National Park Service
U.S. Department of the Interior

Lower Mississippi River Area Special Resource Study

May 2019

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EXECUTIVE SUMMARY

INTRODUCTION

The Department of the Interior, National Park Service, has prepared the Lower Mississippi River Area Special Resource Study to evaluate Fort St. Philip, Fort Jackson, the Head of Passes, and any related and supporting historical, cultural, or recreational resource located in Plaquemines Parish, Louisiana. As directed by Congress, this special resource study evaluates the national significance of the area and the suitability and feasibility of designating the area as a new, independent unit of the national park system.

LEGISLATIVE HISTORY

In 2015, as part of the National Defense Authorization Act, Congress directed the Secretary of the Interior (Secretary) to conduct a special resource study of the Lower Mississippi River Area, (figure 1) including Fort St. Philip, Fort Jackson, the Head of Passes, and any related and supporting historical, cultural, or recreational resource located in Plaquemines Parish, Louisiana. Congress directed the special resource study to evaluate the national significance of the area and the suitability and feasibility of designating the area as a unit of the national park system. The legislation further required that the study process follow Section 8(c) of Public Law 91-383 [(the National Park System General Authorities Act) (recently codified in 54 USC 100507)] and that the Secretary of the Interior submit the study findings and any recommendations to Congress within three years of the study funding.

RESOURCE OVERVIEW

Fort St. Philip and Fort Jackson are historic military garrisons located on the eastern and western banks of the Mississippi River in Plaquemines Parish in southeastern Louisiana (figure 2). Fort St. Philip, the older of the two sites, was constructed by the French in 1746 and was later rebuilt by the Spanish in 1791. The fort played a crucial role in the Battle of New Orleans during the War of 1812. Seven years after the War of 1812 ended, construction began on Fort Jackson in 1822 and was completed in 1832. The two forts were part of a Civil War battle in April 1862. Both were decommissioned in 1920. Fort St. Philip and Fort Jackson were designated as National Historic Landmarks in 1960. Both forts have suffered extensive hurricane damage in recent years. Fort St. Philip is currently privately owned, whereas Fort Jackson is owned by Plaquemines Parish.

The Head of Passes lies about 21 miles south of the forts where the Mississippi River splits into a delta to travel the last 20 miles to the Gulf of Mexico. During the American Civil War, Head of Passes was the site of several naval battles. Today, the Head of Passes is more typically referred to as the geographical reference point in which South Pass, Pass a Loutre, and Southwest Pass converge. Ships entering the Mississippi River from the Gulf of Mexico (mainly via Southwest Pass), pass this point as they near Pilottown, Louisiana, which serves as a base where river pilots board and guide ships across the bar and up and down the Mississippi River (CRPPA 2001).

SUMMARY OF FINDINGS

After evaluating Fort St. Philip, Fort Jackson, the Head of Passes, and a number of other potentially related and supporting historical, cultural, or recreational resources located in Plaquemines Parish, Louisiana, the National Park Service focused the special resource study on Fort St. Philip and Fort Jackson. While the Head of Passes is in fact historically significant, and a number of historical,

cultural, and recreational resources are also located in Plaquemines Parish, Louisiana, the National Park Service determined that these resources were not related to Fort St. Philip and Fort Jackson and, therefore, were excluded from the study area.

The special resource study process was completed for Fort St. Philip and Fort Jackson. Based on a detailed evaluation of these two forts, the National Park Service concludes that Fort St. Philip and Fort Jackson do not meet established feasibility criteria for new NPS units. Below is a summary of key findings related to corresponding special resource criteria outlined in Section 8(c) of Public Law 91-383 (the National Park System General Authorities Act).

Criterion 1 – National Significance

As designated National Historic Landmarks, Fort St. Philip and Fort Jackson are nationally significant. Their national significance is conveyed under the broad National Park Service theme of "Shaping the Political Landscape" and the subtopic of "Military Institutions and Activities."

Criterion 2 – Suitability

An assessment of Fort St. Philip and Fort Jackson, in comparison with other preserved forts constructed during the federal program of seacoast fortifications known as the Third System (1816 to 1867), suggests that the two Plaquemines Parish forts meet the criteria of suitability for possible inclusion in the national park system. The forts continue to exhibit architectural features that highlight the defining features of the Third System fortifications, with its emphasis on bastioned masonry revetment walls, high-powered artillery, and other features designed primarily to defend against naval assault.

Criterion 3 – Feasibility

Fort St. Philip and Fort Jackson do not meet the feasibility criteria for consideration as a unit of the national park system. While Fort St. Philip has an array of structural remains that chronicle its historical development, many of these have severely deteriorated and are beyond repair. The fort's historical integrity and ability to convey its significance have been substantially diminished by repeated episodes of flooding, weathering and siltation that have damaged and obscured its architectural features. It is primarily a ruin with as yet untested potential to yield archeological information. Challenges associated with accessing the fort, ongoing and future threats from flooding and hurricane damage, as well as safety concerns and challenges associated with traversing the Mississippi River, which is a major marine commerce and shipping route, make Fort St. Philip infeasible under this criteria.

Like Fort St. Philip, Fort Jackson is also susceptible to ongoing and future threats from flooding and wind damage from hurricanes as well as spring flooding of the Mississippi. These factors diminish the structural stability and integrity of Fort Jackson, which would necessitate large investments to preserve the fort in perpetuity. Non-facility costs associated with the establishment of a national park system unit are estimated to range from $1 million to $1.7 million. Costs associated with the required minimum facility development and preservation of Fort Jackson are estimated to be $16.8 million (2017 dollars). Additionally, a total cost of facility ownership analysis conducted for Fort Jackson and associated facilities found that the total cost to maintain these sites would be approximately $70.2 million over 40 years. Given these factors, the preservation, development, operation, and maintenance costs are determined to be infeasible.

CONCLUSION

Fort St. Philip and Fort Jackson do not qualify for inclusion in the national park system. Although the forts possess national significance and are suitable, their lack of feasibility precludes them from further consideration as units within the national park system.

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CHAPTER 1: STUDY PURPOSE AND BACKGROUND

CHAPTER OVERVIEW

Chapter 1 describes the purpose and background of the study, including the criteria used by the National Park Service (NPS) to determine if a resource is eligible for potential designation as a unit of the national park system. The chapter concludes with a brief description of the study methodology and limitations.

PURPOSE OF THE SPECIAL RESOURCE STUDY

New areas are typically added to the national park system by an Act of Congress. However, before Congress decides to create a new park it needs to know whether the area's resources meet established criteria for designation. The National Park Service is often tasked to evaluate potential new areas for compliance with these criteria and document its findings in a special resource study (SRS).

The National Defense Authorization Act of 2015, signed into law by President Obama on December 19, 2014, directed the Secretary of the Interior to conduct a special resource study of the Lower Mississippi River Area, including Fort St. Philip, Fort Jackson, the Head of Passes, and any related and supporting historical, cultural, or recreational resources located in Plaquemines Parish, Louisiana. Congress directed the special resource study to evaluate the national significance of the area and the suitability and feasibility of designating the area as a unit of the national park system. The legislation further requires that the study process follow Section 8(c) of Public Law 91- 383 [the National Park System General Authorities Act) (recently codified in 54 USC 100507)] and that the Secretary of the Interior submit the study findings and any recommendations to Congress within three years of the study funding.

The purpose of this special resource study is to provide Congress with information about the quality and condition of Fort St. Philip, Fort Jackson, the Head of Passes, and any related and supporting historical, cultural, or recreational resources located in Plaquemines Parish, Louisiana, and their relationship to criteria for new parklands applied by the National Park Service.

BACKGROUND AND OVERVIEW OF THE STUDY AREA

In determining the study area for the Lower Mississippi River Area SRS, the NPS project team focused attention on the following areas within the lower Mississippi River region: Fort St. Philip, Fort Jackson, and the Head of Passes area (figure 1). The project team also considered "related and supporting resources," as noted in the National Defense Authorization Act of 2015, in an effort to determine the full scope of the study area (and determine if there are any other sites that correspond to this guidance). Historical information originally collected by the National Park Service, the Plaquemines Parish Historical Association, and online sources was reviewed and analyzed to determine if and what related and supporting resources may be present. Based on this review, the project team determined that Fort St. Philip and Fort Jackson are the focus of the study area. The following sections provide an overview of these resources as well as rationale for excluding areas from further evaluation that were not considered to be "related and supporting" resources.

Fort St. Philip and Fort Jackson

Fort St. Philip and Fort Jackson are located approximately 70 miles south of New Orleans, Louisiana, along a strategically important bend in the Mississippi River that today is known as Plaquemines Bend (figure 2). Both sites were designated National Historic Landmarks in 1960 and played pivotal roles in the defense of New Orleans during the War of 1812 and the Civil War. Today, Fort Jackson is operated by the Plaquemines Parish as a public park; however, public access to the fort is available only during special events or during guided tours. Fort St. Philip is privately owned and closed to the public. Access to the site is difficult and is by boat only.

Fort St. Philip, the older of the two forts, was constructed by the French in 1746 and was later rebuilt by the Spanish in 1791. Repairs and improvements were carried out in 1814 during the War of 1812 under the direction of Andrew Jackson prior to the Battle of New Orleans. During this battle, the fort was successfully defended from bombardment by British naval forces and repelled the British fleet from joining their army at the Chalmette Battlefield and capturing New Orleans.

Fort Jackson was constructed between 1822 and 1832 directly across from Fort St Philip on the banks of the Mississippi River at the recommendation of General (later President) Andrew Jackson. Fort Jackson and Fort St. Philip saw little military action until the Civil War when commanding Confederate forces were besieged from April 16 through April 28, 1862, by a Union Army fleet commanded by Flag-Officer David Farragut. While most of the Union ships survived the battle, Confederate ships took heavy losses. On April 24, Farragut successfully led most of his gunships past the forts, evading cannon fire, two ironclad ships, and other vessels/obstructions placed in the river by the Confederate defenders in what became known as the Civil War "Battle of the Forts" and often referred to as the "night the war was lost." The Union fleet then proceeded upriver to capture New Orleans. Other Union mortar schooners remained behind to continue the bombardment of the forts. The Confederate garrisons at Fort Jackson and Fort St. Philip surrendered on April 28th, and Union troops under the command of General Benjamin Butler occupied New Orleans on May 1, 1862.

Other Potential Related and Supporting Resources Considered But Dismissed

Head of Passes. The Head of Passes lies about 21 miles south of Fort St. Philip and Fort Jackson where the Mississippi River splits into a delta to travel the last 20 miles to the Gulf of Mexico. During the American Civil War, Head of Passes was the site of several naval battles. At the outset of the war, the area figured into Union General Winfield Scott's "Anaconda Plan" that called for a large-scale Union blockade of Confederate ports as well as taking military control of the Mississippi River as a strategic means to divide and isolate the South. In October 1861, a Union naval blockade positioned at the Head of Passes was driven off by Confederate naval forces in the "Battle of the Head of Passes." Ships involved in the conflict included the CSS *Manassas*, the USS *Vincennes*, and the USS *Richmond*.

Today, the Head of Passes is more typically referred to as the geographical reference point in which South Pass, Pass a Loutre, and Southwest Pass converge. Ships entering the Mississippi River from the Gulf of Mexico (mainly via Southwest Pass), pass this point as they near Pilottown, Louisiana, which serves as a base where river pilots board and guide ships across the bar and up and down the Mississippi River (CRPPA 2001). Although the Head of Passes had historical ties to Fort St. Philip and Fort Jackson during the American Civil War, and may contain submerged archeological resources, the area does not currently offer any visible supporting resources or infrastructure. Further, the area is situated within one of the world's busiest international shipping routes and is dredged regularly, making it generally impractical for park development.

FIGURE 1. STUDY AREA REGIONAL CONTEXT

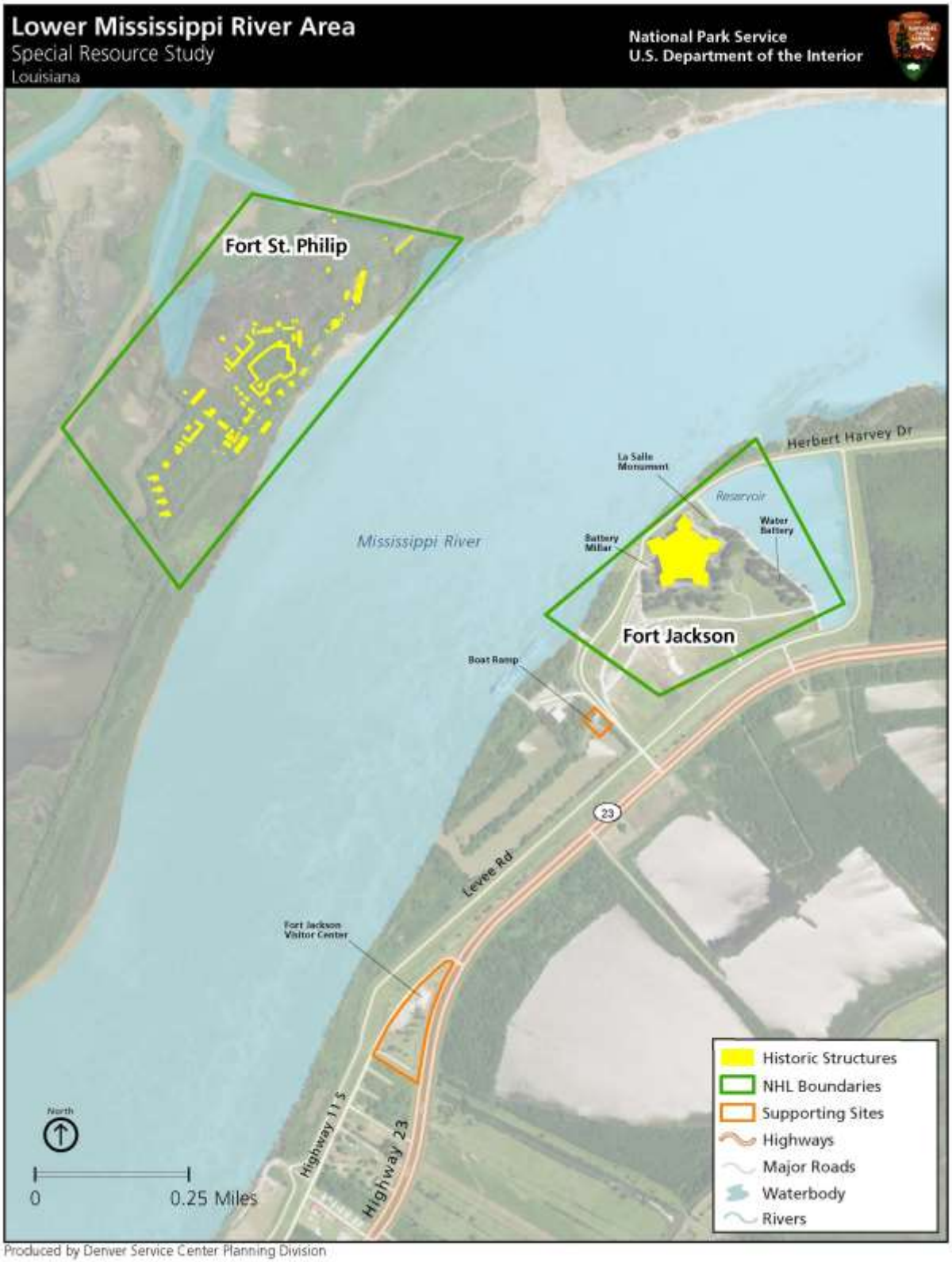

FIGURE 2. FORT JACKSON AND FORT ST. PHILIP STUDY AREA

Pilottown. Pilottown is situated a few miles above the Head of Passes and about 15 miles south of Fort St. Philip and Fort Jackson and is accessible by boat or air. Pilottown was constructed and settled after September 1860 in its current location and replaced the earlier village of La Balize, which was founded by the French more than 160 years earlier downriver near the mouth of the Mississippi River. La Balize featured a 62-foot-high wooden pyramidal structure to help guide ships on the Mississippi River and through its shifting delta. During the 19th and early 20th century, Pilottown was home to a number of fishermen, pilots, and their families, but now most make their residence in larger communities upriver.

While Pilottown reflects past and present elements of the region's rich shipping and cultural heritage, this small unincorporated community today serves a temporary home for members of the Crescent River Port Pilots' Association and as a base for oil exploration. No related and supporting resources are featured at this site.

Other National Register Properties. Eight National Register properties are found in the Plaquemines Parish (including Fort St. Philip and Fort Jackson) along with an additional fort named Fort De La Boulaye (early 18th-century French fort that now consists of only archeological remains), a church, and several 19th-century plantation houses. The other fort site was constructed outside the period of historical significance of the forts in our study and does not appear to be associated. Relevant information related to five of the more notable sites that were considered but dismissed from further analysis is provided below.

- Fort de La Boulaye — The fort (also known as Fort Mississippi) was built by the French in 1700 to support their claim to the Mississippi River and valley. The site is nearly 1 mile east of the present channel of the Mississippi River on a low ridge surrounded by reclaimed swampland. Today, only the site of this fort and associated archeological evidence remain. Fort de la Boulaye was the first French outpost in the present State of Louisiana. The Caddoan tribe forced the French to vacate the fort in 1707 although French troops occasionally visited the fort afterwards. By the middle of the 18th century, Fort de La Boulaye was abandoned (Ries 1936). Tropical storms eventually destroyed this fort. The site was designated a National Historic Landmark in 1960. Fort de La Boulaye does not have apparent associations with the histories of Fort Jackson and Fort St. Philip and was not present at the time of the Civil War battle that involved these other two forts in Plaquemines Parish. Archeological investigations have found remnants of a palisade and a cannonball in the area; however, little else remains and the extent of the site is unknown.

- Harlem Plantation House — This historic plantation house is representative of raised Louisiana Creole plantation architecture. It is located on Louisiana Highway 39 between Davant and Phoenix in Plaquemines Parish (East Bank of the Mississippi River up from Pointe a la Hache, Louisiana). It was built in 1840 and entered in the National Register in 1982.

- Mary Plantation House — This plantation house is located downriver from Braithwaite in Plaquemines Parish, Louisiana. The building is the oldest house in Plaquemines Parish and was built in 1820 on the Mary Plantation. Although the early history of the location is uncertain, a house was built on the site in about 1795. It was significantly enlarged in the 1820s and went through a number of owners. A Tulane University botanist and his wife bought the property in 1946, restored it, and opened it for tours. It was later sold by their heirs in 2003. The Mary Plantation House was entered in the National Register in 1983.

- St. Patrick's Catholic Church — This historic Roman Catholic church is located in West Pointe a' la Hache, Louisiana. The Gothic Revival church building was constructed in 1918 and entered in the National Register in 1999.

- Woodland Plantation — Located in West Pointe à la Hache, the plantation mansion house was depicted in "A Home on the Mississippi," an 1871 lithograph that later was licensed for use on the label of Southern Comfort Whiskey after the end of prohibition. The privately-owned property is currently operated as a bed and breakfast establishment. It was listed in the National Register in 1998.

While each of the above sites is historically significant, the project team determined that no related and supporting resources were currently present and, therefore, were excluded from the study area.

Other Recreation Opportunities. There are 18 Parish-owned facilities that make up the existing local park and recreation system, as well as numerous opportunities to enjoy guided and unguided fishing. Some of the most abundant recreation opportunities in the parish are tied to the Delta National Wildlife Refuge and Pass a Loutre Wildlife Management Area, both of which are situated along the southern terminus of the Mississippi Flyway—an important migration corridor for hundreds of North American bird species. The areas also provide important resting and recovery habitat for trans-Gulf migrant birds such as Neotropical passerines— and wintering habitat for hundreds of thousands of waterfowl. The combined acreage of the refuge and wildlife management area is about 95,000 acres, all within about a nine-mile reach of Fort Jackson. Popular activities at the Delta National Wildlife Refuge and Pass a Loutre Wildlife Management Area include hunting/trapping, fishing, wildlife viewing, and boating/canoeing.

While the Parish-owned park and recreation system and nearby state and federal wildlife areas serve as important recreation amenities and as a critical wildlife refuge, these areas do not serve as related and supporting resources to Fort Jackson and Fort St. Philip. Further, the Delta National Wildlife Refuge is already federally protected and managed by the US Fish and Wildlife Service, while the Pass a Loutre Wildlife Management Area is effectively managed by the Louisiana Department of Wildlife and Fisheries.

