National Park Service
U.S. Department of the Interior

Fort Sumter National Monument
Charleston County, South Carolina

Draft
General Management Plan Amendment/ Environmental Assessment
Secondary Ferry Departure Point

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Environmental Assessment

Secondary Ferry Departure Point
Fort Sumter National Monument

Charleston County, South Carolina

United States Department of the Interior
National Park Service

October 2003

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On the Cover: National Park Service Photo. View from Fort Sumter National Monument overlooking Charleston Harbor.

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Secondary Ferry Departure Point

FORT SUMTER NATIONAL MONUMENT
CHARLESTON COUNTY, SOUTH CAROLINA

Summary

Fort Sumter is located on a man- made island of 2.5 acres at the northeastern terminus of a marshy shoal that extends east from James Island to the inlet of Charleston Harbor, South Carolina. Today the boundary of Fort Sumter National Monument including Fort Moultrie (fee and easement) encompasses slightly more than 200 acres. Park boundaries include 122.5 acres of submerged land surrounding the island. The current ferry boat facility, Liberty Square, is located on an 8.88 - acre site along the west bank of the Cooper River at the foot of Calhoun Street in Charleston. Fort Moultrie, located on Sullivan's Island, comprises 60 acres.

This General Management Plan Amendment and Environmental Assessment examines alternative actions intended to improve ferry service to Fort Sumter by providing two ferry departure points, thereby providing visitors the choice in where they depart for Fort Sumter. The purpose of the amendment is to select and recommend implementation of a preferred alternative action that best improves ferry services for visitors while continuing to preserve and protect the park's natural and cultural resources for the enjoyment of future generations. The general management plan amendment addresses potential facilities serving Fort Sumter from a primary departure point at Liberty Square and a secondary ferry departure site to be located in the Mount Pleasant/East Cooper River area.

A general management plan was published in 1998 to establish and guide the overall management, development and use of Fort Sumter National Monument in ways that best suit visitors while preserving the park's cultural and natural resources. Although much of the 1998 plan remains valid, there are new perspectives on ferry services to Fort Sumter, and an amendment is needed. Although two departure points have been used since 1986, the 1998 general management plan recommended that water based visitor transportation to Fort Sumter leave from one primary departure point at the Fort Sumter visitor education center/dock on the west bank of the Cooper River, now called Liberty Square. Since then, the Charleston area has undergone many changes, including rapid growth and increased visitation to the park and other surrounding attractions. After a recent review of governmental stakeholder perspectives, the National Park Service recognized the need to re- open the public discussion regarding the number and location of departure points. Therefore, a general management plan amendment and environmental assessment is needed to present and analyze alternatives. The environmental assessment is intended to analyze the general location of a secondary departure point from the Mount Pleasant/East Cooper River area. Future site- specific environmental assessments will be tiered to this general management plan amendment and environmental assessment when a specific location for a secondary ferry departure point is identified.

Following a series of meetings with Fort Sumter National Monument staff, concessionaires, local officials, various interest groups, and the general public, the National Park Service

identified the following specific issues to be addressed in the general management plan amendment and environmental assessment:

Hydrology and Water Quality

Floodplains and wetlands

Soils

Vegetation, Wildlife and Aquatic Resources

Endangered, Threatened, or Protected Species and Critical Habitats

Cultural Resources

Section 106 Summary

Visitor use and Experience

Social and Economic Considerations

Park Operations

Transportation

The National Park Service considered and rejected several alternatives prior to selecting the preferred alternative and the no action alternative for further consideration.

Alternative A, the no action alternative, describes the action of continuing the present management operation and condition. Continue current management/no action is the baseline condition against which proposed activities are compared. It is defined as taking no action to change or alter current management. This alternative would be to implement the 1998 General Management Plan as written and approved. The park's 1998 General Management Plan directed that visitors board the Fort Sumter ferry at one location, Liberty Square. Ferry boats would no longer depart for Fort Sumter from Patriots Point.

Alternative B, the preferred alternative, meets the objectives associated with the purpose and need for the proposed action and attains the widest range of beneficial uses of the environment, resource protection, visitor safety and enjoyment, and cultural resource protection, without degradation of resources. Two ferry departure points are proposed, one at Liberty Square and a secondary departure point located in the Mount Pleasant/East Cooper River area. The majority of the environmental impacts of constructing and operating a secondary departure point in the Mount Pleasant/East Cooper River area would be negligible to minor, long- term, adverse effects; however, these can all be avoided or minimized through careful site selection, on- site design and implementation of mitigation measures. The following is a summary of the main features of the preferred alternative.

Facilities Description: The existing National Park Service Liberty Square facility, including the museum, square, 300- person ferry service and dock facility, would be operated as the primary departure point for Fort Sumter. A secondary departure point would be maintained in the Mount Pleasant/East Cooper River area.

Visitor Services Provided: The existing interpretation facility at Liberty Square would continue to provide visitor services. A second and smaller facility would be constructed and operated in the Mount Pleasant/East Cooper River area. This facility would include a dock,

ticket sales area, restrooms, exhibits, parking area, and connecting access roads with appropriate directional signs.

Facilities Requirements: No additional facilities would be required at Liberty Square. Similar facilities would be required at the secondary departure point to support visitor needs described above. Additionally, periodic maintenance dredging will not be required at Liberty Square for the ferry, however, periodic dredging would continue to occur in the Charleston Harbor. Maintenance dredging may be required at a secondary location to a depth of up to 15 feet mean low water (depending on the configuration of the ferry) to provide an adequate water depth to safely operate a 300- passenger ferry.

The no action alternative, while meeting the short- term needs of the public, does not meet the increased demand for alternative means of water transport to Fort Sumter. Therefore, the no action alternative would not meet the goals as well as the preferred alternative.

Public Comment

If you wish to comment on the environmental assessment, you may mail comments to the name and address below. This environmental assessment will be on public review for 30 days. Comments may also be submitted by e- mail to kathy_pearcy@nps.gov. Please note that names and addresses of people who comment become part of the public record. We will make all submissions from organizations, from businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses or representing themselves, available for public inspection in their entirety. Any anonymous comments will not be considered.

COMMENTS MUST BE RECEIVED BY November 17, 2003. Please address written comments to:

Superintendent
National Park Service
Fort Sumter National Monument
1214 Middle Street
Sullivan's Island, SC 29482
ATTN: John Tucker

Comments postmarked (mail) or dated (email) after November 17, 2003 will not receive consideration.

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PURPOSE OF AND NEED FOR ACTION

PURPOSE OF THE GENERAL MANAGEMENT PLAN AMENDMENT

This general management plan amendment and environmental assessment examines alternative actions intended to improve ferry service to Fort Sumter. The purpose of the amendment is to select and recommend implementation of a preferred alternative action that best improves ferry services for visitors while continuing to preserve and protect the park's natural and cultural resources for the enjoyment of future generations.

General management plans represent the broadest level of planning conducted by the National Park Service, and are intended to provide overall guidance for making informed decisions about future conditions in national parks. The focus of this amendment is to address potential changes to the current general management plan (NPS 1998) relative to the provision of ferry service to Fort Sumter. The objective of the general management plan currently in effect for Fort Sumter is to support the purpose for which the park was established and to formalize the park's future direction. The plan is the basic tool for managing the park for the next 10 years. The specific purposes of the general management plan are to:

Specify resource conditions and visitor experiences to be achieved in the park

Provide the basic foundation for decision- making regarding the management of the park

General management plans are required to be in compliance with the National Environmental Policy Act of 1969, as amended (Pub. L. 91- 190, 42 U.S.C. 4321- 4347, January 1, 1970, as amended by Pub. L. 94- 52, July 3, 1975, Pub. L. 94- 83, August 9, 1975, and Pub. L. 97- 258, § 4(b), Sept. 13, 1982) (NEPA). According to policy, the NEPA environmental assessment is prepared simultaneously with the general management plan under the guidelines established in *Director's Order 2 – Park Planning* (NPS 1999) and *Director's Order 12 - Conservation Planning, Environmental Impact Analysis, and Decision- making* (NPS 2001a). The environmental assessment for this amendment analyzes the effects of the preferred and other alternatives.

NEED FOR A GENERAL MANAGEMENT PLAN AMENDMENT

Fort Sumter National Monument was established in 1948 to commemorate the historical events at and surrounding Fort Sumter. A general management plan was published in 1998 to establish and guide the overall management, development and use of Fort Sumter National Monument in ways that best suit visitors while preserving the park's cultural and natural resources. Although much of the 1998 plan remains valid, there are new perspectives on ferry services to Fort Sumter, and an amendment is needed.

