



**US Department of the Interior
National Park Service
Timucuan Ecological and Historic Preserve
Fort Caroline National Memorial Relocation
Environmental Assessment**

PEPC 118467

The National Park Service (NPS) has prepared this environmental assessment (EA) consistent with the National Environmental Policy Act (NEPA) (42 U.S.C. 4321 et seq.), the Department of the Interior (DOI) NEPA Implementing Regulations (43 CFR 46 effective July 1, 2025), and the associated DOI Handbook of NEPA Implementing Procedures, including appendix 3 Implementing Guidance to Bureaus.^{1,2}

The National Park Service has prepared this EA because of the need to relocate the Fort Caroline National Memorial's fort exhibit (Exhibit) to an upland location out of the floodplain and away from the St. Johns River in Jacksonville, Florida. The proposed project would protect park resources and investment by removing the potential for impacts from chronic storm and flooding damage.

This EA describes the purpose and need of the project, preliminary alternatives, resources that may be impacted as a result of project implementation, and preliminary analysis of environmental consequences to those resources from the two preliminary alternatives — a no-action alternative to describe the current management activities, and an action alternative for relocating to an upland site and building a new fort exhibit. Under the no-action alternative, no improvements would be made to the existing fort exhibit site, though routine maintenance and repairs would continue. The preliminary preferred action alternative would completely remove the fort exhibit to an area outside of the floodplain that would not be impacted by flood or storm surge.

¹ Certification related to Page Limits: The NPS certifies it has considered the factors mandated by NEPA; that this EA represents its good-faith effort to prioritize documentation of the most important considerations required by the statute within the congressionally mandated page limits; that this prioritization reflects NPS's expert judgement; and that any considerations addressed briefly or left unaddressed were, in NPS's judgement, comparatively not of a substantive nature that meaningfully informed the consideration of environmental effects and the resulting decision on how to proceed.

² Certification related to Deadline: The NPS certifies that this EA represents a good-faith effort to fulfill NEPA's requirements within the congressional timeline; that such effort is substantially complete; that, in NPS's expert opinion, it has thoroughly considered the factors mandated by NEPA; and that, in NPS's judgement, the analysis contained therein is adequate to inform and reasonably explain its decision regarding the proposed Federal action.

Note to Reviewers:

If you wish to comment on this document, you are encouraged to do so through the NPS Planning, Environment, and Public Comment system at:

<https://parkplanning.nps.gov/FortCarolineRelocation>.

You may also mail to:

Superintendent
Attn: Relocate Fort Caroline Memorial
Timucuan Ecological and Historic Preserve
13165 Mount Pleasant Rd, Jacksonville FL, 32225

Comments will not be accepted by fax, email, or by any method other than those specified above. Bulk comments in any format (hard copy or electronic) submitted on behalf of others will not be accepted. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment, including the personal identifying information, may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee we would be able to do so.

CONTENTS

Acronyms and Abbreviations	v
Chapter 1: Purpose and Need.....	6
Introduction and Proposed Action	6
Purpose and Need for Action.....	6
Preliminary Issues and Resource Topics Retained for Detailed Analysis.....	8
Preliminary Issues and Resource Topics Dismissed from Detailed Analysis	9
Chapter 2: Alternatives	10
Considerations for Alternative Development	10
Alternative A – No-Action Alternative.....	10
Alternative B – Preferred Alternative / Proposed Action	11
Resource Protection Measures.....	16
Chapter 3: Affected Environment and Environmental Consequences.....	18
Cultural Resources	18
Affected Environment.....	18
Impacts Assessment	21
Visitor Use and Experience	23
Affected Environment.....	23
Impacts Assessment	24
Vegetation	26
Affected Environment.....	26
Impacts Assessment	27
Chapter 4: Consultation and Coordination.....	29
Public Participation.....	29
Civic Engagement.....	29
Public Review	29
Agency Consultation.....	29
National Historic Preservation Act Section 106 Consultation.....	29
Stakeholder Outreach.....	30
References.....	32

Appendix A: Issues and Resources Topics Dismissed from Detailed Analysis 34
Appendix B: Alternatives Considered But Dismissed From Detailed Analysis 42

FIGURES

Figure 1. Project Location..... 7
Figure 2. Flooded Walkway on Northeast Corner of Fort Exhibit 8
Figure 3. Flooded Walkway Between St. Johns River and Fort Exhibit 8
Figure 4. Proposed New Location of the Fort Caroline Memorial Exhibit at a Higher Elevation 11
Figure 5. Proposed New Location of the Fort Caroline Memorial Exhibit. 12
Figure 6. Proposed Fort Caroline Memorial Exhibit 14
Figures 7 and 8. Digital Renderings of the Proposed Fort Caroline Memorial Exhibit Corner
Platform Viewing Area and Relocated Archway..... 14

ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
ABAAS	Architectural Barriers Act Accessibility Standards
APE	Area of Potential Effects
BMP	Best Management Practices
CFR	Code of Federal Regulation
CRAS	Cultural Resource Assessment Survey
DBH	Diameter at Breast Height
EA	Environmental Assessment
ESA	Endangered Species Act
Exhibit	Fort Caroline National Memorial's fort exhibit
FDHR	Florida Division of Historic Resources
FEMA	Federal Emergency Management Agency
IPaC	Information for Planning and Consultation
LiDAR	Light Detection and Ranging
Memorial	Fort Caroline National Memorial
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPS	National Park Service
NRHP	National Register of Historic Places
PEPC	Planning, Environment and Public Comment
Preserve	Timucuan Ecological and Historic Preserve
SHPO	State Historic Preservation Officer
USC	US Code
USFWS	US Fish and Wildlife Service

CHAPTER 1: PURPOSE AND NEED

INTRODUCTION AND PROPOSED ACTION

The Timucuan Ecological and Historic Preserve (Preserve) encompasses approximately 46,000 acres northeast of Jacksonville, Florida (figure 1). The Preserve is located between the Atlantic Ocean, the Nassau River, and the St. Johns River. In addition to the coast and river waterways there are wetlands, salt marshes, beaches, dunes, and hardwood hammock ecosystems within the Preserve. There are also two historical resource attractions within the park, Kingsley Plantation and Fort Caroline National Memorial. The Fort Caroline National Memorial's fort exhibit was constructed in 1960s as a two-thirds scale representation to give visitors an idea of what the original fort is believed to have looked like. This exhibit memorializes the French colonists who came to North America during the 16th century seeking religious freedom, wealth, and territorial expansion. The actual Fort location is lost to history, and no French or Spanish artifacts or features have ever been located to pinpoint the site.

The National Park Service proposes to relocate the Fort Caroline National Memorial fort exhibit to an upland location out of the floodplain and away from the St. Johns River (figure 1). The project would follow recommendations provided in the April 2021 Facility Management Hazard Resiliency Workshop Report to redesign and construct a new memorial on higher ground within the Preserve. The new location would still honor the French settlers and highlight characteristics of the historic Fort without recreating a simulation of the original structure. The current fort exhibit would be removed from the landscape and native vegetation would be encouraged to reestablish naturally. The new location would be closer to the Visitor Center and would incorporate existing and new accessible trails with site gathering opportunities and connection to the St. Johns River.

PURPOSE AND NEED FOR ACTION

The purpose of the project is to mitigate damage that occurred to the fort exhibit due to Hurricane Ian in September 2022 and address frequent flooding concerns from increasing tidal influences. The project would protect the Preserve's visitor resources and improve flood protection, stormwater management, and resiliency of the fort exhibit. The current fort exhibit, located along the bank of the St. Johns River, has been subject to chronic storm and flooding damage (figures 2 & 3). This results in closures of the fort exhibit to visitors for safety and repairs. While the Preserve continues to repair the damages to the fort exhibit, continuing to maintain the exhibit at the current frequency and scale of damage is not sustainable or cost effective. These factors will guide the design, permitting, compliance, and construction of the project. The project is needed to address visitor safety and feasibility of future maintenance.

Fort Exhibit Relocation Location Map

Fort Caroline National Memorial
National Park Service
U.S. Department of the Interior

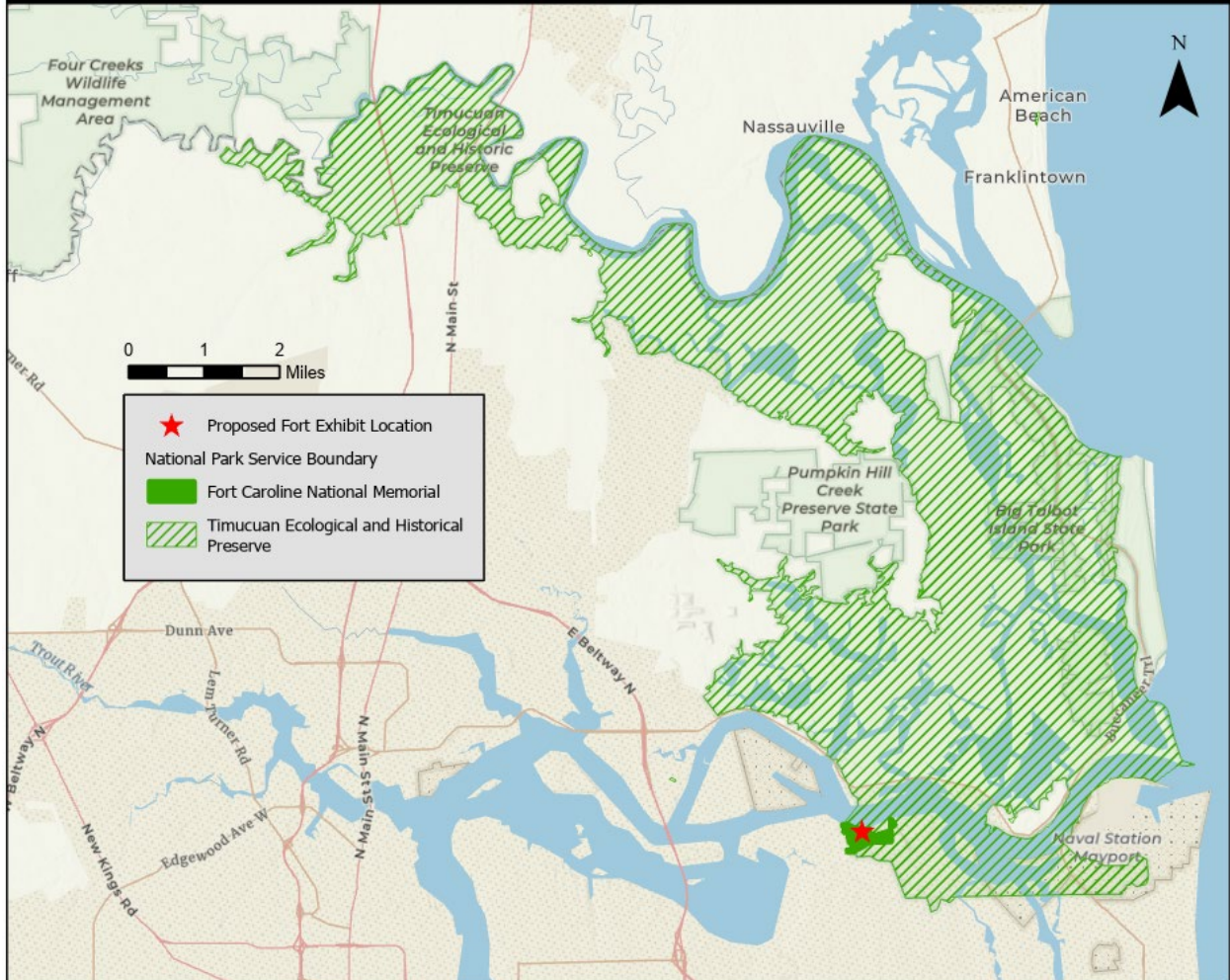


Figure 1. Project Location



Figure 2. Flooded Walkway on Northeast Corner of Fort Exhibit



Figure 3. Flooded Walkway Between St. Johns River and Fort Exhibit

The National Park Service has identified key objectives for this project including:

- Move the fort exhibit out of the floodplain and reduce damage from chronic storm and tidal events.
- Improve visitor and employee safety by creating a safer and more sustainable location for the fort exhibit.
- Enhance visitor experience by providing new accessible pathways, a large gathering area, and views of the St. Johns River.
- Continue to memorialize and interpret the 16th century French settlers' history.
- Protect and rehabilitate the Mission 66-era commemorative landscape, making the least impactful alterations necessary to accommodate visitor access, interpretation, and management of the site.

