brief statement of historic context, if known
	Natural Setting	bluff	Required	Description of the natural setting the site is on
		bluff shelter		
		chenier		
		dune		
		floodplain		
		tidal flat		
		shoreline		
		first terrace		
		knoll on terrace		

Feature	Attribute	Attribute Value	Required	Description
	Vegetation Cover	upland (ridge)	Required	Description of the vegetation covering or activity on the site
		estuary		
		natural levee		
		backswamp		
		flooded, underwater		
		unknown		
		other		
		active cultivation		
		fallow field		
		pasture		
		orchard		
		domestic yard		
		pine forest		
		hardwood forest		
		pine plantation		
		pine, hardwood forest		
	Cover Estimate	kudzu		Estimated percentage of site in primary vegetation cover
		denuded		
		garden		
		recreation		
		unknown		
		other		
	Disturbance Type	number	Required	Description of the type of primary disturbance at the site
		cultivation		
		natural		
		sci excavation		
		unsci excavation		
		extensively collected		
		construction		
		land leveled		
		buried site		
		redeposited site		
		forestry		
		periodic flooding		
		indefinitely flooded		
		multiple		
	Disturbance Comment	unknown		Comment field related to disturbance type
		other		
		text		
	Disturbance Degree	number	Required	Estimated percentage of degree of disturbance
	SCS Soil Type	text		Description of the soil type the site is located within
	SCS Soil Code	text		Code describing the soil type the site is located within
	Artifact Density	heavy		Description of the impression of number of artifacts at the site
		medium		
		light		
		single artifact		
	Surface Area	none		Estimated size of site in square meters
		unknown		
		other		
		number		
	Maximum Length	number		Estimated maximum length of site in meters
	Maximum Width	number		Estimated maximum width of site in meters
	Culture	Poverty Point		Culture associated with the site
		Tchula		
		Miller		
		Marksville		
		Baytown		
		Coles Creek		
		Plaquemine		
		Non Ceramic		

Feature	Attribute	Attribute Value	Required	Description
Chronology		Post Archaic	Required	Time period associated with site
		multiple		
		none		
		unknown		
		other		
		Paleo Indian		
		Early Archaic		
		Middle Archaic		
		Late Archaic		
		Early Woodland		
		Middle Woodland		
		Late Woodland		
		Early Mississippian		
		Middle Mississippian		
		Late Mississippian		
		Protohistoric		
		Historic Indian		
		Unknown Aboriginal		
		Gulf Formational		
		Historic		
		Colonial		
		Early 18th Century		
		Late 18th Century		
		Early 19th Century		
		Mid 19th Century		
		Civil War		
		Lath 19th Century		
		Early 20th Century		
		Mid 20th Century		
		Late 20th Century		
		multiple		
		unknown		
		other		
Chronology Comment	text			Comment field related to chronology
	Associated Event			Indication of any specific historic event associated with the building
		Blues music		
		Civil Rights Movement		
		Civil War		
		Civil War Memorial		
		CCC		
		Cold War		
		Creek Indian War		
		Federal Public Works		
		French Colonial period		
		Mexican War		
		War of 1812		
		Spanish Colonial period		
		Spanish-American war		
		Territorial period		
		World War I		
		World War II		
		World War I Memorial		
		World War II Memorial		
		multiple		
		none		
		unknown		
Mounds		other		Type of mounds found at the site
		conical		
		pyramidal		
		indeterminate		
		multiple		

Feature	Attribute	Attribute Value	Required	Description
		none		
		unknown		
		other		
	Earthworks	yes		Flag indicating the presence of earthworks at the site
		no		
		unsure		
	Earthworks Comment	text		Comment field related to earthworks
	Material Identified	ceramic, abo-undeco		Description of the material found at the site
		ceramic, abo-deco		
		ceramic, abo-incised		
		ceramic, abo-stamped		
		ceramic, abo-punctuate		
		ceramic, abo-pinned		
		ceramic, abo-cordmark		
		ceramic, abo-scallopd		
		ceramic, abo-combed		
		ceramic, abo-multidec		
		ceramic, abo-other		
		ceramic, hist-crs ert		
		ceramic, hist-stneware		
		ceramic, hist-ref ert		
		ceramic, hist-porceln		
		ceramics, hist-other		
		chipped stone		
		proj. point, knife		
		ground stone		
		unmod bone-fauna		
		worked bone-fauna		
		human bone		
		shell midden		
		PPO's		
		stone beads		
		clay beads		
		glass beads		
		glass		
		container glass		
		pane glass		
		amethyst glass		
		aluminum		
		brass		
		iron		
		lead		
		steel		
		metal-other		
		brick		
		construction matrial		
		flora		
		wood		
		gun part		
		bullet		
		clay figure, object		
		multiple		
		none		
		unknown		
		other		
	Material Comment	text		Comment field related to materials
	Raw Lithic Material	gravel chert		Description of the raw materials used in artifacts at the site
		non local chert		
		Tallahatta Quartzite		
		Novaculite		

Feature	Attribute	Attribute Value	Required	Description
Features		Kosciusko Quartzite		Description of the type of features found at the site
		Gravel Quartzite		
		Ferruginous Sandstone		
		Coastal Plains Agate		
		Tuscaloosa Gravel		
		steatite		
		not applicable		
		unknown		
		other		
		midden		
		post mold		
		hearth		
		burial		
		multiple		
		none		
		not applicable		
		unknown		
		other		
Investigation Method		gen surface collect	Required	Description of the method used to investigate the site
		systematic collect		
		shovel testing		
		auger testing		
		test units		
		excavation		
		remote sensing		
		diver investigations		
		other		
		unknown		
Investigation Comment		text		Comment field related to type of investigation
Depth		number	Required	Description of the depth of investigation method (meters)
Depth Comment		text		Comment field related to depth of investigation
STP number		number	Required	Description of the total number of STPs dug on the site
Ethnic Association		African-American		Indication of any historic ethnic association with the site
		Cajun		
		Chickasaw		
		Chinese		
		Choctaw		
		Czechoslovakian		
		Danish		
		Historic Indian		
		Italian		
		Jewish		
		Lebanese		
		Natchez		
		Native American		
		Norwegian		
		Polish		
		Vietnamese		
		Yugoslavian		
		Unknown Aboriginal		
		multiple		
		none		
		unknown		
		other		
Ethnic Assoc Comment		text		Comment field related to ethnic association
Comment		text		General comment field
Surveyor Name		text	Required	Name of surveyor filling in attribute information
Photographer Name		text	Required	Name of photographer taking digital pictures
Photo1		text		Full filename of first photograph

Feature	Attribute	Attribute Value	Required	Description
Archae_Ln				Linear location of archaeological site
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Name	text		Resource name, if known
	Street Number	text		Street number of address
	Street Name	text		Street name of address
	Historic Neighborhood	text		Name of historic neighborhood if known
	Listed Status	National Register		Indicates if the site is recognized officially
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
		other		
		none		
	Significance	text	Required	Brief statement of significance
	Historic Context	text		Brief statement of historic context, if known
	Natural Setting	bluff	Required	Description of the natural setting the site is on
		bluff shelter		
		chenier		
		dune		
		floodplain		
		tidal flat		
		shoreline		
		first terrace		
		knoll on terrace		
		upland (ridge)		
		estuary		
		natural levee		
		backswamp		
		flooded, underwater		
		unknown		
		other		
	Vegetation Cover	active cultivation	Required	Description of the vegetation covering or activity on the site
		fallow field		
		pasture		
		orchard		
		domestic yard		
		pine forest		
		hardwood forest		
		pine plantation		
		pine.hardwood forest		
		kudzu		
		denuded		
		garden		
		recreation		
		unknown		
		other		
	Cover Estimate	number		Estimated percentage of site in primary vegetation cover
	Disturbance Type	cultivation	Required	Description of the type of primary disturbance at the site
		natural		
		sci excavation		
		unsci excavation		
		extensively collected		
		construction		
		land leveled		
		buried site		
		redeposited site		
		forestry		
		periodic flooding		

Feature	Attribute	Attribute Value	Required	Description
		indefinitely flooded		
		multiple		
		unknown		
		other		
	Disturbance Comment	text		Comment field related to disturbance type
	Disturbance Degree	number		Estimated percentage of degree of disturbance
	SCS Soil Type	text		Description of the soil type the site is located within
	SCS Soil Code	text		Code describing the soil type the site is located within
	Artifact Density	heavy	Required	Description of the impression of number of artifacts at the site
		medium		
		light		
		single artifact		
		none		
	Surface Area	unknown		
		other		
		number		Estimated size of site in square meters
		number		Estimated maximum length of site in meters
		number		Estimated maximum width of site in meters
		Poverty Point		Culture associated with the site
		Tchula		
		Miller		
		Marksville		
		Baytown		
		Coles Creek		
		Plaquemine		
	Chronology	Non Ceramic		
		Post Archaic		
		multiple		
		none		
		unknown		
		other		
		Paleo Indian	Required	Time period associated with site
		Early Archaic		
		Middle Archaic		
		Late Archaic		
		Early Woodland		
		Middle Woodland		
		Late Woodland		
		Early Mississippian		
		Middle Mississippian		
		Late Mississippian		
		Protohistoric		
		Historic Indian		
		Unknown Aboriginal		
		Gulf Formational		
		Historic		
		Colonial		
		Early 18th Century		
		Late 18th Century		
		Early 19th Century		
		Mid 19th Century		
		Civil War		
		Lath 19th Century		
		Early 20th Century		
		Mid 20th Century		
		Late 20th Century		
		multiple		
		unknown		
		other		