Although two departure points have been used since 1986, the 1998 general management plan recommended that water based visitor transportation to Fort Sumter leave from one primary departure point at the Fort Sumter visitor education center/dock on the west bank of the Cooper River, now called Liberty Square. Since then, the Charleston area has undergone many changes including rapid growth and increased visitation to the park and other surrounding

attractions. Mount Pleasant's population is among the fastest growing in the State of South Carolina with over 58% growth over the last decade. The three largest cities in the Charleston region with growing tourism activity include Charleston, North Charleston and Mount Pleasant. After a recent review of governmental stakeholder perspectives, a National Park Service working group recognized the need to re- open the public discussion regarding the number and location of departure points. Therefore, a general management plan amendment and environmental assessment is needed to present and analyze alternatives. The environmental assessment is intended to analyze generic secondary departure points. Future site- specific environmental assessments will be tiered to this general management plan and environmental assessment.

This general management plan amendment re- examines the planning decision concerning ferry service to Fort Sumter. It is needed to assist park managers in making purposeful decisions based on a deliberate vision of the park. In view of the rapidly growing greater Charleston area and the projected intense use of the park, the general management plan amendment is a critical element in protecting the park's resources while at the same time providing for quality visitor experiences. This amendment applies to this one item of the current general management plan, and will become a supplement to that document. It does not replace the general management plan in its entirety.

PARK HISTORY AND USE RELATIVE TO MANAGEMENT PLANNING

In 1916, Congress passed the Organic Act, which created the National Park Service. Through this act, Congress established the National Park Service's mission to "preserve unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations." Thus, any management actions in the park must recognize that preserving the natural and cultural resources and values of the park is paramount, and that any visitor activities associated with "enjoyment, education, and inspiration" can occur only to the extent that they do not impair the natural and cultural resources and values for future generations.

Three separate congressional acts contributed to Fort Sumter National Monument as it is known today. Fort Sumter was transferred from the War Department to the National Park Service by joint resolution on April 28, 1948. In this legislation (Public Law 80- 504), Congress established Fort Sumter National Monument providing that it shall be "a public National Memorial commemorating historical events at or near Fort Sumter." The National Park Service accepted jurisdiction of Fort Moultrie in 1960 under authority of the Historic Sites Act of 1935 (Public Law 74- 292). Additionally, the ferry boat facility was acquired on November 7, 1986, (Public Law 99- 637) in order to "provide for needed facilities for visitors to Fort Sumter National Monument, including a ferry boat dock and associated facilities, and an interpretive and museum facility [South Carolina Aquarium] in cooperation with the State of South Carolina and the city of Charleston . . ." Today the boundary of the park encompasses just over 200 acres. The United States owns 164.60 acres in fee simple, and holds the remainder in utility and scenic easements.

Fort Sumter National Monument is located in Charleston County, in Charleston Harbor, South Carolina (see Figures 1 and 2). It consists of four geographically separate areas:

Fort Sumter, an island fort situated at the entrance of Charleston Harbor

Fort Moultrie, located one mile northeast of Fort Sumter on the western third of Sullivan's Island, a barrier island immediately northeast of the entrance to the harbor

The Historic Coast Guard Station, the park's maintenance and quarters facility located 0.8 mile east of Fort Moultrie

Liberty Square, the ferry boat facility site located along the Cooper River at the foot of Calhoun Street, Charleston.

GEOGRAPHIC AREA COVERED BY THE GENERAL MANAGEMENT PLAN AMENDMENT

The focus of this amendment will only address potential changes to the current general management plan relative to ferry service to Fort Sumter. This amendment does not include a discussion of Fort Moultrie or other park units.

Fort Sumter sits on a man- made island of 2.5 acres at the northeastern terminus of a marshy shoal. The shoal extends east from James Island to the inlet of Charleston Harbor. Located along this shoal is the Fort Sumter utility corridor containing 6.25 acres under easement. Park boundaries include 122.5 acres of submerged land surrounding the island. The entrance channel of Charleston Harbor lies 1200 yards to the northeast. The current primary ferry departure point, Liberty Square, is located on an 8.88 - acre site along the west bank of the Cooper River at the foot of Calhoun Street in Charleston. The general management plan amendment will also address potential facilities serving Fort Sumter from a secondary ferry departure site to be located in the Mount Pleasant/East Cooper River area (see Figure 2).

PLANNING DIRECTION OR GUIDANCE

Park Mission[1]

The primary purpose of Fort Sumter National Monument is to commemorate defining moments in American history within a military continuum spanning more than a century and a half. Two seacoast fortifications preserve and interpret these stories. At Fort Moultrie, the first American naval victory over the British in 1776 galvanized the patriots' cause for independence. Less than a century later, America's most tragic conflict ignited with the first shots of the Civil War at Fort Sumter.

[1] Fort Moultrie's purpose statements are not included in this amendment.

Fort Sumter National Monument
General Management Plan
Amendment and Environmental Assessment

Figure 1. Vicinity Map

File: J:/GIS/Charleston_afb/av_project/sumter.apr

Fort Sumter National Monument
General Management Plan
Amendment and Environmental Assessment

Figure 2. Location Map

2000 0 2000 4000 Feet
0.5 0 0.5 1 Miles
N

The purposes of the Fort Sumter National Monument as defined by the most recent legislation are as follows:

> To preserve the Civil War remnants of Fort Sumter
>
> To commemorate and interpret the opening battle of the Civil War and Fort Sumter's role during the Civil War

Park Significance[1]

The significance of the natural and cultural resources in Fort Sumter National Monument is summarized in the statements that follow. This information was used in the planning process to ensure that the park's natural and cultural resources are protected in accordance with the governing laws, regulations, policies and mandates.

> Fort Sumter is where one of our Nation's most critical defining moments, the American Civil War, began
>
> Fort Sumter is the most heavily bombarded site in the western hemisphere as a result of the Union forces' attempt to gain control of Charleston Harbor
>
> Fort Sumter was and is a powerful symbol both to the North and the South, and it remains a memorial to all who fought to hold it

Mission Goals

Each unit of the National Park System develops mission goals based on those of the National Park Service. The mission goals of Fort Sumter National Monument are summarized in the statements that follow.

> Masonry structures and associated values and artifacts relative to the park's stated purpose are preserved and managed within the Charleston Harbor and military history context.
>
> Fort Sumter National Monument contributes to the knowledge of cultural resources and associated values, and bases management decisions on scholarly and scientific information.
>
> At Fort Sumter, Fort Moultrie, and the ferry boat facility, visitors safely enjoy and are satisfied with the availability, accessibility, diversity, and quality of facilities, services and appropriate recreational opportunities.
>
> Park visitors and the general public understand and appreciate the purpose and significance of Fort Sumter and Fort Moultrie.
>
> Fort Sumter National Monument uses best management practices, systems, and technologies to accomplish its mission.
>
> Fort Sumter National Monument increases its managerial capabilities through initiatives and support from other agencies, organizations, and individuals.

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[1] Fort Moultrie's significance statements are not included in this amendment.

PLANNING OPPORTUNITIES AND ISSUES

The 1998 general management plan recommended that water based visitor transportation to Fort Sumter leave from one primary departure point at the Fort Sumter visitor education center/dock on the west bank of the Cooper River now called Liberty Square. Currently, ferry service from both Liberty Square (Figure 3) and Patriots Point (Figure 4) to Fort Sumter is contracted through December 2003. The Secretary of the Interior, acting through the National Park Service, will take steps to ensure that operations from the current departure points are unaffected. Upon completion of this general management plan amendment and environmental assessment, the National Park Service will address future ferry concession contract(s).

Following a series of meetings with Fort Sumter National Monument staff, concessionaires, local officials, various interest groups, and the general public, the National Park Service identified the following specific issues to be addressed by the general management plan amendment and environmental assessment.

Issue 1. Number of ferry concession departure points

> Are park visitors best served from present locations?
>
> Are there alternative places to serve as embarkation points?
>
> Do the present disembarkation points adequately serve the park visitor?

Issue 2. Visitor experience and needs at each departure location

> Do the present disembarkation points adequately serve the park visitor?
>
> How would a new location affect visitor experience, with respect to choices, park ranger presence, timing, and information availability?
>
> What effect would any proposed change in visitor services have on park resources and staff?