The decision left to be made is whether the benefits of relocating the fort exhibit outweigh the impacts on resources.

PRELIMINARY ISSUES AND RESOURCE TOPICS RETAINED FOR DETAILED ANALYSIS

Identifying issues—potential problems, concerns, conflicts, obstacles, or benefits that would result if an action were implemented—is an important part of the environmental review process. Impact topics for the proposed project have been identified based on federal laws and regulations, 2025 DOI Handbook of NEPA Implementing Procedures (516 DM 1 Handbook), and NPS knowledge of resources at the Preserve. Issues were retained for consideration and discussed in detail if:

- The environmental impacts associated with the issue are central to the proposal or of critical importance.
- A detailed analysis of environmental impacts related to the issue is necessary to make a reasoned choice between alternatives.
- The environmental impacts associated with the issue are contentious among the public or other agencies.

- There are potentially significant impacts on resources associated with the issue.

Based on the review of the above, impact topics carried forward for further analysis are cultural landscape, visitor use and experience, and vegetation.

PRELIMINARY ISSUES AND RESOURCE TOPICS DISMISSED FROM DETAILED ANALYSIS

Several issues were initially considered but were ultimately dismissed from detailed analysis. These dismissed issues are not potentially significant, are not critical to choosing among alternatives, or are not controversial. The following issues are described in appendix A, including the reasons why further analysis was not warranted: archeological resources, floodplains, wildlife and wildlife habitat, wetlands, land use, and special status species.

CHAPTER 2: ALTERNATIVES

This chapter presents two alternatives for the management of the Memorial—the no-action alternative (Alternative A) and the action alternative (Alternative B). Alternative A, the no-action alternative, provides a baseline of continued maintenance of the existing site of the fort exhibit compared to the impacts of relocating the exhibit to a site outside of the floodplain to protect and preserve the Preserve’s historic and cultural resources and improve flood protection. The alternatives are summarized below. Resource protection measures are considered part of the action alternative, and they are presented in this chapter. During development and consideration of the alternatives, the National Park Service considered other alternatives or alternative elements that were dismissed because they did not meet the purpose and need for the project, had unacceptable resource impacts, or because they were outside of the scope of this project. These dismissed alternatives and alternative elements, as well as the reasons why each one was not carried forward for detailed analysis, are summarized in appendix B.

CONSIDERATIONS FOR ALTERNATIVE DEVELOPMENT

The increasing intensity and number of severe storms and flood risk pose a substantial threat to the Preserve due to its coastal location. Increasing sea levels continue to contribute to coastal flooding, erosion, and storm surges, threatening the Memorial’s fort exhibit and surrounding grounds. Specifically, rising sea levels can lead to flooding of the lower sections of the exhibit and the walkways around the site.

Given the unique site location, various alternatives were explored as part of the design process and systematically evaluated to determine how the alternatives would address the purpose and need of the project. In addition to addressing future storms, flood risk, and weather patterns, other key factors considered in the evaluation of alternatives included project scoping, stakeholder input, the suitability of each alternative for meeting key project objectives outlined in chapter 1, and constructability challenges. These and other factors were compiled into a design decision matrix and reviewed during an internal Facility Management Environmental Hazard Assessment, Adaptation and Resilience Planning Workshop (NPS 2021). Based on the workshop and subsequent site visits and discussions, the project team identified two alternatives, which are discussed in detail in the following sections. Other alternatives or alternative elements were not carried forward for detailed review as they did not sufficiently meet the needs and limitations of the Preserve (appendix B).

Alternative A – No-Action Alternative

Under the no-action alternative, the fort exhibit would remain in its current location and would continue to experience flooding and storm surge events, damaging the site and limiting access by staff and visitors. The current location of the exhibit is not sited to prevent these impacts so damage from flooding and storm surge would continue to require repair and rebuilding, limiting site access during these activities. The no-action alternative would not enhance resiliency against flooding or mitigate tidal damage during storm events; the National Park Service would be required to continue to respond to future flood events in a reactive way. Additionally, the no-action alternative does not address potential safety concerns for the public and NPS staff should the area need to be accessed while flooded.

Alternative B – Preferred Alternative / Proposed Action

Under Alternative B the National Park Service would propose to relocate the fort exhibit to an upland location out of the floodplain with views to the old exhibit location as well as the St. Johns River. In consideration of the environmental stressors and risks of the area, a potential site was identified which would move the fort exhibit to a higher elevation of at least +14 feet above sea level. This would move the fort exhibit out of the FEMA floodplain and significantly reduce site closures resulting from flooding events. The location of the fort exhibit within the existing landscape considers not only existing floodplain elevations, but also future anticipated sea levels. Given the proposed upland location for the new fort exhibit and anticipated future environmental conditions, the NPS team determined that the relocated fort exhibit should be sustainable for 60 years. Figure 4 shows the topography of the area obtained through LiDAR, a technology that creates high-resolution models of ground elevation. The map in figure 4 has assisted the National Park Service in identifying potential locations for the new fort exhibit.

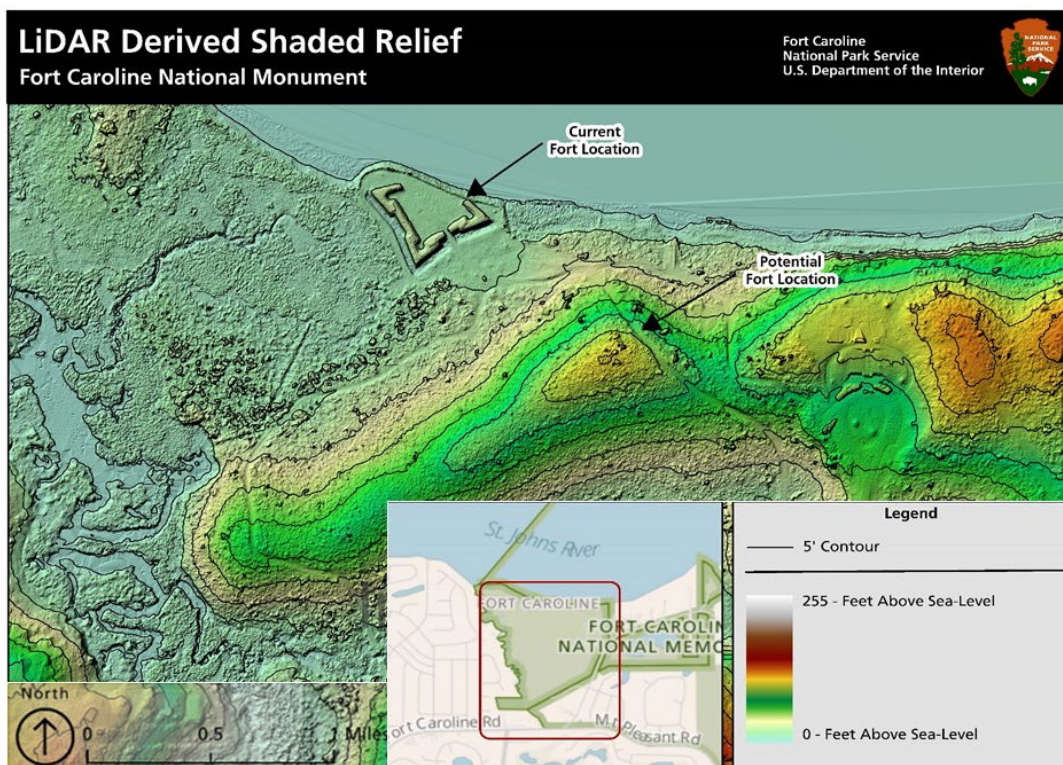


Figure 4. Proposed New Location of the Fort Caroline Memorial Exhibit at a Higher Elevation

The proposed fort exhibit would be moved upland and to the east, closer to the Visitor Center (figure 5) at the site of the current Timucuan Village exhibit. The Timucuan Village exhibit will be removed from the landscape; However, the Preserve would continue to interpret Native American history of the site in a revised manner after thoughtful consultation with the federally recognized tribes associated with the Preserve.

Fort Exhibit Relocation Proposed Site Plan

Fort Caroline National Memorial
National Park Service
U.S. Department of the Interior

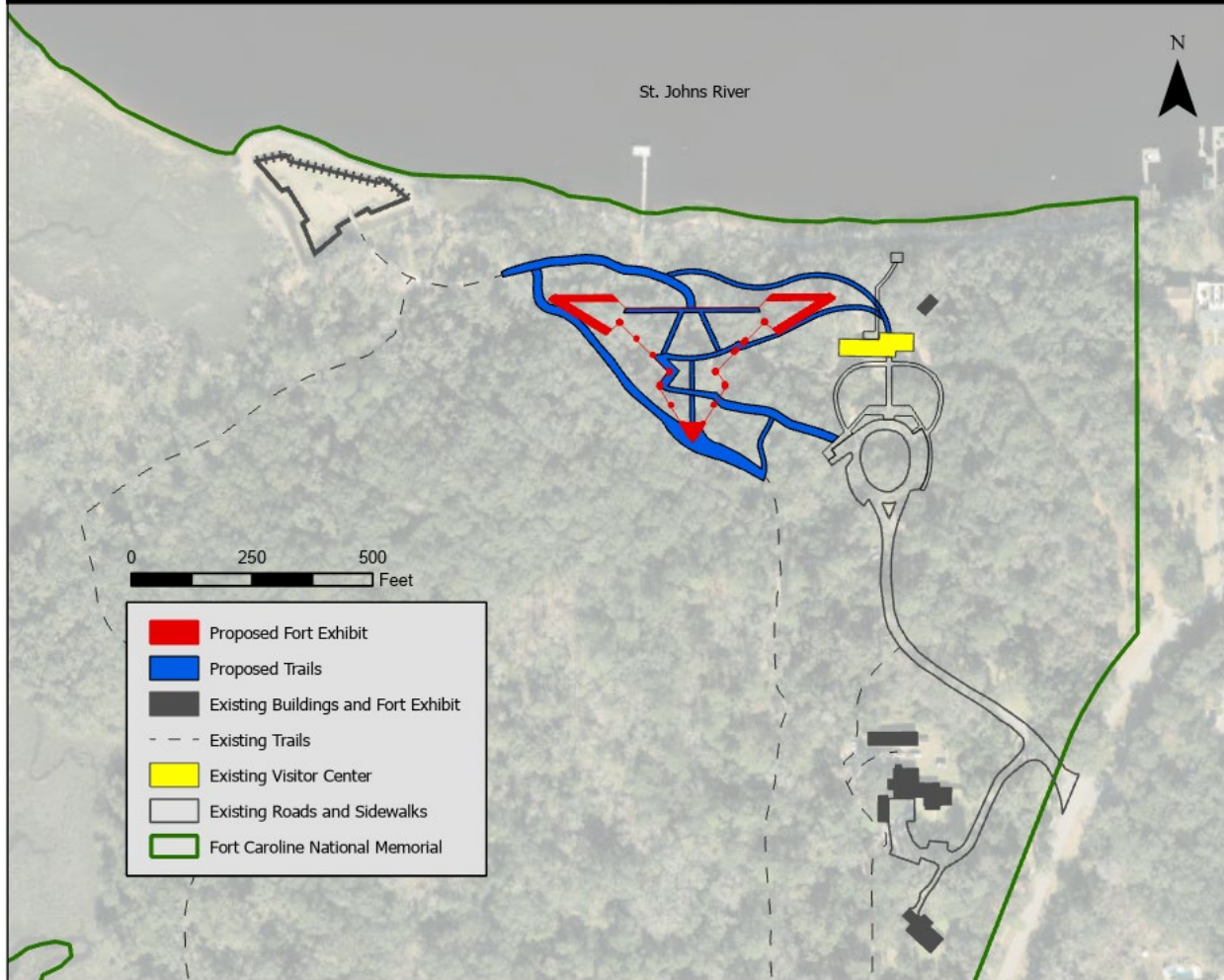


Figure 5. Proposed New Location of the Fort Caroline Memorial Exhibit.