STUDY METHODOLOGY / PROCESS

The special resource study process is designed to provide Congress with critical information about the resource qualities within the study area and potential alternatives for their protection. By law (Public Law 91-383 §8 [(the National Park System General Authorities Act) (recently codified in 54 USC 100507)]) and NPS *Management Policies 2006*, potential new units of the national park system must fully meet the following four criteria for evaluation:

1) Possess nationally significant resources,
2) Be a suitable addition to the system,
3) Be a feasible addition to the system, and
4) Require direct NPS management or administration instead of alternative protection by other agencies or the private sector

This study includes the findings for these four criteria and will serve as the basis for a formal recommendation from the Secretary of the Interior as to whether or not the study area should be designated as a new unit of the National Park Service.

The following methodology illustrated in figure 3 was used to conduct this special resource study and determine if the Lower Mississippi River Area meets these criteria:

Step 1: Assess Public Views and Ideas about the Lower Mississippi River Area

Through a process called "scoping," information about the study area and its resources is collected by the study team. NPS staff identify existing information sources and data needs, issues and potential constraints, and determines or confirms the appropriate National Environmental Policy Act (NEPA) pathway. The canvassing of existing conditions and available data, such as designation status and nominations, and theme studies, etc., is a critical element of scoping and a factor in developing the special resource study. Site visits to the study area may be conducted to assess resource conditions and provide additional information that would be used in the development of the study findings.

During the early stages of the study, the team begins the process of identifying the stakeholders, agencies, and individuals with a direct interest in the study area or with expertise that could assist the team; this facilitates planning for later stakeholder conversations and public outreach activities. Engaging the potential stakeholders in the scoping process allows the public; neighbors of the study area; local, state, and other federal government agencies; and other stakeholders to share insights about their issues, concerns, ideas, goals, and objectives for the area encompassing the two forts. This process also provides a way for the study team to gauge the level of interest and community support in designating the study area as a unit in the national park system as well as affirm the appropriate NEPA pathway. Information collected and research conducted through this scoping process is used in the analysis of the four criteria for evaluation.

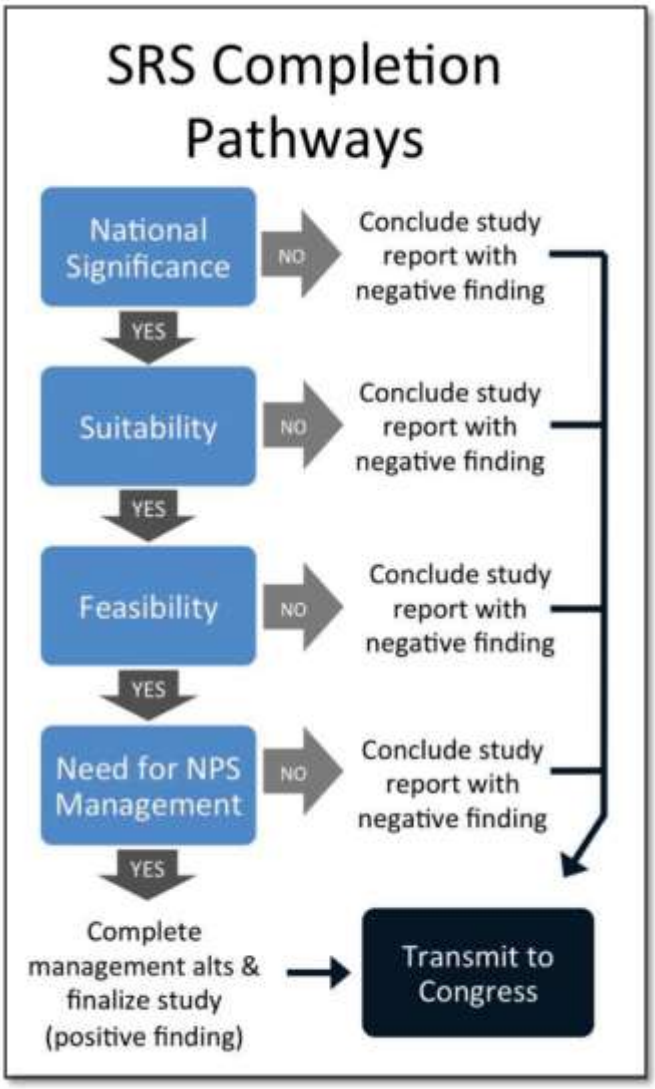

FIGURE 3. SRS COMPLETION PATHWAYS

Step 2: Evaluate National Significance, Suitability, Feasibility, and Need for Direct NPS Management

To be considered for designation, potential new park units must satisfy all four criteria noted previously. Based on the nature of the study process, a sequential evaluation of these criteria is required. The NPS Office of Legislative and Congressional Affairs has confirmed that to fulfill the mandate of a special resource study, the evaluation of criteria must be done sequentially. While a study area may clearly be infeasible or not in need of direct NPS management, the study process must first establish national significance and then if that criterion is met, suitability; and so on.

If the study area is found to be nationally significant, the study process continues on to the evaluation of suitability. Note that study areas designated as national historic or natural landmarks are already considered nationally significant by virtue of designation. If the resource is found to be nationally significant and suitable, the study process continues on to the evaluation of feasibility. If the resource is found to be nationally significant, suitable, and feasible, the study process continues on to the evaluation of need for direct NPS management. The evaluation of the need for direct NPS management is done when an area has been found to meet all of the first three criteria for evaluation. Once the fourth criterion is met, the study proceeds with developing alternatives. An option for a potential new park unit can be included in the range of alternatives only if the study has determined that direct NPS management is clearly superior to other existing management approaches.

If the study determines that the resource does not meet any one of these criteria, then the study process ends and the study outcome is a negative finding. A brief description of preservation and management options (e.g., affiliated area) can be included as part of the findings, regardless of a negative finding for suitability or feasibility.

Step 3: Final Study Completion and Transmittal to Congress

Following rigorous agency review and affirmation of the study findings, the final special resource study report will be transmitted by the NPS Director to the Secretary of the Interior. The report and any recommendations from the Secretary of the Interior are then transmitted to Congress, which may or may not take action on a study's findings. If legislation for the establishment of a new unit is drafted, it will usually draw from study findings. The time period in which Congress takes action is unknown.

The final special resource study report is made available to the public following receipt by congressional members. This is accomplished by posting the study report to the NPS Planning, Environment, and Public Comment (PEPC) website. Study documents are not shared prior to their receipt by Congress, nor can findings be discussed with the public or with key stakeholders until their transmittal.

COMPLIANCE WITH THE NATIONAL ENVIRONMENTAL POLICY ACT

The National Parks Omnibus Management Act of 1998 requires each study to be "completed in compliance with the National Environmental Policy Act of 1969" (42 USC 4321 et seq.) (54 USC 100507). This study complies with the National Environmental Policy Act of 1969, as amended, which mandates that all federal agencies analyze the impacts of major federal actions that have a significant effect on the environment.

A categorical exclusion (CE) was selected as the most appropriate NEPA pathway for this study. The study is excluded from requiring an environmental assessment or environmental impact statement because there is no potential for impacts on the human environment without further legislative action by the United States Congress. The applicable categorical exclusion is in the category of: "Adoption or approval of surveys, studies, reports, plans, and similar documents which will result in recommendations or proposed actions which would cause no or only minimal environmental impact" (NPS NEPA Handbook, 3.2 (R)). A copy of the CE environmental screening form for Lower Mississippi River Area Special Resource Study can be found in appendix D of this document.

Public involvement is not required for categorical exclusions. However, the National Parks Omnibus Management Act of 1998 requires special resource studies to be prepared with public involvement, including at least one public meeting in the vicinity of the area under study (54 USC 100507). The

official public comment period opened on June 1, 2016, and closed on July 6, 2016. During the public comment period, the National Park Service solicited feedback from the public through a public scoping newsletter, the Planning, Environment and Public Comment (PEPC) website, and two public meetings that were announced via press release to local and regional media and social media administered by Jean Lafitte National Historical Park and Preserve, New Orleans Jazz National Historical Park, and on their park websites. The two public informational meetings were held early in the study process on June 7, 2016, in Buras, Louisiana, and June 8, 2016, in Belle Chasse, Louisiana. These meetings provided an opportunity to inform the general public about the study process and gain an understanding of whether there was public support for the creation of a potential park or other NPS involvement. These meetings were attended by 39 people and, overall, public support for the study was positive.

STUDY LIMITATIONS

A special resource study serves as one of many reference sources for members of Congress, the National Park Service, and other persons interested in the potential designation of an area as a new unit of the national park system. The reader should be aware that the analysis and findings contained in this report do not guarantee the future funding, support, or any subsequent action by Congress, the Department of the Interior, or the National Park Service. Because a special resource study is not a decision-making document, it does not identify a preferred NPS course of action.

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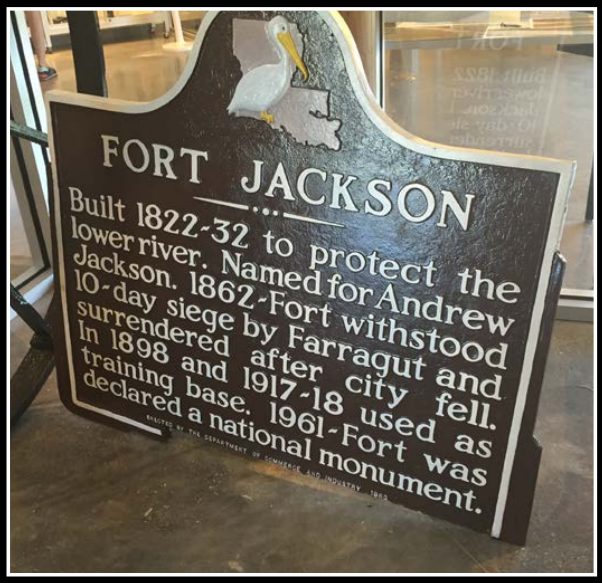
Chapter 2: Historical Background and Resource Description



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CHAPTER 2: HISTORICAL BACKGROUND AND RESOURCE DESCRIPTION

INTRODUCTION

Because Congress directed the National Park Service to investigate historic resources like Fort St. Philip and Fort Jackson within the Lower Mississippi River Area as a potential new unit of the national park system, understanding their historical context, site treatment, and condition is essential. This chapter describes the historic context of the study area as well as associated resources identified through the special resource study process. The information and research presented in this chapter were used in the analysis of the four criteria for evaluating the study area presented in chapter 3 of this study.

HISTORICAL BACKGROUND

From the time New Orleans was established in 1718 as a French colonial possession, the city was seen by successive governments as critical to maintaining regional control of Louisiana and the lower Mississippi River. Fortifications were consequently constructed and improved along the Mississippi south of New Orleans to protect the city from military attack by forces invading by way of the river and the Gulf of Mexico. Notable among these defenses, Fort Jackson and Fort St. Philip were built approximately 70 miles south of New Orleans and 40 miles upriver from the mouth of the Mississippi. Fort St. Philip (San Felipe) was originally constructed on the east side of the river at Plaquemines Bend by the French in 1746 and was later rebuilt by the Spanish in 1791-92. Military strategists recognized that the location was ideally suited for defense because enemy vessels sailing upriver were compelled to tack at this point to negotiate the river bend and strong current, factors that slowed their northward advance and made them easy targets for land-based gun batteries.

War of 1812

During the War of 1812, Fort St. Philip figured prominently in the Battle of New Orleans (December 14, 1814 – January 18, 1815), when American defenders commanded by Major General Andrew Jackson successfully repelled invading British forces. The war between the United States and Great Britain technically ended with the signing of the Treaty of Ghent on December 24, 1814 (ratified by Congress on February 16, 1815). However, because news of the treaty was slow to reach the opposing armies, the battle continued for several weeks into mid-January. For nine days, Fort St. Philip's defenders exchanged fire with six British vessels that had entered the Mississippi River on January 9, 1815. Despite the heavy bombardment, the fort's garrison of some 400 men suffered only light casualties. The British fleet eventually retreated, unable to join and support General Pakenham's land forces in the attack on New Orleans. The successful defense mounted at Fort St. Philip helped ensure the security of New Orleans and the Mississippi Valley for the United States. Following the War of 1812, General Andrew Jackson recommended that an additional fortification be constructed on the west bank of the Mississippi River opposite Fort St. Philip to bolster the defenses. An earlier 18th-century timber and earthen defense work, Fort Bourbon, was situated near the proposed location at a site now presumed submerged by the river. Fort Bourbon was considered inadequate, and the US Government began construction of a new heavily fortified structure in 1822 based on Jackson's recommendations. Fort Jackson, a star- or pentagon-shaped fort with five bastions, was completed in 1832 (figure 4). It was named in honor of Andrew Jackson for his heroic leadership during the Battle of New Orleans (US Army Corps of Engineers 1990; Buras 1991).

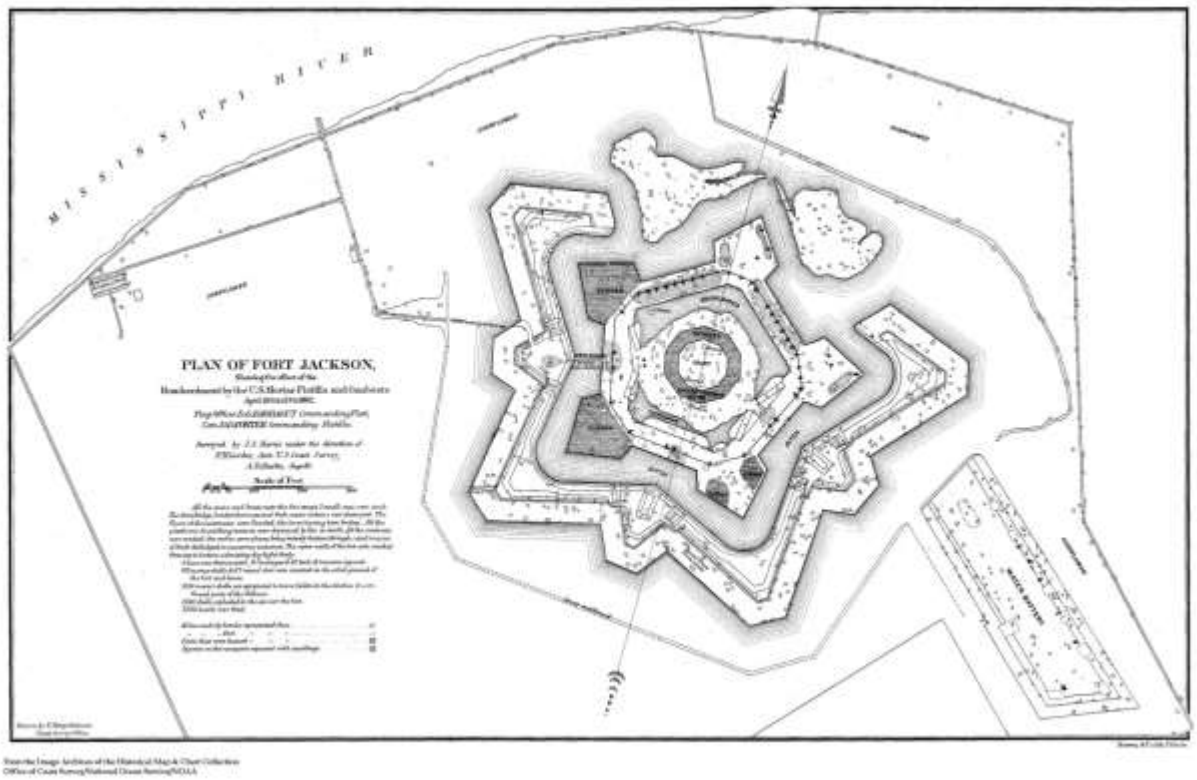

FIGURE 4. PLAN DEPICTING DAMAGE INCURRED DURING THE BOMBARDMENT (1862)

Civil War

Following the construction of Fort Jackson, a small number of troops were garrisoned there and at Fort St. Philip. Although some military preparations were made at the forts prior to the Mexican-American War (1846-1848), the forts were not directly engaged in combat until the Civil War. In early January 1861, prior to the State of Louisiana's decision to secede and join the Confederate States of America, the forts were seized and later placed under the command of Confederate forces. The action clearly reflected the awareness of both the North and South that a cornerstone of their respective military strategies would entail control of the Mississippi River and the industrially and financially important city of New Orleans, the Confederacy's largest and most strategic port. In October 1861, perhaps as a harbinger of the conflict looming for the following spring, a Union blockade fleet positioned at the Head of Passes above the mouth of the Mississippi was driven off by Confederate Navy forces.

At the outset of the Civil War, the combined garrisons at Fort Jackson and Fort St. Philip consisted of about 1,000 men commanded by Brigadier General Johnson K. Duncan. However, Fort Jackson's 69 guns and Fort St. Philip's 45 guns were considered insufficient, and additional artillery pieces were deployed at both forts. An external water battery was also completed below Fort Jackson by early 1862 (figure 4). As a means to strengthen the defenses, a floating boom or obstruction was placed across the river below the forts at the recommendation of Confederate General P. G. T. Beauregard. The boom was intended to slow the progress of attacking ships and allow the fort batteries to concentrate their fire. It consisted of logs and the wooden hulks of scuttled schooners chained together and anchored on either side of the river (US Army Corps of Engineers 1990).

An improvised Confederate fleet was assembled, comprised of three separate and loosely organized divisions (the Confederate States Navy, the Louisiana Provisional Navy, and the River Defense Fleet). The latter was commanded by civilian captains with mostly civilian crews. The combined fleet included 10 wooden ships, 2 ironclad or armored boats (the ram *Manassas* and the unfinished *Louisiana*), along with several unarmed support craft and tugs. Because the *Louisiana* was unprepared for battle, it was deployed as a floating battery above Fort St. Philip. The unfinished ironclad *Mississippi* was not launched at the time of the battle. The effectiveness of the Confederate defenses was hampered in part by a lack of coordination among the land and naval forces. The unclear command structure led to conflicting and sometimes misunderstood orders (US Army Corps of Engineers 1990).

CONFEDERATE GENERAL BEAUREGARD AND UNION FLAG OFFICER FARRAGUT

Flag Officer David Farragut was placed in command of a Union naval fleet (the West Gulf Blockading Squadron) in February 1862. Farragut's fleet, initially assembled at Ship Island in the Gulf of Mexico, consisted of 17 wooden ships and gunboats, along with 21 mortar schooners and additional support vessels led by Commander David Porter. General Benjamin Butler commanded 18,000 troops that accompanied the naval force to provide land support for the attack on New Orleans. By early April, the ships had gained access to the Mississippi above the Head of Passes and proceeded to positions near the forts. Farragut's plan of attack was to first reduce the effectiveness of the forts with a mortar bombardment, and then sever the river barrier to enable his ships to proceed upriver to New Orleans (US Army Corps of Engineers 1990).

The mortar boats opened fire on April 18, 1862, and on April 20 the barrier was severed. The forts withstood 6 days and nights of heavy bombardment, with more than 8,000 shells estimated to have been fired at the forts. Although Fort Jackson was badly damaged, and Fort St. Philip to a lesser extent, neither fort was completely disabled or put out of commission. Fort Jackson's drawbridge, hot shot furnaces, and fresh water cisterns were destroyed, and some of the guns were disabled. The outer walls were cracked, and the casemates were damaged and flooded once the river levee was broken. Perhaps of equal concern, the bombardment drained the morale of the garrisons' enlisted

ATTACK ON FORT JACKSON

men, forced to endure miserable conditions with days of constant shelling, flooded casemates, and lack of adequate food, shelter, and drinking water (US Army Corps of Engineers 1990; Buras 1996).

Early on the morning of April 24, 1862, Farragut organized his fleet into three divisions in an attempt to pass through the gap opened in the river barrier. He left Commander Porter and his mortar schooners behind to continue the bombardment of the forts. During the fierce naval battle, 14 of Farragut's ships were able to pass the forts and the river barrier, evading serious damage from the fort guns and Confederate ships. Three of the Union ships were forced to turn back. The USS *Varuna* was the only Union ship lost in the engagement on April 24. Most of the Confederate flotilla was sunk, either in direct battle with Union ships or by being disabled and scuttled by the Confederate naval force to keep them from the enemy. The disorganized command of the Confederate fleet contributed to its ineffectiveness in halting the Union naval advance (US Army Corps of Engineers 1990).