Issue 3. Environmental impacts

> What transportation, noise, air or other environmental impacts would be associated with multiple departure points?

Issue 4. Funding of a secondary departure point

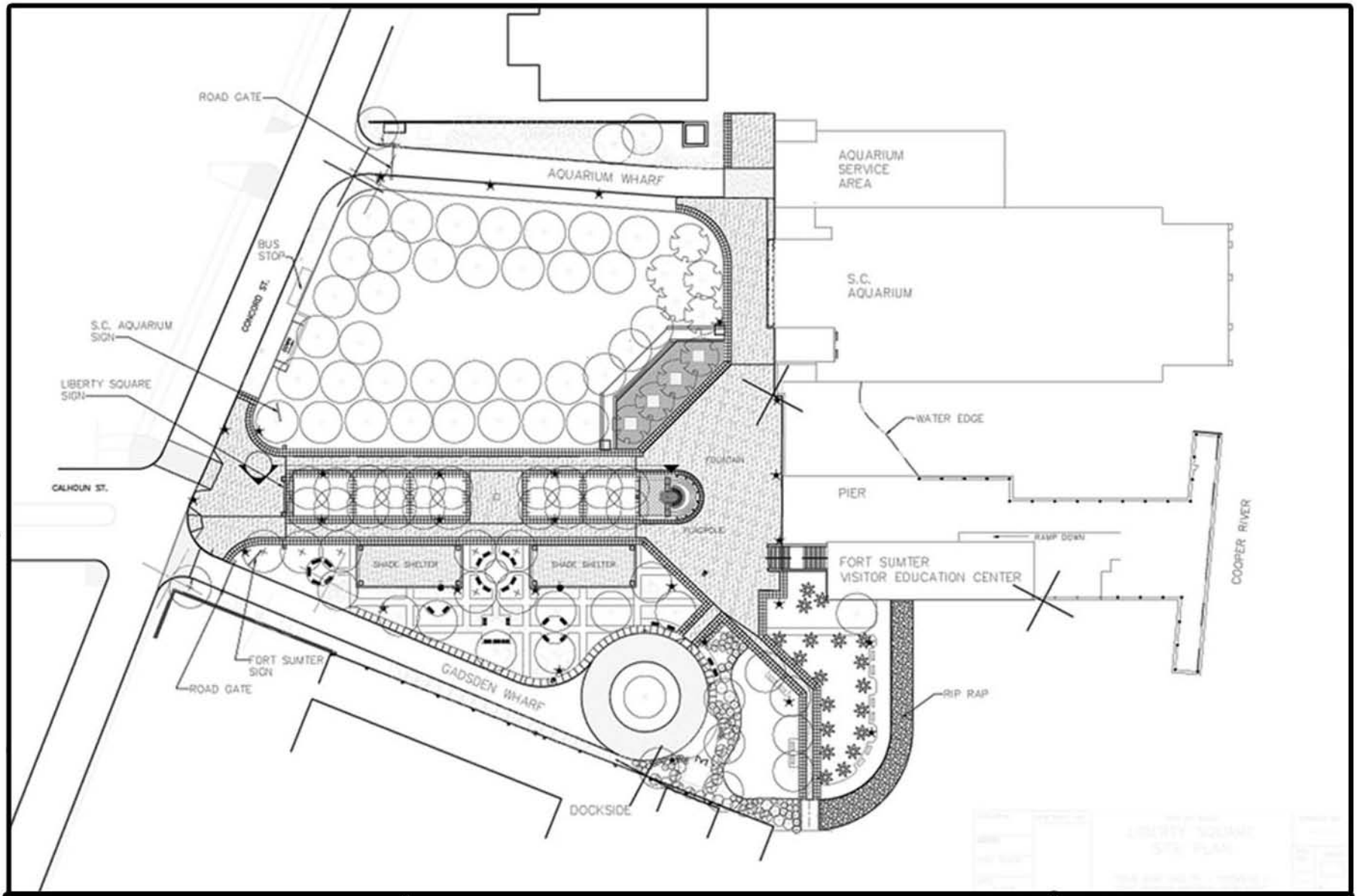
> Would the funding for a new dock at a secondary departure point be provided by private or government sources?

Issue 5. Schedule

> How would a secondary departure point affect the ferry service schedule?

Issue 6. Visitation

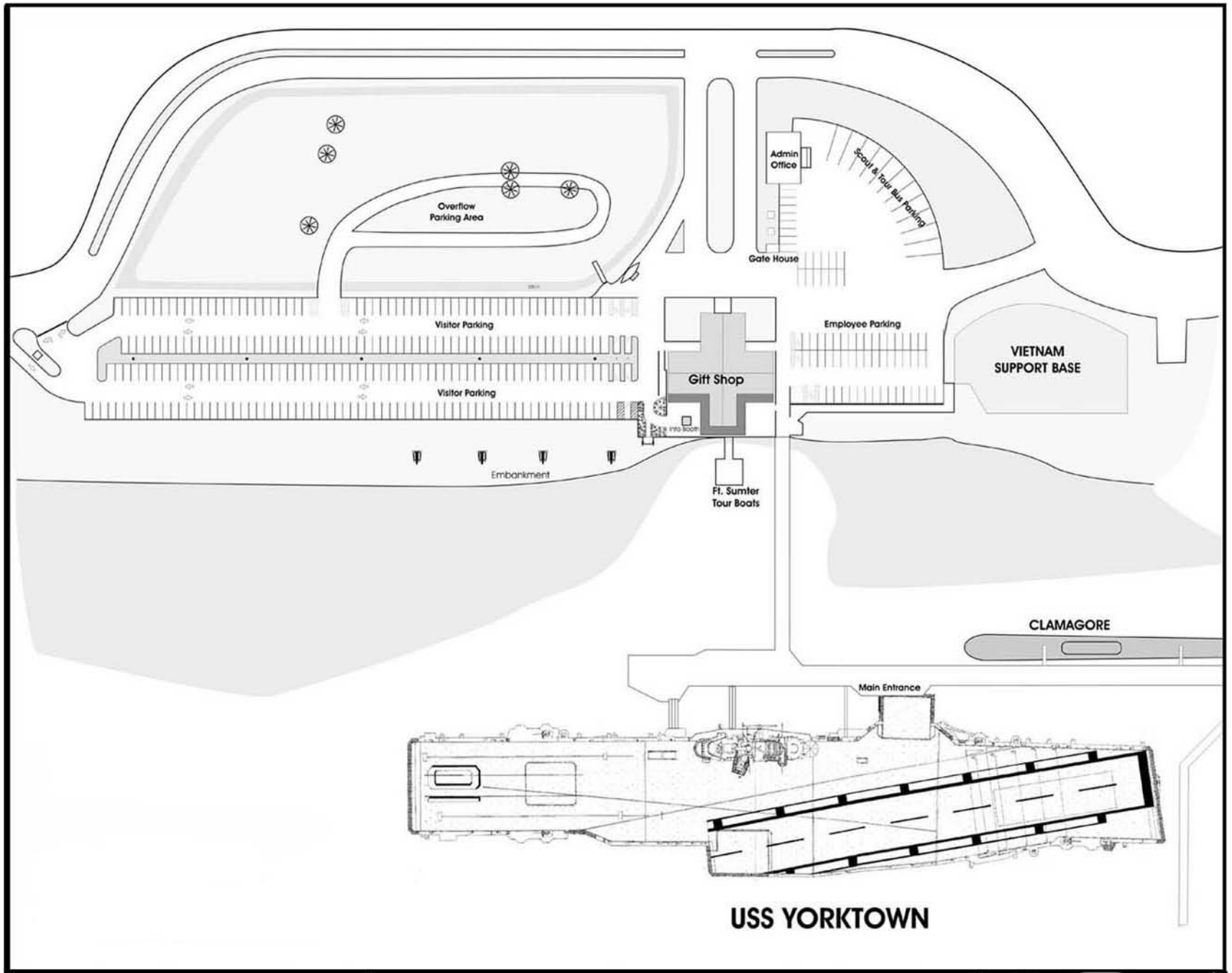
> Would having more than one departure point increase the number of visitors, or divide the existing number into smaller groups?