The existing fort exhibit is a contributing resource to the National Register of Historic Places (NRHP)-listed Fort Caroline National Memorial and conveys significance through its commemorative function, Mission 66 design aesthetic, location, setting, and associative values. The proposed fort exhibit would use the best available historical research to determine and reference key characteristics of the original Fort Caroline but would not attempt to recreate a replica of the original structure. Rather, it would selectively build out portions of the footprint to serve as a framework for understanding the physical scale and landscape of the original Fort. The new fort exhibit would be constructed with a larger, more accurate footprint, reflecting the most thorough research available (Manucy 1960) (figure 6).

The south end of the fort exhibit is envisioned as an outdoor plaza describing the role of the French Huguenots. It would be a triangular plaza with wall segments recalling the mass and presence of the original Fort's sod wall construction. The material of these walls would be either cement-stabilized rammed earth or integral-color, board-formed concrete. Both of these options

would be durable, low maintenance, distinctly contemporary in technique, and compatible with the natural surroundings. The inner faces of the walls provide an opportunity to inscribe the names of the French colonists associated with Fort Caroline by sandblast etching in the surface or other similar means.

From the south corner, the fort exhibit would unfold as a subtly demarcated outline recalling the original fortification, using periodic piers and wall segments made of the same material and construction as the south corner walls. These segments would have a consistent height above grade of about four or five feet, and the intent is that the surrounding landscape appear as natural and undisturbed as possible.

At the northwest and northeast corners, raised deck overlooks would be built to outline the original bastion dimensions, with walkways along the perimeter (Figure 7). The south sides of the respective corners would be mass walls similar to the south corner, referencing the original Fort's sod construction at this location. The north sides of these corners would have a contrasting materiality to reflect the original wood palisade along the river-facing side of the Fort. Corten pre-weathered steel would be used for the posts, railings, and primary deck structural framing, and treated wood would be used for the joists and decking.

Between the two northern corners, a series of large-scale vertical posts would reference the line of the original Fort's wood palisade. These posts would also be of Corten pre-weathered steel to visually reinforce the continuity of the palisade along that edge. The rhythm/spacing of these posts would continue into the construction of the corner overlooks. The pre-weathering of the steel would eliminate the need for periodic maintenance compared to more conventional paints and coatings.

On the east side of the fort exhibit, the wood entry arch and gates from the current fort exhibit would be installed at the appropriate location on the perimeter. Mass walls matching the pier material would be built to each side of the entry, to a height matching the current fort exhibit wall height adjacent to the gates (figure 8).

Among the key features within the memorial would be: ten informational signs to assist in educating visitors on the story of the memorial, the relocation of the existing gate to a key point of entrance, two platforms providing views of the St. Johns River, a southern monument engraved with the fleur-de-lis and the known names of the French settlers, and an amphitheater nestled into the natural grade for use in presenting to larger groups of Memorial visitors.

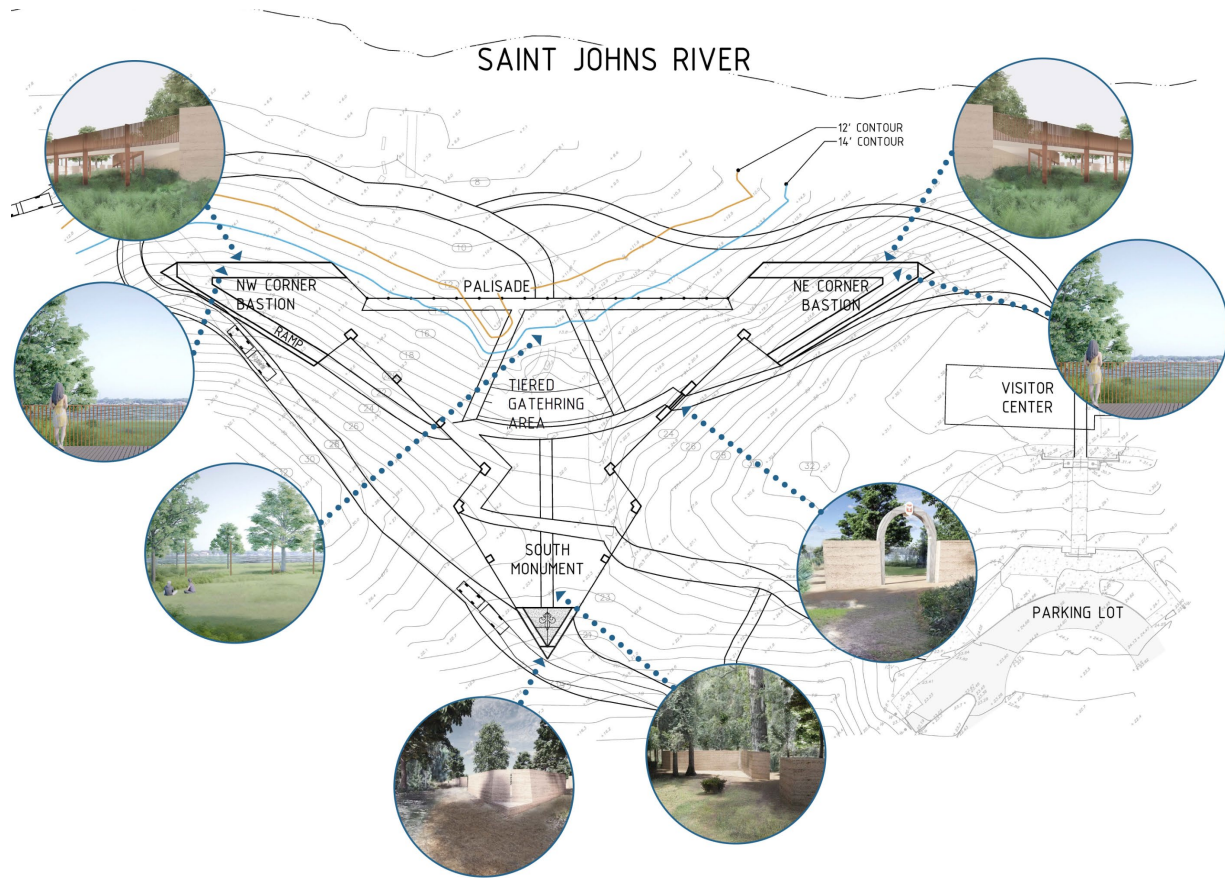


Figure 6. Proposed Fort Caroline Memorial Exhibit



Figures 7 and 8. Digital Renderings of the Proposed Fort Caroline Memorial Exhibit Corner Platform Viewing Area and Relocated Archway

The new fort exhibit would incorporate alignment of existing trail paths with new trails to improve pedestrian flow to and within the Memorial experience. The revised trail paths not only provide access to the various features within and around the fort exhibit but also incorporate

Architectural Barriers Act Accessibility Standards (ABAAS) requirements by providing controlled slopes and walkways to the fort exhibit's key features.

The proposed trail paths would be constructed with gravel and stone to promote the use of natural elements and continuity with the existing trail paths. Materials such as stone and gravel would be used at the surface and compacted earth below to produce stabilized and lasting paths while also allowing infiltration of stormwater runoff. A gathering area would be constructed with earthen fill, stone and gravel. Two wide seating sections would be created by using the slope of the existing topography which provides lounging areas with line of sight to the north end of the outdoor amphitheater (figure 6).

Areas between the river and new fort exhibit would be under-brushed to clear views to the St. Johns River. The proposed site grading works with the existing topography to have minimal impacts on existing trees while using some earthen fill material to establish foundations for other features. 15 trees would be proposed to be removed—14 live oaks, and one laurel oak ranging from 12 to 30 inches in diameter at breast height (DBH). The majority of the trees on the site would be protected during construction and would remain. Within the interior of the fort exhibit's footprint and to the north for viewing of the St. Johns River, 2.3 acres of underbrush would be removed to allow full view and exploration of the Memorial's extents. 3,636 square feet (0.08 acres) would be reestablished with native scrub habitat and the existing oak hammock around the site to the east, west, and south would remain untouched. Standard mitigation measures related to erosion control will be employed to limit sediment loss during construction, and to ensure plantings successfully establish (also see mitigation measure below).

By utilizing the natural topography of the site, along with low impact development, stormwater run-off impacts created by the fort exhibit would be minimized and a need for formal collection and treatment measures would not be necessary.

Turning movements for anticipated maintenance vehicles and equipment were evaluated to ensure that Preserve staff have the capability to service the fort exhibit, surrounding areas, and existing trails.

Use of and visitor access to the existing fort exhibit would be discontinued due to ongoing and increasing environmental impacts, largely caused by the St. Johns River. Items of the existing fort exhibit deemed to be of significance, such as the arched entry gate, would be salvaged and incorporated into the design for the new memorial (Figure 8). Environmentally harmful materials present in the old fort exhibit would be removed and appropriately disposed. The location would be graded to natural contours, the moat filled, and the area allowed to naturally revegetate and return to shoreline/wetland habitat with proper monitoring and control of invasive plants. The existing rip rap along the riverbank will remain in place for continued protection of the site from wave action.

Any necessary contractor staging areas would be located near the existing maintenance entrance to avoid impacts on visitors. This area would also be the primary access for contractors when practicable. Safety fencing and other precautions would be included at the construction staging site to maintain public safety. Alternative B would provide a long-term solution to meet Preserve needs for an estimated 60+ years, with reduced maintenance needs related to flooding and storm events.

RESOURCE PROTECTION MEASURES

To minimize resource impacts related to Alternative B (the preferred alternative), the project would implement mitigation measures and best management practices (BMPs) forward into the FONSI and whenever feasible. These protection measures are considered part of the action alternative, and they would be implemented to avoid or reduce impacts on Preserve resources and values. Subject to the final design and approval of plans by relevant agencies, resource protection measures would include, but would not be limited to, the items below.

- All permits would be acquired from the applicable regulatory agencies before commencement of work, and all stipulations of those permits would be followed.
- Resource protection measures would be clearly stated in the construction specifications, and workers would be instructed to avoid conducting activities outside the project area. Areas of natural or cultural resource concern would be clearly indicated on construction drawings.
- Construction zones would be identified and fenced with construction fencing or similar material before any construction activity. The fencing would define the construction zone and confine activity to the minimum area required for construction. The fencing and signs would also exclude visitors from construction areas for safety reasons. Visitors would be informed about the project through signage, brochures, and the Preserve's website.
- Construction activities would be planned to minimize the closure of key areas, such as trails and the riverfront, for extended periods.
- A preconstruction meeting would be held to inform contractors about sensitive areas and resources and provide procedures for identifying and addressing any unanticipated discoveries.
- Designated staging and storage areas for construction vehicles, equipment, materials, and soils would be sited in previously disturbed or paved areas approved by the Preserve. These areas would be clearly identified in advance of construction.
- Construction would only occur during daylight hours to reduce light pollution, avoid night-time noise disruption, and minimize disturbance to wildlife.
- Some construction activities, such as material delivery, would be scheduled to take place during off-peak hours or during times of lower visitation to reduce the impact on visitors. Noisy or intrusive activities would be limited to hours when fewer visitors are on-site, such as early morning or later in the afternoon.
- Standard noise abatement measures would be followed during construction and plans would include a schedule to minimize impacts on adjacent noise-sensitive resources, would incorporate the use of best available noise control techniques wherever feasible, would require the use of hydraulically or electrically powered tools when feasible, would specify properly maintaining construction equipment to minimize noise, and would require turning off any idling equipment when not in use.
- The contractor would be required to keep all waste and contaminants contained and remove them daily from the work site.

- To minimize the risk of invasive species being introduced or spread, all construction vehicles would be washed and inspected before use in the project area.
- If previously unknown cultural resources are discovered during project implementation, all work in that area must stop and the Preserve Superintendent, Chief of Science and Resource Management, and/or Preserve Archeologist must be notified immediately in accordance with the 2008 National Park Service Programmatic Agreement, Section VI.
- In ongoing consultation with federally recognized tribes, the National Park Service developed a Native American Graves Protection and Repatriation Act (NAGPRA) Plan of Action, including an inadvertent discovery plan, specifically for this project. All activity must cease in the area of discovery and immediate notice made to the Superintendent and Chief of Science and Resource Management if items protected by NAGPRA are discovered during project implementation (see chapter 4).
- An archeological monitor may be required for any work near archeological and prehistoric/historic resources. The archeological monitor would observe and stop work if previously unknown archeological resources were discovered during construction activities.
- A construction spill prevention, control, and countermeasures plan would be developed and implemented.
- Tree and stump removal techniques that minimize ground disturbance would be used to protect surrounding vegetation.
- Tree protection measures would be included in construction activities, such as fencing and root protection, as needed.
- Standard erosion control methods would be employed to limit erosion during and after construction, like erosion socks and/or straw bales at both the existing fort exhibit and proposed fort exhibit locations.
- Conservation measures related to federally listed species will be adhered to as appropriate, including time-of-year restrictions for tree and vegetation removals, time of day work hours to limit disturbances to species, and biological monitors, as needed.