Safely past Fort Jackson and Fort St. Philip, Farragut proceeded to New Orleans, arriving on April 25, 1862. The city was largely unprotected at the time by Confederate troops and surrendered to the Union forces. In response to a series of military losses in Kentucky and Tennessee, the Confederate War and Navy Departments had stripped the region of much of the men and equipment needed for defense, leaving New Orleans particularly vulnerable. General Benjamin Butler and his troops occupied the city on May 1. Previously, on April 27, the garrison at Fort Jackson mutinied upon accounts then circulating among the men that New Orleans had fallen and the forts were surrounded, cut off from the city and any possibility of reinforcement. The mutineers spiked several of the fort guns and many of the men deserted. With Fort St. Philip in a similarly untenable position, General Duncan surrendered both forts to Union commander David Porter on April 28 (US Army Corps of Engineers 1990).

Following the 1862 battle at Plaquemines Bend, the Union garrisons at Forts Jackson and Fort St. Philip came to be composed primarily of African-American troops under the command of white officers. In August 1863, the 13th Maine Regiment was relieved of command of both forts by 11 companies of the 4th Infantry, Corps d'Afrique. Company A of the 1st Louisiana Colored Heavy Artillery also supported the garrison at Fort St. Philip. Mistreatment of African-American soldiers by their commanding officer led to a near mutiny in December 1863 as angered troops rioted and stormed the armory. The incident was quelled and troops of the 83rd Ohio Volunteers were brought in to maintain order. The reorganization of the US Army in 1866 included the creation of infantry and cavalry regiments for enlisted black soldiers. Many of the remaining black troops garrisoned at Fort Jackson and Fort St. Philip were eventually assimilated into the 25th Infantry and were relocated to Texas and on to other destinations on the western frontier where they gained recognition as "Buffalo Soldiers." (US Army Corps of Engineers 1990).

Post-Civil War

After the Civil War, the US Army continued to maintain the forts for coastal defense. Fort Jackson was later used as a prison until the early 1870s. During the Endicott Period of coastal defense improvements of the 1890s, several new features were added to both forts to modernize their effectiveness. Improvements included new breech loading artillery, steam heating, electricity, and the use of concrete for new construction. Two large coastal guns were installed at Fort Jackson during the Spanish American War of 1898, and it served as a minor training base during the United States' involvement in World War I (1917–1918). Use of both forts for defensive purposes was discontinued in 1920. The remaining gun batteries were disarmed, and both posts were abandoned by 1922. In 1927, the site of Fort Jackson was purchased by private owners and later donated to Plaquemines Parish in 1960. Fort St. Philip was not regularly garrisoned after 1871. Like Fort

Jackson, it was also renovated and readied for service during the Spanish American War with the installation of modern gun batteries and buildings. Fort St. Philip was repaired during World War I to serve as a training base, and a watchman later looked after the site until 1923. It was also sold at public auction to private owners (National Register of Historic Places 1977) (National Register of Historic Places 1978).

DESCRIPTION OF FORT JACKSON

Fort Jackson, situated on an 82-acre reservation currently owned by Plaquemines Parish, was built between 1822 and 1832. It was constructed during the federal program of seacoast fortifications known as the Third System (1816 to 1867). The program was not initiated in response to immediate threats from foreign governments, but rather as a means to integrate and upgrade the nation's system of seacoast fortifications. Extensive new construction was undertaken in addition to improvements to aging fortifications to correct perceived inadequacies and incorporate new technological advancements. With the origins of its design dating to 15th-century Europe, Fort Jackson was constructed in the configuration of a "star fort" of five bastions. Since the 18th century, military architects had successfully employed the star fort design for other US coastal defenses, notably at iconic Fort McHenry in Baltimore.

FORT JACKSON CASEMATES

In 1862, early in the Civil War, Fort Jackson was described as being in good condition, solidly constructed with brick masonry and granite. Two of its 22-foot-tall by 110-yard-long scarp or curtain walls faced the Mississippi River, with casemates along the lower tier of each wall equipped to receive eight guns. The brick casemates opened onto the parade grounds. Other gun emplacements were positioned behind the parapet walls that spanned the earthen upper tier (terreplein) of the ramparts. Twenty-four-pounder howitzers were mounted in the casemates along each flank of the bastions. The other three scarp walls, intended for defense against infantry assaults, were primarily of earthen construction and lacked casemates. The fort was surrounded by a moat or "wet ditch" 6-feet-deep at its center. A drawbridge was positioned to span the moat and provide access to the sally port and the fort's interior. A levee was also constructed around the fort to protect it from river flooding. An earthen water battery with parapets was constructed in the 1850s outside the fort walls, but its breast-height walls and gun platforms had not been completed at the time of the Civil War. The water battery was modified in the 1890s to house five pairs of guns and five concrete magazines. A defensive barracks was constructed in the center of the fort grounds to house and protect an estimated 400 to 500 men (National Register of Historic Places 1977) (Hughart, Fort Jackson Park Strategic Plan 2004).

As part of the Endicott Period improvements of the 1890s, Battery Ransom was constructed within the fort grounds. The concrete and earthen battery housed two, 8-inch disappearing rifles with supporting magazines placed below the gun pits. The gun pits were converted to water fountains during the 1960s. Battery Millar was also built during the 1890s outside the fort walls and near the river. The concrete battery contained two, 3-inch rapid-fire rifles. The original surrounding earthworks were later removed, and a flag pole, planter, and various monuments were placed atop

the structure. A monument was placed on the reservoir levee to honor the 17th-century French explorer, La Salle. The tall spire monument has sustained damage from vandalism and plaques have been removed (Hughart, Fort Jackson Park Strategic Plan 2004).

Site Treatment and Condition

Fort Jackson was sold in 1927 to private owners, who in turn leased or sold outlying parcels of the reservation lands to local farmers. Fort St. Philip and Fort Jackson were both designated National Historic Landmarks in 1960 and were subsequently listed on the National Register of Historic Places. The Plaquemines Parish Commission Council began restoration of Fort Jackson in 1961. In the decades following the fort's abandonment, it had deteriorated from lack of maintenance and had become densely overgrown with vegetation. Large areas were flooded and filled with mud and debris. Mud and vegetation were removed, and an access road and parking area were constructed. Fort Jackson itself is located outside the main West Bank Barrier Levee and is threatened by high river flooding and hurricane tidal surges. The Parish built a separate outer levee around the fort to protect it from high water and installed an automatic pumping station to drain standing water. While this outer levee protects the fort from the Mississippi River, it is slightly lower than the main levee that runs parallel to Louisiana Highway 23 and serves to trap water during high water events (see figure 5). The fort's brick walls and gun emplacements were repaired, bridges and walkways replanked, and the original moat and drains reopened. As part of the objective to interpret the site and transform it into a recreational park, the Parish also added interpretive markers throughout the site and began a program to recover and exhibit artifacts and relics discovered within the boundary of the fort. Multicolored fountains were placed at Battery Ransom, water and subsurface lighting systems were installed, and wrought iron picket fencing placed along the parapet walls to protect visitors (National Register of Historic Places 1977)("History of Fort Jackson").

AERIAL VIEW OF FORT JACKSON

Several non-historic features were also developed outside the fort proper within the Parish-owned Fort Jackson Park, the 82-acre former military reservation. These included a fresh water reservoir adjacent to the fort's inner moat and earthen battery to supply the Boothville Water Treatment Plant; a small public boat ramp and marina located outside the levee; and a large currently open area between the fort and Highway 23 that was developed for athletic facilities including a stadium, baseball field, and tennis courts (which were severely damaged and removed following Hurricane Katrina in 2005). Two, large-scale public events are held annually at the site: a Civil war re-enactment held in the spring and the Plaquemines Parish Fair and Orange Festival held the first week in December (Hughart, Fort Jackson Park Strategic Plan 2004).

A number of threats to Fort Jackson were identified in the *Fort Jackson Park Strategic Plan* (2004); the plan was ironically issued just a year before the severe impacts of Hurricane Katrina. Flooding

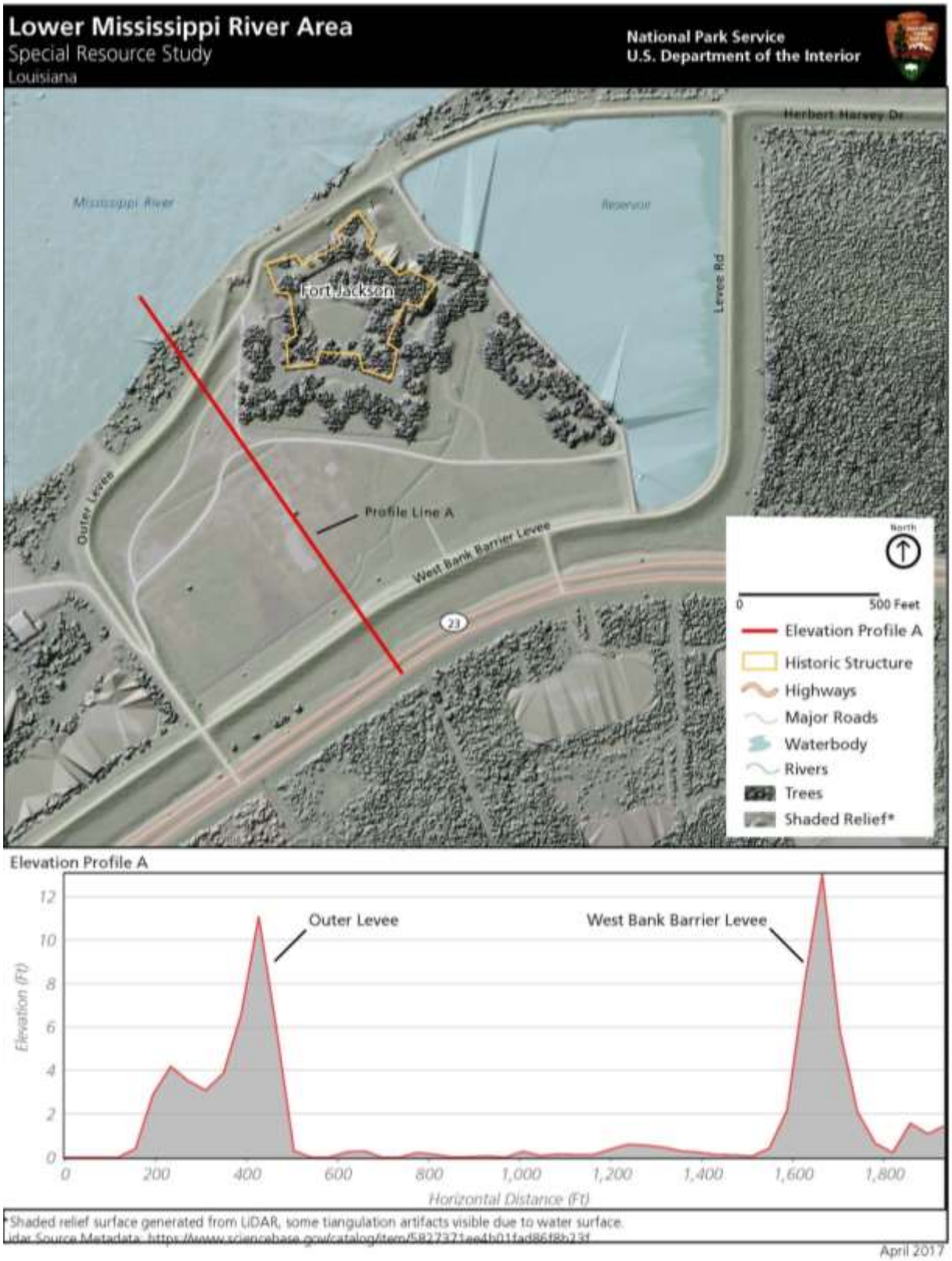

FIGURE 5. FORT JACKSON ELEVATION PROFILE

and wind damage from hurricanes or spring flooding of the Mississippi River were recognized in the plan as potentially the most damaging threats. The plan noted that since the establishment of the site as a Plaquemines Parish park, it had been impacted on several occasions by severe storms and flooding, including Hurricanes Betsy and Camille in the late 1960s that deposited large amounts of debris in the fort. Hurricanes and tropical storms resulted in expensive clean-up operations and loss of artifacts. The low levee in front of the fort, riverbank erosion, and the lack of an automated failsafe pumping system were identified as factors contributing to the flood damage. Additional structural threats were identified, particularly from trees that had grown along the tops of the ramparts. The trees continue to threaten the fort's historic masonry as a result of their weight, disturbance when uprooted by high winds, and deep penetrating root systems. Water infiltration was noted in the strategic plan as causing a variety of masonry problems and failures such as cracking, delamination, and spalling. A number of metal brackets, fences, and structural columns have deteriorated by rusting. Since the 19th century, subsidence was recognized as a significant threat resulting in large cracks in the masonry scarp walls and bastions; suspected subsidence-caused cracks were also evident in the vaulted casemates. Soil erosion from visitor use, inappropriate activities, and inadequate drainage systems also damaged the fort's earthen structures (Hughart, Fort Jackson Park Strategic Plan 2004).

Fort Jackson was severely damaged by Hurricanes Katrina and Rita in 2005. Much of Plaquemines Parish south of Port Sulphur was completely devastated by Katrina's storm surges and high winds. Fort Jackson was initially submerged, with water levels eventually subsiding to 2 to 5 feet after the hurricane passed. The two museum exhibit rooms (just inside the fort's main entrance or sally port) were flooded, and the collections exhibited in these rooms were underwater for about six weeks, buried in mud, brackish water, and debris. National Park Service staff from the National Center for Preservation Technology and Training (NCPTT) provided technical assistance to Parish staff to assess the condition of the collections and offer conservation guidance. More than 1,700 collection items were recovered, stabilized, and prepared for transport to a temporary storage facility. The Federal Emergency Management Agency (FEMA) provided oversight and approximately $4 million in disaster relief funds to repair some of the damage to the fort caused by Hurricane Katrina (NCPTT journal 2005; NPS/NCPTT 2009). An additional $9 million worth of repair work from Hurricanes Katrina and Rita is still pending.

In 2012, Hurricane Isaac caused additional damage to Fort Jackson, exacerbating damage to items awaiting repair from Hurricanes Katrina and Rita, redamaging features repaired following Katrina, and causing new damage. The high winds and flooding caused by Hurricane Isaac resulted in restroom and interior utility systems damage, metal corrosion, mortar loss in the casemates, and accumulation of vegetation and sand/silt debris at the fort. From 2013 to 2017, FEMA, through its Public Assistance Program, funded debris removal and some repairs to the damage at Fort Jackson caused by Hurricane Isaac.

A new Fort Jackson museum and visitor center was completed near the fort in 2014 and officially opened to the public in 2015. The museum currently exhibits nearly all the items painstakingly salvaged and preserved from the collections formerly exhibited at the fort. Paintings, maps, sketches and other displays further interpret the history of Fort Jackson. The artifacts and collection items are stored in mobile exhibit cases that can be transported elsewhere in the event of future storm evacuations (Plaquemines Gazette 12/22/2015).

DESCRIPTION OF FORT ST. PHILIP

Fort St. Philip is situated on an approximately 53-acre site on the east side of the Mississippi River and positioned diagonally across the river from Fort Jackson. Originally built by the French in 1746 and rebuilt by the Spanish Governor Carondelet between 1791-1792, the irregularly-shaped fort was in disrepair at the time it was acquired by the United States in 1803. The fort was subsequently reconfigured at the time of the War of 1812, and then occupied a quadrilateral space of about 150 yards by 100 yards. A bastioned terrace faced the river, flanked by other defensive works (figure 6).

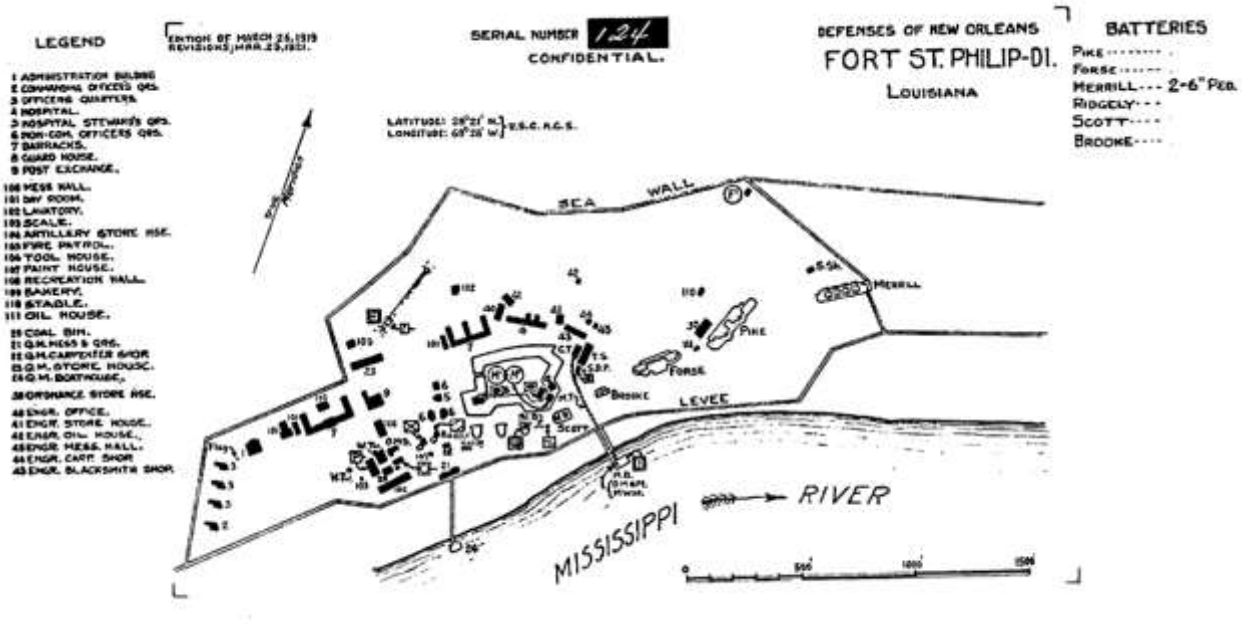

FIGURE 6. FORT ST. PHILIP RENDERING

Improvements to the fort were carried out in the 1840s as part of the federal Third System program of coastal defense upgrades. The brick scarp walls, in poor condition prior to the Mexican-American War, were strengthened with arches and additional brick masonry. The walls were about 16 to 17 feet high on the landward facing front, and 14 to 15 feet high on the water front. Earthen parapets were extended around the fort, and the wet ditch was deepened to a depth of 6 feet. A postern tunnel and drawbridge were placed in the western face, and another drawbridge was placed near the northern angle of the fort. Two earthen water batteries were constructed external to the fort with 20-foot-thick parapets. The batteries were intended to house 22 heavy guns on the water faces along with six, 24-pound guns positioned at the ends and rear of the batteries. The main fort was arranged for 20 heavy guns bearing on the river channel, with another dozen guns bearing upon the land. No casemates were constructed, and the fort's guns were all positioned to fire "en barbette" (over the parapet walls) (National Register of Historic Places 1978).

OLD FORT ST. PHILIP MAGAZINE AND FORT WALL

VIEW OF NORTH GATE AND VIEW OF NORTH WALL (MUCH OF IT COVERED)

Fort St. Philip received comparatively little damage during the 1862 Civil War battle. Although the defensive works sustained some damage, the overall efficiency of the 45-gun armament was not substantially impaired. During the Endicott Period of improved fortifications, six gun batteries were added to Fort St. Philip between 1895 and 1907. All of the new batteries were constructed outside of the old fort but within an area between the river levee and seawall. Officers' quarters, barracks, and other support buildings were also constructed. Along with Fort Jackson, use of Fort St. Philip for coastal defense was discontinued in 1920 as part of the post-World War I disarmament. Its gun batteries were disarmed and the guns shipped out the following year. Both Fort St. Philip and Fort Jackson were abandoned by 1922 (National Register of Historic Places 1978).

Following decades of abandonment, Fort St. Philip reemerged in 1978 as the site of a commune led by spiritual teacher and former evangelist, Louis Hubert Casebolt, known to his followers as Archanna Christos. Christos named the commune "Velaashby" and was granted a long-term lease for the property from Frank Ashby, Jr., owner of Fort St. Philip. The 40 or so commune members and their families occupied and refurbished former officers' quarters and other buildings and cleared and farmed the tract in their pursuit of spiritual peace at the remote isolated site. The commune persisted to 1989 following Christos' death in 1985, but its members eventually abandoned the site and dispersed in the face of economic difficulties.