Fort Sumter National Monument
General Management Plan
Amendment and Environmental Assessment

Figure 3. Liberty Square Site Plan

SCALE OF FEET



Fort Sumter National Monument
General Management Plan
Amendment and Environmental Assessment

Figure 4. Patriots Point Site Plan

0' 100' 200'

Issue 7. Criteria for a secondary departure site

Do visitors have the opportunity to learn about the Civil War story at the secondary departure point through a variety of media meeting National Park Service standards for interpretation and exhibits?

Does the site have access to a deep- water dock suitable for 300- passenger ferry boats?

Are facilities accessible and do they meet National Park Service standards (for example, meeting the requirements of the Americans with Disabilities Act)?

Does the site have adequate infrastructure and commercial scale utilities?

Does the site provide ample parking and support facilities?

Does the site allow for safe operation regardless of the tide, sea, and reasonable wind conditions?

Project Background and Previous Planning

Fort Sumter National Monument was established in 1948 to commemorate the historical events at and surrounding Fort Sumter. The monument was enlarged in 1960 with the addition of Fort Moultrie, the National Park Service ferry boat facility in 1986, and the Historic Coast Guard Station in 1990. A general management plan was published in 1998 to establish and guide the overall management, development, and use of Fort Sumter National Monument in ways that best suit visitors while preserving the park's cultural and natural resources. The objective of the general management plan is to support the purpose for which the park was established and to formalize the park's future direction. The 1998 general management plan recommended that ferry service to Fort Sumter leave from one primary departure point at Liberty Square. Since then, the Greater Charleston area has undergone many changes, and after a recent review of governmental stakeholder perspectives, the National Park Service recognized the need to reopen the public discussion regarding the number and location of departure points.

Public Scoping

Public scoping is an early and open process to solicit public and internal concerns relating to a proposed action. The Council on Environmental Quality (CEQ 1978) guidelines for implementing the National Environmental Policy Act and the National Park Service National Environmental Policy Act guidelines contained in *Director's Order # 12: Conservation Planning, Environmental Impact Analysis and Decision Making Handbook* (NPS 2001b) require public scoping of federal actions that would require an environmental impact statement. Although public scoping is not required for an environmental assessment, the National Park Service conducted scoping for this project to ensure input from all interested stakeholders. Numerous stakeholder meetings were held and identified the need to address a secondary departure point. Meetings were held during 2002 and 2003 to provide and collect information concerning the history of the planning process and solicit input regarding tourism and water transportation issues in the Greater Charleston area. Those attending meetings included the State of South Carolina Parks, Recreation and Tourism, representatives from the Town of Mount Pleasant, Patriots Point Authority, City of Charleston, City of North Charleston, Charleston Area

Convention & Visitors Bureau, Senator Thurmond's office and Congressman Browns' office, and representatives from the National Park Service.

A scoping letter (provided in Appendix A) and newsletter were distributed in the winter and spring of 2003 to individuals, organizations, agencies, Indian tribes, local concessionaires, and the media, and information was posted on the park's website. The National Park Service asked the tribes if they wished to begin government- to- government consultation. In March 2003, the park held three public scoping workshops, one in North Charleston, one in Charleston, and one in Mount Pleasant, as well as a scoping workshop with potential concessionaires. Interviews also were conducted and information was collected from local, state and federal agencies. Scoping helped define the range of ferry service alternatives, criteria for ferry service, and identify the impact topics that should be considered for the project.

ISSUES, CONCERNS, AND DERIVATION OF IMPACT TOPICS

Issues and concerns affecting the proposed action were identified during National Park Service planning efforts, with input from interested individuals, groups, local representatives, and local, state and federal agencies. Issues and concerns related to the proposed secondary ferry departure point are defined in the section titled "Planning Opportunities and Issues." Criteria for the establishment of a secondary departure point also were developed during the planning process, and are listed under issue number 7 in the same section.

The major issues are the conformance of this proposal with the National Park Service Management Policies (2001a), the need to amend the Fort Sumter National Monument general management plan (1998), and conformance with other planning documents.

Impact Topics

Impact topics were used to focus the evaluation of the potential environmental consequences of the alternatives. Candidate impact topics were identified based on legislative requirements, executive orders, topics specified in *Director's Order #12 and Handbook* (NPS 2001b), *Management Policies 2001* (NPS 2001a), guidance from the National Park Service, other agencies, public concerns, and resource information specific to Fort Sumter National Monument.

Derivation of Impact Topics

Specific impact topics were developed for discussion focus and to allow comparison of the environmental consequences of the preferred alternative to the no action alternative. These impact topics were identified based on federal laws, regulations, and executive orders; 2001 National Park Service management policies; and National Park Service knowledge of limited or easily affected resources. These requirements are summarized by impact topic in Table 1. A brief rationale for the selection of each impact topic is given below, as well as the rationale for dismissing specific topics from further consideration.

TABLE 1
IMPACT TOPICS AND RELATED REGULATIONS OR POLICIES

Impact Topic	Relevant Regulations or Policies
Retained	
Hydrology and water quality	Executive Order 12088; Executive Order 11990; National Park Service Management Policy 4.6.3, 2001; Federal Water Pollution Control Act [The Clean Water Act of 1972 (As amended in 1977], State of South Carolina Regulation 61- 68, Water Classifications and Standards and South Carolina Regulation 61- 69, Classified Waters
Floodplains and wetlands	Executive Order 11990; Clean Water Act Section 404; National Park Service Director's Order #77- 1; Executive Order 11988; Federal Coastal Zone Management Act; National Park Service Management Policy 4.6.4 and 4.6.5, 2001; The South Carolina Coastal Zone Management Act of 1977 (as amended 1993); The South Carolina Coastal and Tidelands Act of 1977; South Carolina Beach Front Management Act 48- 39- 290,
Soils	National Park Service Management Policy 4.8.2.4, 2001
Vegetation and wildlife	National Park Service Management Policy 4.4.2, 2001
Aquatic resources	National Park Service Management Policy 4.6, 2001 ; Federal Water Pollution Control Act [The Clean Water Act of 1972 (As amended in 1977]; Magnuson- Stevens Fishery Conservation and Management Act
Endangered, threatened, or protected species and their habitats	Endangered Species Act of 1973; National Park Service Management Policy 4.4.2.3, 2001; 40 Code of Federal Regulations 1500 Regulations for Implementing the National Environmental Policy Act
Cultural resources	Section 106 of the National Historic Preservation Act; Section 110 of the National Historic Preservation Act (16 U.S.C. 470); 36 Code of Federal Regulations 800; National Environmental Policy Act; Executive Order 13007; Director's Order 28; National Park Service Management Policy 5.3.5, 2001; Native American Graves Protection and Repatriation Act (NAGPRA); Archeological Resources Protection Act (ARPA); National Parks Act of August 25, 1916, The Antiquities Act of 1906.
Important scientific, archeological, and other cultural resources, including historic properties listed or eligible for the National Register of Historic Places (1508.27)	See cultural resources

TABLE 1 (CONTINUED)
IMPACT TOPICS AND RELATED REGULATIONS OR POLICIES

Impact Topic	Relevant Regulations or Policies
Urban quality, historic and cultural resources, and design of the built environment (1502.16).	40 Code of Federal Regulations 1500 Regulations for Implementing the National Environmental Policy Act; National Park Service Director's Order #12
Public health and safety	National Park Service Management Policy 8.2.5, 2001; U.S. Coast Guard Boating Safety Regulations
Visitor use and experience	National Park Service Organic Act; National Park Service Management Policy 8.2, 2001
Economics and socioeconomics	40 Code of Federal Regulations 1500 Regulations for Implementing National Environmental Policy Act
Park operations	National Park Service Management Policy 9.1, 2001
Transportation – local and regional	National Park Service Management Policy 9.2, 2001
Accessibility for individuals with disabilities	National Park Service Management Policy 9.1.2, 2001; Architectural Barrier Act of 1968 (42 USC 4151 et seq.); The Rehabilitation Act of 1973 (29 USC 701 et seq.); American Disabilities Act of 1990 (Public Law 101- 336, 104 Stat. 327)
Community character	National Park Service Management Policy 8.11 2001
Concessionaires and contracts	National Park Service Management Policy 10.2, 2001
Socially or economically disadvantaged populations	Executive Order 12898
Dismissed	
Sacred sites	Executive Order 13007, National Park Service Management Policy 5.3.5.3.2, 2001
Indian trust resources	Department of the Interior Secretarial Order No. 3206, Secretarial Order No. 3175
Ecologically critical areas or other unique natural resources	36 Code of Federal Regulations 62 criteria for national natural landmarks; National Park Service Management Policies 2001; The South Carolina Coastal and Tidelands Act of 1977,
Air quality	Federal Clean Air Act (CAA); CAA Amendments of 1990 (CAAA); National Park Service Management Policy, 4.7.1, 2001
Geology	National Park Service Management Policy 4.8, 2001
Mineral and agricultural resources	National Park Service Management Policy 8.7 and 8.6.7, 2001
Natural lightscape (night sky)	National Park Service Management Policy 4.10, 2001
Soundscape	National Park Service Management Policy 4.9, 2001