CHAPTER 3: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter analyzes the following resource topics: cultural resources, visitor use and experience, and vegetation. For each resource topic, the affected environment is described. This description serves as an account of the baseline conditions within the project area upon which the impacts of each alternative are compared. Resource protection measures are part of the action alternatives, as presented in chapter 2. Where appropriate, the resource protection measures for adverse impacts are also described and incorporated into the evaluation of impacts. The impact analyses in this chapter are generally based on a review of existing literature, studies, and research; information provided by subject matter experts within the National Park Service and other agencies and institutions; professional judgment; Preserve staff expertise and insights; and public input.

Environmental trends and planned actions that may have reasonably foreseeable effects on a resource when combined with Alternative A or Alternative B are described and analyzed under the appropriate resource topics below.

CULTURAL RESOURCES

Affected Environment

Cultural resources considered in this analysis include historic districts, historic buildings and structures, cultural landscapes, and archeological resources that could be impacted by the proposed project are covered below. Compliance with the National Historic Preservation Act (NHPA) of 1966 is being conducted separately from this NEPA process. Mitigation measures for the adverse effects on the historic district, historic buildings and structures, cultural landscapes and archeological resources under Section 106 of the NHPA will be defined in a Memorandum of Agreement between the National Park Service and the Florida Division of Historic Resources. To minimize other potential impacts on the cultural resources at the Preserve during the proposed project, the resource protection measures noted in chapter 2 would be followed and were considered in this analysis.

Historic Districts. Fort Caroline National Memorial was established to commemorate the French settlers who attempted to found a colony in Florida in the 1560s. The original fort location is lost to history, and no French or Spanish artifacts or features have ever been located to pinpoint the site. A national park for this commemorative purpose was authorized by Congress in 1950, and property was purchased west of St. Johns Bluff on the St. Johns River. Development of amenities at the property lagged until the Mission 66 program was launched by NPS Director Conrad Wirth in 1956 to confront challenges across the NPS system related to inadequate, out-of-date facilities and infrastructure, and resource degradation caused by exploding visitor numbers. The commemorative portion of the site was initially envisioned as an open pavilion next to the planned Visitor Center and museum, but by 1964 the Fort Caroline master plan included a more literal fort exhibit at the water's edge below St. Johns Bluff.

Following the passage of the National Historic Preservation Act in 1966, Fort Caroline National Memorial was administratively listed in the National Register of Historic Places. Fort Caroline National Memorial was formally nominated to the National Register in 1975 and listed in the

Register as a historic district on December 12, 1977. The nomination indicates that the historic district was significant in the areas of Military, Politics/Government, and Religion. The “Fort Caroline (20th Century Replica)” exhibit was included as one of four contributing resources within a historic district that also included the Ribault Monument, the Confederate Earthworks, and Spanish Campsite Pond. The Mission 66-related landscape features, buildings, and structures—other than the exhibit—were not addressed, as they were of recent construction.

A 2021 Determination of Eligibility completed for Fort Caroline National Memorial additionally cites a period of significance for the site beginning in 1953 with the establishment of the Preserve, and ending in 1965, when Mission 66-era construction ended in the Memorial. Because of substantial changes to the buildings and structures at the Memorial since this period, most notably the centerpiece Visitor Center, preliminary determinations concluded that the Memorial’s property as a whole does not retain sufficient integrity to constitute a coherent Mission 66 historic district. The Memorial as a whole appears to meet eligibility for the National Register only under Criteria Consideration F in the area of Commemoration. A commemorative property may be eligible for its design if it reflects the aesthetics of its period of creation but may also be eligible if it has acquired significance after the time of its creation through age, tradition, or symbolic value. This eligibility has not yet been formalized through the National Register and SHPO concurrence.

Historic Buildings and Structures. Although no archeological remains of the original Fort have been located and its exact site remains unknown, in 1960 the NPS reviewed documentary evidence to establish precedence for a full-scale replica to be built. It was concluded that any such replica would be 90% conjectural and would have ongoing maintenance issues with the sod parapet and timber stockade used in the original fort. A full-scale replica reconstruction was not recommended, instead that a scale model to be built inside the Visitor Center, within view of the likely site of the lost Fort. In the end, political pressure and tourism interests led the National Park Service to capitulate on a reconstruction, but with a number of compromises—the fort exhibit that was built in 1964 was two-thirds the size of the original estimation, it contained none of the buildings on the interior that were known to have existed, and maintenance difficulties quickly led to material substitutions that compromised the original designs.

No specific significance criteria were cited for the fort exhibit in the 1975 National Register nomination, but it remains a contributing resource to the historic district, which was determined to be significant in the areas of Military, Politics/Government, and Religion. In the 2021 Determination of Eligibility, the period of significance of the Mission 66 development of the Memorial was defined as 1953 to 1965, which includes the design and construction of the fort exhibit. Although a potential historic district that encompasses the Mission 66-era developments at the Memorial does not retain sufficient integrity primarily because of changes to the centerpiece Visitor Center, the exhibit itself can be considered significant at the local and state level within its Mission 66 context, fulfilling part of that transformative effort’s master plan for visitor-oriented developments at the Memorial.

Cultural Landscape. The Memorial is located on the St. Johns River at the western foot of St. Johns Bluff. The landform and topography near the mouth of the St. Johns River were recognized for their strategic military and economic value centuries ago, first by Native Americans and then later by Europeans settlers. The key features of this landscape were the St. Johns River, which provided access to the Atlantic Ocean and inland resources, and St. Johns Bluff, which served as a prominent landmark and a natural defensive position for European

settlers. This location was selected for the Memorial because it closely aligns with the description provided by French settlers who constructed the original Fort Caroline in 1564.

The direct connection between the topography surrounding the existing fort exhibit on the banks of the St. Johns River was intended to be evocative of the landscape during the period of the original Fort's brief existence. Although there are residential properties adjacent to the Memorial's east border with associated topographic modification from development, the Memorial site has few alterations to the natural site topography since its period of significance.

The existing fort exhibit is an important piece of the Memorial's cultural landscape, which includes the Visitor Center, Hammock Trail system, observation pier, and interpretive waysides and exhibits, as well as the contributing structures defined in the NRHP nomination form. A 2024 Cultural Landscape Report concluded that the cultural landscape meets National Register eligibility for significance in the area of Commemoration (Criteria Consideration F), and due to the central focus of the fort exhibit within the landscape, possibly in the related area of Education. This assessment noted that "generally, the various buildings on the property appear less important as individual objects than the character of the overall landscape and riverscape that set this location apart"(NPS 2024a). In this context, although the integrity of design, setting, workmanship, and materials are diminished from years of adaptations due to changing maintenance and operational needs, integrity of location, feeling, and association have remained intact.

Archeological Resources. The Timucuan Ecological and Historic Preserve contains over 200 archeological sites representing thousands of years of continuous human history. The National Park Service is sensitive to archeological sites and artifacts, and as such, the proposed site for the new fort exhibit has been extensively surveyed. At least 19 archeological surveys and investigations were conducted within one mile of the Area of Potential Effects (APE) between the late 19th century and 2024, and portions of six of these surveys were conducted within the APE itself. The most notable were the extensive close-interval shovel testing surveys conducted by the National Park Service in 1996 and 2024 and further excavations by the University of North Florida in 2004, 2012, and 2013 that together cover the proposed location of the new fort exhibit (Bennett et al 2025). To synthesize all available data into a single comprehensive assessment and report for the APE, the National Park Service completed a Cultural Resource Assessment Survey (CRAS). This survey identified one archeological site within the APE and determined that the construction of the proposed new exhibit would not adversely impact the resource. The survey will also serve as the park's formal submission to the Florida Division of Historical Resources and Tribal Nations for a no adverse effect determination related to archeological resources in the APE as part of the NHPA Section 106 consultation process on historic resources.

Reasonably Foreseeable Actions. Past, ongoing, and future activities to replenish riprap at the pier on the St. Johns River could affect the cultural landscape. The National Park Service is planning to replenish the riprap along the base of the public observation pier that is just east of the existing exhibit, and north of the proposed new exhibit. The replenishment is planned to be completed prior to the exhibit relocation. The cultural landscape would be temporarily affected by construction activities. No impacts would occur after the construction is completed.

Impacts Assessment

Assessment of impacts of alternatives on the cultural landscape are based on the fundamental resources and values of the Preserve, which include these significance statements from the foundation document (NPS 2012):

- Fort Caroline memorializes the French colonists who came to North America during the 16th century seeking religious freedom, wealth, and territorial expansion.
- The Timucuan Ecological and Historic Preserve contains over 200 archeological sites representing more than 12,000 years of continuous human history.
- The strategic military importance of the St. Johns River is exemplified by the presence of numerous installations within the Preserve for over 450 years, from Fort Caroline in 1564 to Naval Station Mayport today.

Impacts of Alternative A – No-Action Alternative

Under the no-action alternative, storm surges and other severe weather events would continue to result in displacement of soils, scouring of the landscape, and flooding of the exhibit, causing temporary closures. Ongoing maintenance and use of stop-gap measures would likely not keep up with the deterioration. Eventually, more frequent flooding, overtopping events, and resulting damage would require mitigation activities leading to repeated temporary closures and replacement of materials. Over time, damage from weather events, erosion, and aging would diminish the functionality and structural integrity of the exhibit, potentially resulting in the failure of portions of the structure. Maintenance projects would help slow the negative trend of site deterioration within the Memorial; however, some features would likely be damaged or lost to storm events and deterioration. Damage and continued flooding of the fort exhibit would have a long-term adverse impact on the historic district, fort exhibit, and the cultural landscape.

When the impacts of the no-action alternative are combined with the effects of reasonably foreseeable actions of the riprap replacement at the pier described above, overall impacts from flooding of the exhibit and cultural landscape would be long-term and adverse.

Impacts of Alternative B – Preferred Alternative / Proposed Action

At the current fort exhibit, all features would be removed. Items deemed to be of significance, such as the arched entry gate, would be salvaged and incorporated into the new fort exhibit. The site would be graded to approximate the natural terrain, the moat filled, and the area left to reclaim naturally with appropriate invasive plant control. Educational waysides and information about the removed exhibit would be included in the landscape.

The new fort exhibit site is located further upland, well above the floodplain, eliminating flooding as a long-term concern. The new location would incorporate accessible trails from the Visitor Center allowing access to a wider range of visitors. The new exhibit would use the best available historic research to determine and recall key characteristics of the original Fort Caroline but would not attempt to recreate a simulation of the original structure. It would selectively build out smaller portions of the footprint to serve as interpretive features to help visitors understand and visualize the French colonial experience. The forms and materials would be designed to ensure that it is not mistaken as historical artifact or an attempt at recreation.

The loss of the existing fort exhibit would have a long-term adverse impact on the National Register historic district due to the loss of one of the four contributing structures. The loss of the existing fort exhibit would also be a long-term adverse impact due to the loss of the NRHP eligible structure, which is significant in the area of Commemoration (Criteria Consideration F) and has become eligible based on its Mission 66-era context, and would constitute an adverse effect according to 36 CFR 800.5.

The cultural landscape of the Memorial is not defined only by the fort exhibit itself but also by the natural and manmade landforms, vegetation, paths, and shoreline that have shaped the site over time. The exhibit, as an element of the landscape, plays a key role in maintaining the site's relationship with its environment and in providing visitors an interpretive experience into the French colonial history of the area. As a contributing element to a National Register-eligible cultural landscape, removal of the fort exhibit would constitute an adverse effect under Section 106 of the NHPA according to 36 CFR 800.5 due to the loss of the landscape feature and changes to the associated circulation through the commemorative and educational Memorial site. In addition, the construction of the new fort exhibit in an upland location near the Visitor Center would adversely impact the original Mission 66-era landscape's deliberate visitor progression from the centerpiece Visitor Center to the fort exhibit.