Site Treatment and Condition

Fort St. Philip has been under private ownership since 1929. The fort sustained extensive deterioration following its abandonment, subject to natural weathering, hurricane damage, and repeated episodes of flooding accentuated by a broken levee. Large sections of the fort are currently inundated much of the year (during high river flows) and are partially buried under silt. Dense undergrowth and trees further obscure the fort's structural features. Many of the former earthworks have been reduced to tree-covered mounds. Access to the site is very difficult. Boat and helicopter are the only feasible means of reaching the site, as the nearest road is some five miles away.

AERIAL IMAGE OF FORT ST. PHILIP LOOKING EAST

Chapter 3:
Resource Evaluation

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CHAPTER 3: RESOURCE EVALUATION

CHAPTER OVERVIEW

This chapter presents the evaluation of the four criteria that must be met for a study area to be considered for designation as a national park unit. The application of these criteria follows agency and legislated guidance outlined in Section 1.3 (*Criteria for Inclusion)* of the NPS *Management Policies 2006* as well as the National Park System New Areas Studies Act (Title III of the National Parks Omnibus Management Act of 1988, PL 105-391; 54 US Code 100507). For a study area to be considered for designation as a potential new unit of the national park system, it must fully meet the following four criteria for evaluation:

1) Possess nationally significant resources
2) Be a suitable addition to the system
3) Be a feasible addition to the system
4) Require direct NPS management or administration instead of alternative protection by other agencies or the private sector.

These four criteria are analyzed sequentially, and there are several pathways for concluding the study process based on individual criteria findings. The study process may be truncated if a negative finding is made for any one of these criteria. The findings presented in this chapter will serve as the basis for a formal recommendation from the Secretary of the Interior to Congress as to whether or not the study area should be designated as a new unit of the National Park Service. A summary of these findings can be found at the end of this chapter.

NATIONAL SIGNIFICANCE CRITERIA

The determination of national significance for a study area is the first step in the special resource study evaluation process. To determine their national significance, historic places or sites being studied for their outstanding cultural resources are evaluated using established National Historic Landmark (NHL) criteria. More rigorous than the National Register of Historic Places nomination process, NHL designation serves as official recognition by the federal government of the national significance of a historic property or site. Outlined in 36 CFR Part 65, the NHL designation process for determining national significance is ascribed to districts, sites, buildings, structures, and objects that possess:

1. exceptional value or quality in illustrating or interpreting the heritage of the United States in history, architecture, archeology, engineering, and culture; and
2. a high degree of integrity of location, design, setting, materials, workmanship, feeling, and association.

In addition, to be eligible for designation, an area must meet at least one of six "Specific Criteria of National Significance" contained in 36 CFR Part 65:

- Criterion 1: be associated with events that have made a significant contribution to and are identified with, or that outstandingly represent, the broad national patterns of United States history and from which an understanding and appreciation of those patterns may be gained; or

- Criterion 2: be associated importantly with the lives of persons nationally significant in the history of the United States; or

- Criterion 3: represent some great idea or ideal of the American people; or

- Criterion 4: embody the distinguishing characteristics or an architectural type specimen exceptionally valuable for the study of a period, style, or method of construction, or represent a significant, distinct, and exceptional entity whose components may lack individual distinction; or

- Criterion 5: be composed of integral parts of the environment not sufficiently significant by reason of historical association or artistic merit to warrant individual recognition but collectively compose an entity of exceptional historic or artistic significance, or outstandingly commemorate or illustrate a way of life or culture; or

- Criterion 6: have yielded or may be likely to yield information of major scientific importance by revealing new cultures, or by shedding light upon periods of occupation of large areas of the United States. Such sites are those which have yielded, or which may reasonably be expected to yield, data affecting theories, concepts, and ideas to a major degree.

The use of the NHL criteria to determine national significance is the only link between the special resource study process and the NHL program regulations. It does not confer landmark designation; separate designation processes, governed by other regulations, exist for the NHL program.

National Significance Evaluation

A brief summary of Fort Jackson and Fort St. Philip national significance findings that correspond to each of the aforementioned criteria are noted below.

Criterion 1: *(Properties) that are associated with events that have made a significant contribution to and are identified with, or that outstandingly represent, the broad national patterns of United States history and from which an understanding and appreciation of those patterns may be gained; or*

Fort Jackson and Fort St. Philip were both designated National Historic Landmarks in 1960. National Register of Historic Places nomination forms were completed for both forts (Fort Jackson – 9/13/1977; Fort St. Philip –11/24/1978) that served to document their National Historic Landmark status. By virtue of their National Historic Landmark designations, Fort Jackson and Fort St. Philip meet the criteria of national significance for the purposes of the present special resource study.

In January 1815, Fort St. Philip, played a critical role in the defense of New Orleans as its defenders turned back British war ships en route up the Mississippi River to assist land forces in the attack of the city. Although the War of 1812 had technically ended the previous month, the successful defense mounted at Fort St. Philip helped ensure the security of New Orleans and the Mississippi Valley for the United States. Following the War of 1812, Fort St. Philip and Fort Jackson (constructed in the aftermath of the war on the opposite or west side of the Mississippi River) would not be engaged in direct military battle until the Civil War when the forts had come under Confederate control. In April 1862, assisted by a river blockade and a small fleet of Confederate ships and naval forces, the forts initially withstood a prolonged attack by a flotilla of warships commanded by Union Flag Officer David Farragut. The Union fleet ultimately succeeded in passing the forts on April 24. Farragut, with the support of land troops commanded by General Benjamin Butler, proceeded up the Mississippi and occupied New Orleans on May 1. Occurring relatively early in the Civil War, Union

occupation of the city and eventual control of the Mississippi River Valley were vitally significant outcomes that helped pave the way for the Union Army's ultimate victory in the war.

As part of the coordinated system of Third System fortifications, Fort Jackson and Fort St. Philip are linked to the US Army's objectives for ensuring national security by bolstering defense of the nation's seacoast and important harbors. As many 19th-century military strategists believed, well-protected and fortified coast lines made it unnecessary for the United States to support a large and costly standing army. Strategic placement of Fort St. Philip and Fort Jackson at Plaquemines Bend on the Mississippi River and the ongoing structural enhancements and armament upgrades that extended to the late 19th century are clearly indicative of the military importance attached to protecting the southern (Mississippi River) approach to the vital port city of New Orleans.

The sites of Fort Jackson and Fort St. Philip have the potential to yield archeological evidence associated with their respective periods of construction and occupation. Many artifacts recovered over the years at Fort Jackson were cleaned and reconditioned for exhibit (originally on-site at Fort Jackson and presently at the Fort Jackson Museum and Welcome Center near the fort). Additional archeological resources and artifacts are likely to exist in buried stratified contexts in areas within or adjacent to both Fort Jackson and Fort St. Philip that have not received substantial ground disturbance. Archeological investigations could substantiate or reveal new information regarding construction of the forts and their role and condition at the time of the War of 1812 and Civil War battles. However, it is uncertain whether such information would provide substantial new insights supporting particular theories or concepts related to the historical development of the forts or their national significance.

Criterion 2: *(properties) that are associated importantly with the lives of persons nationally significant in the history of the United States; or*

(not applicable)

Criterion 3: *(properties) that represent some great idea or ideal of the American people; or*

(not applicable)

Criterion 4: *(properties) that embody the distinguishing characteristics or an architectural type specimen exceptionally valuable for the study of a period, style, or method of construction, or represent a significant, distinct, and exceptional entity whose components may lack individual distinction; or*

Fort Jackson and Fort St. Philip embody several distinctive military architectural features that reflect efforts carried out between the late 18th and late 19th centuries to strengthen and modernize seacoast (riverbank) defenses against attacking naval forces. Fort Jackson was constructed between 1822 and 1832 during the federal program of seacoast fortifications known as the Third System (1816 to 1867). Third System forts incorporated new construction along with improvements to aging fortifications to bolster defenses and incorporate new technological advancements. Fort Jackson was constructed in the configuration of a "star fort" of five bastions, a centuries-old European design successfully employed at several US forts since the 18th century. Several distinguishing elements of the fort's original construction exist including the brick masonry scarp walls with interior casemates that housed gun emplacements, the moat around the exterior perimeter of the fort, the entrance or sally port, and interior parade ground. The fort's defenses were modernized over the ensuing years, notably with the addition of Endicott Period gun batteries during the 1890s. Fort St. Philip, with origins dating to French and Spanish occupation of the area during the 18th century, was elongated and irregularly shaped in large measure because of the restricted land base afforded its construction

site on the east bank of the Mississippi River. It also received additional batteries and artillery, strengthening of its scarp walls and other modernizations completed as part of Third System improvements of the 1840s, with further improvements carried out in the 1890s during the Endicott Period of enhanced fortifications.

Criterion 5: *(properties) that are composed of integral parts of the environment not sufficiently significant by reason of historical association or artistic merit to warrant individual recognition but collectively compose an entity of exceptional historic or artistic significance, or outstandingly commemorate or illustrate a way of life or culture; or*

(not applicable)

Criterion 6: *(properties) that have yielded or may be likely to yield information of major scientific importance by revealing new cultures, or by shedding light upon periods of occupation of large areas of the United States. Such sites are those which have yielded, or which may reasonably be expected to yield, data affecting theories, concepts, and ideas to a major degree.*

(not applicable)

National Significance Finding

Fort Jackson and Fort St. Philip meet two of the six criteria of national significance for the purposes of the present special resource study. The forts are individually designated as National Historic Landmarks, and are thereby recognized for their exceptional national significance. Fort St. Philip was involved in the successful defense of New Orleans during the War of 1812. Both forts are notably associated with the Civil War battle of April 1862 when Union naval forces were able to defeat the combined Confederate defense mounted at Plaquemines Bend by the forts, naval command, and river barricade. The Confederate defeat enabled the Union naval and land forces to continue up the Mississippi River and capture the critical port city of New Orleans. Despite subsequent modifications and the damaging impacts of multiple storms and flood waters, the forts retain sufficient historic integrity to allow insight into the character-defining design and construction features that reflect their respective periods of historical significance.

SUITABILITY CRITERIA

A study area is considered suitable for addition to the national park system if it represents a natural or cultural resource type that is not already adequately represented in the national park system or is not comparably represented and protected for public enjoyment by other federal agencies, tribal, state, or local governments, or the private sector.

Adequacy of representation is determined by comparing the study area to other comparably managed areas representing the same resource type, while considering differences or similarities in the character, quality, quantity, or combination of resource values. This comparative analysis should also address the rarity of the resources, interpretive and educational potential, and similar resources already protected in the national park system or in other public or private ownership. The comparison results in a determination of whether the study area would expand, enhance, or duplicate resource protection or visitor use opportunities found in other comparably managed areas. Based on this determination, a finding on suitability is made.

The following methodology was used by the study team to evaluate the suitability of the Lower Mississippi River Area:

1. Define the type of resource represented by the study area.
2. Identify the theme or context in which the study area fits.
3. Identify sites that represent the resource type within the national park system, and similar sites protected by other agencies, state, local or tribal governments, and the private sector.
4. Through a comparative analysis, describe how the resource type is represented.
5. Consider adequacy of representation and determine whether the resource will duplicate, enhance, or expand opportunities for visitor use or resource protection.
6. Prepare a concluding finding on suitability.

SUITABILITY EVALUATION

Type of Resource Represented by the Study Area

In 1794, the US Government authorized federal funding for the construction of seacoast fortifications to protect strategic seaports along the coast of the Atlantic Ocean and the Gulf of Mexico. The program of fortifications, known as the First System (1794-1801), was undertaken in response to political instability in Europe that threatened to draw the United States into conflict with Great Britain. The US military had no engineering department at the time and, consequently, First System forts were dissimilar in form (mostly earthworks) whose design and construction were contracted to independent, primarily French, military architects. By 1805, following a brief lull in political tensions with France and Britain, the maritime neutrality of the United States was again jeopardized during renewed conflict between Great Britain and France, with American ships boarded and crew members impressed into service aboard British ships. As perceived threats to United States coasts increased, the US Government initiated the Second System (1807-1814) of new fortification construction along with the strengthening of existing forts. Although Second System forts continued to be dissimilar in form, construction was supervised and coordinated by the US military and American-trained architects. Most construction was completed by the War of 1812 (John Milner Associates, Inc., 1993).

Fort Jackson (constructed between 1822 and 1832) was built during the federal program of seacoast fortifications known as the Third System. In 1816, with lessons learned from the War of 1812, Congress appropriated over $800,000 for the ambitious seacoast defense system (about $14.7 million in 2016 dollars). President James Madison appointed a Board of Engineers for Fortifications to advise on defense policy and recommend suitable fortification projects along the Atlantic and Pacific coasts and the Gulf of Mexico. Under the direction of French fortification expert, Simon Bernard, the board marked the nation's first permanent institution devoted to the establishment of a unified strategic policy and defense network. Bernard and US Army engineer officer Joseph G. Totten designed the larger forts and key features of most of the smaller forts. Totten (chief engineer of the US Army from 1838 to 1864) became America's fortification expert following Bernard's return to France in 1831. Board officials visited potential sites, prepared plans for new forts, and assigned construction priorities. The entire United States coastline was investigated, with each important harbor evaluated in great detail to protect the nation's most vital naval bases, commercial ports, and strategic anchorages (Weaver 2001; OMICS, Intl. n.d.).

By the close of the Third System in 1867, the US Army had built 42 of nearly 200 forts earlier recommended by the Board of Engineers, including additional towers and gun batteries for less critically important harbors. With work on masonry forts ending in 1867, many of the forts were not completed. Nevertheless, the Third System represented the most comprehensive, unified, and

advanced defense program that the nation had undertaken to that point. Some of the most impressive harbor defense structures built during any era of United States military architecture were constructed as part of the Third System; although many were subsequently modified, they constitute the oldest surviving body of major military structures in the United States. Forts from the period were distinguished by large vertical-walled brick or stone defense works with multiple tiers of gun batteries. To protect the nation's important harbor entrances, the forts were strategically sited on promontories and islands at topographic "choke points" (i.e., narrow sections of waterways and inlets that restricted the passage of enemy ships). Each fort was designed to accommodate a smaller peace-time garrison for maintenance, with the capability to rapidly expand to a full garrison force during times of war. Although armed with specialized artillery, Third System forts represented a concerted effort to standardize coastal armament systems. New defensive innovations and technological advancements were incorporated along with improvements to aging fortifications to correct perceived inadequacies. Consequently, several First and Second System forts were renovated and readied for larger artillery (Weaver 2001; OMICS, Intl. n.d.).

The outbreak of the Civil War and the rapid technological advances that accompanied the war effort severely tested the effectiveness of the Third System fortifications. From the first artillery fire at Fort Sumter, the strategic locations of the forts placed them in the forefront of numerous crucial battles. Steam propulsion, ironclad warships, and rifled cannon eventually combined to end the predominance of thick masonry walls and expensive permanent fortifications. The thick brick and stone walls of Confederate-occupied forts like Sumter and Pulaski were reduced to rubble in hours or days by heavy rifled and shell-firing guns of enormous power. By the end of the Civil War, it was clear that the Third System of coastal defenses was obsolete. More flexible, repairable and cheaper earthworks reinforced by heavy timber revetments were eventually found to be more effective, capable of better absorbing the shock of repeated bombardment from large caliber and rifled siege artillery. To supplement firepower, earthworks supporting additional artillery emplacements were often built as stand-alone fortifications near Third System forts (Weaver 2001; OMICS, Intl. n.d.).

A distinguishing feature of Fort Jackson is its pentagonal or "star fort" configuration of five bastions. The star fort design was successfully employed at several US forts since the 18th century, and the persistence of the design with variations and modernizations well into the 1860s attests to its long-standing viability among military engineers. Although the weaknesses of its design and particularly the inability of masonry walls to withstand more powerful artillery bombardments were exposed during the Civil War, Fort Jackson and other Third System forts continued to be upgraded with improved gun batteries well into the latter 19th century during the Endicott Period of fort modernization at the outset of the Spanish-American War.

Fort St. Philip, with origins dating to French and Spanish occupation of the area during the 18th century, was elongated and irregularly shaped. Although never a true star fort like its counterpart, Fort St. Philip received armament upgrades and modifications that assisted its garrison in defeating the British naval assault during the War of 1812. In the 1840s prior to the Civil War, additional gun batteries and artillery were placed at Fort St. Philip, its scarp walls were strengthened, and other modernizations were completed as part of Third System improvements. Like Fort Jackson, Fort St. Philip received additional upgrades during the Endicott Period of the 1890s.

Theme or Context In Which the Study Area Fits

In evaluating the suitability of cultural resources within or outside the national park system, the National Park Service references the 2016 System Plan, as well as its 1994 thematic framework, "History in the National Park Service: Themes and Concepts" for history and prehistory. The 2016 System Plan built upon the 1994 framework and examines the special places, stories, ecosystems, and recreational opportunities that the National Park Service currently protects, while identifying gaps and opportunities to seek new ways to protect important natural areas and cultural heritage in the national park system and beyond (Hugart undated). The 1994 framework provides additional guidance for the National Park Service related to historic resources and serves as an outline of major themes and concepts that help to conceptualize American history. It is used to assist in the identification of cultural resources that embody America's past and to describe and analyze the multiple layers of history encapsulated within each resource.

While Fort Jackson and Fort St. Philip do not directly correspond to any of the cultural resource gaps and opportunities identified in the 2016 System Plan, the two forts do contribute to historical knowledge and understanding under the theme of "Shaping the Political Landscape," in accordance with the NPS Thematic Framework. The theme broadly encompasses political and governmental institutions that create public policy as well as those groups that seek to shape policies and institutions. The political landscape has been shaped by military events and decisions, by transitory movements and protests, as well as by political parties. The subtopic of "Military Institutions and Activities" helps to more specifically define the theme with regard to Fort St. Philip and Fort Jackson. As structures importantly associated with the defense of New Orleans, notably during the War of 1812 (Fort St. Philip) and the Civil War (Fort Jackson and Fort St. Philip), the forts are a reminder of their critical role in both successful and unsuccessful efforts to protect the city from invading naval forces. Not only do the forts reinforce the need faced by successive military engineers and garrison commanders to upgrade armaments and associated defense elements as new technological advances became available, but they also attest to the long-standing strategic importance of siting defenses at Plaquemines Bend on the Mississippi River to take full military advantage of natural topographic features and the dynamics of the river itself.

Comparative Analysis

In addressing the suitability criteria, a comparative analysis is needed to determine if similar resource protection and visitor opportunities are already offered by other NPS units or other land management entities. The following are some of the more representative examples of Third System forts managed by the National Park Service.

Fort Pulaski. Fort Pulaski is one of the best preserved examples of American Third System masonry coastal fortifications. Constructed between 1829 and 1847 on Cockspur Island at the mouth of the Savannah River, the fort was built to protect the city of Savannah from naval attack. Lieutenant Robert E. Lee, then a recent graduate from the US Military Academy, oversaw the preliminary construction. He selected the site and designed the system of drains and dikes that drained excess water, allowing the weight of the massive five-sided masonry fort to be supported on pilings. Upon its completion, the fort could mount 146 cannons (some along the parapet walls and others in the interior casemates) and with its eleven-foot-thick walls was considered all but invincible to attack. The completed two-tier structure was a truncated hexagon, including a demilune (an outer crescent-shaped defensive work), moat, two powder magazines, and a parade ground. The fort came under Union Army fire on the morning of April 10, 1862, and by the afternoon it was apparent that the heavy shells from the rifled cannons were capable of breaking through the fort walls. The fort guns returned fire but did not damage the Union positions. The Confederate commander surrendered the fort on April 11, recognizing the fort could not withstand the powerful Union bombardment and

that the artillery destruction of the fort walls exposed the interior of the fort and its main powder magazine. The loss of Savannah as a viable Confederate port crippled the Southern war effort. Fort Pulaski fell into disrepair following the conclusion of the Civil War. It was subsequently designated a national monument in 1924 and was acquired by the National Park Service in 1933.