TABLE 1 (CONTINUED)
IMPACT TOPICS AND RELATED REGULATIONS OR POLICIES

Impact Topic	Relevant Regulations or Policies
Wilderness	Wilderness Act of 1964, National Park Service Management Policy 6.3, 2001
Possible conflicts between the proposal and land use plans, policies, or controls for the area concerned (including local, state, or Indian tribe) and the extent to which your park will reconcile the conflict.	40 Code of Federal Regulations 1500 Regulations for Implementing National Environmental Policy Act parts 1502.16, 1506.2(d)
Energy requirements and conservation potential. Natural or depletable resource requirements and conservation potential	National Park Service Management Policy 9.1.7, 2001; 40 CFR 1500 Regulations for Implementing National Environmental Policy Act parts 1502.16 and 1502.16
Prime and unique agricultural lands	Council on Environmental Quality 1980 memorandum on prime and unique farmlands; 40 Code of Federal Regulations 1500 Regulations for Implementing National Environmental Policy Act part 1508.27

Impact Topics Analyzed in this Environmental Assessment

All resources described in impact topics are included and described in the "Affected Environment" chapter of this environmental assessment. Impact topics are the resources of concern that could be affected by the range of alternatives. Specific impact topics were developed to ensure that alternatives were compared on the basis of the most relevant topics. Impact topics analyzed for this project include: hydrology and water quality; floodplains and wetlands; soils; vegetation, wildlife and aquatic resources; endangered, threatened, or protected species and critical habitats; cultural resources; visitor use and experience; socioeconomic considerations; park operations and; transportation. The rationale for including the impact topics is summarized in Table 2.

Impact Topics Dismissed from Further Analysis

The impact topics originally considered for the Fort Sumter National Monument Secondary Ferry Departure Point project are presented in Table 1 and Table 2. Based on site- specific conditions described below, several candidate impact topics were dismissed from further consideration. The rationale for dismissing impact topics is given in Table 2. The resources described in impact topics dismissed in this document will not be included or described in the "Affected Environment" Chapter of this environmental assessment.

TABLE 2
IMPACT TOPICS AND DISMISSAL RATIONALE

Issues Identified During Planning[1]	Impact Topic	Action – Justification
3	Hydrology and water quality	Retained –The construction and operation of the secondary department point (the proposed action) would require analysis of potential effects to water quality and hydrology. Compliance with state and local regulations to minimize or eliminate impacts will be discussed.
3	Wetlands and floodplains (100- year, and 500- year when critical actions as defined in the National Park Service floodplain management guides are involved) (1508.27).	Retained –Freshwater and estuarine wetlands are located in the vicinity and therefore confirmation of avoidance of wetlands and floodplains impacts would be required.
3	Soils	Retained – Erosion potential could be changed at any construction site for the secondary departure point – best management practices would ensure that soil resources were protected and soil losses were negligible.
3	Vegetation and wildlife	Retained - Habitat changes could occur due to construction and operation of secondary departure point.
3	Aquatic Resources	Retained – Aquatic life of the estuaries are productive and sensitive natural resources could be affected locally by construction and operation of the secondary departure point. Impacts of construction and maintenance dredging will be considered.

TABLE 2 (CONTINUED)
IMPACT TOPICS AND DISMISSAL RATIONALE

Issues Identified During Scoping[1]	Impact Topic	Action – Justification
3	Endangered or threatened plants and animals and their habitats (including those proposed for listing, or on state lists) (1508.27).	Retained –state and federal designated species occur in the project area, both on land and in the water. A discussion of the potential effects of a secondary departure point is needed.
3	Cultural Resources	Retained – Cultural resources are considered as a single unit, rather than as individual resource types, because there is insufficient information to make determinations regarding the presence or absence of specific archaeological resources, historic structures, ethnographic resources, cultural landscapes and museum objects as individual resource types. The park intends to use this environmental assessment as the Section 106 Consultation document for consultation with the State Historic Preservation Office (SHPO) and affiliated tribes.
3	Sacred sites (Executive Order 13007).	Dismissed – none in area.
3	Indian Trust resources (ECM95–2).	Dismissed – Indian trust assets are owned by American Indians but held in trust by the United States. Indian trust assets do not occur within the park. No known Trust resources have been identified with the vicinity of the Mount Pleasant/East Cooper River area or near Liberty Square. There are no known Indian trust resources downstream of the project area.

TABLE 2 (CONTINUED)
IMPACT TOPICS AND DISMISSAL RATIONALE

Issues Identified During Scoping[1]	Impact Topic	Action – Justification
3	Important scientific, archeological, and other cultural resources, including historic properties listed or eligible for the National Register of Historic Places (1508.27).	Retained – see Cultural Resources. Consultation with the National and State Register of Historic Places will be undertaken.
3	Urban quality, historic and cultural resources, and design of the built environment (1502.16).	Retained – The park intends to use this environmental assessment as the Section 106 Consultation document for consultation with the State Historic Preservation Office (SHPO) and affiliated tribes – Additional consultation will occur under subsequent site- specific environmental analyses.
3	Public health and safety (1508.27).	Dismissed – Ferry boat operators are required to comply with U.S. Coast Guard standards and federal guidelines under the American Disabilities Act. In the context of activities and park operations, no appreciable effects to public health and safety would be anticipated under either alternative. Appropriate National Park Service requirements and safety codes would be met.
1, 2, 4, 6, 7	Visitor use and experience	Retained – The secondary departure point would have an effect on visitor use and experience due to the change in the means of transport to Fort Sumter. The secondary departure point and area is projected to receive heavy visitation.
4	Economics and socioeconomics	Retained – Economic and socioeconomic effects are considered for the region.

TABLE 2 (CONTINUED)
IMPACT TOPICS AND DISMISSAL RATIONALE

Issues Identified During Scoping[1]	Impact Topic	Action – Justification
4, 7	Park operations	Retained – Park operations would change as a result of the proposed action.
1, 2, 3, 7	Transportation – local and regional	Retained – Relates primarily to the ability to accommodate visitors who will use the secondary departure point and overall transportation arrangements to Fort Sumter.
3	Ecologically critical areas, Wild and Scenic Rivers, or other unique natural resources (1508.27).	Dismissed – There are no designated ecologically critical areas, wild and scenic rivers, or other unique natural resources in the vicinity, as referenced in 40 Code of Federal Regulation 1508.27.
3	Air quality	Dismissed – incremental contribution associated with alternatives for moving visitors between secondary departure point and Fort Sumter is negligible locally and in the airshed. The no action alternative proposes no construction activities, and no change in air quality would result. Under the preferred alternative, the occurrence of fugitive dust and equipment fumes would be mitigated and would not likely affect visitors or staff. Any occurrence of construction dust would be localized and transient. If dust were generated by installation of facilities, best management practices for dust suppression would be initiated. Emissions from construction vehicles would be kept to a minimum by restricting idling time. In the context of activities and facilities in the greater Charleston and Mount Pleasant area, no appreciable effects to air quality would be anticipated under either alternative.
3	Geology	Dismissed – no significant features are located in or near park; no potential to affect geology.

TABLE 2 (CONTINUED)
IMPACT TOPICS AND DISMISSAL RATIONALE

Issues Identified During Scoping[1]	Impact Topic	Action – Justification
3	Mineral and agricultural resources	Dismissed – lands in the Mount Pleasant/East Cooper River area are not available for farming or mineral extraction; no adverse impacts on these resources are predicted.
3	Natural lightscape (night sky)	Dismissed – light pollution from surrounding area overwhelms contribution from a secondary departure point.
3	Soundscape/noise	Dismissed – soundscape was dismissed due to existing level of noise due to ferry, recreational, and various private operations as well as existing levels of the urban and developed landscape. The natural sound environment would not be affected, or there would not be discernable difference. Therefore, any changes would not be of any measurable or perceptible consequence to the visitor experience or biological resources.
3	Wilderness	Dismissed – There are no designated wilderness areas in the vicinity.
1, 2	Accessibility for individuals with disabilities	Dismissed – In the context of activities and park operations, facilities and services would be required to meet the guidelines under the American Disabilities Act. No appreciable effects to Americans with disabilities would be anticipated under either alternative.
3	Community character	Retained – Charleston and Mount Pleasant are historical areas with sensitivities for maintaining community character. Area planning efforts would be considered.