Although the proposed location for the new fort exhibit would maintain a similar relative position south of the St. Johns River adjacent to St. Johns Bluff, it would be located 14 feet above sea level and removed from the riverbank. Views from the exhibit location to the St. Johns River, critical to the interpretation and educational use of the exhibit, would be impacted by the relocation, although impact on views to the river would be mitigated somewhat by clearing underbrush within its Coastal Hammock setting.

Removal of the existing fort exhibit would have a long-term adverse impacts on the NRHP-listed historic district, as well as the NRHP-eligible structure and cultural landscape, as it would completely remove the Mission 66-era exhibit from its location of over 60 years. The construction of a new fort exhibit would result in a short-term adverse impact during the construction process itself, due to the use of scaffolding, heavy machinery, and barriers, which would introduce modern, but temporary, visual distractions that interfere with the cultural landscape. It would also have a long-term adverse impact on the cultural landscape associated with the Mission 66 Memorial master plan as a result of alterations to the setting of the Visitor Center and fort exhibit, circulation and visitor progression through the site, and the relationship between the fort exhibit and both the St. Johns River and the Visitor Center.

When the impacts of the proposed action are combined with the effects of reasonably foreseeable actions of the riprap replacement at the pier described above, there would be long-term adverse impacts on the NRHP-listed historic district, as well as the NRHP-eligible structure and cultural landscape, as it would completely remove the Mission 66-era exhibit from its location of over 60 years. The construction of a new fort exhibit would result in a short-term adverse impact during the construction process itself as mentioned above. However, the proposed action is not considered to have a significant adverse effect on cultural resources due to the mitigating factors of the new fort exhibit. This includes maintaining the fundamental resources and values of the Preserve and the purpose of Fort Caroline National Memorial to commemorate the French settlers who attempted to found a colony in Florida in the 1560s. The new fort exhibit would better demonstrate the original Fort Caroline's dimensions, leading to new opportunities for interpretation. In addition, key elements of the fort exhibit will be replicated at the new fort

exhibit location, like the continued connection and views to the St. Johns River, the names of the French settlers, and reuse of the arched entry gate from the existing fort exhibit.

VISITOR USE AND EXPERIENCE

Affected Environment

Fort Caroline National Memorial was established to commemorate the French settlers who attempted to establish a colony in Florida in the 1560s. As the exact location of the original fort has never been uncovered, the existing fort exhibit is not tied to a specific location but rather to the known elements of proximity to the St. Johns River and Atlantic Ocean. Current visitor and interpretive services are provided at the Timucuan Preserve Visitor Center, located within the Memorial (figure 1). As visitors stop in at the Visitor Center, they can take a short walk to visit the fort exhibit. From the fort exhibit, visitors can experience expansive views of the Memorial and St. Johns River.

In addition to visiting the fort exhibit, the Preserve provides a variety of recreational opportunities in and around the Memorial. Activities include self-guided walking tours, walking the grounds, fishing, kayaking, and photography opportunities. One of the Preserve's goals is to ensure that visitors safely enjoy and are satisfied with the availability, accessibility, variety, and quality of facilities, services, and appropriate recreational opportunities.

Because it is located near the Atlantic coast of Florida on a major river, the Preserve is vulnerable to severe weather events, especially during hurricane season (June through November). When there are hurricane watches or warnings for the Jacksonville Area, the National Park Service closes the Preserve temporarily to protect visitors, staff, and the memorial structure itself. Some recent closures include Hurricane Matthew (2016), Hurricane Irma (2017), Hurricane Michael (2018), Hurricane Dorian (2019), Hurricane Isaias (2020), Hurricanes Ian and Nicole (2022), Hurricane Idalia (2023), and Hurricanes Milton and Helene (2024), tropical storm four (2024), and Tropical Storm Debby (2024) (NPS 2017, 2018, 2019, 2020, 2022a, 2022b, 2023, 2024b; National Parks Traveler 2016, 2024a, 2024b, 2024c).

Relocation of the fort exhibit allows this commemorative and interpretive element to be located in a spot more conducive to modern needs while still giving visitors a connection and experience with the past. Views of the St. Johns River would be reestablished at the new location as integral to the visitor understanding of the site's historical context and the historic fort's relationship with the water.

Reasonably Foreseeable Actions. Past, ongoing, and future activities to maintain the fort exhibit could affect visitor experience in both alternatives. Visitor experience could be temporarily affected by noise associated with maintenance activities to maintain the current fort exhibit, demolition of the current fort exhibit, and construction of the new fort exhibit. Maintenance related impacts would occur after the construction is completed but these would happen regardless of the proposed project.

The National Park Service is planning to replenish the riprap along the base of the public observation pier that is just east of the existing fort exhibit, and north of the proposed fort exhibit. The replenishment is planned to be completed prior to the fort exhibit's relocation. Visitor use and experience would be temporarily affected by the site of construction activities. No impacts would occur after the construction is completed.

Impacts Assessment

Assessment of impacts of alternatives on visitor use and experience is based on the fundamental resources and values of the Preserve, which include the fort, the preservation of the estuary system, Kingsley Plantation, over 200 archeological sites representing more the 12,000 years of human history, history of the area's original inhabitants the Timucua Indians, American Beach—the largest and most popular beach resort established for African Americans during the Jim Crow era, and the strategic military importance of the St. Johns River demonstrated through the presence of numerous installations within the Preserve for over 450 years.

The potential impacts were assessed qualitatively, drawing on data from previous studies and considering factors such as visitation patterns, available activities, and construction-related noise and traffic. The evaluation focused on how visitor use and experience might change, including any potential increases or decreases in recreational activities, access to the project area, and the overall impact on the desired visitor experience.

Impacts of Alternative A – No-Action Alternative

Under the no-action alternative, the visitor experience would be expected to be adversely impacted in the future. The fort exhibit, an important cultural and tourist landmark, is already vulnerable to storm surges, rising water levels, and flooding. Without improvements to address existing structural damage and provide proper flood defenses, additional damage to the fort exhibit would be expected to occur that would impact the enjoyment and accessibility of the site.

In the event of flooding, access to the fort exhibit may be blocked or restricted, limiting visitor experience opportunities. Flooding and storm events could also lead to damage to the fort exhibit itself, potentially eroding the foundation and degrading its structure. If flooding or damage occurs, areas would be closed for the duration of repairs, adversely impacting the experience for visitors.

Flooding would also threaten the fort exhibit's interpretive waysides and artifacts, which are vital for educating visitors about its role in North American history. If these items were damaged, it would compromise the educational value of the site and deprive tourists of the chance to engage with its rich history. Special programs like guided tours and living history events may also be canceled or disrupted, further impacting the opportunities for visitors to connect with the Memorial's past.

Beyond the damage to the physical site and its exhibits, the aesthetic aspects of a visit would be impacted. The fort exhibit offers beautiful views of the surrounding landscape and waters, but frequent flooding could create unsightly conditions, leaving standing water, debris, or muddy areas around the fort exhibit. This would not only affect the visual appeal but also limit outdoor spaces where visitors might take in the view or capture photos.

Overall, Alternative A would have short-term adverse impacts on visitor use and experience during episodic storm and flooding events, and maintenance response to damage. Alternative A would also have long-term adverse impacts on visitor use and experience as the damage to the fort exhibit would be chronic and would not address increased future storm events, flooding, and rise in water levels at the site.

When the impacts of the no-action alternative are combined with the effects of reasonably foreseeable actions described above, including ongoing maintenance activities and the riprap replacement at the pier, there would be short-term and long-term adverse impacts on visitor use and experience as there would be increased instances of unavailable public access to the fort exhibit and surrounding areas.

Impacts of Alternative B – Preferred Alternative / Proposed Action

Under Alternative B, construction-related impacts would temporarily limit and disrupt visitor experience. The National Park Service would aim to maintain the existing fort exhibit during the construction of the new fort exhibit for continued access and visitor experience. The existing fort exhibit would be demolished after the new fort exhibit is built. Demolition would include removal of the existing structures, fill the moat, and regrade the landscape to a naturally low-lying elevation. The riprap along the shoreline would remain. Access to the existing fort exhibit would depend on closures for flooding and maintenance activities.

The new fort exhibit location is heavily forested, which would visually screen the construction from direct views from the Visitor Center though it would be visible from parts of the trail and pier. The Timucuan Village exhibit would be removed prior to construction of the new fort exhibit, having a short-term and long-term adverse impact on visitor use and experience as that educational opportunity would no longer be available. The National Park Service would consult with federally recognized tribes with connections to the site, including the Seminole Tribe of Florida, Thlopthlocco Tribal Town, Miccosukee Tribe of Indians, Seminole Nation of Oklahoma, Muscogee Creek Nation, Poarch Band of Creek Indians, and Alabama-Quassarte Tribal Town, to re-envision educational opportunities to share Native American history of the site. This thoughtful process would have a long-term beneficial impact to visitor use and experience of new interpretation of Native American history and culture.

If issues with staging and construction dictate that the demolition of the existing fort exhibit must be undertaken prior to the construction of the new fort exhibit, the National Park Service estimates the public would be unable to experience a fort exhibit for about six months until the new fort exhibit is constructed.

Visitor access to or through active construction areas, as well as staging and travel areas, would be temporarily restricted. The construction zone for the proposed new fort site is near the Visitor Center, nature trails, and pier, and construction operations may result in temporary closures of certain trails or access points but is not expected to result in full closures to these features. The presence of heavy machinery, construction vehicles, and workers could create substantial noise and visual disturbances in the area. Visitors who come to experience the memorial's historic and serene environment could find the disruption unpleasant. Access to the Visitor Center may be occasionally impacted by construction equipment.

In addition to the aesthetic impact, noise and vibration from construction activities would disrupt the peaceful atmosphere that visitors expect when touring a historic and ecological site. The presence of loud machinery and construction vehicles could interfere with audio tours, guided programs, and self-guided tours, making it difficult for visitors to concentrate or fully appreciate the Preserve's educational offerings. If visiting during construction, the experience a first-time visitor has could degrade their overall impression of the Preserve.

Relocating the fort exhibit would improve visitor safety by moving them away from the St. Johns River. The Memorial is situated adjacent to the river, and, without adequate protection, the increasing frequency of severe storms and rising tides poses a growing risk to the safety of visitors and the physical structure of the fort exhibit. With the relocation, visitors would be able to visit the new fort exhibit safely without the concern of potential flooding or damage during adverse weather conditions. Increased visitation is expected as the new fort exhibit will be a novel space for the public to explore. For those visitors still hoping to access the river at the old fort exhibit site, access would remain open. The National Park Service may continue to use the old fort site along the St. Johns River for other interpretive and educational opportunities.

Another potential issue is visitors' perception of the site's historical integrity. The new fort exhibit would make it obvious that the memorial is an interpretative feature and not an actual fort reconstruction, and there may be an adjustment period in visitor understanding of the memorial intent, muddled by the existing fort exhibit's literality. By regulation, properties that are eligible for the National Register for commemorative reasons must be fifty years old to be considered. The existing fort exhibit, as a cultural expression of the date of its creation and having reached that age, contributes to the entire Memorial's historic significance under National Register Criteria Consideration F: Commemoration. A relocated fort exhibit inherently would not. Visitors who value the existing fort exhibit's historic appearance may be concerned about the impact of the new fort exhibit on the site's visual landscape.

During removal of the existing fort exhibit and construction of the new fort exhibit, there would be short-term adverse impacts on visitor use and experience. Once construction is complete, the preferred alternative would provide long-term beneficial impacts on visitor use and experience, including a new fort exhibit free from the issues of flooding, and the inclusion of more accessible trails.

When the impacts of the preferred alternative are combined with reasonably foreseeable actions described above, including ongoing maintenance activities to the new fort exhibit and the riprap replacement at the pier, the overall occurrences of site closures would be reduced, having a long-term beneficial impact to visitor use and experience. The replenishment of the pier riprap would add to the amount of time the public may experience disruptions to the area during construction of the riprap, removal of the existing fort exhibit, and the construction of the new fort exhibit. However, construction activities would have a short-term adverse impact on visitor use and experience and would cease after construction.