Fort Sumter. Fort Sumter was built on a man-made island at the entry to Charleston Harbor, South Carolina. As one of the Third System forts constructed after the War of 1812, it protected Charleston Harbor along with Fort Moultrie and Castle Pinckney. Although construction began in 1829, Fort Sumter was still unfinished in 1861 at the outset of the Civil War. Supported by seventy thousand tons of imported New England granite, the fort was a five-sided brick structure, 170- to 190-feet-long, with 5-feet-thick walls standing 50 feet over the low tide mark. It was designed to house 650 men and 135 guns in three tiers of gun emplacements although it was never filled near its full capacity. Upon South Carolina's secession from the Union, a standoff with the state militia left Maj Robert Anderson, the commanding officer, and his troops cut off from access to supplies. President Lincoln's announcement that he intended to resupply the fort led to its bombardment by Confederate General P.G.T. Beauregard on April 12, 1861, marking the beginning of the Civil War. Anderson surrendered on April 13, 1861, and the fort remained in Confederate control until February 1865. During the war the fort suffered considerable damage from Union bombardments. At the end of the war only one wall remained standing with the others reduced to rubble. The fort was redesigned and rebuilt after the war, and it presently bears only superficial resemblance to its historical appearance. It served for a while as a lighthouse but was recommissioned for the Spanish-American War, World War I, and World War II. In 1948, the United States decommissioned Fort Sumter and turned the property over to the National Park Service.

Fort Pickens. Fort Pickens was built on Santa Rosa Island to defend the navy yard and entrance to Pensacola Bay, Florida. Originally designed by military engineers Simon Bernard and Joseph G. Totten, construction of the Third System masonry fort began in 1829 and was completed in 1834. Fort Pickens was the largest of the additional fortifications (Fort Barrancas, Fort McRee, and the Advanced Redoubt) that guarded Pensacola Harbor, and it was designated the headquarters for the Gulf Coast defenses. As built, the fort had two, 1,000-foot-long seacoast scarp walls with dual gun casemates and a barbette tier on top. The two secondary fronts were shorter with casemates that served as gun rooms and crew quarters. A backfilled wall and gorge with massive bastions protected the landward side from attack. Armament was noted to have been 252 guns of different types and caliber. Fort Pickens was one of only four forts in the South that was never occupied by Confederate forces during the Civil War. The fort was reinforced the day after Fort Sumter surrendered, preventing the Confederates from controlling Pensacola Bay and the Pensacola Navy Yard. Following the October 1861 Battle of Santa Rosa Island, Fort Pickens artillery with naval support bombarded Confederate forces then occupying Forts Barrancas and McRee and other bay shore positions on November 22 and 23, 1861. Confederate forces withdrew from Pensacola Bay in May of 1862. Fort Pickens was not attacked again during the remainder of the war, and it served as a prison for military and political prisoners. Fort Pickens received Endicott Period armament upgrades during the 1890s and additional batteries were installed in and around the fort during World War II. The fort was decommissioned in 1947 and was later transferred to the National Park Service in the 1970s as part of Gulf Islands National Seashore.

Fort McHenry. Fort McHenry was constructed between 1794 and 1802 to guard the entrance to Baltimore harbor. It is recognized as one of the finest surviving examples of coastal fortifications built during the First American System. This system of federally-funded forts spanned the Atlantic seaboard and the Gulf of Mexico to protect strategic ports from foreign invasion. As originally constructed, the earthen and masonry star fort was laid out as a regular pentagon with a bastion at each angle. Officers' quarters, barracks and a powder magazine were placed within the fort's parade

ground. Fort McHenry was upgraded with new structures and armament improvements throughout its history, including a ravelin (a walled triangular defensive structure external to the sally port constructed in 1813 as part of Second System improvements), the water (outer) battery, and the Civil War powder magazine. The primary physical expression of the fort in its capacity as a coastal defense work is best reflected by the resources constructed between approximately 1800 and 1867. The site derives preeminent national significance from its pivotal role in the defense of Baltimore during the War of 1812. It withstood a 25-hour British naval bombardment on September 13-14, 1814, inspiring Francis Scott Key to immortalize the triumph with the "Star Spangled Banner." From its establishment until 1912, Fort McHenry remained an active military post but was not involved in further combat. Between 1917 and 1923 it served as a receiving hospital for the convalescence of World War I veterans. In 1925, Congress designated the fort a national park and "perpetual national memorial shrine." The fort was transferred from the War Department to the Department of the Interior in 1933.

Fort Point. Fort Point was built between 1853 and 1861 by the US Army as part of a defense system of forts planned for the protection of San Francisco Bay. Designed at the height of the California Gold Rush, the fort and its companion fortifications were intended to protect the Bay's important commercial and military installations against foreign attack. The masonry fort was the only Third System fortification constructed west of the Mississippi River, attesting to the strategic military importance of San Francisco and the gold fields during the 1850s. The structure featured seven-foot-thick walls and multi-tiered casemated construction typical of Third System forts. The fort's garrison stood guard during the Civil War for possible Confederate naval attack, but the fort was never engaged in battle. It nevertheless retains significance because of its military history, architecture, and association with maritime history. After the Civil War, Fort Point was used intermittently as an army barracks, and its obsolete cannons were removed. Breech-loading rifled guns were later added to the fort as part of Endicott Period upgrades during the 1890s. During World War II, the fort was again used for military purposes, and its soldiers guarded the entrance of the Golden Gate against possible explosive mines and submarine attack. Despite some discussion of removing the fort to facilitate the construction of the Golden Gate Bridge in the 1930s, it was ultimately preserved by the construction of a special bridge arch that spanned the fort. Fort Point was designated a national historic site in 1970 and is a unit of Golden Gate National Recreation Area.

Fort James Jackson (Old Fort Jackson)—A Similar Resource Outside the National Park System. Fort James Jackson is one of the few preserved Second System seacoast fortifications in the United States. It is located approximately three miles east and downstream of Savannah, Georgia, on the south bank of the Savannah River. The original brick fort, now the oldest standing brick fortification in Georgia, was built between 1808 and 1812 and manned during the War of 1812. Fort James Jackson was enlarged and strengthened between 1845 and 1860 and saw its greatest wartime activity serving as the headquarters for the Confederate defenses on the Savannah River during the Civil War. On December 20, 1864, Union General W.T. Sherman captured the city of Savannah and Fort Jackson. The fort consists of an irregular-shaped gun battery of earth and brick masonry and is enclosed at its rear by brick walls that include four demi-bastions. The gun platform, facing the Savannah River, is supported by arched brick casemates, and a brick powder magazine is located at the southwest side of the gun platform. On the northeast angle of the barbette is an 1870s concrete and granite sod covered magazine, which was the only addition to the fort after the Civil War. Both battery and rear walls are fully enclosed by a brick-lined wet moat, which is supplied by a tide tunnel on the northwest face of the counter scarp wall. Fort James Jackson, a National Historic Landmark, is owned by the state of Georgia and operated as a museum by the Coastal Heritage Society.

Comparison and Adequacy of Representation

The broad array of surviving seacoast fortifications along the east and west coasts of the United States and Gulf of Mexico are variously preserved and managed by the National Park Service and state, local, and other governmental entities. Although surviving First and Second System forts like Fort McHenry (Baltimore, Md.) and Fort James Jackson (Savanah, Ga.) are comparatively rare, several Third System forts exist that collectively underscore the comprehensive and unified nature of that defense program and are widely recognized as among the nation's most impressive collection of military architecture. Many Third System forts, constructed in the aftermath of the War of 1812 to defend against the possibility of foreign invasion, were ironically only engaged in battle during the Civil War. Because of their coordinated design under the direction of the Board of Engineers for Fortifications, they often convey common architectural elements such as thick masonry and stone ramparts, interior casemates, tiered gun batteries (within casemates and along upper parapet walls), and other features that reflect the design approach of military engineers, particularly Simon Bernard and Joseph G. Totten. The intricately-constructed brickwork exhibited in the arched interconnected casemates of several Third System forts (Fort Jackson, Fort Jefferson in the Dry Tortugas, and others) are defining architectural elements along with other features of brick and stone masonry.

Because of the importance of commanding strategic locations at the mouths of harbors or along rivers (as in the case of Fort St. Philip and Fort Jackson along the Mississippi River), it was typically more practical to upgrade fort armaments and structural features under ensuing programs of defense improvements rather than to relocate or undertake wholesale new construction to replace prior fortifications. Consequently, forts such as Fort McHenry retained their iconic star fort configuration from the early 19th century even as new structural features (e.g., outer batteries, higher-powered artillery) were added. Fort Jackson and Fort St. Philip similarly retained much of their early 19th-century design although later additions (e.g., Batteries Ransom and Millar at Fort Jackson together with other Endicott Period upgrades at Fort St. Philip) altered the spatial configuration and construction materials of the fortifications. While the Civil War dramatically exposed the vulnerability of masonry forts to new high-powered rifled artillery, the continued repair and upgrading of damaged forts attest to the enduring military importance placed on harbor and coastal defenses. In the 1850s and 1860s, the US Army identified harbor defense as one of the principle means for protecting the seacoast and by extension was recognized as the best option for ensuring national security. Military strategists long remained optimistic that the United States did not need to support a costly large standing army as long as its coast lines were well-protected and fortified. The 20th-century possibilities of airplane and missile attack ultimately spelled the end of seacoast fortifications as a first line of military defense.

Surviving examples of Third System forts are currently well-represented in the national park system, as well as by state, local, and other governmental / private entities. Collectively, the fortifications demonstrate the importance of the 19th-century defense system for protecting major port cities and harbors and exhibit historical and architectural features that distinguish the system and reflect their adaptation to continued improvements. Considered in the context of the larger unified concept of the Third System coastal defenses, Fort Jackson and Fort St. Philip contribute to an expanded and more complete understanding of the extent of the defense system, particularly with regard to their roles in the defense of New Orleans.

Suitability Finding

Assessment of Fort Jackson and Fort St. Philip in comparison with other preserved Third System forts suggests that the forts meet the criteria of suitability for possible inclusion in the national park system. Their national significance, determined by their designation as National Historic Landmarks, is conveyed under the broad National Park Service theme of "Shaping the Political Landscape" and

the subtopic of "Military Institutions and Activities." The forts continue to exhibit architectural features that highlight the defining features of the Third System fortifications, with its emphasis on bastioned masonry revetment walls, high-powered artillery, and other features designed primarily to defend against naval assault. The location of Fort Jackson and Fort St. Philip adjacent to the lower Mississippi River has entailed repeated exposure to the damaging effects of hurricanes and storm events throughout their histories. Similar to other coastal and open water Third System forts, they face the damaging consequences of ongoing and anticipated extreme environmental and climatic conditions. Although the fundamental structural integrity of the forts has survived, it is clear that without vital ongoing stabilization and repair measures, their continued preservation and ability to convey their significance are at risk. With regard to Fort Jackson, previous stabilization measures have helped to substantially preserve its essential star fort configuration and spatial organization, assisting efforts to interpret the site and the fort's historical role in the defense of New Orleans.

EVALUATION OF FEASIBILITY

An area that is nationally significant and meets suitability criteria must also meet feasibility criteria to qualify as a potential addition to the national park system. To be feasible as a new unit, an area's natural systems or historic settings must be of sufficient size and appropriate configuration to ensure long-term protection of the resources and visitor enjoyment (taking into account current and potential impacts from sources beyond its boundaries) and have the potential for efficient administration by the National Park Service at a reasonable cost. A variety of factors may affect feasibility, including landownership, acquisition costs, access, threats to the resource, and staff or development requirements. The feasibility evaluation also considers the ability of the National Park Service to undertake new management responsibilities in light of current and projected availability of funding and personnel.

Fort Jackson and Fort St. Philip are the two sites within the study area that meet the special resource study criteria for national significance and suitability. Therefore, the evaluation of feasibility centers on these two sites.

In evaluating feasibility for Lower Mississippi River Area, the National Park Service considered the following:

- Size and Boundary Configuration
- Land Ownership Patterns, Local Planning and Zoning, and Current and Potential Uses of the Study Area and Surrounding Lands
- Access and Public Enjoyment Potential
- Existing Degradation and Potential Threats to the Resources
- Cost Associated with Acquisition, Development, Preservation, Operation and Maintenance
- Level of Local and General Public Support (*including landowners*)
- Economic/socioeconomic Impacts of Designation as a Unit in the National Park System

Size and Boundary Configuration

The NPS-defined study area encompasses lands within the original boundaries that were established for the Fort St. Philip and Fort Jackson NHL districts. The study area also includes supporting sites located just to the southwest of the NHL boundaries, including an existing boat ramp and the Fort Jackson Welcome and Visitor Center (figure 2).

Section 110(f) of the National Historic Preservation Act requires that federal agencies exercise a higher standard of care when considering undertakings that may directly and adversely affect

National Historic Landmarks. The law requires that agencies "to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm" to National Historic Landmarks. Any new national park unit would require some new visitor facilities and infrastructure, such as adequately sized parking, restroom facilities, and interpretive signage. Additionally, there would likely be a need for some administrative and operational facilities. Potentially, additional research could identify areas outside the NPS-defined study area that would be suitable for facility development—either on adjacent lands or remote sites.

Fort Jackson. The Fort Jackson study area is located about 2.5 miles southeast of Triumph on Louisiana State Highway 23 along the west bank of the Mississippi River in Plaquemines Parish and lies within the National Historic Landmark designation boundary (figure 2). Total acreage of the study area is approximately 52 acres. Although the area that comprises Fort Jackson has changed over time, the current configuration of levees surrounding the site and the study area serves to protect archeological and historical information that lies in the immediate fort area (National Register of Historic Places 1977). While not contiguous with the core area of the site that encompasses the Fort Jackson area, the Fort Jackson Visitor Center (located 0.8 miles southwest of Fort Jackson) is also included in the study area and is comprised of approximately 6 acres.

Fort St. Philip. Directly across the river, Fort St. Philip's study area consists of approximately 65 acres and lies entirely within the National Historic Landmark boundary. Fort St. Philip is bordered by the Mississippi River and levees on the southeast and canals on the remaining sides. This boundary encompasses the historic fort as indicated in maps of this time, which, during lower seasonal flows in the Mississippi River, provides a definable dry land mass within a swampy marshland area (National Register of Historic Places 1978).

Both Fort Jackson and Fort St. Philip have been determined to be nationally significant, as evidenced by their designation as National Historic Landmarks. The study area boundaries would be adequate to ensure protection of resources associated with the historic forts and to interpret the forts in their entirety. The area that encompasses both sites totals roughly 122 acres, comparable to other small NPS units or unit components.

In summary, the size and boundary configuration of the study area is found to be feasible to manage as a potential new unit of the national park system; however, the separation of the two forts by the Mississippi River presents a logistical challenge in terms of administration of Fort St. Philip, which is currently only accessible by boat and is directly across from one of the busiest shipping and commerce routes in the country. Overall, the NPS-defined study area is of sufficient size and configuration to ensure resource protection; however, any proposal should consider the mandate to minimize harm to the National Historic Landmarks. Therefore, consideration may be given to locating facilities outside of the study area.

Land Ownership, Local Planning and Zoning, and Potential Land Uses

Land Ownership. Land ownership within the study area is mixed. After World War I, both Fort Jackson and Fort St. Philip were sold as surplus government property. Fort Jackson was later donated in 1960 to the Parish of Plaquemines for the purposes of restoration (National Register of Historic Places 1977). While Fort Jackson is managed by the Plaquemines Parish Council, Fort St. Philip remains under private ownership.

Plaquemines Parish leaders have previously expressed an interest in a new NPS unit that encompasses Fort Jackson but have not formally expressed a willingness to donate or sell the property. At Fort St. Philip, land ownership is split among three private landowners (divided among

minority and majority owners) and these individuals have not been formally approached regarding their willingness to donate or sell the property. However, conversations with individuals that know the owners have indicated that they may be open to discussions regarding land donation or sale.

If Congress were to authorize a new park unit that included historic areas and resources identified in this study, there would be no immediate need to change existing landownership, and the National Park Service would not need to carry out any immediate actions that would affect these properties. Ownership and uses of these lands would continue as they were before the park's establishment. Any changes to landownership, management, or use would be in the future, and any land considered for inclusion in a national park unit would only be acquired from willing sellers at fair market value or from willing donors.

Local Planning and Zoning and Potential Land Uses. Plaquemines Parish has zoning jurisdiction over the areas within the study area boundary, much of which falls within the "parks and recreation" zone. Current land use in the study area is more formally noted in the Plaquemines Parish Comprehensive Master Plan and is largely influenced by natural conditions (Plaquemines Parish Government 2013). Less than 6% of the parish is dry land, with only 5% of that land being developed. Developed land in the parish is divided into 20 zoning districts. Slightly more than 1% of the developed land is comprised of parks and recreation areas, a total that includes Fort Jackson and Fort St. Philip.

The Land Use Assessment conducted to complete the Plaquemines Parish Comprehensive Master Plan lists Fort Jackson as a parks and recreation area. In the same assessment, Fort St. Philip is included in the description of the Parks and Recreation land use zone; however, on the existing land use map, Fort St. Philip and the surrounding area is unmarked, and therefore little is known about land ownership or zoning in this area. The study area was zoned through the Plaquemines Parish Comprehensive Zoning Ordinance, which establishes permitted uses; minimum lot sizes; minimum front, side, and rear setback for principal and accessory buildings; maximum building heights; and maximum building and lot coverage (Code of Ordinanances Plaquemines Parish Council 2017). Fort Jackson is grouped with other parks, playgrounds, churches, libraries, museums, and schools that are zoned in one of the following districts: single-family residential districts, two-family residential districts, mobile home park district, medical service district, neighborhood commercial district, and general commercial district. Meanwhile, Fort St. Philip falls into some of the 12,152 acres of undeveloped land in Plaquemines Parish.

Fort Jackson is currently closed to the public but can be accessed during special events or during guided tours upon request (when possible). Most visitors view the fort from outside the surrounding moat and gated entrance. The nearby Fort Jackson Museum and Welcome Center is run by Plaquemines Parish and offers interpretation of the fort's history four days a week, Tuesday through Saturday, which hours between 8:00 a.m. and 5:00 p.m. In contrast, Fort St. Philip, which is privately owned, is currently used as agricultural land and is grazed by cattle.

Lands on the north side of the Mississippi River and immediately adjacent to Fort St. Philip are zoned as undeveloped, while agricultural lands are located just south of Fort Jackson. Lands immediately to the southwest of Fort Jackson are defined as parks and recreation lands, while the strip of land between Fort Jackson and the Mississippi River is noted as industrial.

Although the lands surrounding Fort Jackson are largely undeveloped, the Plaquemines Parish Department of Economic Development and Tourism has listed the areas to the northeast, southeast, and southwest of the Fort Jackson study area as being potential 'Development Areas' (Plaquemines Parish Government n.d.).

Future land use in the study area is reflected in future land use mapping included within the 2010 Comprehensive Master Plan. Fort Jackson's classification denotes that the area is classified as 'Institutional Complex' (Plaquemines Parish Government 2013). Envisioned future land uses include campus-style planned clusters of schools, community centers, and other public uses, such as recreational parks. Fort St. Philip and the surrounding area is unmarked in terms of future land use. The land to the northeast and southwest of Fort Jackson is also classified as Industrial Complex, while land to the southeast is intended for continued agricultural use. Future economic investment areas, which are also noted in the 2010 Comprehensive Master Plan, identify a potential marina site about 0.5 miles to the west of Fort Jackson.

In summary, current landownership patterns and land uses are compatible with the establishment of a new unit of the national park system. Local planning guidance and zoning regulations currently permit the use of the study site as a recreational park, and there are no public plans to transition lands away from their current recreational use within the study area. The study area is feasible under these criteria.

Access and Public Enjoyment Potential

For the purpose of this study, access is defined as the method in which a visitor can physically experience a site, either by means of approaching or entering a site, if possible. Having free and easy access to a site is an important factor for the ability to interpret the significance of a resource as well as for facilitating visitor enjoyment.

Access to the Forts. Fort Jackson is readily accessible from Louisiana State Highway 23, which also links to the City of New Orleans, located roughly 70 miles north. State highways connect the communities of Triumph, Venice, and Empire to the rest of the region. Fort Jackson is located adjacent to paved county roads, and the existing road network has proven adequate for current visitors to Fort Jackson. Enhanced visitor wayfinding could be facilitated by directional signage systems, published tour guides, and maps.