Feature	Attribute	Attribute Value	Required	Description
	Chronology Comment	text		Comment field related to chronology
	Associated Event	Blues music Civil Rights Movement Civil War Civil War Memorial CCC Cold War Creek Indian War Federal Public Works French Colonial period Mexican War War of 1812 Spanish Colonial period Spanish-American war Territorial period World War I World War II World War I Memorial World War II Memorial multiple none unknown other		Indication of any specific historic event associated with the building
	Mounds	conical pyramidal indeterminate multiple none unknown other		Type of mounds found at the site
	Earthworks	yes no unsure		Flag indicating the presence of earthworks at the site
	Earthworks Comment	text		Comment field related to earthworks
	Material Identified	ceramic, abo-undeco ceramic, abo-deco ceramic, abo-incised ceramic, abo-stamped ceramic, abo-punctuate ceramic, abo-pinched ceramic, abo-cordmark ceramic, abo-scallopd ceramic, abo-combed ceramic, abo-multidec ceramic, abo-other ceramic, hist-crs ert ceramic, hist-stneware ceramic, hist-ref ert ceramic, hist-porceln ceramics, hist-other chipped stone proj. point, knife ground stone unmod bone-fauna worked bone-fauna human bone shell midden PPO's stone beads clay beads		Description of the material found at the site

Feature	Attribute	Attribute Value	Required	Description
		glass beads		
		glass		
		container glass		
		pane glass		
		amethyst glass		
		aluminum		
		brass		
		iron		
		lead		
		steel		
		metal-other		
		brick		
		construction matrial		
		flora		
		wood		
		gun part		
		bullet		
		clay figure, object		
		multiple		
		none		
		unknown		
		other		
	Material Comment	text		Comment field related to materials
	Raw Lithic Material	gravel chert		Description of the raw materials used in artifacts at the site
		non local chert		
		Tallahatta Quartzite		
		Novaculite		
		Kosciusko Quartzite		
		Gravel Quartzite		
		Ferruginous Sandstone		
		Coastal Plains Agate		
		Tuscaloosa Gravel		
		steatite		
	Features	not applicable		
		unknown		
		other		
		midden		Description of the type of features found at the site
		post mold		
		hearth		
		burial		
		multiple		
		none		
		not applicable		
		unknown		
		other		
	Investigation Method	gen surface collect	Required	Description of the method used to investigate the site
		systematic collect		
		shovel testing		
		auger testing		
		test units		
		excavation		
		remote sensing		
		diver investigations		
		other		
		unknown		
	Investigation Comment	text		Comment field related to investigation method
	Depth	number	Required	Description of the depth of investigation method (meters)
	Depth Comment	text		Comment field related to depth of investigation
	STP number	number	Required	Description of the total number of STPs dug on the site

Feature	Attribute	Attribute Value	Required	Description
	Ethnic Association	African-American		Indication of any historic ethnic association with the site
		Cajun		
		Chickasaw		
		Chinese		
		Choctaw		
		Czechoslovakian		
		Danish		
		Historic Indian		
		Italian		
		Cold War		
		Jewish		
		Lebanese		
		Natchez		
		Native American		
		Norwegian		
		Polish		
		Vietnamese		
		Unknown Aboriginal		
		Yugoslavian		
		multiple		
		none		
		unknown		
		other		
	Ethnic Assoc Comment	text		Comment field associated with ethnic association
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph
	Landscape_Pt			Point location of a landscape feature
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Name	text		Resource name, if known
	Street Number	text		Street number of address
	Street Name	text		Street name of address
	Historic Neighborhood	text		Name of historic neighborhood if known
	Design Date	text		Date of the landscape feature design
	Date Estimated?	yes		Flag to indicate if the design date is estimated
		no		
		unsure		
	Less than 45 yrs old	yes	Required	Flag to indicate if the feature is less than 45 years old
		no		
		unsure		
	Listed Status	National Register		Indicates if the landscape feature is recognized officially
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
		other		
		none		
	Contributes to NR HD	yes		Flag to indicate if the landscape feature contributes to a historic district
		no		
		unknown		
		other		
	Significance	text	Required	Brief statement of significance
	Historic Context	text		Brief statement of historic context, if known
	Overall Integrity	very intact	Required	Evaluation of the MS SHPO integrity criteria
		some changes		
		extensive changes		
		deteriorated		
		ruins		

Feature	Attribute	Attribute Value	Required	Description
Materials Integrity		no visible remains	Required	Evaluation of the National Register materials integrity criteria
		yes		
		no		
		unsure		
Design Integrity		not applicable	Required	Evaluation of the National Register design integrity criteria
		yes		
		no		
		unsure		
Wrkmanship Integrity		not applicable	Required	Evaluation of the National Register workmanship integrity criteria
		yes		
		no		
		unsure		
Setting Integrity		not applicable	Required	Evaluation of the National Register setting integrity criteria
		yes		
		no		
		unsure		
Location Integrity		not applicable	Required	Evaluation of the National Register location integrity criteria
		yes		
		no		
		unsure		
Feeling Integrity		not applicable	Required	Evaluation of the National Register feeling integrity criteria
		yes		
		no		
		unsure		
Assoc. Integrity		not applicable	Required	Evaluation of the National Register association integrity criteria
		yes		
		no		
		unsure		
Vegetation Cover		not applicable		Description of the vegetation covering or activity on the site
		active cultivation		
		fallow field		
		pasture		
		orchard		
		domestic yard		
		pine forest		
		hardwood forest		
		pine plantation		
		pine,hardwood forest		
		kudzu		
		denuded		
		garden		
		recreation		
		unknown		
		other		
Natural Setting		bluff	Required	Description of the natural setting the site is on
		bluff shelter		
		chenier		
		dune		
		floodplain		
		tidal flat		
		shoreline		
		first terrace		
		knoll on terrace		
		upland (ridge)		
		estuary		
		natural levee		
		backswamp		
		flooded, underwater		
		unknown		
		other		

Feature	Attribute	Attribute Value	Required	Description
	Historic Use	landscape feature	Required	Description of the general historic use of landscape, if known
		recreational		
		military		
		multiple		
		unknown		
		other		
	Historic Use Detail	fence		Description of the detailed historic use of landscape, if known
		lighting fixture		
		natural		
		garden		
		park		
		rural		
		spring		
		zoo		
		park complex		
		state park		
		swimming pool		
		earthwork		
		battle site		
		unknown		
		other		
	Historic Use Comment	text		Comment field related to historic use
	Current Use	landscape feature	Required	Description of the general current use of landscape, prior to damage
		recreational		
		military		
		multiple		
		unknown		
		other		
	Current Use Detail	fence	Required	Description of the detailed current use of landscape, prior to damage
		lighting fixture		
		natural		
		garden		
		park		
		rural		
		spring		
		zoo		
		park complex		
		state park		
		swimming pool		
		earthwork		
		battle site		
		unknown		
		other		
	Type	tree/shrub		Description of the type of landscape feature
		ornamental planting		
		veg/flower garden		
		defined open space		
		cultural		
		scenic overlook		
		other		
	Landscape Features	text		Description of the features within the larger landscape
	Culture	Poverty Point		Culture associated with the site
		Tchula		
		Miller		
		Marksville		
		Baytown		
		Coles Creek		
		Plaquemine		
		Non Ceramic		
		Post Archaic		

Feature	Attribute	Attribute Value	Required	Description
Chronology		multiple	Required	Time period associated with site
		none		
		unknown		
		other		
		Paleo Indian		
		Early Archaic		
		Middle Archaic		
		Late Archaic		
		Early Woodland		
		Middle Woodland		
		Late Woodland		
		Early Mississippian		
		Middle Mississippian		
		Late Mississippian		
		Protohistoric		
		Historic Indian		
		Unknown Aboriginal		
		Gulf Formational		
		Historic		
		Colonial		
		Early 18th Century		
		Late 18th Century		
		Early 19th Century		
		Mid 19th Century		
		Civil War		
		Late 19th Century		
		Early 20th Century		
		Mid 20th Century		
		Late 20th Century		
		multiple		
		unknown		
		other		
Chronology Comment	Associated Event	text		Comment field related to chronology
		Blues music		Indication of any specific historic event associated with the building
Associated Event		Civil Rights Movement		
		Civil War		
		Civil War Memorial		
		CCC		
		Cold War		
		Creek Indian War		
		Federal Public Works		
		French Colonial period		
		Mexican War		
		War of 1812		
		Spanish Colonial period		
		Spanish-American war		
		Territorial period		
		World War I		
		World War II		
		World War I Memorial		
		World War II Memorial		
		multiple		
		none		
		unknown		
Ethnic Association		other		Indication of any historic ethnic association with the site
		African-American		
		Cajun		
		Chickasaw		
		Chinese		
		Choctaw		

Feature	Attribute	Attribute Value	Required	Description
		Czechoslovakian		
		Danish		
		Historic Indian		
		Italian		
		Cold War		
		Jewish		
		Lebanese		
		Natchez		
		Native American		
		Norwegian		
		Polish		
		Vietnamese		
		Unknown Aboriginal		
		Yugoslavian		
		multiple		
		none		
		unknown		
		other		
	Ethnic Assoc Comment	text		Comment field associated with ethnic association
	Point Recorded	north corner	Required	Description of the location where the GPS point was collected
		south corner		
		east corner		
		west corner		
		northeast corner		
		southeast corner		
		southwest corner		
		northwest corner		
		easternmost		
		westernmost		
		northernmost		
		southernmost		
		center		
		random		
	Eligibility Recommend	other		
		Nat. Reg. eligible	Required	National Register eligibility recommendation of surveyor
		not Nat. Reg. eligible		
		unknown		
	Comment	other		
	Surveyor Name	text	Required	General comment field
	Photographer Name	text	Required	Name of surveyor filling in attribute information
	Photo1	text	Required	Name of photographer taking digital pictures
		text		Full filename of first photograph
	Photo1	text		
Landscape_Py				Polygon location (boundary) of a landscape feature
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Name	text		Resource name, if known
	Street Number	text		Street number of address
	Street Name	text		Street name of address
	Historic Neighborhood	text		Name of historic neighborhood if known
	Design Date	text		Date of the landscape feature design
	Date Estimated?	yes		Flag to indicate if the design date is estimated
		no		
	Less than 45 yrs old	yes	Required	Flag to indicate if the feature is less than 45 years old
		no		
		unsure		
	Listed Status	National Register		Indicates if the landscape feature is recognized officially
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		