VEGETATION

Affected Environment

The landscape associated with the fort exhibit is characterized by woodland representative of a temperate mixed hardwood and evergreen hammock community. The woodland is layered and contains canopy and understory trees, shrubs, vines, and a grassy herbaceous layer. The species associated with the hammock woodland include live oak (*Quercus virginiana*), southern magnolia (*Magnolia grandiflora*), and southern hackberry (*Celtis laevigata*) trees. The understory consists of saw palmetto (*Serenoa repens*) and oak saplings (*Quercus spp.*). The coastal marsh/estuary on the west side of the current memorial site is primarily vegetated by spartina (*Spartina alterniflora*) and juncus (*Juncus roemerianus*).

The new fort exhibit location consists of vines, including catbrier (*Smilax rotundifolia*) and grape (*Vitis sp.*). There are several ferns present, likely including species of the maiden fern genus *Thelypteris*, Boston fern genus *Nephrolepis*, and representatives of the shield fern genus *Dryopteris*. There is also Spanish moss (*Tillandsia usneoides*), an epiphyte, associated with the canopies of many live oak trees. Additional species often included in the hammock woodland type in northeast Florida include laurel oak (*Quercus hemisphaerica*), swamp cabbage (*Sabal palmetto*), redbay (*Persea borbonia*), and hollies (*Ilex spp.*).

Air potato vine (*Dioscorea bulbifera*) and a tuberous sword fern (*Nephrolepis cordifolia*) are some invasives that occur in the Preserve.

Unabated growth of invasives within the sites will continue into the future if not removed or controlled. The presence of the invasives will increase and continue to threaten the stability and health of understory trees and bluff slope coverage of oaks and other hardwoods in areas with an open canopy and exposed understory by the rapid growth of the invasive species on the site.

Reasonably Foreseeable Actions

Any construction projects and associated ground disturbance and movement of materials into and out of the current memorial site and proposed location could increase the presence of invasives. Based on current information, there are no projects in the foreseeable future on or near the memorial site that would affect vegetation.

Impacts Assessment

Alternative A: No-Action

Under the no-action alternative, the conditions and trends associated with vegetation around the existing fort exhibit discussed above would continue. Existing management and maintenance strategies would remain in place including monitoring of vegetative growth within and around the fort exhibit. Within this alternative and the current ongoing vegetation management and operations, any future migration of invasive species from the surrounding context landscape would be unlikely with no long-term impacts on native vegetation.

Alternative B: Proposed Action

Under Alternative B, impacts on vegetation include selected tree removal and clearing of underbrush and invasive species for construction of the new fort exhibit and accessible pedestrian walkways. In total, 15 trees are proposed to be removed—14 live oaks and 1 laurel oak, ranging from 12 to 30 inches in diameter at breast height (DBH). The majority of the trees on the site would be protected during construction and would remain. Decisions for selected removal would be based on construction needs, management issues, general health of each tree, visitor access and preservation of visitor views of the St. Johns River.

Underbrush (0.9 acres) within the proposed fort exhibit would be removed and low grass/vegetation would be maintained through routine mowing. Native scrub (0.08 acres) would be reestablished after construction around exterior sections of the fort exhibit. Selective underbrush removal (1.4 acres) would occur that would include removal of larger underbrush to open up views of the St. Johns River to the north of the fort exhibit.

Tree and stump removal techniques would be used to minimize ground disturbance and protect surrounding vegetation. Alignments of pedestrian walks would be verified in the field before construction to ensure minimal removal of trees and protection of trees adjacent to new construction. Construction methods and materials for boardwalks within heavily vegetated areas would be detailed within construction drawings and specifications. Limbing-up of selected trees would occur. Additional mitigation measures can be found in chapter 2.

Permanent loss of maritime hammock vegetation would be minimal (2.3 acres) compared to the extent of maritime hammock vegetation the Preserve protects (over 3,500 acres) (O'Hare 2020). Therefore, the impacts on vegetation would be negligible within the context of the vegetation resources of the park.

CHAPTER 4: CONSULTATION AND COORDINATION

This chapter summarizes the consultation and coordination process for the proposed project to relocate the fort exhibit.

PUBLIC PARTICIPATION

Civic Engagement

The National Park Service introduced and invited the public to comment on the proposed project in July and August 2025. The National Park Service distributed an informative newsletter that was posted on July 9, 2025, on the NPS Planning, Environment, and Public Comment (PEPC) website, as well as social media. The newsletter included information on the background, the purpose of and need for action, the process for developing the project, and how to comment. The civic engagement newsletter and news release were sent by e-mail to the project stakeholders on July 9, 2025. The news release was also posted to the Preserve's website, informing the public of the project, the civic engagement meeting, and the opportunity to provide comments. The National Park Service held a meeting at the Gulliford Community Center on July 23, 2025, from 6:00 to 8:00 pm; interested parties could also attend the first part of this meeting virtually. The 30-day comment period was open from July 9 through August 8, 2025. The National Park Service received 12 individual correspondences, which were split in expressing a desire to maintain the fort exhibit in its current location and favoring the proposed project to relocate the fort exhibit.

Public Review

The environmental assessment will be on formal public and agency review for 30 days and has been distributed to a variety of interested individuals, agencies, Tribal Nations, and organizations. It also is available on the NPS's PEPC website at: <https://parkplanning.nps.gov/FortCarolineRelocation>.

AGENCY CONSULTATION

National Historic Preservation Act Section 106 Consultation

Florida Division of Historical Resources. As required by Section 106 of the NHPA, the National Park Service initiated consultation with the Florida Division of Historic Resources (FDHR) on November 7, 2024, introducing the proposed project to relocate Fort Caroline National Memorial's fort exhibit and provide a draft report of a Phase I archeological survey of the proposed relocation site. FDHR responded on December 5, 2024, requesting additional information on the current archeological survey and previous work performed within the Area of Potential Effects (APE). The National Park Service is currently finalizing a comprehensive report and will provide it to FDHR upon completion, for their review.

In addition to formal consultation, Preserve staff has presented the proposed project and consulted with Kelly Chase, Deputy State Historic Preservation Officer, at biennial meetings on June 7, 2023, and May 7, 2025. On each occasion, Kelly Chase agreed that the removal of the

existing fort exhibit would constitute an adverse effect according to 36 CFR 800.5 and discussed potential mitigations.

Advisory Council on Historic Preservation. The National Park Service will notify the Advisory Council on Historic Preservation (ACHP) of the adverse effect when FDHR completes their review and formally concurs with the findings. This correspondence will be attached to the project information and submitted to the ACHP for their review.

Tribes. The National Park Service sent a letter initiating consultation to the following five federally recognized Tribal Nations between October 17-23, 2025: Miccosukee Tribe of Indians of Florida, Muscogee (Creek) Nation, Seminole Nation of Oklahoma, Seminole Tribe of Florida, and Thlopthlocco Tribal Town. The letter introduced the proposed project to relocate the fort exhibit.

The National Park Service is currently consulting with the Miccosukee Tribe of Indians of Florida, Muscogee (Creek) Nation, Seminole Nation of Oklahoma, Seminole Tribe of Florida, Poarch Band of Creek Indians, Alabama-Quassarte Tribal Town and Thlopthlocco Tribal Town to develop a NAGPRA Plan of Action, which describes the procedures for the treatment and disposition of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony that may be discovered during the project. The Plan of Action is being developed in accordance with NAGPRA (25 USC 3001 et seq.), its implementing regulations (43 CFR 10, specifically §10.5[e]); and the Archeological Resources Protection Act (16 USC 470 et seq.), with its implementing regulations (43 CFR Part 7).

Endangered Species Act Section 7. Section 7 of the Endangered Species Act (ESA) requires federal agencies to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. On September 9, 2025, the National Park Service completed the US Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) digital tool that helps project proponents assess and avoid impacts on federally listed species (USFWS 2025a). IPaC identified listed species and critical habitat expected to be in or near the project area under the jurisdiction of the USFWS (terrestrial and freshwater species) and in accordance with the Endangered Species Act (ESA). The list included nine species, eight of which may be present at or close by to the proposed fort exhibit location. The West Indian manatee (*Trichechus manatus*) has been dismissed from further rationale as no in-water work would occur that would have potential impacts on the West Indian manatee. Through the IPaC evaluation process, the tricolored bat (*Perimyotis subflavus*) was determined to be a “may effect, not likely to adversely effect,” and the eastern black rail (*Laterallus jamaicensis ssp. jamaicensis*), red-cockaded woodpecker (*Dryobates borealis*), Rufa red knot (*Calidris canutus rufa*), whooping crane (*Grus americana*), wood stork (*Mycteria americana*), eastern indigo snake (*Drymarchon couperi*), and monarch butterfly (*Danaus plexippus*) were determined to be “no effect”. More information on each species and their determinations can be found in appendix A.

Stakeholder Outreach

The following agencies, Tribal Nations, and organizations were contacted and invited to participate in the NEPA process:

Federal Agencies

- Advisory Council on Historic Preservation
- US Fish and Wildlife Service

State Agencies

- Florida Division of Historical Resources

Local Agencies

- City of Jacksonville

Tribes

- Alabama-Quassarte Tribal Town
- Miccosukee Tribe of Indians of Florida
- Muscogee (Creek) Nation
- Seminole Nation of Oklahoma
- Seminole Tribe of Florida
- Thlopthlocco Tribal Town
- Poarch Band of Creek Indians
- Alabama-Quassarte Tribal Town

REFERENCES

Bennett, Rhianna

- 2025 “Phase I Cultural Resource Assessment Survey Fort Caroline National Memorial.” Draft report, The NDN Companies. Fort Caroline National Memorial Library, Jacksonville, Florida.

Manucy, Albert

- 1960 “How Did Fort Caroline Look: A Report on the Feasibility of Reconstructing Fort Caroline.” Typescript, National Park Service. Fort Caroline National Memorial Library, Jacksonville, Florida.

National Audubon Society

- 2025 “Black Rail, *Laterallus jamaicensis*.” Available online: <https://www.audubon.org/field-guide/bird/black-rail>. Accessed April 2025.

National Park Service (NPS)

- 2012 “Foundation Document, Timucuan Ecological and Historic Preserve, Florida.” December. [Foundation Documents/Statements \(NPS\)](#)
- 2015 “National Park Service NEPA Handbook.” September.
- 2017 “News Release: Hurricane Michael.” Available online: [Timucuan Ecological and Historic Preserve to Close as Hurricane Irma Approaches - Timucuan Ecological & Historic Preserve \(U.S. National Park Service\)](#). Accessed November 2025.
- 2018 “News Release: Timucuan Ecological and Historic Preserve to Close as Hurricane Irma Approaches.” Available online: [Hurricane Michael - Timucuan Ecological & Historic Preserve \(U.S. National Park Service\)](#). Accessed November 2025.
- 2019 “News Release: Timucuan Ecological and Historic Preserve to Close as Hurricane Dorian Approaches” Available online: [Timucuan Ecological and Historic Preserve to Close as Hurricane Dorian Approaches - Timucuan Ecological & Historic Preserve \(U.S. National Park Service\)](#). Accessed November 2025.
- 2020 “News Release: Timucuan Ecological and Historic Preserve to Close as Hurricane Isaias Approaches.” Available online: [Timucuan Ecological and Historic Preserve to Close as Hurricane Isaias Approaches - Timucuan Ecological & Historic Preserve \(U.S. National Park Service\)](#). Accessed November 2025.
- 2021 “Facility Management Environmental Hazard Assessment, Adaptation and Resilience Planning Workshop, Summary Report.” April 2021.
- 2022a “News Release: Timucuan Ecological and Historic Preserve to Close Ahead of Tropical Storm Nicole.” Available online: [Timucuan Ecological and Historic Preserve to Close Ahead of Tropical Storm Nicole - Timucuan Ecological & Historic Preserve \(U.S. National Park Service\)](#). Accessed November 2025.
- 2022b “News Release: Timucuan Preserve to Open After Hurricane Ian Clean Up.” Available online: [Timucuan Preserve to Open After Hurricane Ian Clean Up -](#)

[Timucuan Ecological & Historic Preserve \(U.S. National Park Service\)](#)). Accessed November 2025.