Access to Fort St. Philip is limited; boat and helicopter are the only feasible means of reaching the site since the nearest road is some five miles away. The inability to easily access Fort St. Philip makes visitor use and administration of the site problematic should it become a unit of the national park system. In concept, the National Park Service could partner with commercial operator/s to provide periodic boat access to Fort St. Philip which would require an improved boat ramp on the south side of the Mississippi River. This assumes that visitors would view and experience the site primarily from the boat because of the unstable condition of the site and natural hazards.

Public Enjoyment Potential. Today, Fort Jackson is zoned as a park and recreation area and is operated by the Parish as a public park although entrance into the fort is only available during special events or during guided tours. Two, large-scale public events are held annually at the site: a Civil War re-enactment held in the spring and the Plaquemines Parish Fair and Orange Festival held the first week in December (Hughart, Fort Jackson Park Strategic Plan 2004). Fort Jackson has been the home of the Plaquemines Parish Fair and Orange Festival since 1970. In addition, since 2008, the Buras Volunteer Fire Department's Oilfield Crawfish Boil Off has been held on the grounds outside Fort Jackson. Believed to be the largest crawfish boil in the world, the event draws tens of thousands of people to south Plaquemines (Plaquemines Parish Government 2016). Plaquemines Parish is also considering a regional multiuse trail system along the levee, which may further enhance public enjoyment potential.

A new Fort Jackson Museum and Welcome Center was completed near the fort in 2014 and officially opened to the public in 2015. The museum currently exhibits nearly all the items salvaged and preserved from the collections formerly exhibited at the fort prior to Hurricane Katrina. Paintings, maps, sketches, and other displays further interpret the history of Fort Jackson. During a field visit to the site in May 2016, as many as 25 people came to visit the Fort Jackson Visitor Center during the middle of the week, with many of these people driving up to the fort and attempting to view it from outside the gated entry.

Should Fort St. Philip become a national park unit, public enjoyment potential would continue to be limited because of the challenges of accessing the site via boat. In addition, the site is inundated throughout much of the year, particularly during periods of high flows in the Mississippi River. Further, the abundance of poisonous cottonmouth snakes and alligators also serve as a deterrent to visitation. While a private boat concession operation could conceivably provide access from a future boat access area or marina just to the west of Fort Jackson, securing safe access within one of the busiest commercial port systems could prove to be a challenge.

Access to Specific Resources and Interpretation. The Fort Jackson mission statement provides further context for the types of public enjoyment that could occur on-site.

> *Fort Jackson Park exists to preserve and promote the resources and history of the forts at Plaquemines Bend within their historic environments. The park will attract out-of-parish tourists to enhance the parish economy. The park will reach parish residents to broaden their cultural experiences and understanding. To accomplish this, a variety of methods will be used to provide high quality learning experiences on the grounds, in the exhibit spaces, and in off-site public settings* (Plaquemines Parish Government 2013).

If the study area became a new unit of the national park system, the National Park Service could build on existing programming and potentially expand interpretive materials to include more stories related to the unique historic and architectural resources at the site. The study area encompasses numerous historic resources that can help the public understand the significance of the site's location during the War of 1812 and Civil War and the military importance attached to the southern (Mississippi River) approach to the vital port city of New Orleans. Visitors could learn about the soldier's life and hardships associated with living in a coastal fort and the historical significance of Third System fortifications by examining distinguishing elements of Fort Jackson's original construction or improvements to Fort St. Philip's original design. If Fort Jackson and Fort St. Philip became a new NPS unit, the National Park Service could tap into heritage efforts related to Louisiana during the War of 1812 or Civil War such as Louisiana's Civil War Museum at Confederate Memorial Hall in New Orleans or Chalmette Battlefield in Chalmette.

Plaquemines Parish officials have expressed support for National Park Service designation for a NPS-administered park unit that encompasses Fort Jackson, and they believe that a national designation with improved access and interpretation would make the site a major tourist destination. Fort Jackson also has potential to be connected by a regional multiuse trail system along the levee (Plaquemines Parish

TYPICAL CARGO SHIP TRAVELING UP THE MISSISSIPPI

Comprehensive Master Plan, Community Assessment – Technical Addendum, Parks and Recreation Facilities Services Assessment, 2013).

In summary, there is proven potential for public enjoyment of the study area's resources. However, only Fort Jackson currently has sufficient access to support visitor use and administration of a potential park unit. At Fort St. Philip, challenges associated with accessing the site, as well as safety concerns and challenges associated with traversing a major marine highway make Fort St. Philip infeasible under this criteria.

Existing Degradation and Potential Threats to the Resources

Fort Jackson. Since the 19th century, subsidence has been recognized as a significant threat, resulting in large cracks in the masonry scarp walls and bastions; suspected subsidence-caused cracks are also evident in the vaulted casemates. Soil erosion from visitor use, inappropriate activities, and inadequate drainage systems also threatens the Fort Jackson's earthen structures (Hughart, Fort Jackson Park Strategic Plan 2004) (National Park Service 2009). Fort Jackson itself is located outside the main West Bank Barrier Levee and is threatened by high river flooding and hurricane tidal surges.

The outermost levee to the north of Fort Jackson directly protects the site from the Mississippi River but is lower than the main levee that is parallel to Louisiana Highway 23 and has allowed for sustained inundation of the site (see figure 3). A pumping system is in place to help deal with water drainage at the site; however, the existing system is inadequate to handle major storms. For instance, Fort Jackson was submerged underwater during Hurricanes Katrina and Rita in 2005 and stayed submerged for six weeks resulting in damages to the fort's masonry, mechanical and electrical systems, and restrooms among other miscellaneous damages. More recently, high winds and flooding caused by Hurricane Isaac in 2012 resulted in the accumulation of vegetative and sand/silt debris at the fort - exacerbating items awaiting repairs and redamaging repaired elements from Hurricanes Katrina and Rita. The site and facilities within it will remain vulnerable to future flood and storm damage because of their location in a flood-prone coastal area and the site's water drainage issues.

Additional details related to structural threats to Fort Jackson were identified in the Fort Jackson Park Strategic Plan (2004); the plan was issued just a year before the severe impacts of Hurricane Katrina. Such stressors are ongoing threats to the structural stability and integrity of the fort that would require additional funding and management to preserve the fort in perpetuity. Flooding and wind damage from hurricanes or spring flooding of the Mississippi River were recognized in the plan as potentially the most damaging threats. Since the establishment of Fort Jackson, it has been impacted on several occasions by severe storms and flooding, including Hurricanes Betsy and Camille in the late 1960s that deposited large amounts of debris in the fort. The low levee in front of the fort, riverbank erosion, and the lack of an automated failsafe pumping system were identified as factors contributing to the flood damage.

Additional structural threats were identified in the plan, particularly from trees that had grown along the tops of the ramparts. These trees were originally planted in the 1930s and 1940s, provide shade for visitors, but cause problems for the masonry walls, earthen fortifications, and casemates. Many of the trees are growing into the masonry walls on the scarp and causing stress points from soil pressure and tree root invasion. Trees are also growing on top of the magazines in the water battery where their root structures compromise the structural integrity of the casemate roofs. Since many of the trees have large canopies, they are vulnerable to high winds, rafted debris, waves, etc., that cause significant movement during storm surges. In some instances, trees have uprooted and crashed into other areas of the fort. Other effects of this movement are visible in the scarp walls where sharp cracks have appeared, destabilizing the walls. The trees continue to threaten the fort's historic masonry as a result of their weight, disturbance when uprooted by high winds, and deep penetrating root systems. Water infiltration was noted in the strategic plan as causing a variety of masonry problems and failures such as cracking, delamination, and spalling. A number of metal brackets, fences, and structural columns had deteriorated by rusting.

VIEW OF TREES ON TOP OF CASEMATES

Fort St. Philip. Fort St. Philip has also sustained extensive deterioration following its abandonment, becoming subject to natural weathering, subsidence, hurricane damage, and repeated episodes of flooding accentuated by a broken levee. Fort St. Philip is particularly threatened by spring flooding of the Mississippi River, as large sections of the fort continue to subside and be inundated during higher river flows and buried under silt. Dense undergrowth and trees further obscure the fort's structural features and threaten the structural integrity.

Only 30 miles north of the Gulf of Mexico, both Fort St. Philip and Fort Jackson are particularly susceptible to sea level rise, increased flooding, loss of coastal ecosystems, and other potential impacts from climate change. Changes of this sort are already being felt across Louisiana. The land loss rate on the state's shorelines measured an average of 16.75 square miles per year from 1985 to 2010. If this loss were to occur at a constant rate, coastal Louisiana would lose an area the size of a football field every hour (C. P. Louisiana, Louisiana Coastal Facts 2012). Flooding poses an equal threat. In the state of Louisiana's lowest estimates, Plaquemines' flood depths are projected to rise between 13 to 15 feet in the next 50 years if no additional mitigation measures are pursued. In the highest forecast, the loss is estimated at more than 15 feet (Authority 2017). There are currently no restoration or structural projects in the immediate area that would help reduce the risk of flooding. In addition, projections suggest a decrease in the annual number of hurricanes in the Atlantic but an increase in the number of the strongest (Category 4 and 5) hurricanes, and increases in associated rainfall (Walsh 2014). Even if storm characteristics do not change, at higher sea levels, storm surge will travel farther inland, affecting a larger area and having greater impacts (Caffrey 2013). As sea level rises, increased salt content in the soil will kill the plants, leaving the land exposed to more erosion (Boesch 1994). Soil erosion, especially at the base of outer battery walls and raised earthworks, will likely intensify with increased flooding and further threaten structural integrity.

In summary, the contributing resources of the two forts are presently under immediate threat from flooding and wind damage from hurricanes or spring flooding of the Mississippi River and other factors; climate change will likely exacerbate damage from many of these stressors in addition to bringing new threats. The feasibility of the National Park Service for direct and continual management of this site may be diminished because of the threats of climate change, specifically related to the practicality of costs and other factors associated with climate change adaptation.

Costs Associated with Acquisition, Development, Preservation, Operation, and Maintenance

Although the National Park Service has a mandate to conserve resources and provide for public enjoyment and it can be assumed that the areas it manages continue indefinitely into the future, designation of an area as a national park unit does not automatically ensure adequate staff and funding to administer a site—any new authorizations need to compete with other park units for funding in a current fiscally constrained environment. Projects that would be both technically possible and desirable to accomplish for the new park may not be feasible for the National Park Service to carry out in light of current budgetary constraints and competing needs in existing park units.

For this study, the cost estimates associated with deferred, recurring, and cyclic maintenance are derived from an NPS-commissioned condition assessment update conducted in December 2016. The condition assessment update accounts for already recognized deficiencies from multiple assessments conducted from 2002 to 2013 as well as newly developed deficiencies since 2013. Operating costs were estimated by comparing the study site with selected national park system units in the southeast region with similar resources (fortifications).These costs are presented as preliminary estimates and are not intended to be used for budgetary purposes.

Acquisition. If Congress were to designate the study area as a new national park unit, the National Park Service would first develop a land protection plan, and actual acquisition costs would be determined by formal real estate appraisals at the time of acquisition. Any future land acquisitions would also have to take into account larger agency-wide and regional priorities for purchasing new park lands. The establishment of a new national park unit by Congress does not guarantee funding or the purchase of lands within the study area, and any improvements would require further cost analysis and planning. Any National Park Service acquisition of private properties can occur only through donation or from a willing seller for the appraised fair market value.

Plaquemines Parish, which owns Fort Jackson, has expressed support for the fort becoming a National Park Service unit. The Parish has previously expressed an interest in selling or donating the fort to the National Park Service; however, the National Park Service has not formally approached Plaquemines Parish regarding acquisition.

As mentioned previously, Fort St. Philip is privately owned and its owners have not been formally approached by the National Park Service regarding donation or sale of the property. Currently, it is unknown whether the owners have an interest in selling or donating the property to the National Park Service or to other potential purchasers (Purpura 2009).

Cost estimates for the acquisition of these two sites are not included in this study. Costs for land acquisition would vary depending upon the final property boundary configuration. As stated earlier, if Congress were to authorize the study area as a new national park unit, the National Park Service would need to determine actual real property acquisition costs through formal real estate appraisals at the time of purchase.

Estimates for Development and Preservation. Development costs of national park system additions vary widely, depending on existing conditions of the resources and facilities and broad needs for potential future preservation and facility development associated with operating a park unit. New national park system units and additions frequently require facilities and non-facilities one-time investment to get the new park unit up and running. One-time facility costs include developing and improving facilities for visitors and park operations, including facilities that would meet legislative requirements for accessibility. These costs would vary with the specific facility and development needs of each of the two sites. Non-facility costs include projects related to natural and cultural resources management as well as visitor use. These would be costs associated with inventorying and documenting resources in the unit, developing management or treatment plans for those resources, developing educational and interpretative plans and materials, and preparing environmental compliance documents. Non-facility costs associated with recently established national park system units were looked at for comparison purposes. These one-time costs range from $1 million to $1.7 million.

The cost estimates presented in this study are for the preservation of the study area resources as defined by *The Secretary of the Interior's Standards for the Treatment of Historic Properties.* Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. As the study area resources would be new additions, the limited and sensitive upgrading of mechanical, electrical and plumbing systems, and other code-required work to make properties functional are considered appropriate within a preservation project.

Fort Jackson — Preservation work at Fort Jackson would include addressing structural and architectural deficiencies and failures that have accumulated over time and that are needed to eliminate potentially unsafe conditions and threats for the resources as well as potential visitors and staff. Some of the immediate site needs include removing 150 to 180 trees from fort walls that are likely to cause damage to the surrounding masonry especially in the event of another storm in the area. Another immediate need is addressing deferred maintenance associated with masonry work for the entire fort and batteries. Please refer to Appendix E for details on the masonry work needs. The estimated cost of deferred maintenance including tree removal and masonry work at Fort Jackson is $16 million.

The Fort Jackson Museum and Welcome Center that opened in 2015 would assist in accommodating expected visitation. Because of the visitor center's location 0.8 miles from Fort Jackson, a new restroom facility, rehabilitated parking lot, and maintenance building would be needed for visitor access and long-term maintenance of the site. Although new restrooms were added in 2010 through FEMA-financed work after Hurricane Katrina, Hurricane Isaac in 2012 flooded the newly built restrooms, which resulted in their total loss. Even though all new facilities would be located and designed to maximize resiliency, these facilities would remain within a flood-prone coastal area and would likely require recurrent repair or rebuild from storm damages. These capital improvements are estimated to be at least $780,000 resulting in a total of $16.8 million in preservation and development work needed at Fort Jackson.

Fort St. Philip — Because of Fort St. Philip's physical condition, which includes clearly articulated features among dense undergrowth and trees, some of which are partially buried under silt with many sections frequently inundated, it is assumed that were Fort St. Philip to be acquired, it would be treated and managed as an archeological property in accordance with National Park Service

Director's Order 28. In such a case, maintenance would be minimal as archeological resources maintaining a healthy vegetative cover exhibit the least amount of erosion and contain the sharpest profiles and most legible features. The Fort Jackson Museum and Welcome Center that opened in 2015 would assist in accommodating expected visitation and interpreting the site of Fort St. Philip. Since boats are the only feasible means of reaching the site, it is likely that an improved area on the south side of the Mississippi River would be required for visitor access to accommodate a boat launch. The cost of building a new ramp is estimated to be $460,000, which includes cumulative construction add-ons such as compliance measures and permitting. The National Park Service could pursue implementation of these types of improvements and ongoing maintenance through partnership efforts.

Estimates for Operations and Maintenance. Operating costs encompass what is needed to run a park including staffing, maintenance, and repairs. Staffing is needed to design and deliver programming (personal interpretation, exhibits), perform administrative functions (budget, management), provide for law enforcement, and conduct outreach to the community and schools. Staffing requirements would be dependent on the boundary size, resources, the configuration of the site, the structure of park management, and the nature of agreements between partners for administering the two sites.

Maintenance of constructed facilities and structures is needed to realize the originally anticipated useful life of assets. Maintenance includes preventive maintenance, cyclic maintenance, repairs, replacement of parts or components, painting, resurfacing, and other actions to assure continuing service and to prevent breakdown.

To estimate the potential costs of operating and maintaining Fort Jackson as part of a new park unit, costs from comparable park units such as Fort Pulaski, Fort Sumter, and Fort Jefferson were reviewed. Adjustments were made in the operations and maintenance costs to account for differences in the size of the fortifications as well as the location factors.

Fort Jackson — At a minimum, the operating costs of Fort Jackson would include grounds maintenance, utilities, communications, and other miscellaneous expenses. Personnel would be required to design and deliver programming (e.g., personal interpretation, exhibits, special events), maintain facilities and grounds, perform administrative functions (budget, management, planning, and compliance), provide for law enforcement, and conduct outreach to the community and schools. It was estimated that a total of 7.5 full-time equivalent employees would be required to maintain Fort Jackson, provide visitor services, protect resources, and generally support NPS operations. The estimated annual operation and maintenance cost is $1.3 million (2017 dollars). The total cost of facility ownership over the next 40-year period for Fort Jackson includes facility operations, recurring maintenance, preventative maintenance, component renewal which includes one repointing project for the entire fortification in the next 40 years, and unscheduled maintenance. Storm damages are included as part of unscheduled maintenance with the assumption that one major flooding event would affect Fort Jackson once per decade. Over a 40-year period, the operation and maintenance cost of Fort Jackson is estimated to be $70.2 million (2017 dollars).

Fort St. Philip — Because of Fort St. Philip's physical condition as primarily a ruin and the difficulties of accessing the site, it is assumed that were Fort St. Philip to be acquired, it would be treated and managed as an archeological property in accordance with National Park Service Director's Order 28 and no on-site visitor access would be provided. Therefore there would be no operating costs associated with this site. It is assumed that staff would be shared with Fort Jackson. No additional facilities would need to be maintained to support maintenance nor visitation at Fort St. Philip.

Level of Local and General Public Support (Including Landowners)

Public scoping indicates that there is strong local support for the National Park Service to become involved in the protection of Fort Jackson, and potentially Fort St. Philip. Public outreach activities took place early in the special resource study to collect additional information, inform the public about the special resource study process, and gauge public support. During the public comment period, the National Park Service distributed a newsletter and press releases that encouraged the public to link to the National Park Service Planning, Environment and Public Comment (PEPC) project website to learn more about the special resource study and to attend two public meetings. In addition to publicizing these meetings through the project newsletter and press releases, public notification of these meetings were provided via social media administered by Jean Lafitte National Historical Park and Preserve, Jazz National Historical Park, and on park websites.

The official public comment period opened on June 1, 2016, and closed on July 6, 2016. Comments were received via the project website, comment cards gathered at public meetings, and through mailed correspondence. Two evening public meetings were held during the comment period—one in Buras, Louisiana, and the other in Belle Chasse, Louisiana. Thirty-nine people attended the two public meetings.

Public Opinions, Perceptions, and Values. A total of 49 comments were received via the PEPC website, mailed-in comment cards, and mailed letters. The National Park Service sought public feedback by requesting responses to five questions related to the special resource study. The questions were listed in the public scoping newsletter as well as at the comment stations at the public meetings. The questions were:

1. What are your general opinions about preserving the Fort Jackson, Fort St. Philip, and any related and supporting historical, cultural, or recreational resources located in Plaquemines Parish? (Please be as specific as possible)
2. What are your concerns about Fort Jackson, Fort St. Philip, and any related and supporting historical, cultural, or recreational resources? (Please be as specific as possible)
3. Please identify what lands you think should and should not be included in the study area and provide your rationale.
4. Please describe your suggestions for how Fort Jackson, Fort St. Philip, and any related and supporting historical, cultural, or recreational resources may be managed.
5. Do you have any additional comments or ideas you would like to share?

The following is a brief overview of the comments made by respondents, broken down by the four main topics related to the scoping questions listed above.

Preserving and Interpreting Fort Jackson and Fort St. Philip. By designating this area as an NPS unit, some individuals feel it would shine a spotlight on a host of unique natural and historic resources in the area that they believe are virtually unknown to many Americans. Some commenters also feel designating this area as an NPS unit would provide the resources necessary to create more access for visitors to enjoy these unique resources. Residents perceive preservation of the forts as critical.

One commenter stated that granting national significance to the site through formal recognition of a national park service unit could also contribute to the ongoing restoration of the area and help bring attention to current erosion issues and prevent future ecological problems.

Historical, Cultural, and Recreational Resource Concerns. A number of individuals described the importance of their recreational traditions associated with the Fort Jackson site (BBQs, picnics, fireworks, river tours, citrus festivals, etc.) and expressed the desire to maintain these traditions for years to come.