Feature	Attribute	Attribute Value	Required	Description
	Contributes to NR HD	unknown		Flag to indicate if the landscape feature contributes to a historic district
		other		
		none		
		yes		
		no		
	Significance	unknown		Brief statement of significance
		other		
		text	Required	
		text		
		text		
	Historic Context	very intact	Required	Evaluation of the MS SHPO integrity criteria
		some changes		
		extensive changes		
		deteriorated		
		ruins		
	Materials Integrity	no visible remains		Evaluation of the National Register materials integrity criteria
		yes	Required	
		no		
		unsure		
		not applicable		
	Design Integrity	yes	Required	Evaluation of the National Register design integrity criteria
		no		
		unsure		
		not applicable		
		yes	Required	Evaluation of the National Register workmanship integrity criteria
	Wrkmanship Integrity	no		
		unsure		
		not applicable		
		yes	Required	
		no		
	Setting Integrity	unsure		Evaluation of the National Register setting integrity criteria
		not applicable		
		yes	Required	
		no		
		unsure		
	Location Integrity	not applicable		Evaluation of the National Register location integrity criteria
		yes	Required	
		no		
		unsure		
		not applicable		
	Feeling Integrity	yes	Required	Evaluation of the National Register feeling integrity criteria
		no		
		unsure		
		not applicable		
		yes	Required	Evaluation of the National Register association integrity criteria
	Assoc. Integrity	no		
		unsure		
		not applicable		
		active cultivation		
		fallow field		
	Vegetation Cover	pasture		Description of the vegetation covering or activity on the site
		orchard		
		domestic yard		
		pine forest		
		hardwood forest		
		pine plantation		
		pine, hardwood forest		
		kudzu		
		denuded		
		garden		
		recreation		
		unknown		
		other		

Feature	Attribute	Attribute Value	Required	Description
	Natural Setting	bluff	Required	Description of the natural setting the site is on
		bluff shelter		
		chenier		
		dune		
		floodplain		
		tidal flat		
		shoreline		
		first terrace		
		knoll on terrace		
		upland (ridge)		
		estuary		
		natural levee		
		backswamp		
		flooded, underwater		
		unknown		
	Historic Use	other	Required	Description of the general historic use of landscape, if known
		landscape feature		
		recreational		
		military		
		multiple		
	Historic Use Detail	unknown		Description of the detailed historic use of landscape, if known
		other		
		fence		
		lighting fixture		
		natural		
		garden		
		park		
		rural		
		spring		
		zoo		
		park complex		
		state park		
		swimming pool		
		earthwork		
		battle site		
	Historic Use Comment	unknown		
		other		
	Historic Use Comment	text		Comment field related to historic use
	Current Use	landscape feature	Required	Description of the general current use of landscape, prior to damage
		recreational		
		military		
		multiple		
		unknown		
	Current Use Detail	other		Description of the detailed current use of landscape, prior to damage
		fence		
		lighting fixture		
		natural		
		garden		
		park		
		rural		
		spring		
		zoo		
		park complex		
		state park		
		swimming pool		
		earthwork		
		battle site		
		unknown		
		other		

Feature	Attribute	Attribute Value	Required	Description
	Type	tree/shrub		Description of the type of landscape feature
		ornamental planting		
		veg/flower garden		
		defined open space		
		cultural		
		scenic overlook		
		other		
	Landscape Features	text		Description of the features within the larger landscape
	Culture	Poverty Point		Culture associated with the site
		Tchula		
		Miller		
		Marksville		
		Baytown		
		Coles Creek		
		Plaquemine		
		Non Ceramic		
		Post Archaic		
		multiple		
		none		
		unknown		
		other		
	Chronology	Paleo Indian	Required	Time period associated with site
		Early Archaic		
		Middle Archaic		
		Late Archaic		
		Early Woodland		
		Middle Woodland		
		Late Woodland		
		Early Mississippian		
		Middle Mississippian		
		Late Mississippian		
		Protohistoric		
		Historic Indian		
		Unknown Aboriginal		
		Gulf Formational		
		Historic		
		Colonial		
		Early 18th Century		
		Late 18th Century		
		Early 19th Century		
		Mid 19th Century		
		Civil War		
		Lath 19th Century		
		Early 20th Century		
		Mid 20th Century		
		Late 20th Century		
		multiple		
		unknown		
		other		
	Chronology Comment	text		Comment field related to chronology
	Associated Event	Blues music		Indication of any specific historic event associated with the building
		Civil Rights Movement		
		Civil War		
		Civil War Memorial		
		CCC		
		Cold War		
		Creek Indian War		
		Federal Public Works		
		French Colonial period		
		Mexican War		

Feature	Attribute	Attribute Value	Required	Description
		War of 1812		
		Spanish Colonial period		
		Spanish-American war		
		Territorial period		
		World War I		
		World War II		
		World War I Memorial		
		World War II Memorial		
		multiple		
		none		
		unknown		
		other		
	Ethnic Association	African-American		Indication of any historic ethnic association with the site
		Cajun		
		Chickasaw		
		Chinese		
		Choctaw		
		Czechoslovakian		
		Danish		
		Historic Indian		
		Italian		
		Cold War		
		Jewish		
		Lebanese		
		Natchez		
		Native American		
		Norwegian		
		Polish		
		Vietnamese		
		Unknown Aboriginal		
		Yugoslavian		
		multiple		
		none		
		unknown		
		other		
	Ethnic Assoc Comment	text		Comment field associated with ethnic association
	Eligibility Recommend	Nat. Reg. eligible	Required	National Register eligibility recommendation of surveyor
		not Nat. Reg. eligible		
		unknown		
		other		
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph
Landscape_Ln				Linear location of a landscape feature
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Name	text		Resource name, if known
	Street Number	text		Street number of address
	Street Name	text		Street name of address
	Historic Neighborhood	text		Name of historic neighborhood if known
	Design Date	text		Date of the landscape feature design
	Date Estimated?	yes		Flag to indicate if the design date is estimated
		no		
	Less than 45 yrs old	yes	Required	Flag to indicate if the feature is less than 45 years old
		no		
	Listed Status	unsure		
		National Register		Indicates if the landscape feature is recognized officially
		NR historic district		
		NHL		
		local listing		

Feature	Attribute	Attribute Value	Required	Description
	Contributes to NR HD	local hist district		Flag to indicate if the landscape feature contributes to a historic district
		multiple		
		unknown		
		other		
		none		
		yes		
		no		
		unknown		
		other		
Significance	Historic Context	text	Required	Brief statement of significance
		text		Brief statement of historic context, if known
Overall Integrity		very intact	Required	Evaluation of the MS SHPO integrity criteria
		some changes		
		extensive changes		
		deteriorated		
		ruins		
Materials Integrity		no visible remains		Evaluation of the National Register materials integrity criteria
		yes	Required	
		no		
		unsure		
Design Integrity		not applicable		Evaluation of the National Register design integrity criteria
		yes	Required	
		no		
		unsure		
Wrkmanship Integrity		not applicable		Evaluation of the National Register workmanship integrity criteria
		yes	Required	
		no		
		unsure		
Setting Integrity		not applicable		Evaluation of the National Register setting integrity criteria
		yes	Required	
		no		
		unsure		
Location Integrity		not applicable		Evaluation of the National Register location integrity criteria
		yes	Required	
		no		
		unsure		
Feeling Integrity		not applicable		Evaluation of the National Register feeling integrity criteria
		yes	Required	
		no		
		unsure		
Assoc. Integrity		not applicable		Evaluation of the National Register association integrity criteria
		yes	Required	
		no		
		unsure		
Vegetation Cover		not applicable		Description of the vegetation covering or activity on the site
		active cultivation		
		fallow field		
		pasture		
		orchard		
		domestic yard		
		pine forest		
		hardwood forest		
		pine plantation		
		pine,hardwood forest		
		kudzu		
		denuded		
		garden		
		recreation		
		unknown		
		other		

Feature	Attribute	Attribute Value	Required	Description
Natural Setting		bluff	Required	Description of the natural setting the site is on
		bluff shelter		
		chenier		
		dune		
		floodplain		
		tidal flat		
		shoreline		
		first terrace		
		knoll on terrace		
		upland (ridge)		
		estuary		
		natural levee		
		backswamp		
		flooded, underwater		
Historic Use		unknown	Required	Description of the general historic use of landscape, if known
		other		
		landscape feature		
		recreational		
		trail		
		railroad		
		military		
Historic Use Detail		multiple	Required	Description of the detailed historic use of landscape, if known
		unknown		
		other		
		fence		
		lighting fixture		
		trail		
		natural		
		garden		
		park		
		rural		
		railroad		
		temporary railroad		
		spring		
		zoo		
		park complex		
		state park		
		swimming pool		
		earthwork		
Historic Use Comment		battle site	Required	Comment field related to historic use
		unknown		
Current Use		other	Required	Description of the general current use of landscape, prior to damage
		text		
		landscape feature		
		recreational		
		trail		
		railroad		
		military		
Current Use Detail		multiple	Required	Description of the detailed current use of landscape, prior to damage
		unknown		
		other		
		fence		
		lighting fixture		
		trail		
		natural		
		garden		
		park		
		rural		
Current Use Comment		railroad	Required	Comment field related to current use
		temporary railroad		