TABLE 2 (CONTINUED)
IMPACT TOPICS AND DISMISSAL RATIONALE

Issues Identified During Scoping[1]	Impact Topic	Action – Justification
3, 7	Concessionaires and contracts	Retained – future and/or subsequent decisions concerning concessionaires and contracts will be made pending actions resulting from this environmental assessment.
3,4	Possible conflicts between the proposal and land use plans, policies, or controls for the area concerned (including local, state, or Indian tribe) (1502.16, 1506.2(d)), and the extent to which your park will reconcile the conflict.	Dismissed: The proposed action is compatible with local land use planning initiatives. The National Park Service will continue to coordinate with local, state and federal planning agencies concerning the proposed action.
3	Energy requirements and conservation potential (1502.16); Natural or depletable resource requirements and conservation potential (1502.16).	Dismissed – The National Park Service reduces energy costs, eliminates waste, and conserves energy resources by using energy-efficient and cost- effective technologies. Energy efficiency is incorporated into the decision- making process during the design and acquisition of buildings, facilities, and transportation systems that emphasize the use of renewable energy sources. The proposed action alternative does not include increased wastewater treatment capacity, which would require increased energy usage; nor does it call for increased fuel consumption in support of transportation over existing conditions. Future design components would conserve energy usage, consistent with National Park Service mandates.

TABLE 2 (CONTINUED)
IMPACT TOPICS AND DISMISSAL RATIONALE

Issues Identified During Scoping[1]	Impact Topic	Action – Justification
3	(e) Socially or economically disadvantaged populations (see Environmental Justice Executive Order 12898 for more information).	Dismissed – Executive Order 12898, "General Actions to address Environmental Justice in Minority Populations and Low- Income Populations," requires that all federal agencies address the effects of policies on minorities and low- income populations or communities as defined in the Environmental Justice Guidance (July 1996). None of the alternatives would have disproportionate health or environmental effects on populations of concern.
3	Prime and unique agricultural lands (1508.27).	Dismissed – Prime farmland has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. Unique agricultural land is land other than prime farmland that is used for production of specific high- value food and fiber crops. Both categories require that the land is available for farming uses. Lands in the vicinity of East Cooper River are not available for farming and therefore do not meet the definitions.

TABLE 2: (CONTINUED)
IMPACT TOPICS AND DISMISSAL RATIONALE

Issue 1. Number of ferry concession departure points
Are park visitors best served from present locations?
Are there alternative places to serve as embarkation points?
Do the present disembarkation points adequately serve the park visitor?

Issue 2. Visitor experience and needs at each departure location
Do the present disembarkation points adequately serve the park visitor?
How would a new location affect visitor experience, with respect to choices, park ranger presence, timing, and information availability?
What effect would any proposed change in visitor services have on park resources and staff?

Issue 3. Environmental impacts
What transportation, noise, air or other environmental impacts would be associated with multiple departure points?

Issue 4. Funding of a secondary departure point
Would the funding for a new dock at a secondary departure point be provided by private or government sources?

Issue 5. Schedule
How would a secondary departure point affect the ferry service schedule?

Issue 6. Visitation
Would having more than one departure point increase the number of visitors, or divide the existing number into smaller groups?

Issue 7. Criteria for a secondary departure site
Do visitors have the opportunity to learn about the Civil War at the secondary departure point through a variety of media meeting National Park Service standards for interpretation and exhibits?
Does the site have access to a deep- water dock suitable for 300- passenger ferry boats?
Is the site accessible and does it meet National Park Service standards (for example, meeting the requirements of the Americans with Disabilities Act)?
Does the site have adequate infrastructure and commercial scale utilities?
Does the site provide ample parking and support facilities, or is construction of the required facilities a viable option?
Does the site allow for safe operation regardless of the tide, sea, and wind conditions?

ALTERNATIVES

DESCRIPTION OF THE ALTERNATIVES

The alternatives section describes two alternatives for ferry service to Fort Sumter. The alternatives are described below.

The no action alternative describes the action of continuing the present management operation and condition. It does not imply or direct discontinuing the present action or removing existing uses, developments, or facilities. The no action alternative provides a basis for comparing the management direction and environmental consequences of the preferred alternative. Should the no action alternative be selected, the National Park Service would respond to future needs and conditions associated with the park's issues without major actions or changes from the present course. Analysis of the no action alternative is required under the National Environmental Policy Act.

The preferred alternative presents the National Park Service proposed action and defines the rationale for the action in terms of resource protection and management, visitor use and operational use, costs, and other applicable factors.

Sustainability is a concept that the National Park Service uses as a guiding principle of facility design planning and development. The objectives of sustainability are to design park facilities to minimize adverse effects on natural and cultural values, to reflect their environmental setting, to maintain and encourage biodiversity; to construct and retrofit facilities using energy- efficient materials and building techniques; to operate and maintain facilities to promote their sustainability; and to illustrate and promote conservation principles and practices through sustainable design and ecological sensitive use. Essentially, sustainability is living within the environment with the least impact on the environment. The preferred alternative subscribes to and supports the practice of planning for sustainable design and use.

Alternative A: No Action/Continue Current Management

Continue current management/no action is the baseline condition against which proposed activities are compared. It is defined as taking no action to change or alter current management. This alternative would be to implement the 1998 general management plan as written and approved. The park's 1998 general management plan directed that visitors board a ferry to Fort Sumter at one location, Liberty Square. Ferry boats would no longer depart from Patriots Point to Fort Sumter. A summary of the primary features of this alternative is included in Table 3. The site plan for Liberty Square is depicted in Figure 3.

TABLE 3
MAJOR FACILITY COMPONENTS OF EXISTING LIBERTY SQUARE AND PROPOSED SECONDARY FERRY DEPARTURE POINT

Major Components	Liberty Square Program	Secondary Departure Site	Clarifying information
Vessel	100 foot, 300 plus passengers	100 foot, 300 plus passengers	Draft on ferry approximately 6 feet. Best to have approximately 10 feet of water at all times for year round operations Ferry should be accessible, partly heated and air conditioned, rain protected, chair for each passenger, meet United Stated Coast Guard & South Carolina Department of Health and Environmental Control standards, minimum one accessible restroom, and include snack bar
Pier	170 x 20 feet Walk up accessible No major maintenance or waste disposal allowed	Suitable for concession ferry operations.	Dock should meet appropriate National Park Service requirements, safety codes, construction codes, and access codes Dock lease needs to conform to terms of concession contract Fixed or floating pier Accessible
Ferry Queuing Space	48 by 48 feet	Queuing space to allow efficient operations	Queuing space shall be provided on approach to or on the dock for efficient visitor operations that do not result in passenger loading delays.
Ticket Sales	86 square feet	Ticket Sales Ticket Queuing Ticket Staffing (one person)	Ticket sales needed near the parking area. Ticket should be included in main entry area for boats and exhibits.
Concession Support	Office 480 square feet Storage 307 square feet	Concession Office Concession Storage	Concessionaire support facilities and personnel needs are determined by the concessionaire. Concessionaire must have one manager on duty at all times ferry is operating. Need approximately 500 square feet
Safety Features	Designed for year round operations including hurricane and seismic loading	Facility must allow for safe operations regardless of the tide in reasonable wind and rain events.	Dock design must be sufficient for the size of ferry. During extreme weather events, ferry would be relocated to alternate protected site.