A number of individuals stated they are experiencing declining access to their cherished spots from year to year, given the need for further levee improvements in the area (citing rising water, more alligators, etc.). They are concerned that they will lose their landmarks to some of these impending environmental threats and believe the National Park Service could offer broad support, which may include ecological restoration and or financial support to stabilize these areas. Some individuals also expressed concern that they may be restricted from using some of their typical recreational areas and from holding special events that are held at Fort Jackson, should the federal government take control of the resources.

Some individuals expressed concern about the current economic situation in their community, but also worried that they will not be the ones to benefit from any money that comes into the area from an influx of tourism. Commenters request to be trained on the best ways to take advantage of any new NPS designation (i.e., to learn about which types of businesses benefit visitors most and how to start running them). Some individuals also noted that since any NPS-designated site would be funded by taxpayers, it should be run as efficiently as possible.

Suggested Management Options. Comments received from the public meetings and through the project website included ideas for suggested management options and creative uses of potential resources. It was suggested that a future park could be run with as few as 6-10 employees and that the park should recruit from within the local area. One individual stated that volunteers and partner committees could help provide a good amount of staffing support for free (because, as a government agency, the National Park Service should "do more with less"). Some individuals also included suggestions about pursuing outside funding sources (since funding is lacking in their area), in conjunction with local partner "corporations."

Other suggestions included constructing a lighthouse monument at the "end of the road," allowing for consolidated educational and aesthetic values at one location. Another commenter suggested that Fort Jackson could be renovated and used as the main visitor hub, since it is easier to access than some of the other sites in the parish.

A number of individuals also suggested that tourists could include school groups, history buffs, and hunters/anglers; however, recreation should remain a priority. Strong opinions were voiced that any recreation concessionaires should be given limited timeframes on their contracts (i.e., 5-10 years), so as to provide for fairness/competitiveness.

A number of individuals suggested a study area boundary to include Fort Jackson and possibly Fort St. Philip, while the following each received one mention: Head of the Passes, Port Eads, Pilottown, and Woodland Plantation.

Other Ideas and Concerns. There were a variety of other ideas and concerns voiced by commenters at public meetings. One commenter stated that a future NPS unit in this area could utilize the necessary infrastructure already in place in the region to connect with tourists who travel to and through New Orleans every year. It was also noted that this NPS unit could serve in a Homeland Security capacity as well, given its strategic location. Commenters suggested that the inclusion of this unit into the national park system should be expedited while there is still momentum for its designation at the grassroots level. One commenter noted that this idea has been discussed since 2002, so they would like to see it finally come to fruition.

In summary, there appears to be a great deal of local support for establishing an NPS unit that includes Fort Jackson and potentially Fort St. Philip. Added support for Fort Jackson is likely linked to the fact that most parish residents have a strong affiliation with the Fort Jackson site because of the special events (such as the annual Orange Festival) that have historically been hosted there. Less expressed support for Fort St. Philip may be attributed to the fact that access to Fort St. Philip is generally more restrictive (and unauthorized, given private ownership), and that very few parish residents have visited the site. The National Park Service is widely recognized by the public as the entity most likely to be able to facilitate reopening of the site to the public and successfully preserving it in the long-term. Many envision the site as being an important economic driver that would generate additional tourism and relieve some of the economic challenges the parish has grappled with since Hurricane Katrina and subsequent economic recession.

Economic/Socioeconomic Impacts of Designation as a Unit in the National Park Service

The development of Fort Jackson and Fort St. Philip as an independent unit of the national park system would have mostly beneficial economic and social impacts. Opening the forts for public enjoyment is consistent with the goal of growing the tourism industry in Plaquemines Parish as envisioned by Plaquemines Parish residents through their Community Visioning Workshops (Plaquemines Parish Comprehensive Master Plan 2013) and could support tourism-related development in the parish by expanding tourist attractions in the region. Public access to Fort Jackson and Fort St. Philip would benefit locals and visitors by providing a special place to understand the important role that the forts played in the War of 1812 and the Civil War and the military importance attached to the southern (Mississippi River) approach to the vital port of New Orleans. Because neither fort is currently open to the public, newfound access to the forts and interpretive programming would offer these new visitor experiences and opportunities.

Another socioeconomic impact from the designation as an independent park unit could include increased visitation to the vicinity of the forts in Plaquemines Parish. Opening the forts to the public, especially Fort Jackson which is readily accessible from Louisiana Highway 23, could encourage increased tourism, such as longer lengths of stay, sales and hotel tax revenues, and other visitor-related expenditures in the area (e.g., dining). Because of Fort St. Philip's limited access, visitation to the fort and administration of the site is assumed to be minimal. It is assumed that Fort Jackson would be staffed to operate the facility and care for the structure, which would create jobs and generate revenue within the local economy.

FEASIBILITY FINDING

While Fort Jackson and Fort St. Philip meet many of the feasibility criteria discussed in this section, an overall feasibility determination was made for both forts after taking into account all factors discussed in this section.

Establishing Fort Jackson as part of a unit of the national park system is not feasible within the context of current National Park Service-wide staffing and funding shortfalls as well as deferred maintenance backlog in current units of the national park system. Non-facility costs associated with the establishment of a national park system unit are estimated to range from $1 million to $1.7 million. Costs associated with the required minimum facility development and preservation of Fort Jackson are estimated to be $16.8 million (2017 dollars). Additionally, a total cost of facility ownership analysis was conducted for Fort Jackson and associated facilities and showed that the total cost to maintain them would be approximately $70.2 million over 40 years. Foremost are the ongoing and future threats from flooding and wind damage from hurricanes or spring flooding of the Mississippi to the structural stability and integrity of Fort Jackson, which would require additional funding and management to preserve the fort in perpetuity. Therefore, the preservation, development, and operation and maintenance costs are determined to be infeasible. Given this analysis, Fort Jackson is not feasible for inclusion as a unit of the national park system.

Like Fort Jackson, Fort St. Philip is vulnerable to continued environmental degradation associated with regular flooding and damage from hurricanes. Existing levees buffering Fort St. Philip from the Mississippi River are undiscernible and much of the site is beyond repair, submerged, buried, and overgrown with vegetation. These conditions will only be exacerbated with climate change and associated new threats. While Fort St. Philip likely has a rich array of archeological resources, many of these have severely deteriorated and are beyond repair. In addition, many of the fortifications are inaccessible.

Challenges associated with accessing Fort St. Philip, as well as safety concerns and challenges associated with traversing one of the nation's busiest marine commerce and shipping routes, make Fort St. Philip infeasible under this criteria. Given this analysis, Fort St. Philip is not feasible for inclusion as a unit of the national park system.

EVALUATION OF THE NEED FOR DIRECT NPS MANAGEMENT

The need for direct NPS management was not evaluated based on the negative feasibility findings for the study area.

POTENTIAL RECOGNITION AS A NATIONAL PARK SERVICE AFFILIATED AREA OR A HERITAGE AREA

Being added as a unit to the national park system is only one of many options for managing a site(s), and the National Park Service operates several programs that help others preserve natural, cultural, and recreational areas outside of the park system. Despite the negative study findings, the National Park Service recognizes that there is strong public support and a potential opportunity for enhancing the interpretation and preservation at Fort Jackson, and possibly Fort St. Philip as well as other cultural, historic, and recreational resources within the Lower Mississippi River Area. In cases where resources meet special resource study criteria for national significance but do not meet other criteria for inclusion in the national park system, an alternative designation such as affiliated area or heritage area can apply.

Affiliated Area

Outlined in the National Park Service System Plan (2016), affiliated areas are a select group of nationally significant areas. They are neither federally owned nor directly administered by the National Park Service, but benefit from National Park Service brand recognition and are eligible for technical, and in some instances, financial assistance. Legally, they are not units of the national park

system. Affiliated areas comprise a variety of locations in the United States and Canada that preserve significant properties outside the national park system. There are currently 25 officially designated affiliated areas. Jamestown National Historic Site in Virginia, Benjamin Franklin National Memorial in Pennsylvania, and Oklahoma City National Memorial in Oklahoma are a few well-known examples of affiliated areas. Affiliated area status enables these sites to receive technical support and special recognition through their association with the National Park Service.

To be considered eligible for affiliated area recognition, the proposed area's resources must meet the following standards:

1. Meet the same standards for national significance and suitability that apply to units of the national park system.
2. Require some special recognition or technical assistance beyond what is available through existing NPS programs.
3. Be managed in accordance with the policies and standards that apply to units of the national park system.
4. Be assured of sustained resource protection, as documented in a formal agreement between the park service and the nonfederal management entity.

Once it has been determined that a proposed area meets these standards, an Act of Congress or designation by the Secretary of the Interior is needed to recognize official affiliated area status. Affiliated area status may create new opportunities to work more collaboratively with thematically linked National Park Service units like Chalmette Battlefield. Assuming that Plaquemines Parish continues to maintain Fort Jackson as an acting nonfederal management entity, the parish could enter into a formal agreement with the National Park Service to ensure long-term resource protection, if affiliated area recognition was sought as an alternative to national park unit designation.

National Heritage Area

National Heritage Areas (NHAs) are designated by Congress as places where natural, cultural, and historic resources combine to form a cohesive, nationally important landscape. The 49 National Heritage Areas across the country are a key component of the national system of parks and protected sites that fully represent our natural resources and the nation's cultural experience. Through a grassroots, community-driven approach to heritage conservation and economic development, National Heritage Areas further the mission of the National Park Service by fostering community stewardship at a large landscape scale.

Given the abundance of natural, cultural, and historical resources located in the Lower Mississippi River Area, which include not only Fort St. Philip and Fort Jackson, but also the Head of Passes, Pilottown, Delta National Wildlife Refuge, Pass a Loutre Wildlife Management Area, and other attractions, pursuit of a National Heritage Area designation may be appropriate. Furthermore the Lower Mississippi River area is also home to a diverse array of cultures. The distinctive cultural history of Plaquemines Parish differs from most of the rest of the United States. While the French, Spanish, African, and Native Americans have interwoven the cultural fabric of the Parish, the more recent immigration of European Slavs, Germans, Italians, Irish, Portuguese, English, Danes, Swedes, Greeks, Filipinos, Chinese, Malays, and Vietnamese have further contributed to the areas rich cultural diversity (Senate Report 113-26).

Further exploration of the Lower Mississippi River Area as a National Heritage Area could be pursued through consultation with the NPS Southeast Region NHA Coordinator and the NPS NHA Program in Washington DC. The NHA feasibility study could be prepared by community members,

a consultant, or the National Park Service (through a congressionally authorized study). This investigation would entail a preliminary evaluation of the four general categories of NHA program criteria to determine whether: (1) the landscape has an assemblage of natural, cultural, historic, and scenic resources that, when linked together, tell a nationally important story; (2) opportunities exist for increasing public access to and understanding of contributing natural, cultural, and historic resources; (3) an organization exists that has the financial and organizational capacity to coordinate heritage area activities; and (4) support for NHA designation exists within the region.

Pursuit of either affiliated area or National Heritage Area status would provide added recognition (and potentially support for protection) of the area's importance to the nation without requiring or implying management by the National Park Service.

CONCLUSION

The Lower Mississippi River Area Special Resource Study finds that Fort St. Philip and Fort Jackson do not meet all four criteria to be considered for inclusion in the national park system. Although the study area meets criterion 1 (national significance) and criterion 2 (suitability), the study found that Fort St. Philip and Fort Jackson do not meet established feasibility criteria for new NPS units. While Fort St. Philip has an array of structural remains that chronicle its historical development, many of these have severely deteriorated and are beyond repair. The fort's historical integrity and ability to convey its significance have been substantially diminished by repeated episodes of flooding, weathering and siltation that have damaged and obscured its architectural features. Today the site is primarily a ruin with as yet untested potential to yield archeological information. Additionally, challenges associated with accessing the fort, ongoing and future threats from flooding and hurricane damage, as well as safety concerns and challenges associated with traversing the Mississippi River, which is a major marine commerce and shipping route, make Fort St. Philip infeasible under this criteria.

Like Fort St. Philip, Fort Jackson is also susceptible to ongoing and future threats from flooding and wind damage from hurricanes, as well as spring flooding of the Mississippi. These factors diminish the structural stability and integrity of Fort Jackson and point to the need for substantial investments to preserve the fort in perpetuity— amounting to an estimated $70.2 million over 40 years. Given these factors, the preservation, development, and operation and maintenance costs as a unit of the National Park Service are determined to be infeasible.

As designated National Historic Landmarks, Fort St. Philip and Fort Jackson possess cultural resources that are nationally significant. The forts continue to exhibit architectural features that highlight the defining features of the Third System fortifications, with its emphasis on bastioned masonry revetment walls, high-powered artillery, and other features designed primarily to defend against naval assault. Fort Jackson (and potentially Fort St. Philip) could potentially qualify for recognition as a National Park Service affiliated area. Such a designation would recognize the national significance of the forts and could provide a venue for continued National Park Service engagement and support in the long-term stewardship of the sites. If affiliated area recognition is pursued, a formal agreement between the National Park Service and Plaquemines Parish as the nonfederal management entity would be required. This agreement would establish a formal partnership between the National Park Service and the parish, ensuring the sustained protection of the resources within the study area.

Alternatively, recognition of the wider array of natural, cultural, and historic resources found within the Lower Mississippi River Area may make the area well suited as a National Heritage Area. Consultation with the NPS Southeast Region NHA coordinator and the NPS NHA Program in Washington, DC, could initiate the exploration of the area's potential as a National Heritage Area. The NHA feasibility study could be prepared by community members, a consultant, or the National Park Service (through a congressionally authorized study). Through a grassroots, community-driven approach to heritage conservation and economic development, National Heritage Areas further the mission of the National Park Service by fostering community stewardship at a large landscape scale, while also providing added recognition of resources found within the National Heritage Area.

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Appendixes

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APPENDIX A: REFERENCES

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APPENDIX B: ACRONYMS

CE – Categorical Exclusion
CFR – Code of Federal Regulations
NEPA – National Environmental Policy Act
NHL – National Historic Landmark
NPS – National Park Service
NRHP – National Register of Historic Places
PEPC – Planning Environment and Public Comments
SRS – Special Resource Study

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APPENDIX C: LEGISLATION AUTHORIZING THIS SPECIAL RESOURCE STUDY: NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2015

(Public Law 113-291)

or indirectly, to influence congressional action on any legislation or appropriation matters pending before Congress.".

(8) In paragraph (9) (as redesignated by paragraph (6)), by striking "2014" and inserting "2021".

SEC. 3051. SPECIAL RESOURCE STUDIES.

(a) IN GENERAL.—The Secretary of the Interior (referred to in this section as the "Secretary") shall conduct a special resource study regarding each area, site, and issue identified in subsection (b) to evaluate—

(1) the national significance of the area, site, or issue; and

(2) the suitability and feasibility of designating such an area or site as a unit of the National Park System.

(b) STUDIES.—The areas, sites, and issues referred to in subsection (a) are the following:

(1) LOWER MISSISSIPPI RIVER, LOUISIANA.—Sites along the lower Mississippi River in the State of Louisiana, including Fort St. Philip, Fort Jackson, the Head of Passes, and any related and supporting historical, cultural, or recreational resource located in Plaquemines Parish, Louisiana.

(2) BUFFALO SOLDIERS.—The role of the Buffalo Soldiers in the early years of the National Park System, including an evaluation of appropriate ways to enhance historical research, education, interpretation, and public awareness of the story of the stewardship role of the Buffalo Soldiers in the National Parks, including ways to link the story to the development of National Parks and the story of African-American military service following the Civil War.

(3) ROTA, COMMONWEALTH OF NORTHERN MARIANA ISLANDS.—Prehistoric, historic, and limestone forest sites on the island of Rota, Commonwealth of the Northern Mariana Islands.

(4) PRISON SHIP MONUMENT, NEW YORK.—The Prison Ship Martyrs' Monument in Fort Greene Park, Brooklyn, New York.

(5) FLUSHING REMONSTRANCE, NEW YORK.—The John Bowne House, located at 3701 Bowne Street, Queens, New York, the Friends Meeting House located at 137-17 Northern Boulevard, Queens, New York, and other resources in the vicinity of Flushing, New York, relating to the history of religious freedom during the era of the signing of the Flushing Remonstrance.

(6) WEST HUNTER STREET BAPTIST CHURCH, GEORGIA.—The historic West Hunter Street Baptist Church, located at 775 Martin Luther King Jr. Drive, SW, Atlanta, Georgia, and the block on which the church is located.

(7) MILL SPRINGS BATTLEFIELD, KENTUCKY.—The area encompassed by the National Historic Landmark designations relating to the 1862 Battle of Mill Springs located in Pulaski and Wayne Counties in the State of Kentucky.

(8) NEW PHILADELPHIA, ILLINOIS.—The New Philadelphia archeological site and surrounding land in the State of Illinois.

(c) CRITERIA.—In conducting a study under this section, the Secretary shall use the criteria for the study of areas for potential inclusion in the National Park System described in section 8(c) of Public Law 91–383 (commonly known as the "National Park System General Authorities Act") (16 U.S.C. 1a–5(c)).

(d) CONTENTS.—Each study authorized by this section shall—

(1) determine the suitability and feasibility of designating the applicable area or site as a unit of the National Park System;

(2) include cost estimates for any necessary acquisition, development, operation, and maintenance of the applicable area or site;

(3) include an analysis of the effect of the applicable area or site on—

(A) existing commercial and recreational activities;

(B) the authorization, construction, operation, maintenance, or improvement of energy production and transmission or other infrastructure in the area; and

(C) the authority of State and local governments to manage those activities;

(4) include an identification of any authorities, including condemnation, that will compel or permit the Secretary to influence or participate in local land use decisions (such as zoning) or place restrictions on non-Federal land if the applicable area or site is designated as a unit of the National Park System; and

(5) identify alternatives for the management, administration, and protection of the applicable area or site.

(e) REPORT.—Not later than 3 years after the date on which funds are made available to carry out a study authorized by this section, the Secretary shall submit to the Committee on Natural Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a report the describes—

(1) the findings and recommendations of the study; and

(2) any applicable recommendations of the Secretary.

SEC. 3052. NATIONAL HERITAGE AREAS AND CORRIDORS.

(a) EXTENSION OF NATIONAL HERITAGE AREA AUTHORITIES.—

(1) EXTENSIONS.—

(A) Section 12 of Public Law 100–692 (16 U.S.C. 461 note; 102 Stat. 4558; 112 Stat. 3258; 123 Stat. 1292; 127 Stat. 420; 128 Stat. 314) is amended—

(i) in subsection (c)(1), by striking "2015" and inserting "2021"; and

(ii) in subsection (d), by striking "2015" and inserting "2021".

(B) Division II of Public Law 104–333 (16 U.S.C. 461 note) is amended by striking "2015" each place it appears in the following sections and inserting "2021":

(i) Section 107 (110 Stat. 4244; 127 Stat. 420; 128 Stat. 314).

(ii) Section 408 (110 Stat. 4256; 127 Stat. 420; 128 Stat. 314).

(iii) Section 507 (110 Stat. 4260; 127 Stat. 420; 128 Stat. 314).

(iv) Section 707 (110 Stat. 4267; 127 Stat. 420; 128 Stat. 314).

(v) Section 809 (110 Stat. 4275; 122 Stat. 826; 127 Stat. 420; 128 Stat. 314).

(vi) Section 910 (110 Stat. 4281; 127 Stat. 420; 128 Stat. 314).

National Park Service
U.S. Department of the Interior

Denver Service Center
Date: 04/28/2017

Categorical Exclusion Form

Project: Lower Mississippi River Area Special Resource Study
PEPC Project Number: 59517
Description of Action (Project Description):

Special Resource Study to evaluate the Lower Mississippi Area, including Fort St. Philip, Fort Jackson, the Head of Passes, and any related and supporting historical, cultural, or recreational resource located in Plaquemines Parish, Louisiana, for inclusion within the national park system.

Project Location:

Location
County: Plaquemines Parish **State:** Louisiana

Mitigation(s):

- No mitigations identified.

CE Citation: CEs for Which No Formal Documentation is Necessary
3.3 code = R, Adoption or approval of surveys, studies, reports, plans and similar documents which will result in recommendations or proposed actions which would cause no or only minimal environmental impact.