Feature	Attribute	Attribute Value	Required	Description
Type		spring		Description of the type of landscape feature
		zoo		
		park complex		
		state park		
		swimming pool		
		earthwork		
		battle site		
		unknown		
		other		
		tree/shrub		
		ornamental planting		
		veg/flower garden		
		trail		
		railroad		
		defined open space		
		cultural		
		scenic overlook		
Landscape Features	Culture	other		Description of the features within the larger landscape Culture associated with the site
		text		
Chronology		Poverty Point		Time period associated with site
		Tchula		
		Miller		
		Marksville		
		Baytown		
		Coles Creek		
		Plaquemine		
		Non Ceramic		
		Post Archaic		
		multiple		
		none		
		unknown		
		other		
		Paleo Indian	Required	
		Early Archaic		
		Middle Archaic		
		Late Archaic		
		Early Woodland		
		Middle Woodland		
		Late Woodland		
		Early Mississippian		
		Middle Mississippian		
		Late Mississippian		
		Protohistoric		
		Historic Indian		
		Unknown Aboriginal		
		Gulf Formational		
		Historic		
		Colonial		
		Early 18th Century		
		Late 18th Century		
		Early 19th Century		
		Mid 19th Century		
		Civil War		
		Late 19th Century		
		Early 20th Century		
		Mid 20th Century		
		Late 20th Century		
		multiple		
		unknown		
		other		

Feature	Attribute	Attribute Value	Required	Description
	Chronology Comment	text		Comment field related to chronology
	Associated Event	Blues music		Indication of any specific historic event associated with the building
		Civil Rights Movement		
		Civil War		
		Civil War Memorial		
		CCC		
		Cold War		
		Creek Indian War		
		Federal Public Works		
		French Colonial period		
		Mexican War		
		War of 1812		
		Spanish Colonial period		
		Spanish-American war		
		Territorial period		
		World War I		
		World War II		
		World War I Memorial		
		World War II Memorial		
		multiple		
		none		
		unknown		
		other		
	Ethnic Association	African-American		Indication of any historic ethnic association with the site
		Cajun		
		Chickasaw		
		Chinese		
		Choctaw		
		Czechoslovakian		
		Danish		
		Historic Indian		
		Italian		
		Cold War		
		Jewish		
		Lebanese		
		Natchez		
		Native American		
		Norwegian		
		Polish		
		Vietnamese		
		Unknown Aboriginal		
		Yugoslavian		
		multiple		
		none		
		unknown		
		other		
	Ethnic Assoc Comment	text		Comment field associated with ethnic association
	Eligibility Recommend	Nat. Reg. eligible	Required	National Register eligibility recommendation of surveyor
		not Nat. Reg. eligible		
		unknown		
		other		
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph
	Marker_Monument			Point location of a historical marker or sign
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Name	text		Name or title of marker
	Text	text		Text written on marker

Feature	Attribute	Attribute Value	Required	Description
	Type	statue	Required	Description of the type of marker or monument
		monument/memorial		
		plaque/tablet		
		boundary marker		
		interpretive sign		
		MDAH marker/sign		
	Historic Use	other	Required	Description of the general historic use of the marker, if known
		funerary		
		monument		
		multiple		
		unknown		
	Historic Use Detail	other		Description of the detailed historic use of the marker, if known
		grave		
		fountain		
		mound		
		military		
		unknown		
	Current Use	other	Required	Description of the general current use of the marker, prior to damage
		funerary		
		monument		
		multiple		
		unknown		
	Current Use Detail	other		Description of the detailed current use of the marker, prior to damage
		grave		
		fountain		
		mound		
		military		
		unknown		
	Use Comment	text		Comment field on historic/current use
	Overall Integrity	very intact	Required	Evaluation of the MS SHPO integrity criteria
		some changes		
		extensive changes		
		deteriorated		
		ruins		
	Condition	no visible remains		Assessment of the condition of the marker/monument
		intact/legible		
		degraded/ilegible		
		missing		
		destroyed		
		other		
	Materials	earth		Description of the primary construction material of the marker
		masonry		
		stone		
		metal		
		wood/frame		
		unknown		
	Associated Event	other		Indication of any specific historic event associated with the building
		Blues music		
		Civil Rights Movement		
		Civil War		
		Civil War Memorial		
		CCC		
		Cold War		
		Creek Indian War		
		Federal Public Works		
		French Colonial period		
		Mexican War		
		War of 1812		
		Spanish Colonial period		

Feature	Attribute	Attribute Value	Required	Description	
	Ethnic Association	Spanish-American war			
		Territorial period			
		World War I			
		World War II			
		World War I Memorial			
		World War II Memoril			
		multiple			
		none			
		unknown			
		other			
		African-American		Indication of any historic ethnic association with the site	
		Cajun			
		Chickasaw			
		Chinese			
		Choctaw			
		Czechoslovakian			
		Danish			
		Historic Indian			
		Italian			
		Cold War			
	Jewish				
	Lebanese				
	Natchez				
	Native American				
	Norwegian				
	Polish				
	Vietnamese				
	Unknown Aboriginal				
	Yugoslavian				
	multiple				
	none				
	unknown				
	other				
	Ethnic Assoc Comment	text		Comment field associated with ethnic association	
	Point Recorded	north corner	Required	Description of the location where the GPS point was collected	
		south corner			
		east corner			
		west corner			
		northeast corner			
		southeast corner			
		southwest corner			
		northwest corner			
		center			
		random			
		other			
		Comment	text		General comment field
		Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures	
	Photo1	text		Full filename of first photograph	
Cemetery_Pt			Point location of known cemetery		
GPS_ID	text	Required	Unique ID assigned by field surveyor		
Name	text		Name of cemetery, if known		
Oldest Grave	pre 1700		Indication of the date range of the oldest grave found in the cemetery		
	1700-1750				
	1750-1800				
	1800-1850				
	1850-1900				
	1900-1950				
	1950-Present				
	unknown				

Feature	Attribute	Attribute Value	Required	Description
Date Estimated?		other		Flag to indicate if the date range is estimated
		yes		
		no		
Less than 45 yrs old		yes	Required	Flag to indicate if the cemetery is less than 45 years old
		no		
		unsure		
Status		active		
		maintained		
		abandoned		
		unknown		
		other		
Number_graves		number		Estimated number of graves found in the cemetery
Unmarked graves?		yes		Indication of whether unmarked graves are present
		no		
		unsure		
Listed Status		National Register		Indicates if the cemetery is recognized officially
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
		other		
		none		
Historic District		yes		Flag to indicate if the cemetery is a historic district
		no		
		unknown		
Significance		text	Required	Brief statement of significance
Historic Context		text		Brief statement of historic context, if known
Overall Integrity		very intact	Required	Evaluation of the MS SHPO integrity criteria
		some changes		
		extensive changes		
		deteriorated		
		ruins		
		no visible remains		
Materials Integrity		yes	Required	Evaluation of the National Register materials integrity criteria
		no		
		unsure		
		not applicable		
Design Integrity		yes	Required	Evaluation of the National Register design integrity criteria
		no		
		unsure		
		not applicable		
Wrkmanship Integrity		yes	Required	Evaluation of the National Register workmanship integrity criteria
		no		
		unsure		
		not applicable		
Setting Integrity		yes	Required	Evaluation of the National Register setting integrity criteria
		no		
		unsure		
		not applicable		
Location Integrity		yes	Required	Evaluation of the National Register location integrity criteria
		no		
		unsure		
		not applicable		
Feeling Integrity		yes	Required	Evaluation of the National Register feeling integrity criteria
		no		
		unsure		
		not applicable		

Feature	Attribute	Attribute Value	Required	Description
	Assoc. Integrity	yes	Required	Evaluation of the National Register association integrity criteria
		no		
		unsure		
		not applicable		
	Historic Use	funerary	Required	Description of the general historic use of the cemetery, if known
		unknown		
		other		
	Historic Use Detail	cemetery		Description of the detailed historic use of the cemetery, if known
		unknown		
		other		
	Current Use	funerary	Required	Description of the general current use of the cemetery, prior to damage
		unknown		
		other		
	Current Use Detail	cemetery		Description of the detailed current use of the cemetery, prior to damage
		unknown		
		other		
	On Mound?	yes		Indicates whether the cemetery is sited on top of a mound
		no		
		unsure		
	Burial Society	Masonic		Indicates whether the cemetery is associated with a group/society
		Mosaic Templar		
		Woodmen of the World		
		Odd Fellows		
		unknown		
		multiple		
		none		
		other		
	Religious Associatn	Catholic		Indicates whether the cemetery is associated with a religious group
		Episcopal		
		Methodist		
		Baptist		
		Af. Methodist Episc.		
		Jewish		
		unknown		
		multiple		
	Ethnic Association	none		Indication of any historic ethnic association with the site
		other		
		African-American		
		Cajun		
		Chickasaw		
		Chinese		
		Choctaw		
		Czechoslovakian		
		Danish		
		Historic Indian		
		Italian		
		Cold War		
		Jewish		
		Lebanese		
		Natchez		
		Native American		
		Norwegian		
		Polish		
		Vietnamese		
		Unknown Aboriginal		
		Yugoslavian		
		multiple		
		none		
		unknown		
		other		

Feature	Attribute	Attribute Value	Required	Description
	Ethnic Assoc Comment	text		Comment field associated with ethnic association
	Point Recorded	north corner	Required	Description of the location where the GPS point was collected
		south corner		
		east corner		
		west corner		
		northeast corner		
		southeast corner		
		southwest corner		
		northwest corner		
		center		
		entrance		
		random		
		other		
	Eligibility Recommend	Nat Reg eligible	Required	National Register eligibility recommendation of surveyor
		not Nat Reg. eligible		
		unknown		
		other		
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph
Structure_Pt				Point location of historic structure
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Property Name	text		Resource name, if known
	Street Number	text		Street number of address
	Street Name	text		Street name of address
	Construction Date	text		Date of the structure construction
	Date Estimated?	yes		Flag to indicate if the construction date is estimated
		no		
	Less than 45 yrs old	yes	Required	Flag to indicate if the structure is less than 45 years old
		no		
		unsure		
	Listed Status	National Register		Indicates if the structure is recognized officially
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
		other		
	Contributes to NR HD	yes		Flag to indicate if the structure contributes to a historic district
		no		
		unknown		
		other		
	Significance	text	Required	Brief statement of significance
	Historic Context	text		Brief statement of historic context, if known
	Overall Integrity	very intact	Required	Evaluation of the MS SHPO integrity criteria
		some changes		
		extensive changes		
		deteriorated		
		ruins		
		no visible remains		
	Materials Integrity	yes	Required	Evaluation of the National Register materials integrity criteria
		no		
		unsure		
		not applicable		
	Design Integrity	yes	Required	Evaluation of the National Register design integrity criteria
		no		
		unsure		