- 2023 “News Release: Timucuan Preserve to Close Ahead of Hurricane Idalia.” Available online: [Timucuan Preserve to Close Ahead of Hurricane Idalia - Timucuan Ecological & Historic Preserve \(U.S. National Park Service\)](#). Accessed November 2025.
- 2024a “Fort Caroline National Memorial: Cultural Landscape Report.” Prepared by Liz Sargent HLA for National Park Service, Timucuan Ecological & Historic Preserve. Pg 196. Cultural Resources, Partnerships and Science Division. Interior Region 2: South Atlantic-Gulf. Atlanta, Georgia.
- 2024b “News Release: Timucuan Preserve to Close as Potential Tropical Cyclone Four Approaches.” Available online: [Timucuan Preserve to Close as Potential Tropical Cyclone Four Approaches - Timucuan Ecological & Historic Preserve \(U.S. National Park Service\)](#). Accessed November 2025.

National Parks Traveler

- 2016 “Hurricane Matthew Bearing Down On Mainland, National Park Units Shuttering.” Available online: [National Parks](#). Accessed November 2025.
- 2024a “UPDATE | Tropical Storm Debby Has Parks Bracing For Weather.” Available online: <https://www.nationalparkstraveler.org/2024/08/update-tropical-storm-debby-has-parks-bracing-weather>. Accessed November 2025.
- 2024b “Hurricane Milton On The Path To Pound National Park Units.” Available online: [Hurricane Milton On The Path To Pound National Park Units | National Parks Traveler](#). Accessed November 2025.
- 2024c “Parks Struggling To Recover From Helene.” Available online: <https://www.nationalparkstraveler.org/2024/09/parks-struggling-recover-helene>. Accessed November 2025.

O’Hare, N. K. and others

- 2020 “Vegetation mapping at Timucuan Ecological and Historic Preserve: Photointerpretation key and vegetation map.” Natural Resource Report. NPS/SECN/NRR-2020/2075. National Park Service. Fort Collins, Colorado.

US Fish and Wildlife Service (USFWS)

- 2025a “Information for Planning and Consultation (IPaC)” Available online: <https://ipac.ecosphere.fws.gov/>. Accessed September 2025.

**APPENDIX A: ISSUES AND RESOURCES TOPICS DISMISSED FROM
DETAILED ANALYSIS**

ISSUES AND RESOURCE TOPICS DISMISSED FROM DETAILED ANALYSIS

This appendix presents the issues and resource topics that were dismissed from detailed analysis for the project to relocate the fort exhibit at Timucuan Ecological and Historic Preserve (Preserve) based on the methods presented in chapter 1 and the rationale for dismissal.

Economic Effects

The proposed action would not have impacts on the economics of the area, including effects on local employment or businesses. Therefore, the topic of economic effects was dismissed from further analysis.

Floodplains

Executive Order 11988, “Floodplain Management” directs all federal agencies to avoid, to the extent possible, both long- and short-term adverse impacts on floodplains. All federal agencies are required to avoid building permanent structures within the 1% annual chance floodplain unless no other practical alternative exists. In the absence of such alternatives, agencies must modify actions to preserve and enhance floodplain values and minimize degradation. National Park Service Director’s Order 77-2: Floodplain Management implements Executive Order 11988 and establishes NPS policy to preserve floodplain values and minimize potentially hazardous conditions associated with flooding (NPS 2002).

Flood Insurance Rate Maps are official maps of a community that show special flood hazard areas, risk zones, base flood elevations, floodways, and community information. FEMA uses two main categories for delineating coastal flood hazard zones: an inundation zone (“AE” designation) and a velocity zone (“VE” designation). Zone AE indicates areas that have at least a 1% annual chance of being flooded but where wave heights are less than three feet. Zone VE, also known as the coastal high-hazard zone, is where wave action and fast-moving water can cause extensive damage during a base flood event. Zone X is an area of minimal flood hazard with a 0.2% annual chance of flooding. The existing fort exhibit is mapped within Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map 12031C0219J, effective November 2, 2018 (FEMA 2018). The existing location is within the AE zone and the VE zone. The proposed location for the new fort exhibit is within the FEMA Rate Maps 12031C0219J and 12031C0238J, both effective November 2, 2018. The proposed relocation site for the fort exhibit is not within coastal flood hazard zones. The removal of the existing fort exhibit will have a benefit to the floodplain by reestablishing natural habitat conditions to the site, and the removal will decrease NPS assets within the floodplain that would be subject to damage. Therefore, the impact topic of floodplains was considered but dismissed from further analysis.

Land Use

Relocating the fort exhibit and removing the existing exhibit would not change the overall land use at the park. The physical location of the memorial exhibit would change, but the public use and maintenance of the new fort exhibit would not increase or decrease the kind of use managed by the park. The public would have access to a fort exhibit honoring the original French settlers of the area, trails around the site and views of the St. Johns River would be maintained, and a gathering space for large groups would continue to be available. Educational opportunities related to the history of Fort Caroline, Native Americans, and information on Timucuan

Ecological and Historic Preserve would not be impacted by the relocation of the fort exhibit. Therefore, land use was dismissed from detailed analysis.

Public Health and Safety

One of the objectives of the proposed project is to reduce the risk to public health and safety by moving the fort upland and out of the floodplain where it is safer for visitors. In addition, public health and safety is considered in the Visitor Use and Experience resource topic for analysis. Therefore, the topic of public health and safety was dismissed as a resource topic from further analysis.

Quality of Life for the American People

The proposed action would create a new fort exhibit that is out of the floodplain, making it safer for the visiting public, will include ABAAS-compliant walkways, and will continue to interpret the French settlers associated with Fort Caroline. An analysis related to these topics is covered under Visitor Use and Experience. Therefore, the topic of quality of life for the American people was dismissed as a resource topic from further analysis.

Special Status Species

On September 9, 2025, the National Park Service completed the US Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) digital tool that helps project proponents assess and avoid impacts on federally listed species (USFWS 2025a). IPaC identified listed species and critical habitat expected to be in or near the project area under the jurisdiction of the USFWS (terrestrial and freshwater species) and in accordance with the Endangered Species Act (ESA). The list included nine species, eight of which may be present at or close by to the proposed fort exhibit location. The West Indian manatee (*Trichechus manatus*) has been dismissed from further rationale as no in-water work would occur that would have potential impacts on the West Indian manatee. The following paragraphs provide information on the tricolored bat (*Perimyotis subflavus*), eastern black rail (*Laterallus jamaicensis ssp. jamaicensis*), red-cockaded woodpecker (*Dryobates borealis*), Rufa red knot (*Calidris canutus rufa*), whooping crane (*Grus americana*), wood stork (*Mycteria americana*), eastern indigo snake (*Drymarchon couperi*) and monarch butterfly (*Danaus plexippus*) and provide the rationale for dismissing these nine species from detailed analysis.

Tri-Colored Bat (*Perimyotis subflavus*). The tricolored bat is one of the smallest bats in North America, weighing between 4.6 to 7.9 grams (0.16 to 0.28 ounces). Its fur is characterized by three distinct color bands: dark at the base, lighter in the middle, and dark at the tips, giving it a unique appearance. Tricolored bats may roost in large oak trees, like those at the proposed new fort exhibit location. Time of year restrictions in the summer months will avoid impacts on potential pupping colonies. Having only daytime construction activities will also avoid impacts on bats at night from construction noise. If underbrush is to be removed and then the larger trees felled, that would allow the bats to relocate to another roosting location, if they are in the large oaks that are proposed for removal (15 individual trees). Pursuant to Section 7 of the ESA under the jurisdiction of the USFWS, the finding for tricolored bat under all alternatives is may affect-not likely to adversely affect with the implementation of conservation measures (USFWS 2024).

Eastern Black Rail (*Laterallus jamaicensis*). The black rail is a small, secretive bird that lives in salt and freshwater marshes in portions of the United States, Central America, and South America (USFWS 2025d). Black rails are rarely seen in flight, generally walking or running through their marsh habitat. The black rail feeds on insects, small crustaceans, and seeds, and nests in vegetation, often in areas slightly higher than the surrounding marsh (National Audubon Society 2025). Partially migratory, the eastern black rail breeds in the United States and winters farther south (USFWS 2025d). Eastern black rails inhabit a range of wetland habitats, including salt and freshwater marshes (USFWS 2025d). The eastern black rail is federally threatened, and the major threats to this species include habitat loss and destruction, sea level rise, tidal flooding, increasing storm intensity and frequency, and incompatible land management (USFWS 2025d). Although the eastern black rail may exist within the boundaries of the Preserve with its extensive salt marshes, including salt marsh habitat adjacent to the existing fort exhibit, the habitat at the exhibit itself and the proposed new location do not contain the habitat type the eastern black rail would use. The habitat around the existing fort exhibit is maintained lawn and the proposed new fort location is upland woods. Therefore, eastern black rail was not carried forward for detailed analysis.

Pursuant to Section 7 of the ESA under the jurisdiction of the USFWS, the finding for eastern black rail under all alternatives is “no effect.”

Red-Cockaded Woodpecker (*Dryobates borealis*). Red-cockaded woodpeckers make their homes in mature pine forests. While other woodpeckers bore out cavities in dead trees where the wood is rotten and soft, the red-cockaded woodpecker is the only species that excavates cavities that are exclusively in living pine trees. Longleaf pines (*Pinus palustris*) are most commonly preferred, but other species of southern pine are also acceptable. Cavities are excavated in mature pines, generally more than 80 years old (USFWS 2025c).

The project site at the current fort exhibit, and the proposed location for the new fort exhibit do not consist of old growth pine forests and therefore do not include suitable habitat for the red-cockaded woodpecker. Pursuant to Section 7 of the ESA under the jurisdiction of the USFWS, the finding for red-cockaded woodpecker under all alternatives is “no effect.”

Rufa Red Knot (*Calidris canutus rufa*). The rufa red knot is a stocky, medium-sized shorebird with relatively short bill and legs. Individuals measure about 9 to 11 inches (in) (23 to 28 centimeters (cm)) in length, with a wingspan up to 20 inches (50.8 cm). Coastal habitats used by rufa red knots in migration and wintering areas are similar in character: generally coastal marine and estuarine habitats with large areas of exposed intertidal sediments. Migration and wintering habitats include both high-energy ocean- or bay-front areas, as well as tidal flats in more sheltered bays and lagoons. Preferred wintering and migration habitats are muddy or sandy coastal areas, specifically, bays and estuaries, tidal flats, and unimproved tidal inlets. Along the US Atlantic coast, dynamic and ephemeral features are important rufa red knot habitats, including sand spits, islets, shoals, and sandbars, features often associated with inlets. In many wintering and stopover areas, quality high-tide roosting habitat (i.e., close to feeding areas, protected from predators, with sufficient space during the highest tides, free from excessive human disturbance) is limited. In nonbreeding habitats, rufa red knots require sparse vegetation and open landscapes to avoid predation (USFWS 2025f).

The project site at the current fort exhibit and the proposed location for the new fort exhibit do not consist of coastal habitats as described above and therefore the project site does not include

suitable habitat for the rufa red knot. Pursuant to Section 7 of the ESA under the jurisdiction of the USFWS, the finding for rufa red knot under all alternatives is “no effect.”

Whooping Crane (*Grus americana*). The whooping crane (*Grus americana*) occurs only in North America, specifically within Canada and the United States, and is North America’s tallest bird. The whooping crane breeds, migrates, winters and forages in a variety of habitats, including coastal marshes and estuaries, inland marshes, lakes, open ponds, shallow bays, salt marsh and sand or tidal flats, upland swales, wet meadows and rivers, pastures and agricultural fields (USFWS 2025e).

Although the whooping crane may exist within the boundaries of the park with its extensive salt marshes, including salt marsh habitat adjacent to the existing fort exhibit, the habitat at the fort exhibit itself and the proposed new location do not contain the habitat type the whooping crane is expected to use. The habitat around the existing fort exhibit is maintained lawn and the proposed new fort location is upland woods.

The project site at the current fort exhibit, and the proposed location for the new fort exhibit do not consist of the habitats utilized by whooping cranes as described above and, therefore, the project site does not include suitable habitat for the whooping crane. Pursuant to Section 7 of the ESA under the jurisdiction of the USFWS, the finding for whooping crane under all alternatives is “no effect.”