Explanation:

CE3.2R is the appropriate NEPA pathway for the Lower Mississippi River Area because the study would result in no environmental impact. The study is intended to provide Congress with information about the resource qualities of the study area and alternatives for protection. Although the study has implications for potential future NPS actions, it will not result in environmental impacts unless Congress takes action.

Decision: I find that the action fits within the categorical exclusion above. Therefore, I am categorically excluding the described project from further NEPA analysis. No extraordinary circumstances apply.

Regional Director: Sarah Craighead **Date:** 4/3/18

Extraordinary Circumstances:

If implemented, would the proposal...	Yes/No	Notes
A. Have significant impacts on public health or safety?	No	
B. Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation, or refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (Executive Order 11990); floodplains (Executive Order 11988); national monuments; migratory birds; and other ecologically significant or critical areas?	No	
C. Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources (NEPA section 102(2)(E))?	No	
D. Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks?	No	
E. Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?	No	
F. Have a direct relationship to other actions with individually insignificant, but cumulatively significant, environmental effects?	No	
G. Have significant impacts on properties listed or eligible for listing on the National Register of Historic Places, as determined by either the bureau or office?	No	
H. Have significant impacts on species listed or proposed to be listed on the List of Endangered or Threatened Species, or have significant impacts on designated Critical Habitat for these species?	No	
I. Violate a federal, state, local or tribal law or requirement imposed for the protection of the environment?	No	
J. Have a disproportionately high and adverse effect on low income or minority populations (EO 12898)?	No	
K. Limit access to and ceremonial use of Indian sacred sites on federal lands by Indian religious practitioners or adversely affect the physical integrity of such sacred sites (EO 130007)?	No	
L. Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and Executive Order 13112)?	No	

APPENDIX E: 2017 ADDENDUM TO EXCERPT FROM JMA'S KATRINA DAMAGE EVALUATION (2008) AND HPTC'S POST KATRINA SURVEY (2009)

INTRODUCTION

During the week of 2016 December 05, Dennis McCarthy (Architect, NPS Southeast Region) and Tatiana Márquez (Economist, NPS Denver Service Center) conducted a site visit of Fort Jackson and general site to determine their general current condition and update the preliminary costs estimates for deferred maintenance and life cycle costs. During the site visit, James Madere (GIS Coordinator, Plaquemines Parish) and Rod Lincoln (Historian) provided a walk-through of the site providing a general historical overview, work that has been done at the site, and pending corrections to existing deficiencies. Some details were confirmed in the summer of 2017 by e-mail correspondence among the observers.

OVERALL DESCRIPTION

Fort Jackson is subject to coastal storm surge from the Gulf of Mexico, Mississippi River floods, and hurricanes. On the FEMA flood map (1990) the fort is located within the 100-year coastal flood with velocity (wave action) zone, with a base flood elevation of 10 feet. However, since 1990, the US Army Corps of Engineers has constructed a levee between the fort and the river. There is also a preexisting levee between the fort and State Route 23. As a result, although the levees protect the fort from minor and moderate floods, the fort is effectively in a "bowl" that can fill during extreme events. The fort is also subject to impacts by sea level rise.

The fort is accessible by vehicle via a levee road that connects to Route 23. The levee road is an unpaved public access road that runs completely around the fort. There is a small parking area adjacent to the fort's moat bridge. Service vehicles can enter the fort over the bridge and through the historic gate. The interior of the fort has been closed since Hurricane Isaac in 2012 August, but the exterior is open to the public seven days a week.

PHYSICAL CONDITION AND DEFICIENCIES

Since the 2008 and 2009 evaluations, some damage from Hurricane Katrina has been repaired, but additional damage occurred from Hurricane Isaac. Structural and architectural problems continue to progress. The current status of deficiencies and failures are summarized in the following table.

Item	2008 and 2009 Assessments	2017 Update
Overall Assessment	The present condition of the fort is poor. In addition to existing deferred maintenance, significant damage from Hurricane Katrina flooding has damaged the fort. Large areas held water for months before being pumped out. The scouring effect of the receding waters is believed to have been the primary causal factor in destabilizing and weakening wall sections, in some cases leading to displacement and in others to critical destabilization. Research on the load carrying capacity of flooded masonry arches and vaults suggests that during the period of inundation that the load carrying capacity of the arch is reduced by as much as 50%. This is of particular relevance at Fort Jackson where we have a series of barrel vaulted casemates buried within the earth-filled bastions at the perimeter of the fort.	The fort is poor condition. Some recommended repairs were effected after Katrina. However, repairs that were not accomplished include masonry work for the entire fort, restoration of the moat, concrete work for battery Millar and Ransom, metal conservation, and waterproofing. Additional damage occurred from Hurricane Isaac in 2012. The site is generally free of storm debris.
Biological Growth	Biological growth on masonry surfaces at the fort including lichens, black microbial growth, and higher vegetation. Lichens and lack microbial growth exacerbate moisture levels as walls as salt and contribute to erosion and delamination of the masonry surfaces. Higher vegetation includes leafy plants that embed their roots into the masonry structure. Some biological growth was likely present before Katrina, however flood waters spurred further growth around the fort.	Biological growth continues to be a problem at the fort, although it is unclear if the situation has worsened. There is evidence of inactive roots in areas of large cracking on the rampart walls.

Item	2008 and 2009 Assessments	2017 Update
Brick Loss	The walls of the fort show many areas where missing bricks have pocked the walls with holes. The bricks most likely became loose from mortar loss over time. There is significant brick loss within the wall span on the rampart walls whereas most of the brick loss on the scarp walls is occurring at the vulnerable bottom or top edges of the walls. Flooding of the walls contributed to brick loss by depositing soluble salts and further weakening the mortar that held the bricks in place as the binder is leached out. Also, previously fragile mortar could have been easily washed out of the joints leaving the bricks unsupported.	Significant brick loss and weakened mortar is still evident in the fort. For the most part, loss seems to be continuing, but the rate is not noticeably accelerating.

Item	2008 and 2009 Assessments	2017 Update
Capstones	The capstones suffer from cracking, delamination, and displacement. There are some cracks in the brownstone trim pieces on the rampart walls due to penetrations from the iron fence and other embedded metal within the wall. As uncoated metal is exposed to moisture, it expands as it corrodes. The brownstone elements at the fort are vulnerable to delamination in which layers of the stone are separating from the substrate due to moisture, biological growth, and salts. If left unchecked, this will lead to the irreversible loss of stone surface and leave the stone vulnerable to further deterioration. Many of the brownstone capstones on the scarp and rampart walls have shifted in place, have been scattered in surrounding areas, or are missing. Capstones protect the wall structure from penetrating water. With the capstones no longer in place, the wall is vulnerable to rapid deterioration and mortar loss. The hurricane destroyed major sections of the fencing on the rampart walls. The stones that held the fence may have already been weakened by the corroding metal and were prone to further cracking and displacement during the fierce movement of the fence in the hurricane-force winds and from impact by rafted debris.	Some repairs of the brownstone caps have been completed. However, there are still section of brownstone cracked or missing.

Item	2008 and 2009 Assessments	2017 Update
Structural Cracks	The rampart walls, scarp walls, and inner walls all have vertical cracking in the brick structure. These vertical cracks are up to 3" wide. The cracks permeate many if not all courses of brick. All the walls serve as retaining walls and are prone to movement from soil pressure. Vertical cracking occurs when there is a combination of weakened mortar and pressure that puts the wall in tension causing it to crack in the weakest area. Structural cracks, observed within scarp, cavalier, interior parapet and revetment wall sections are generally located at weak points or projections bastions in the structures. Cracks within wall sections, and in some cases accompanying out-of-plane displacement, are typically the result of long-term settlement issues associated with changes in ground conditions due to wetting and drying of the moat, fluctuating water tables, deterioration of supporting cribbing/mats and, inferior footing design. Furthermore, the latter addition of Endicott Period batteries and related artillery placements has adversely impacted the structural integrity of the fort as designed, by compromising wall sections, loading walls and changing drainage patterns. The hurricane exacerbated the amount of pressure being applied to these walls during the flooding stages of the storm particularly on the rampart walls. While some of the vertical cracks may have been present before the storm, they have since been severely destabilized due to scouring of mortar from the center of the wall, washed out soil, and opened up to future risk of accelerated damage and collapse.	Same conditions observed.

Item	2008 and 2009 Assessments	2017 Update
Corrosion	Paint coatings have failed on fences and grills; its remaining surfaces have begun to corrode and cause dimensional loss. Other corroding elements include metal grates and frames at the embrasures, gates, canons, machinery in the casemates, metal eyehooks on the rampart walls, gun carriage rails and pintels, as wells as other miscellaneous other metal elements. The storm increased the vulnerability of metals to corrosion in a variety of ways. Large quantities of salt and other contaminants deposited on metals and in the surrounding masonry is causing rapid, accelerated deterioration of embedded and free standing metals	Same conditions observed.
Open Joints	Open joints leave masonry structures vulnerable to water penetration and associated deterioration mechanisms. This condition is common throughout the entire fort. By modern standards, the production of masonry materials during the early 19th century was inferior and produced materials that were inconsistent in quality and lacked when exposed to extreme conditions for extended periods of time. Open joints left many masonry elements vulnerable during the storm and contributed to material loss, cracking, and displacement. Much of the bind has leached out to the mortar joints and is weakening the walls.	Same condition observed.

Item	2008 and 2009 Assessments	2017 Update
Efflorescence	Soluble salts migrate through any materials that can absorb water. These salts include sulfates, carbonates and chlorides of sodium, potassium, magnesium, calcium, and iron and are naturally occurring within the environment. When the fort walls were saturated during the storm, the amount of salts absorbed into the walls increased. Right after the storm, there was a large "bathtub ring" of efflorescence on the rampart walls at about the level of the standing water. This condition contributed to surface loss and mortar loss in the walls and it will continue to exacerbate masonry loss at accelerated levels. High salt levels will also complicate wall stabilization efforts as it will create difficult conditions for masonry repairs and repointing.	The "bathtub ring" was not observed, but the efflorescence is still common on portions of the fort's brickwork.

Trees	The fort has a thick tree cover of substantially overgrown trees planted in the 1930s and 1940s. These trees provide shade for visitors but cause problems for the masonry walls, earthen fortifications, and casemates. Many of the trees are growing into the masonry walls on the scarp and causing stress points from soil pressure and tree root invasion. Trees are also growing on top of the magazines in the water battery where their root structures compromise the structural integrity of the casemate roofs. Since many of the trees have large canopies, they were vulnerable to high winds, rafted debris, waves, etc. that caused significant movement during the storm surge. Some trees have uprooted and crashed into other areas of the fort. Other effects of this movement are visible in the scarp walls where sharp vertical and horizontal cracks have appeared in line with the tree roots. These wide cracks, at least 6" wide in some areas, have destabilized the walls. Over half the trees at Fort Jackson are dead or dying and must be removed to prevent risk to the staff and public. Flooding from Katrina has also compromised the health of these trees. Salt toxicity has resulted in high mortality of virtually all water oaks. A substantial number of the trees have died or are diseased and are likely to cause damage to the surrounding masonry in the next storm as they fall. From a fort preservation standpoint, all remaining trees should be removed. Tree removal will be highly technical in nature due to the need to keep from tearing up the site (and related historic masonry and archeological resources) from falling trees and limbs.	The dead trees have been removed, but the fort continues to have a thick tree cover. The fort and water batteries are still heavily threatened by invasive tree roots causing localized masonry failures.

Item	2008 and 2009 Assessments	2017 Update
Coatings / Parging	The exposed roofs of the casemates were historically parged with tar for waterproofing. This tar has severely eroded from surfaces and is no longer functioning as intended. The brick structures are exposed to weathering and deterioration. Additionally, the batteries were parged with concrete and this coating has severe cracking on all surfaces and is holding moisture in at masonry walls. These conditions were most likely preexisting but exacerbated by the severe weathering from the hurricane. The cracked parging trapped salt contaminates and moisture in the walls behind the coating. Trapped moisture and salts have caused significant delamination of the parging from the wall surface and will require removal and replacement of the parging.	Same conditions observed.
Concrete	Batteries Millar and Battery Ransom have areas of concrete that are no longer structurally stable. This includes cracked concrete slabs that have broken to the point of threatening the life safety of a visitor. There are also damaged concrete stairs that have suffered large spalls and cracking. The concrete was weakened by the flooding and high winds of the hurricane but more destructive to certain areas was that the supporting soil that acted as a fill was washed out. This was particularly devastating for the large concrete slabs at Battery Millar. The voids caused settlement. These areas were intact before the storm.	Battery Millar (which is outside the fort, and open to the public) is in fair condition. Battery Ransom (inside the fort and closed to the public) is still in poor condition.

Item	2008 and 2009 Assessments	2017 Update
Utilities	All the plumbing and electrical utilities are nonfunctioning. Many lines and pipes are missing.	The restrooms were rebuilt after Katrina, yet were rendered unusable by Isaac. Neither plumbing nor electricity have been restored.
Earthworks	Raised earthworks and earthen infill are an integral component of the fortification system and must be preserved to maintain the fort's historic appearance and serve as a moisture barrier for the masonry beneath. Isolated areas of the earthworks and earthen infill associated with the fort experienced damage from Hurricane Katrina. This is most prevalent along the superior slope (outer) of the rampart along the northern and eastern elevations, the earthen buttress adjacent to the parade face of the sally port, sections of the terreplein, embankments associated with Battery Ransom, the south slope of the parade grounds and possibly the areas surrounding the watery battery. This scouring has left areas void of vegetation, subterranean vaults and tree roots exposed and undermined wall sections, leaving them susceptible to accelerated deterioration.	Same conditions observed.

Item	2008 and 2009 Assessments	2017 Update
Moat	The moat retains water that served a purpose during the fort's occupation and use. In addition, it ensures that the cypress and willow mat, that supports the structure, remains wet, preventing rapid decay. The moat is not in its original configuration. A substantial portion of the moat was filled in during the levee construction. Remaining sections of the moat were free and clear of debris and supported a variety of native wildlife. Storm effects have filled it with debris in many areas and invasive weeds are taking over whole sections. The moat has also lost depth from siltation associated with Hurricane Katrina. It is reasonable that the moat's depth be a minimum of 3'.	Debris was removed after Katrina and Isaac, but otherwise the conditions are the same.
Support Structures	Not evaluated.	A new museum and visitor center opened in 2015 and is in good condition. However, it is built at-grade and is at risk of damage from future floods. Because of the visitor center's location 0.8 miles from Fort Jackson, a new restroom facility, rehabilitated parking lot, and maintenance building would be needed for visitor access and long-term maintenance of the site.

Life Cycle and Costs:
The cost estimate from the 2008 damage evaluation by JMA was limited to repairs of damages related to Hurricane Katrina, and did not include most deferred maintenance to the existing infrastructure, component renewal of items not significantly damaged, comprehensive tree removal, cleanup and repair costs from probable future storms, nor

allowances for improvements to meet the expectations of visitors to a national park unit. Even so, JMA identified $13 million in Katrina damage, but only $4 million was accomplished, leaving a $9 million gap of unfunded repairs. In a later evaluation, JMA identified $12 million in Isaac repairs, with very little actually funded or accomplished to date.

The cost estimate provided with this addendum provides a comprehensive picture of total cost of ownership for the potential park unit. The expectation is that without a major preservation project the deferred maintenance costs will continue to escalate geometrically in the years to come.

- The estimated cost of deferred maintenance, including tree removal, is $16.0 million.
- The estimated annual operations and maintenance cost is $1.3 million.
- Total cost of facility ownership over a 40-year period is $70.2 million (2017 dollars).

Other Notes Related to the Condition Improvements:
Before executing construction and rehabilitation projects, the National Park Service is charged with considering all pertinent Executive Orders and Director's Orders. Two of those are mentioned below, with items within their requirements that could impact NPS' ability to carry out repairs to the fort.

- Executive Order 13653: Preparing the United States for the Impacts of Climate Change
    - Increases expectation for more heavy down pours, ocean acidification, and sea level rise.
    - Sec. 2-iii charges the federal government to 'identify opportunities to support and encourage smarter, more climate-resilient investments.'
- The National Park Service addresses climate change in the 'Addressing Climate Change and Natural Hazards, Level 3 Handbook.' The National Parks are to consider this handbook prior to making capital investments in their facilities, to include rehab of historic structures.
    - Construction considerations from the Handbook include, "Historic structures located in areas susceptible to natural hazards must be evaluated to determine their future disposition, weighing their historic significance and potential use against identified and evaluated risks."

In order to perform the physical repairs to the fort, various studies and permits will be required. The expectation is for an environmental assessment; structural assessment of interior and exterior walls; ground penetrating radar of walking surfaces; permitting through multiple agencies; as well as archaeological assessments, sampling, reports, and construction monitoring.

Images of Current Conditions

Table design for layout of multiple photos.	
Photo 1: Site entrance. 	Photo 2: Bridge and historic gate. 
Photo 3: Scarp wall with cracking and biological growth. Moat filled in to construct levee. 	Photo 4: Bastion interior with cracked wall and failed coatings. 

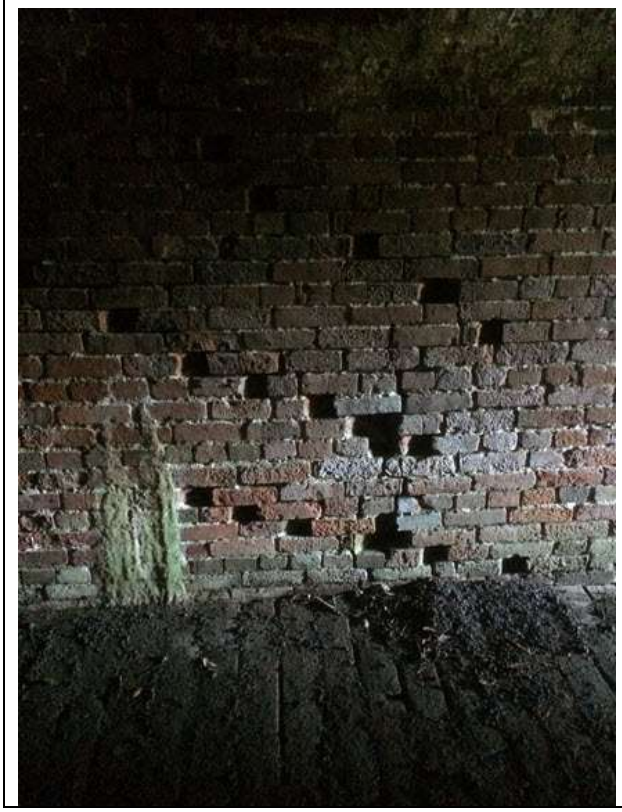
Table design for layout of multiple photos.	
Photo 5: Failure of brickwork. 	Photo 6: Casemate with brick damage. 
Photo 7: Brick loss. 	Photo 8: Damaged floor at embrasure. 

Table design for layout of multiple photos.	
Photo 9: Terreplein with trees. 	Photo 10: Water batteries. 
Photo 11: Tree damage to walls. 	Photo 12: Tree damage to fort. 

Table design for layout of multiple photos.	
Photo 13: Wall with biological growth. 	Photo 14: Bastion with cracks. 
Photo 15: Moat silting up. 	Photo 16: Visitor center. 

APPENDIX F: ORGANIZATIONS AND INDIVIDUALS CONTACTED

As part of the special resource study planning process, the study team informed and sought input from a number of organizations and subject matter experts to better understand the Lower Mississippi River Area and its associated resources, identify possible concerns or issues, and obtain information that was essential in the analysis and evaluation of the study area.

The following individuals and governmental and nongovernmental organizations were informed about the Special Resource Study process and associated public open houses.

Federal Agencies
Chalmette National Battlefield
Jean Lafitte National Preserve
New Orleans Jazz National Historical Park

Congressmen
Office of Senator Bill Cassidy
Office of Senator (former) David Vitter
Office of Congressman Steve Scalise

State of Louisiana
Office of the Governor of Louisiana
Office of Lieutenant Governor's Civil War and Reconstruction Task Force

Local Government
Plaquemines Parish President
Plaquemines Parish Office of Tourism
Plaquemines Parish Recreation Department
Plaquemines Parish District 1 Council
Plaquemines Parish District 9 Council

Other Organizations
Plaquemines Parish Historical Association
Louisiana State University History Department
Louisiana Historical Association

Other Individuals
Private landowners within the study area

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As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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Lower Mississippi River Area Special Resource Study

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