Feature	Attribute	Attribute Value	Required	Description
	Wrkmanship Integrity	not applicable	Required	Evaluation of the National Register workmanship integrity criteria
		yes		
		no		
		unsure		
	Setting Integrity	not applicable	Required	Evaluation of the National Register setting integrity criteria
		yes		
		no		
		unsure		
	Location Integrity	not applicable	Required	Evaluation of the National Register location integrity criteria
		yes		
		no		
		unsure		
	Feeling Integrity	not applicable	Required	Evaluation of the National Register feeling integrity criteria
		yes		
		no		
		unsure		
	Assoc. Integrity	not applicable	Required	Evaluation of the National Register association integrity criteria
		yes		
		no		
		unsure		
	Historic Use	bridge	Required	Description of the general historic use of structure, if known
		maritime		
		public works		
		multiple		
		unknown		
		other		
	Historic Use Detail	pedestrian	Required	Description of the detailed historic use of structure, if known
		railroad		
		vehicular		
		ship/boat		
		dam/dike/levee		
		pier		
		fire tower		
		reservoir		
		water tower		
		unknown		
	Historic Use Comment	text	Required	Commend field related to historic use
	Current Use	bridge	Required	Description of the general current use of structure, prior to damage
		maritime		
		public works		
		multiple		
		unknown		
		other		
	Current Use Detail	pedestrian	Required	Description of the detailed current use of structure, prior to damage
		railroad		
		vehicular		
		ship/boat		
		dam/dike/levee		
		pier		
		fire tower		
		reservoir		
		water tower		
		unknown		
	Culture	other	Required	Culture associated with the site
		Poverty Point		
		Tchula		
		Miller		
		Marksville		

Feature	Attribute	Attribute Value	Required	Description
Chronology		Baytown	Required	Time period associated with site
		Coles Creek		
		Plaquemine		
		Non Ceramic		
		Post Archaic		
		multiple		
		none		
		unknown		
		other		
		Paleo Indian		
		Early Archaic		
		Middle Archaic		
		Late Archaic		
		Early Woodland		
		Middle Woodland		
		Late Woodland		
		Early Mississippian		
		Middle Mississippian		
		Late Mississippian		
		Protohistoric		
		Historic Indian		
Chronology Comment		Unknown Aboriginal		Comment field related to chronology
		Gulf Formational		
		Historic		
		Colonial		
		Early 18th Century		
		Late 18th Century		
		Early 19th Century		
		Mid 19th Century		
		Civil War		
		Lath 19th Century		
		Early 20th Century		
		Mid 20th Century		
		Late 20th Century		
		multiple		
		unknown		
		other		
		text		
		Blues music		
		Civil Rights Movement		
		Civil War		
Associated Event		Civil War Memorial		Indication of any specific historic event associated with the building
		CCC		
		Cold War		
		Creek Indian War		
		Federal Public Works		
		French Colonial period		
		Mexican War		
		War of 1812		
		Spanish Colonial period		
		Spanish-American war		
		Territorial period		
		World War I		
		World War II		
		World War I Memorial		
		World War II Memorial		
		multiple		
		none		
		unknown		
		other		

Feature	Attribute	Attribute Value	Required	Description
	Ethnic Association	African-American		Indication of any historic ethnic association with the site
		Cajun		
		Chickasaw		
		Chinese		
		Choctaw		
		Czechoslovakian		
		Danish		
		Historic Indian		
		Italian		
		Cold War		
		Jewish		
		Lebanese		
		Natchez		
		Native American		
		Norwegian		
		Polish		
		Vietnamese		
		Unknown Aboriginal		
		Yugoslavian		
		multiple		
		none		
	Ethnic Assoc Comment	unknown		Comment field associated with ethnic association
		other		
	Point Recorded	text	Required	Description of the location where the GPS point was collected
		north corner		
		south corner		
		east corner		
		west corner		
		northeast corner		
		southeast corner		
		southwest corner		
		northwest corner		
		center		
		entrance		
		façade center		
		random		
	Eligibility Recommend	other	Required	National Register eligibility recommendation of surveyor
		Nat. Reg. eligible		
		not Nat. Reg. eligible		
		unknown		
		other		
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text	Required	Full filename of first photograph
	Photo2	text		Full filename of second photograph
	Photo3	text		Full filename of third photograph
	Photo4	text		Full filename of fourth photograph
Structure_Py				Polygon location (footprint) of historic structure
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Property Name	text		Resource name, if known
	Street Number	text		Street number of address
	Street Name	text		Street name of address
	Construction Date	text		Date of the structure construction
	Date Estimated?	yes		Flag to indicate if the structure date is estimated
		no		
	Less than 45 yrs old	yes		Flag to indicate if the structure is less than 45 years old
		no	Required	
		unsure		

Feature	Attribute	Attribute Value	Required	Description
Listed Status	Listed Status	National Register		Indicates if the structure is recognized officially
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
		other		
		none		
Contributes to NR HD	Contributes to NR HD	yes		Flag to indicate if the structure contributes to a historic district
		no		
		unknown		
		other		
Significance	Significance	text	Required	Brief statement of significance
Historic Context	Historic Context	text		Brief statement of historic context, if known
Overall Integrity	Overall Integrity	very intact	Required	Evaluation of the MS SHPO integrity criteria
		some changes		
		extensive changes		
		deteriorated		
		ruins		
Materials Integrity	Materials Integrity	no visible remains	Required	Evaluation of the National Register materials integrity criteria
		yes		
		no		
		unsure		
Design Integrity	Design Integrity	not applicable	Required	Evaluation of the National Register design integrity criteria
		yes		
		no		
		unsure		
Wrkmanship Integrity	Wrkmanship Integrity	not applicable	Required	Evaluation of the National Register workmanship integrity criteria
		yes		
		no		
		unsure		
Setting Integrity	Setting Integrity	not applicable	Required	Evaluation of the National Register setting integrity criteria
		yes		
		no		
		unsure		
Location Integrity	Location Integrity	not applicable	Required	Evaluation of the National Register location integrity criteria
		yes		
		no		
		unsure		
Feeling Integrity	Feeling Integrity	not applicable	Required	Evaluation of the National Register feeling integrity criteria
		yes		
		no		
		unsure		
Assoc. Integrity	Assoc. Integrity	not applicable	Required	Evaluation of the National Register association integrity criteria
		yes		
		no		
		unsure		
Historic Use	Historic Use	not applicable	Required	Description of the general historic use of structure, if known
		bridge		
		maritime		
		public works		
		multiple		
Historic Use Detail	Historic Use Detail	unknown	Required	Description of the detailed historic use of structure, if known
		other		
		pedestrian		
		railroad		
		vehicular		
		ship/boat		
		dam/dike/levee		

Feature	Attribute	Attribute Value	Required	Description
		fire tower		
		reservoir		
		water tower		
		unknown		
		other		
	Historic Use Comment	text	Required	Comment field related to historic use
	Current Use	bridge		Description of the general current use of structure, prior to damage
	Current Use Detail	maritime		Description of the detailed current use of structure, prior to damage
		public works		
		multiple		
		unknown		
		other		
		pedestrian		
		railroad		
		vehicular		
		ship/boat		
		dam/dike/levee		
		fire tower		
		reservoir		
		water tower		
		unknown		
		other		
	Culture	Poverty Point		Culture associated with the site
		Tchula		
		Miller		
		Marksville		
		Baytown		
		Coles Creek		
		Plaquemine		
		Non Ceramic		
		Post Archaic		
		multiple		
		none		
		unknown		
		other		
Chronology		Paleo Indian	Required	Time period associated with site
		Early Archaic		
		Middle Archaic		
		Late Archaic		
		Early Woodland		
		Middle Woodland		
		Late Woodland		
		Early Mississippian		
		Middle Mississippian		
		Late Mississippian		
		Protohistoric		
		Historic Indian		
		Unknown Aboriginal		
		Gulf Formational		
		Historic		
		Colonial		
		Early 18th Century		
		Late 18th Century		
		Early 19th Century		
		Mid 19th Century		
		Civil War		
		Lath 19th Century		
		Early 20th Century		
		Mid 20th Century		
		Late 20th Century		

Feature	Attribute	Attribute Value	Required	Description
		multiple		
		unknown		
	Chronology Comment	other		
		text		Comment field related to chronology
	Associated Event	Blues music		Indication of any specific historic event associated with the building
		Civil Rights Movement		
		Civil War		
		Civil War Memorial		
		CCC		
		Cold War		
		Creek Indian War		
		Federal Public Works		
		French Colonial period		
		Mexican War		
		War of 1812		
		Spanish Colonial period		
		Spanish-American war		
		Territorial period		
		World War I		
		World War II		
		World War I Memorial		
		World War II Memorial		
		multiple		
		none		
	Ethnic Association	unknown		
		other		
		African-American		Indication of any historic ethnic association with the site
		Cajun		
		Chickasaw		
		Chinese		
		Choctaw		
		Czechoslovakian		
		Danish		
		Historic Indian		
		Italian		
		Cold War		
		Jewish		
		Lebanese		
		Natchez		
		Native American		
		Norwegian		
		Polish		
		Vietnamese		
		Unknown Aboriginal		
		Yugoslavian		
		multiple		
		none		
		unknown		
		other		
	Ethnic Assoc Comment	text		Comment field associated with ethnic association
	Eligibility Recommend	Nat Reg eligible	Required	National Register eligibility recommendation of surveyor
		not Nat Reg eligible		
		unknown		
		other		
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text	Required	Full filename of first photograph
	Photo2	text		Full filename of second photograph
	Photo3	text		Full filename of third photograph