TABLE 3 (CONTINUED)
MAJOR FACILITY COMPONENTS OF EXISTING LIBERTY SQUARE
AND PROPOSED SECONDARY FERRY DEPARTURE POINT

Major Components	Liberty Square Program	Secondary Departure Site	Clarifying information
Support Facilities- restrooms	608 square feet	Provided in permanent facilities or co-located	Size, flow, number of restrooms would be determined based upon visitor data. Restrooms can be separate or in combination with other co- located facilities.
Exhibit Space	1902 square feet Entry area 111 square feet Waiting area 510 square feet 3 wayside panels	Visitor interpretive facilities	Five wayside color panels 2 feet x 4 feet. 800- 1,200 square feet permanent exhibit space (no visitor fee) with enclosed waiting area in separate or co- located facilities.
National Park Service Support	Storage 189 square feet Workspace/first aid 309 square feet	Ranger workspace. Provide first aid station.	200 square feet of National Park Service enclosed and climate controlled storage and work space.
Utilities	Drinking fountains: 5 Waste water to sanitary sewer Solid waste dumpster	Drinking fountains Waste water to sanitary sewer Solid waste dumpster	Drinking water flow capacity as indicated by potential visitor use. With construction or permanent facilities. No wastewater disposal from boats at dock. Suitable contained solid waste disposal for all concession operations.
Paving and Access Road	Site driven	Site driven; potential access road and paving	Length/ width, including shoulder for new construction or existing to meet Federal Highway Administration standards.
Parking Area	Approximately 300 yards distance to public parking garage.	Parking area for expected visitation levels (i.e., number of people returning from and preparing to depart to Fort Sumter).	Number of spaces and types of surface shall be determined to meet appropriate Federal, State, and local standards. Reasonably priced or free. Parking to include access for larger vehicles such as school buses. Must be able to accommodate expected visitation with ferry operating at full capacity on back to back trips.
Alternative Transportation	Intermodel	Bus, private vessel, other	Clearly identified, convenient, centrally located, and good signalization.

TABLE 3 (CONTINUED)
MAJOR FACILITY COMPONENTS OF EXISTING LIBERTY SQUARE
AND PROPOSED SECONDARY FERRY DEPARTURE POINT

Major Components	Liberty Square Program	Secondary Departure Site	Clarifying information
Visitor Use	Patriots Point youth groups are usually ferried directly to Fort Sumter outside the normal visitor schedules	Ability to load or pickup Patriots Point youth groups	Conveniently designed for visitors. Ability to accommodate Patriots Point youth groups.
Number Of Visitors Expected	Capacity to accommodate projected number of visitors	Ability to accommodate expected visitation	Capacity to accommodate projected number of visitors- 200,000 visitors per year by 2014 departing from the secondary departure point. Visitation generally increases by 2 to 5% per year. Fort Sumter carrying capacity is 385 visitors at any one time.

Currently, ferry service from both Liberty Square (Figure 3) and Patriots Point (Figure 4) to Fort Sumter is contracted through December 2003. The Secretary of the Interior, acting through the National Park Service, will take steps to ensure that operations from the current departure points are unaffected. Upon completion of this general management plan amendment and environmental assessment, the National Park Service will address future ferry concession contract(s).

Alternative B: The Preferred Alternative

Alternative B has been identified as the preferred alternative because it meets the objectives associated with the purpose and need for the proposed action and is the environmentally preferred alternative. Two Ferry Departure Points are proposed, one at Liberty Square and a secondary departure point located in the Mount Pleasant/East Cooper River area. The following is a summary of the main features of the preferred alternative.

Facilities Description: The existing National Park Service Liberty Square facility, including the museum, square, 300- person ferry service and dock facility (Figure 3), would be operated as the primary departure point for Fort Sumter. A secondary departure point would be maintained in the Mount Pleasant/East Cooper River area. For purposes of this general management plan amendment and environmental assessment, this area has been defined as the land along the east bank of the Cooper River/Charleston Harbor in the Mount Pleasant area.

Visitor Services Provided: The existing interpretation facility at Liberty Square would continue to provide visitor services. A secondary and smaller facility would be constructed and operated in the Mount Pleasant/East Cooper River area. This facility would consist of a dock, parking area, and connecting access roads with appropriate directional signs. The secondary departure point would also allow for the presence of National Park Service rangers and interpretive facilities and services. Other visitor services provided at the secondary facility would include availability of restrooms, exhibits, shade, an accessible route to dock and ferry for the mobility impaired, a dock for a 300- person ferry to Fort Sumter, and an accessible ferry.

Facilities Requirements: No additional facilities would be required at Liberty Square. Dredging may be required at a secondary location to a depth of up to 15 feet mean low water (depending on the configuration of the ferry) to maintain adequate water depth to safely operate a 300- person ferry. A joint permit from the State of South Carolina Office of Coastal Resource Management and the US Army Corps of Engineers, Charleston District would be required for this activity and any periodic maintenance dredging that could be required. Periodic maintenance dredging activities conducted by the U.S. Army Corps of Engineers of the Charleston Harbor would continue to occur.

Table 3 provides a description of the primary features of the existing ferry system at the Liberty Square facility and also provides a description of the overall required features of a secondary departure point. This information, as well as information on the existing natural and man- made resources in the project area, was used to define the impacts of the preferred alternative and the no action alternative in the section of the environmental assessment entitled “Affected Environment, Evaluation Methodology, and Environmental Consequences”.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is the alternative that will best promote the national environmental policy expressed in the National Environmental Policy Act. The environmentally preferred alternative would cause the least damage to the biological and physical environment, and would best protect, preserve, and enhance historical, cultural, and natural resources.

Section 101(b) of the National Environmental Policy Act identifies six criteria to help determine the environmentally preferred alternative. The act directs that federal plans should:

> Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.
>
> Assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.
>
> Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences.
>
> Preserve important historical, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice.
>
> Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities.
>
> Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Based upon the application of these national environmental policy goals, the environmentally preferred alternative is the proposed Fort Sumter secondary ferry departure point project. The preferred alternative would attain the widest range of beneficial uses for the visitor and enhance the visitor experience without degradation of resources. The preferred alternative is a safe, balanced alternative that preserves the important historic, cultural and natural aspects of the park and the region. The no action alternative, while meeting the short- term needs of the public, does not meet the increased demand for alternative means of water transport to Fort Sumter. Therefore, the no action alternative would not meet the goals as well as the preferred alternative.

Both the no action alternative and the preferred alternative meet the criteria for fulfilling the responsibilities as trustee of the environment by providing long- term protection of park resources and providing for public understanding and appreciation of Fort Sumter and its significance.

The preferred alternative provides additional opportunity for all visitors to experience the Civil War story from either the Mount Pleasant/East Cooper River area departure point or from Liberty Square, thereby increasing the opportunity for safe, healthful, productive, and esthetically and culturally pleasing surroundings.

By providing a secondary departure point with features and standards similar to those at Liberty Square, the preferred alternative allows visitors a choice in determining their point of departure and provides the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences. The number of ferry boats arriving and departing to and from Fort Sumter would be similar to existing conditions, and the number of visitors at a given time would not exceed 385 people, thereby continuing to protect the resources at Fort Sumter and avoid undesirable and unintended consequences.

The preferred alternative continues to preserve the important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment, which supports diversity, and variety of individual choice. The preferred alternative provides reasonable access to Fort Sumter from both the Mount Pleasant/East Cooper River area as well as from Liberty Square, providing a wider variety of individual choice and desirable visitor experiences, while preserving resources at Fort Sumter.

While both the no action alternative and the preferred alternative achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities, the preferred alternative provides additional opportunities for visitors originating from the Mount Pleasant/East Cooper River area to benefit from having a secondary departure point on the east side of the river. The preferred alternative provides additional visitor choice and opportunity for the local businesses to benefit from the secondary departure point.

Under both the no action and preferred alternatives, green space will continue to be preserved in the area, thereby enhancing the quality of life. Depending on the specific site location of the secondary departure point, opportunities exist for enhancing the quality of renewable resources. The National Park Service will continue to meet goals regarding recycling and reuse of resources at all of its facilities, including Liberty Square and the secondary departure point.

GENERAL SCHEDULE AND COSTS FOR THE PREFERRED ALTERNATIVE

The next step following the completion and approval of this environmental assessment and "Finding of No Significant Impact (FONSI), would be the issuance of a prospectus advertising the availability of a business opportunity for ferry passenger service from the Mount Pleasant/East Cooper River area to Fort Sumter. This prospectus would allow all vendors a fair and equal opportunity to provide the optimal level of visitor experience in compliance with the 1998 concession law (PL 105- 391). The National Park Service estimates that the prospectus will be issued during the spring of 2004. For the period from January 2004 until a contract is signed, the National Park Service will take steps to ensure that operations from the current departure sites are unaffected.

Assuming the project is defined by the features identified in Table 3, the Class C estimate for the project would be $5,129,563. In addition, annual operating costs are estimated to be $516,000, bringing estimated total costs to $5,645,563.