Wood Stork (*Mycteria americana*). Wood storks are large, long-legged wading birds, about 50 inches tall, with a wingspan of 60 to 65 inches. Wood storks are dependent upon wetland habitats. The southeast distinct population segment of wood stork has been proposed for removal from the Federal list of Endangered and Threatened Wildlife due to recovery in 2023 (USFWS 2025h).

Although the wood stork may exist within the boundaries of the park with its extensive salt marshes, including salt marsh habitat adjacent to the existing fort exhibit, the habitat at the fort exhibit itself and the proposed new location do not contain the habitat type the wood stork is expected to use. The habitat around the existing fort exhibit is maintained lawn and the proposed new fort location is upland woods.

The project site at the current fort exhibit, and the proposed location for the new fort exhibit do not consist of wetlands that would be utilized by wood storks. Therefore, the project site does not include suitable habitat for the wood stork. Pursuant to Section 7 of the ESA under the jurisdiction of the USFWS, the finding for wood stork under all alternatives is “no effect.”

Eastern Indigo Snake (*Drymarchon couperi*). Eastern indigo snakes historically ranged across Florida and the coastal plain of Georgia, Alabama, and Mississippi. Currently, this species is found in parts of Florida and southern areas of Georgia and Alabama (USFWS 2025b). The eastern indigo snake uses a variety of habitats, including pine sandhills, scrub, pine flatwoods, tropical hardwood hammocks, coastal dunes, and areas that surround cypress swamps. Eastern indigo snakes also use gopher tortoise burrows for shelter, especially in colder months (USFWS 2025b). The eastern indigo snake is federally threatened due to habitat destruction, fragmentation, and degradation. Subject matter experts at the Preserve believe the eastern indigo snake is extirpated from the local area around Fort Caroline National Memorial and there has not been a sighting of the eastern indigo snake in decades. Even though the species is not likely to

occur in the project area, the National Park Service will implement the USFWS Standard Protection Measures for the Eastern Indigo Snake (May 2024) to avoid impacts on the species.

Pursuant to Section 7 of the ESA under the jurisdiction of the USFWS, the finding for eastern indigo snake under all alternatives is *no effect*.

Monarch butterfly (*Danaus plexippus*). The monarch butterfly is a butterfly with iconic orange and black markings that occupies a wide variety of habitats including urban, grassland, and wet habitats, provided that milkweed (*Asclepias spp.*) and flowering plants are present. Milkweed is essential to monarch butterfly survival because they obligately use milkweed plants as an egg-laying substrate and subsequent larval food source (USFWS 2025g). The monarch butterfly is most notably known for its annual mass migration from its northern habitat to the south for winter, where they roost in trees that protect them from the elements. However, some non-migratory monarchs remain year-round at the southern end of their breeding range in North America, including in parts of Florida, the Gulf Coast, and California (USFWS 2025g). Since the majority of the vegetation is landscaped to retain the historic setting of the fort, there will be no disturbance to potential monarch habitat at the existing fort exhibit, and the proposed new fort exhibit does not have milkweed in the understory. For these reasons, monarch butterfly was not carried forward for detailed analysis.

Pursuant to Section 7 of the ESA under the jurisdiction of the USFWS, the finding for monarch butterfly under all alternatives is “no effect.”

Wetlands

The NPS defines a wetland as an area that (Cowardin et al. 1979):

1. At least periodically, the land supports predominantly hydrophytes (wetland vegetation).
2. The substrate is predominantly undrained hydric soil.
3. The substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year.

Approximately 75 percent, or 35,000 acres, of the land within the boundaries of the Preserve are wetlands and open water (O’Hare 2020). Water resources include numerous tidal creeks, portions of the Nassau and St. Johns Rivers, Sisters Creek/Intracoastal Waterway, Fort George River, and freshwater resources like Spanish Pond. The marsh west of the current exhibit site and the moat (less than 0.1 acre) at the fort exhibit are wetlands. The proposed fort location does not contain designated wetlands.

The moat is less than 0.1 acres of tidally influenced wetlands via check valve connected to the St. Johns River.

The proposed relocation site does not include wetlands and will not have impacts on wetland resources. Removal of the berms and filling of the artificial moat could allow natural processes to potentially convert the site to more wetlands, specifically, upland marsh habitat that is located to the west.

Wetlands and estuarine resources could be affected during construction activities, though mitigations and best management practices, like silt fencing and erosion control measures, would eliminate impacts on wetlands during construction (chapter 2).

With the consideration of the proposed project's scope and scale related to wetlands, this topic was dismissed from further analysis.

Wildlife and Wildlife Habitat

The park supports a variety of wildlife species including mammal, bird, amphibian, reptile, and invertebrate species. The project area is a national park unit with daily use by visitors and habitats of maintained upland trails and coastal environs. Permanent loss of maritime hammock habitat would be minimal (2.3 acres) compared to the extent of maritime hammock habitat the Park protects (over 3,500 acres) (O'Hare 2020). Project activities would result in temporary disturbances to wildlife due to human presence and noise generation from equipment that may displace some wildlife during the construction activities. Potential impacts on birds, reptiles and mammals would result primarily from construction noise, which can increase physiological stress, change behavior, such as less time foraging and more time watching the surroundings, and alter movement patterns (displacement to nearby habitat). The short-term impacts from the action alternatives would be similar to current conditions due to preexisting human presence and regularity of scheduled operations maintenance. Permanent loss of habitat (2.3 acres) would occur from construction from the removal of underbrush for the new memorial.

As part of the proposed action, the existing fort exhibit would be removed from the landscape and natural revegetation of the site would be encouraged. This would provide an increase in the coastal habitat available to wildlife of approximately one acre, including potential natural salt marsh restoration.

Mitigations and BMPs identified in chapter 2 would be employed to reduce impacts on wildlife, such as limiting construction activities to certain times of year and daylight hours and using properly maintained equipment to minimize noise impacts. Because impacts on wildlife and wildlife habitat would be minimal and only limited to the construction period, this topic was dismissed from additional analysis.

REFERENCES

Federal Emergency Management Agency (FEMA)

2018 “Flood Insurance Rate Map 12031C0219J and 12031C0238J”. Available online: [FEMA's National Flood Hazard Layer \(NFHL\) Viewer](#). Accessed October 2025.

National Park Service (NPS)

2002 *Procedural Manual #77-2, National Park Service Floodplain Management*. U.S Department of the Interior, NPS, Washington, D.C. Available online. https://www.nps.gov/subjects/policy/upload/PM-77-2_10-2002_508.pdf.

O’Hare, N. K. and others

2020 *Vegetation mapping at Timucuan Ecological and Historic Preserve: Photointerpretation key and vegetation map*. Natural Resource Report. NPS/SECN/NRR-2020/2075. National Park Service. Fort Collins, Colorado.

US Fish and Wildlife Service (USFWS)

2024 *Standing Analysis and Implementation Plan – Northern Long-Eared Bat and Tricolored Bat Assisted Determination Key*. Midwest and Northeast Region, USFWS. August.

2025a “Information for Planning and Consultation (IPaC)” Available online: <https://ipac.ecosphere.fws.gov/>. Accessed September 2025.

2025b “Eastern Indigo Snake.” Available online: <https://www.fws.gov/species/eastern-indigo-snake-drymarchon-couperi>. Accessed September 2025.

2025c “Red-cockaded Woodpecker (*Picoides borealis*).” Available online: <https://www.fws.gov/species/red-cockaded-woodpecker-dryobates-borealis>. Accessed September 2025.

2025d “Eastern black rail, *Laterallus jamaicensis*.” Available online: <https://www.fws.gov/species/eastern-black-rail-laterallus-jamaicensis-jamaicensis>. Accessed September 2025.

2025e “Whooping Crane.” Available online: <https://www.fws.gov/species/whooping-crane-grus-americana>. Accessed September 2025.

2025f “Rufa Red Knot.” Available online: <https://www.fws.gov/species/rufa-red-knot-calidris-canutus-rufa>. Accessed September 2025.

2025g “Monarch.” Available online: <https://www.fws.gov/species/monarch-danaus-plexippus>. Accessed September 2025.

2025h “Wood Stork.” Available online: <https://www.fws.gov/species/wood-stork-mycteria-americana>. Accessed September 2025.

**APPENDIX B: ALTERNATIVES CONSIDERED BUT DISMISSED FROM
DETAILED ANALYSIS**

This appendix summarizes the alternatives that were developed during the early planning process and were not carried forward for detailed review as they did not sufficiently address key project objectives, or they demonstrated limitations in meeting the project's purpose and need. The National Park Service conducted a Facility Management Hazard Resiliency Workshop in 2021 to understand the environmental hazards to the fort exhibit and analyzed alternative elements that were considered as potential solutions to mitigate flooding and storm damage to the fort exhibit. The alternative elements below were ultimately dismissed as they did not address the purpose and need for the project as flooding and damage would continue to occur at the current fort exhibit location in the future even with these proposed protection measures.

PROTECTION – OFFSHORE BREAKWATERS AND BERMS

An alternative that was considered was adding additional protections to the site around the fort exhibit to mitigate vulnerabilities. The protections included offshore breakwaters, regrading of the area to lift the fort exhibit out of the floodplain, and creation of earthen berms around the entirety of the exhibit. This alternative would allow the fort exhibit to stay in its current location.

An offshore breakwater is a coastal structure built in the water, parallel to the shoreline, designed to reduce the impact of waves and currents, protecting coastal areas from erosion and storm surges. It dissipates wave energy, helping to stabilize the coastline and promote sediment accumulation. Although offshore breakwaters provide coastal protection, they can alter natural sediment transport, affecting local ecosystems and water circulation, which may influence marine habitats such as coral reefs or seagrass beds. In addition, breakwaters would have to be designed to be effective against future anticipated rise in water levels and would be a considerable addition to the landscape and potential hazard in the water for boat traffic.

Regrading of the site and creation of an earthen berm around the fort exhibit would require changes to water access from the current condition, alter the landscape and access to the exhibit and change how the public interacts with the site. Connecting the berm back to land at higher elevation in order to achieve the added protection to the site would be challenging, resulting in a large footprint of disturbance and trees to be removed. In addition, the berm would necessitate a closed drainage system design and installation, which could have significant impacts and disturbance to the entire site. The addition of an earthen berm would lead to an alteration of the landscape and would no longer look like the intended scaled fort reconstruction, potentially confusing visitors that the berm is part of the fort exhibit's design.

Adding protective features to the landscape was determined to not be an effective solution because these would not reduce the exposure of the site to environmental risks like storms and flooding impacts. New waterfront structures, like breakwaters and berms, could impact visitor experience. This alternative does not meet the purpose and need of the project to protect the park's natural and cultural resources and improve flood protection and could create new impacts on aquatic and upland resources. For these reasons, this alternative was eliminated from consideration.

REDESIGN

Redesigning the fort exhibit in place was considered as an option that would allow for it to remain in its current location with new design elements to mitigate vulnerabilities, similar to the

protection option. In place redesign would still result in the alteration of Mission 66 design intent and have adverse effects to the Mission 66 historic district.

The proposed redesign would regrade the fort exhibit's site to an elevation above the floodplain, raising the entire site elevation by two feet. A concrete wall would be built on the existing earthen berm to provide flood protection by acting as a barrier to floodwaters. The moat around the fort would also be filled to remove the proximity of water. Although this alternative would provide some protection by lifting the fort exhibit above the floodplain and adding sections impervious to water, such as stamped concrete walkways, it would not eliminate all flooding risk. In addition, incorporating future sea level rise considerations into the design would result in a much higher elevation of the site while still not providing complete protection. This option would also result in a large footprint of new disturbance, require vegetation to be cleared, the moat to be filled, and would impact the view-scape of the St. Johns River. In addition, the site elevation and cement wall would necessitate a closed drainage system design and installation, which could have significant impacts and disturbance to the entire site.

Redesigning the fort exhibit at its existing location was determined to not be an effective solution because it would not reduce the exposure of the site to environmental risks such as storms and flooding impacts and future rise in water levels. Elevated berms and cement walls could impact visitor experience by changing the original design of the fort exhibit and confusing the original replica elements of the fort. This alternative does not meet the purpose and need of the project to protect the park's natural and cultural resources and improve flood protection and could create new impacts on aquatic and upland resources. For these reasons this alternative was eliminated from consideration.