Feature	Attribute	Attribute Value	Required	Description
Structure_Ln	Photo4	text		Full filename of fourth photograph
				Linear location of historic structure
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Property Name	text		Resource name, if known
	Street Number	text		Street number of address
	Street Name	text		Street name of address
	Construction Date	text		Date of the structure construction
	Date Estimated?	yes		Flag to indicate if the construction date is estimated
		no		
	Less than 45 yrs old	yes	Required	Flag to indicate if the structure is less than 45 years old
		no		
		unsure		
	Listed Status	National Register		Indicates if the structure is recognized officially
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
		other		
		none		
	Contributes to NR HD	yes		Flag to indicate if the structure contributes to a historic district
		no		
		unknown		
		other		
	Significance	text	Required	Brief statement of significance
	Historic Context	text		Brief statement of historic context, if known
	Overall Integrity	very intact	Required	Evaluation of the MS SHPO integrity criteria
		some changes		
		extensive changes		
		deteriorated		
		ruins		
		no visible remains		
	Materials Integrity	yes	Required	Evaluation of the National Register materials integrity criteria
		no		
		unsure		
		not applicable		
	Design Integrity	yes	Required	Evaluation of the National Register design integrity criteria
		no		
		unsure		
		not applicable		
	Wrkmanship Integrity	yes	Required	Evaluation of the National Register workmanship integrity criteria
		no		
		unsure		
		not applicable		
	Setting Integrity	yes	Required	Evaluation of the National Register setting integrity criteria
		no		
		unsure		
		not applicable		
	Location Integrity	yes	Required	Evaluation of the National Register location integrity criteria
		no		
		unsure		
		not applicable		
	Feeling Integrity	yes	Required	Evaluation of the National Register feeling integrity criteria
		no		
		unsure		
		not applicable		
	Assoc. Integrity	yes	Required	Evaluation of the National Register association integrity criteria
		no		
		unsure		

Feature	Attribute	Attribute Value	Required	Description
Historic Use		not applicable	Required	Description of the general historic use of structure, if known
		bridge		
		maritime		
		public works		
		trail		
		railroad		
		multiple		
		unknown		
		other		
Historic Use Detail		pedestrian		Description of the detailed historic use of structure, if known
		railroad		
		temporary railroad		
		trail		
		vehicular		
		ship/boat		
		dam/dike/levee		
		fire tower		
		reservoir		
		water tower		
		multiple		
		unknown		
		other		
Historic Use Comment		text		Comment field related to historic use
Current Use		bridge	Required	Description of the general current use of structure, prior to damage
		maritime		
		public works		
		trail		
		railroad		
		multiple		
		unknown		
		other		
Current Use Detail		pedestrian	Required	Description of the detailed current use of structure, prior to damage
		railroad		
		temporary railroad		
		trail		
		vehicular		
		ship/boat		
		dam/dike/levee		
		fire tower		
		reservoir		
		water tower		
		unknown		
		other		
Culture		Poverty Point		Culture associated with the site
		Tchula		
		Miller		
		Marksville		
		Baytown		
		Coles Creek		
		Plaquemine		
		Non Ceramic		
		Post Archaic		
		multiple		
		none		
		unknown		
		other		
Chronology		Paleo Indian	Required	Time period associated with site
		Early Archaic		
		Middle Archaic		
		Late Archaic		

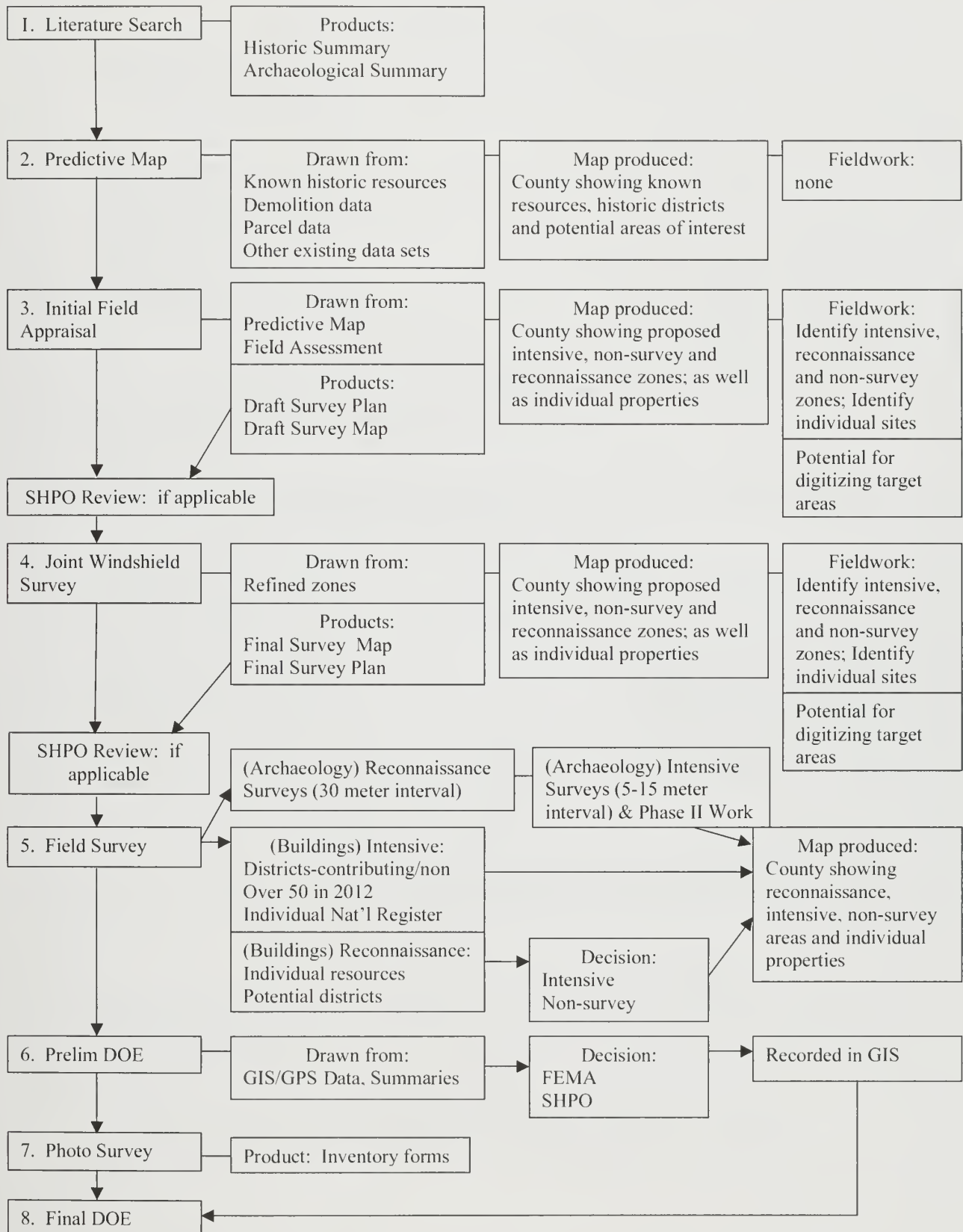
Feature	Attribute	Attribute Value	Required	Description
		Early Woodland		
		Middle Woodland		
		Late Woodland		
		Early Mississippian		
		Middle Mississippian		
		Late Mississippian		
		Protohistoric		
		Historic Indian		
		Unknown Aboriginal		
		Gulf Formational		
		Historic		
		Colonial		
		Early 18th Century		
		Late 18th Century		
		Early 19th Century		
		Mid 19th Century		
		Civil War		
		Lath 19th Century		
		Early 20th Century		
		Mid 20th Century		
		Late 20th Century		
		multiple		
		unknown		
		other		
	Chronology Comment	text		Comment field related to chronology
	Associated Event	Blues music		Indication of any specific historic event associated with the building
		Civil Rights Movement		
		Civil War		
		Civil War Memorial		
		CCC		
		Cold War		
		Creek Indian War		
		Federal Public Works		
		French Colonial period		
		Mexican War		
		War of 1812		
		Spanish Colonial period		
		Spanish-American war		
		Territorial period		
		World War I		
		World War II		
		World War I Memorial		
		World War II Memorial		
		multiple		
		none		
		unknown		
		other		
	Ethnic Association	African-American		Indication of any historic ethnic association with the site
		Cajun		
		Chickasaw		
		Chinese		
		Choctaw		
		Czechoslovakian		
		Danish		
		Historic Indian		
		Italian		
		Cold War		
		Jewish		
		Lebanese		
		Natchez		

Feature	Attribute	Attribute Value	Required	Description
		Native American		
		Norwegian		
		Polish		
		Vietnamese		
		Unknown Aboriginal		
		Yugoslavian		
		multiple		
		none		
		unknown		
		other		
	Ethnic Assoc Comment	text		Comment field associated with ethnic association
	Eligibility Recommend	Nat. Reg. eligible	Required	National Register eligibility recommendation of surveyor
		not Nat. Reg. eligible		
		unknown		
		other		
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text	Required	Full filename of first photograph
	Photo2	text		Full filename of second photograph
	Photo3	text		Full filename of third photograph
	Photo4	text		Full filename of fourth photograph
Road_Ln				Linear location of a road
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Name	text		Resource name, if known
	Location	text		Description of the basic location of the road
	Historic Neighborhood	text		Name of historic neighborhood if known
	Construction Date	text		Indicates the date of construction for the road
	Date Estimated?	yes		Flag to indicate if the construction date is estimated
		no		
	Less than 45 yrs old	yes	Required	Flag to indicate if the feature is less than 45 years old
		no		
		unsure		
	Listed Status	National Register		Indicates if the feature is recognized officially
		NR historic district		
		NHL		
		local listing		
		local hist district		
		multiple		
		unknown		
		other		
	Contributes to NR HD	none		
		yes		Flag to indicate if the feature contributes to a historic district
		no		
		unknown		
	Significance	other		
		text	Required	Brief statement of significance
		text		Brief statement of historic context, if known
		text		
	Overall Integrity	very intact	Required	Evaluation of the MS SHPO integrity criteria
		some changes		
		extensive changes		
		deteriorated		
		ruins		
	Materials Integrity	no visible remains		
		yes	Required	Evaluation of the National Register materials integrity criteria
		no		
		unsure		
	Design Integrity	not applicable		
		yes	Required	Evaluation of the National Register design integrity criteria
		no		

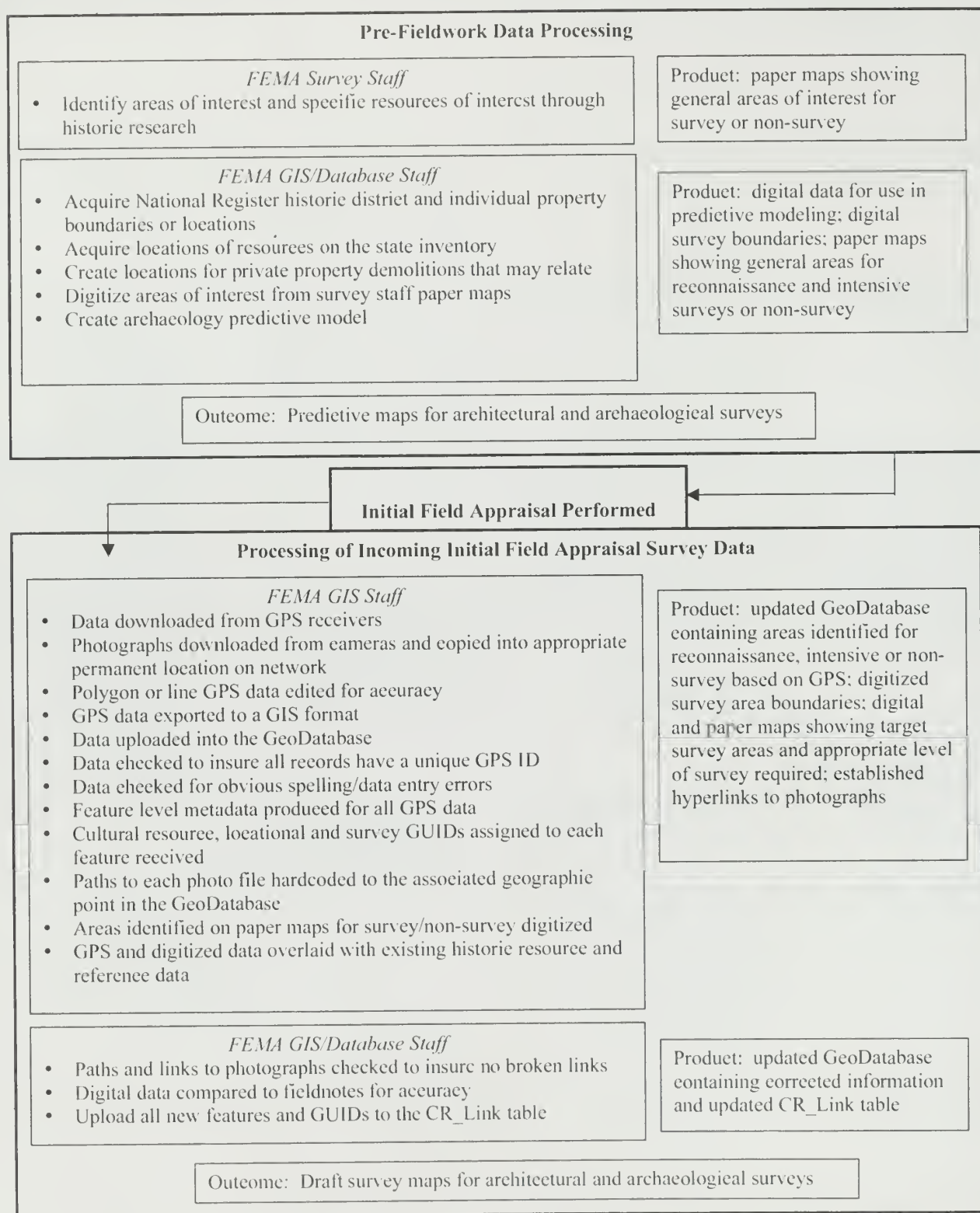
Feature	Attribute	Attribute Value	Required	Description
	Wrkmanship Integrity	unsure	Required	Evaluation of the National Register workmanship integrity criteria
		not applicable		
		yes		
	Setting Integrity	no	Required	Evaluation of the National Register setting integrity criteria
		unsure		
		not applicable		
	Type	yes		Indicates the type of road being recorded
		no		
		unsure		
		not applicable		
		access road		
		residential street		
		minor traffic artery		
		major traffic artery		
		highway		
		freeway		
		interstate		
		historic		
		trace		
		sunken		
		unknown		
	Material	other		Indicates the primary construction material of the road
		earth		
		gravel		
		shell		
		asphalt		
		concrete		
		courdoroy		
		plank		
		unknown		
	Eligibility Recommend	other	Required	National Register eligibility recommendation of surveyor
		Nat. Reg. eligible		
		not Nat. Reg. eligible		
	Comment	unknown		General comment field
		other		
		text		
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph
Photo_Pt				Point location of any picture taken, unrelated to a specific resource
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Subject	text		Identification of the subject of the photo
	Film Type	color slide		Description of the type of photo taken
		color print		
		black & white print		
		digital		
	Direction	north		Identification of the cardinal direction the photo was taken in
		south		
		east		
		west		
		northeast		
		southeast		
		southwest		
		northwest		
		other		
	Roll_filename	text		Identification of the film roll or digital filename of the photo
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph

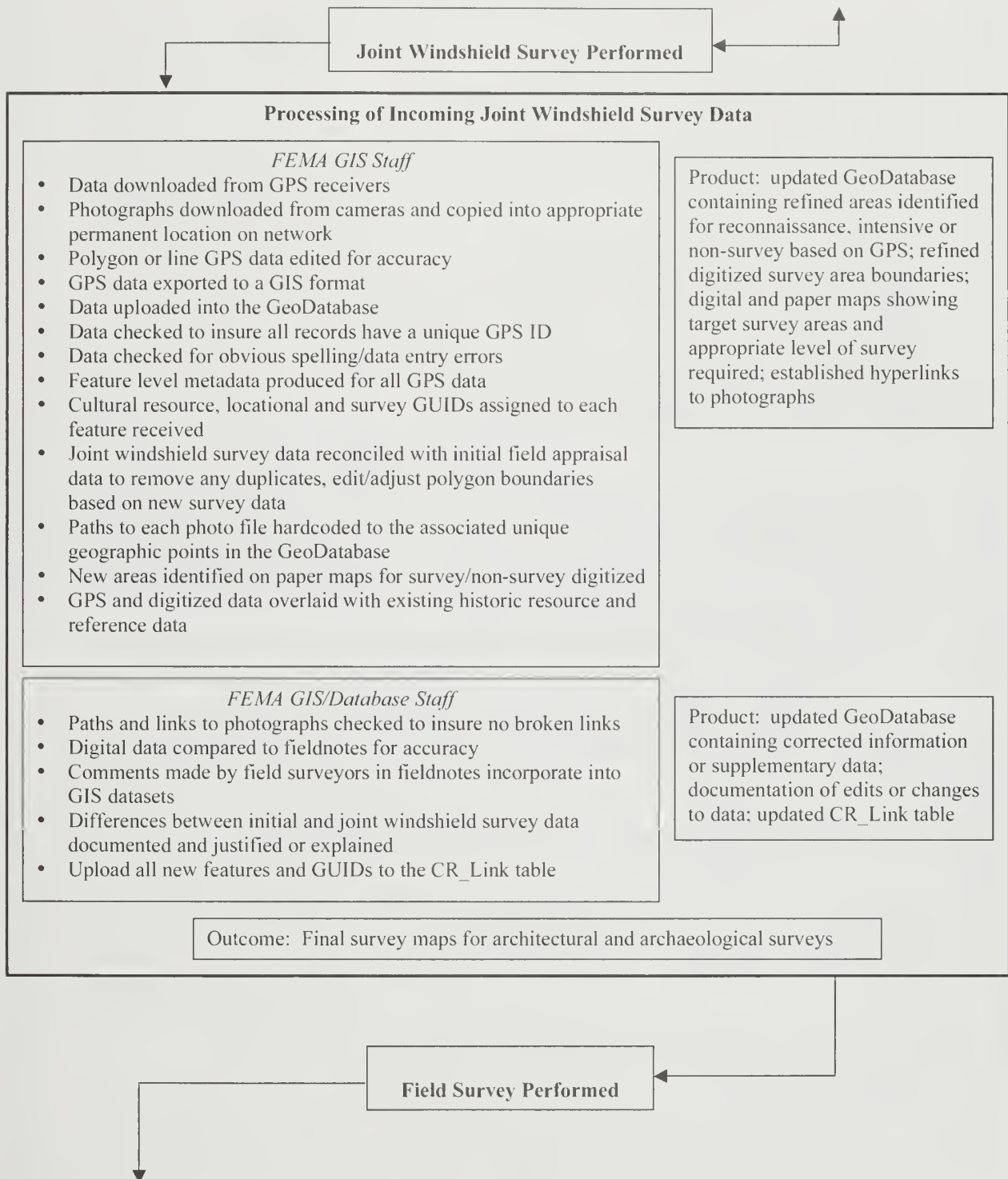
Feature	Attribute	Attribute Value	Required	Description
Anchor_Pt				Point location taken as a reference point to help in editing data
	Type	begin		Indicates what type of anchor or reference point is being collected
		end		
		angle		
		intersection		
		other		
	Comment	text		General comment field
Ref_Pt				Reference point taken to identify a feature not included elsewhere
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Feature Type	text		Indicates the type of feature being recorded
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph
Ref_Ln				Reference line taken to identify a feature not included elsewhere
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Feature Type	text		Indicates the type of feature being recorded
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph
Ref_Py				Reference polygon taken to identify a feature not included elsewhere
	GPS_ID	text	Required	Unique ID assigned by field surveyor
	Feature Type	text		Indicates the type of feature being recorded
	Comment	text		General comment field
	Surveyor Name	text	Required	Name of surveyor filling in attribute information
	Photographer Name	text	Required	Name of photographer taking digital pictures
	Photo1	text		Full filename of first photograph

Appendix R: MS FEMA Historic Resource Survey Methodology Flowchart



Appendix S: GIS/GPS Data Processing Workflow for Survey Data





Initial Processing of Incoming Field Survey Data

FEMA GIS Staff

- Data downloaded from GPS receivers
- Photographs downloaded from cameras and copied into appropriate permanent location on network
- Polygon or line GPS data edited for accuracy
- GPS data exported to a GIS format
- Data uploaded into the GeoDatabase
- Data checked to insure all records have a unique GPS ID
- Data checked for obvious spelling/data entry errors
- Feature level metadata produced for all GPS data
- Cultural resource, locational and survey GUIDs assigned to each feature received
- Field survey data reconciled with joint windshield survey data and initial field appraisal data to remove any duplicates, edit/adjust polygon boundaries based on new survey data
- Paths to each photo file hardcoded to the associated unique geographic points in the GeoDatabase

Product: updated GeoDatabase containing individual resources surveyed in intensive areas, individual resources in reconnaissance areas, digital and paper maps showing general survey progress; established hyperlinks to photographs

FEMA GIS/Database Staff

- Paths and links to photographs checked to insure no broken links
- Digital data compared to fieldnotes for accuracy
- Differences between field survey, initial and joint windshield survey data documented and justified or explained
- Upload all new features and GUIDs to the CR_Link table

Product: updated GeoDatabase containing corrected information; documentation of edits or changes to data; updated CR_Link table

Outcome: Working GeoDatabase for use in analysis and survey planning

Detailed Manual Quality Assurance/Quality Control Process

FEMA Database Staff

- Spreadsheets of daily totals and sites surveyed and areas completed
- Differences between previous surveys and final field survey geographic data or attribute data documented, justified or explained
- Comments made by field surveyors in field notes incorporated into field data
- Resource attribute data checked for consistency, spelling, etc.
- Photo file names checked against photo log/field note information to insure appropriate photo associated with appropriate point

Product: spreadsheet containing new target features for surveyors, based on comparison with final survey map and demolition lists

Product: completed edit/change documentation forms for all data edited or deleted

Outcome: Documents created from GIS to help in survey planning and documentation, as well as analysis

Detailed Manual Processing in the FEMA GeoDatabase

FEMA GIS Staff

- Feature level metadata confirmed and entered for each geographic feature received
- Cultural resource, locational and survey GUIDs confirmed and assigned to each feature received
- Edits made as indicated FEMA Database staff, based on manual check for data consistency, duplication, etc.
- All new features and GUIDs added to the CR_Link table
- Creation of metadata for all feature classes and tables

Product: updated GeoDatabase corrected attribute information, metadata and GUIDs; updated CR_Link table

Outcome: Error-checked working GeoDatabase for use in analysis and survey planning



Subsequent Data Processing of the CR_Link Table to Establish Connections to Exterior Data Sources

FEMA Database Staff

- Examine CR_Link table to find matches for surveyed properties to external databases, such as the SHPO inventory, National Register, HABS/HAER
- Manually enter matching ID numbers from external databases into appropriate record in the CR_Link table

Product: updated CR_Link table containing live links to external data sources

Outcome: Error-checked working GeoDatabase which links to external databases



Updating of FEMA GeoDatabase and Preparation for Preliminary Determinations of Eligibility

FEMA GIS Staff

- Update FEMA GeoDatabase with edited CR_Link table
- Establish persistent relationships between CR_Link table and external data sources

Product: updated GeoDatabase for use with digital preliminary DOE review

FEMA Survey Staff

- Create written documents to summarize significance of individual resources or historic districts for use in review

Product: significance statements for use in DOE review

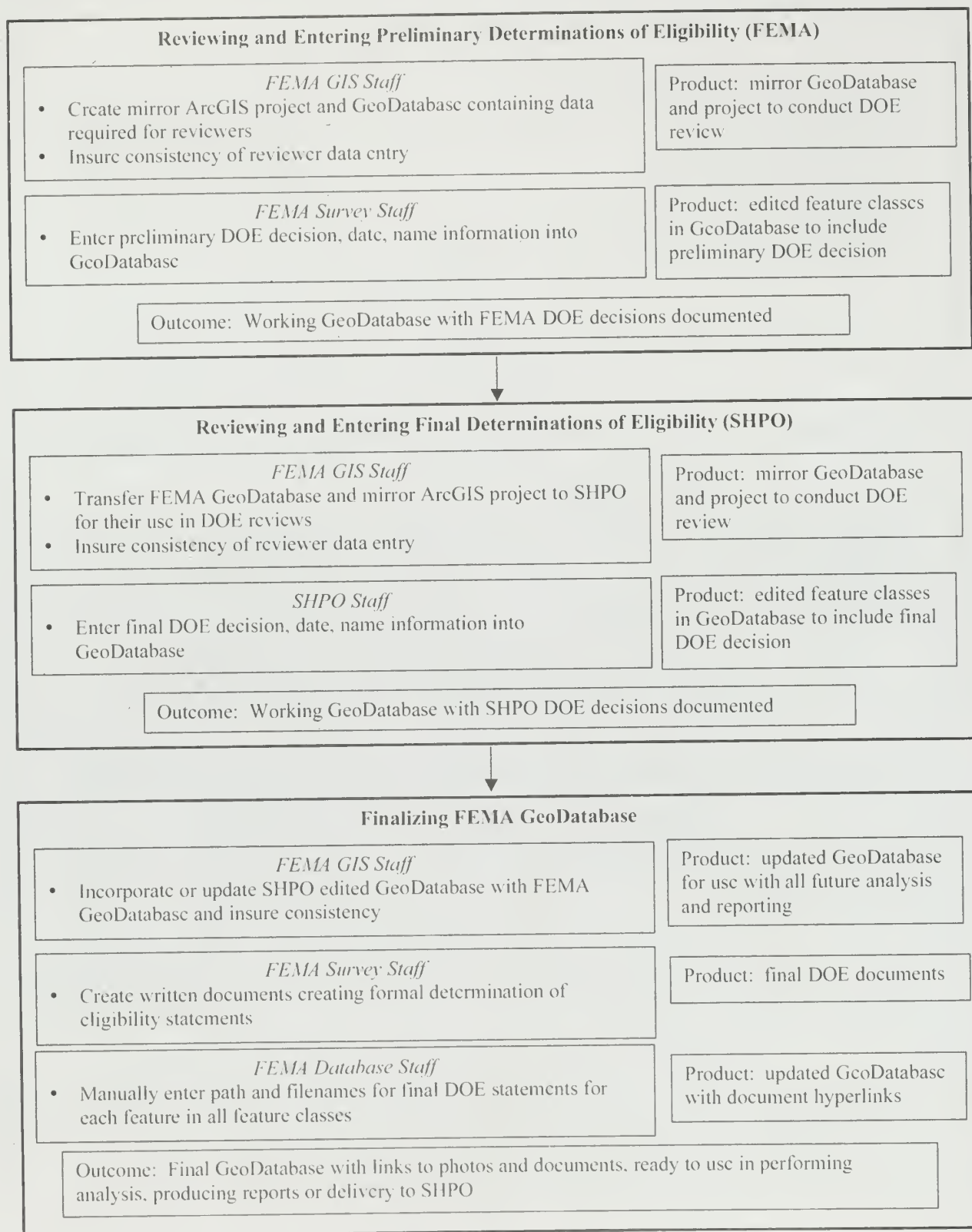
FEMA Database Staff

- Manually enter path and filenames for preliminary DOE summaries or significance statements for each feature in all feature classes

Product: updated GeoDatabase with document hyperlinks

Outcome: Working GeoDatabase with links to documents, ready for FEMA DOE reviews





Production of FEMA Deliverables

FEMA GIS Staff

- Update FEMA GeoDatabase (path names for photos and documents) for use on the SHPO network in preparation for data delivery
- Perform analysis required to produce paper maps required in county survey reports and SHPO inventory forms
- Perform analysis and create reports/charts/tables necessary to support county survey reports
- Export data required to produce SHPO inventory forms

Product: updated GeoDatabase for use at the SHPO, analysis for county survey reports, paper maps for county survey reports and SHPO inventory forms, attribute data for inclusion on SHPO inventory forms

FEMA Survey Staff

- Provide GIS staff with parameters for analysis as needed for creation of county survey reports and inventory forms
- Provide Database staff with reporting requirements to create SHPO inventory forms

Product: analysis parameters, examples of SHPO inventory forms to duplicate

FEMA Database Staff

- Create database-based reports from GIS generated data to mirror SHPO inventory forms

Product: database formatted SHPO survey inventory forms

Outcome: Final GeoDatabase containing all cultural resource data for use at the SHPO, county survey reports, SHPO inventory forms