MITIGATION MEASURES

Best management practices and mitigation measures would be used to prevent or minimize potential adverse effects associated with the preferred action alternative. These practices and measures would be incorporated into the project construction documents and plans to ensure that major adverse impacts would not occur. Mitigation measures undertaken during project implementation would include, but not strictly be limited to, those listed in Table 4.

ALTERNATIVES CONSIDERED BUT NOT FURTHER ASSESSED

A number of alternatives for a secondary ferry departure point were considered but ultimately rejected. These alternatives were developed during numerous National Park Service working sessions or during the public scoping meetings that were held in March 2003. A number of alternatives included water shuttles as an integral feature of the alternative. During the course of planning and selection of the preferred alternative, the National Park Service work group eliminated the concept of shuttles from further consideration in the general management plan amendment and environmental assessment. The National Park Service recognizes that the various entities in the Greater Charleston area will continue to explore the feasibility of linking selected areas through the integration of water and/or surface oriented transportation systems, which may complement the action selected by the National Park Service. The National Park Service supports these efforts and will continue to work with appropriate local, state and federal agencies, as well as other organizations, in planning and implementing future regional transportation systems.

The following is a summary of alternatives considered, and the reasons why they were not further assessed.

Two ferry departure points, one at Liberty Square and one in the Mount Pleasant/East Cooper River area, with a shuttle between the two departure points. This alternative was eliminated because planning efforts for water shuttles are not thoroughly developed at this time, and therefore, the shuttle concept is best considered as part of the Greater Charleston area water transportation planning process as discussed above. The National Park Service supports these efforts and will continue to work with appropriate local, state and federal agencies, as well as other organizations, in planning and implementing future regional transportation systems. This alternative was therefore eliminated from further consideration.

One ferry departure point from Liberty Square with a water shuttle between the East Cooper River area and Liberty Square. This alternative was eliminated from further consideration for several reasons. One departure point does not serve the purpose and need identified by the public for more than one departure point and this alternative is dependent upon a water shuttle. The use of a water shuttle dedicated to a route between Mount Pleasant and Liberty Square would require visitors to add additional time and expense for their visit to Fort Sumter. Therefore, this alternative was dismissed.

TABLE 4
MITIGATION MEASURES AND BEST MANAGEMENT PRACTICES

Potential Adverse Effect	Mitigation Measure or Best Management Practice
Direct effects from construction activities	Protection of all construction areas to confine potentially adverse activities to the minimum area required for construction. All protection measures would be clearly stated in the construction specifications, and workers would be instructed to avoid conducting activities beyond the construction zone.
Erosion resulting from construction- related surface disturbance	The contractor would be required to control erosion prior to, during and following ground disturbing activities. Standard erosion control measures would be used to minimize soil erosion. Erosion barriers would be inspected and maintained regularly to ensure effectiveness. The primary measure used to control stormwater runoff would be installation of temporary silt fencing. Silt fences are made of synthetic fabric and are placed in drainage contours to trap sediments generated during construction.
Construction would affect areas previously undisturbed	Construction activities would take advantage, where possible, of sites where previous disturbance has already taken place.
Contamination of soil by petrochemicals from construction equipment and maintenance of ferry system	Areas used for equipment maintenance and refueling would be minimized, and surface runoff in these areas would be controlled. Equipment would be checked frequently to minimize leaks and potential contamination. All chemicals used in the construction and operation of the ferry departure point would be transported, stored, and used following federal, state, and local regulations and standards.
Direct effects from construction and operation of new departure on threatened and endangered species, wildlife, and habitat	Impacts on these species during construction will be avoided by conducting surveys of proposed ferry departure sites and avoiding as necessary during conceptual design state. Best management erosion control practices will also be employed to minimize impacts on aquatic species caused by soil erosion during construction. During operation, potential effects on these species will be avoided by timing of any required maintenance dredging to mid- winter periods when spawning is not occurring.
Wildlife disturbance resulting from construction activities, including noise	To reduce potential impacts on wildlife, construction activities occurring near sensitive habitats would be scheduled to minimize potential impacts during periods of breeding, nesting and rearing of young. Construction would occur only during daylight hours to reduce effects on nocturnal foraging or rest.

TABLE 4 (CONTINUED)
MITIGATION MEASURES AND BEST MANAGEMENT PRACTICES

Potential Adverse Effect	Mitigation Measure or Best Management Practice
Direct effects from construction and operation of secondary departure point on the visitor experience and park staff	To lessen adverse effects on the visitor experience, construction information would be posted in strategic locations and made available on the park's website. Construction would utilize a rotation system to minimize disruption of visitor access and use of the ferry departure point area. Where possible, all construction activities would be timed to avoid high visitor use periods. In the design stage, every effort would be made to buffer the noise generated by construction activities.
Protection of cultural resources	To determine the levels of previous disturbance, to avoid damage to previously unknown archaeological or historical resources, qualified scientists will conduct archaeological survey and testing activities in previously undisturbed areas prior to ground disturbing activities. If any resources are encountered, adequate mitigation of project impacts (in consultation with appropriate agencies) or adjustment of the project design will take place to avoid or limit the adverse effects on prehistoric and historic archaeological resources. Avoid known historic structures and archaeological sites, whenever possible. If avoidance is not possible, mitigate impacts through salvage and documentation, as appropriate. Educate personnel about the nature of the cultural resources at the project site and the need for protection. Monitor construction activities and include stop- work provisions in construction documents should archaeological or paleontological resources be uncovered.
Discovery of unknown archeological resources or human remains	If previously unknown archaeological resources are discovered, work will be stopped in the area of any discovery and the park would consult with affiliated tribes, the National Park Service Southeast Archaeological Center, the State Historic Preservation Officer and the Advisory Council on Historic Preservation, as appropriate.
Visitor experience	Prepare bulletins to educate visitors on the purpose of projects.
Public health and safety	Provide traffic flow control, signage and flagging to protect visitor and staff safety during construction activities.
Disturbance of state and/or federally listed plant and animal species	In construction areas near listed plant and animal species, identify, flag, and avoid these species to eliminate potential adverse effects. Conduct initial inventories to determine presence of these species and avoid as necessary in conceptual design phase.

TABLE 4 (CONTINUED)
MITIGATION MEASURES AND BEST MANAGEMENT PRACTICES

Potential Adverse Effect	Mitigation Measure or Best Management Practice
Wetland and floodplains impacts	Because the secondary ferry departure point is water based, it would be located at least in part within the 100- year floodplain of the Cooper River. In addition, wetlands and estuarine benthic habitat would typically be associated with any departure point site and could disturbed during construction. The National Park Service will conduct surveys of the existing resources at proposed sites and define the types, acreages, functions and values of all freshwater and salt water wetlands prior to construction. Measures to avoid and then to minimize impacts on wetlands on a proposed site would then be developed and integrated into the design of the project. A similar assessment of the effects of the project on sensitive estuarine benthic habitat would be conducted, and the extent of dredging required to construct and maintain any new docking areas would be assessed, and measures to avoid and minimize these impacts would be developed early in the design phase for the projects. These measures would allow the project to meet the requirements of the Section 404(b)(1) Clean Water Act Guidelines for activities involving filling of waters of the United States.

Triangular Route for continuous ferry service between Liberty Square, the Mount Pleasant/East Cooper River area, and Fort Sumter. This alternative was eliminated because of the added travel time for either departing or returning trips to Fort Sumter. The continuous service would add approximately 45 minutes to each trip, with no value added, affecting schedules, and reducing the overall number of total trips possible. The number of ferry boats would be increased to maintain the current schedule. This alternative would not allow for an increased number of departures. Scheduling would be difficult, limit options, and add operating costs without benefit. This alternative would not improve the visitor experience. This alternative was therefore eliminated.

Patriots Point, in lieu of Liberty Square, as the primary departure point, and downtown Charleston as the secondary departure point. This alternative was eliminated from further consideration because it does not meet the purpose and need for a secondary departure point. The purpose is to add a departure point, and not eliminate the existing National Park Service facilities at Liberty Square that currently provide excellent visitor services.

Water shuttle or ferry service from North Charleston, Noisette Creek Waterfront Park connecting to Fort Sumter or to one or two departure points. In addition to the partial dependency of this alternative on a water shuttle system, this alternative was rejected from further consideration because a departure point in the North Charleston area would be located too far from Fort Sumter to be practical from an operations and visitor's experience perspective. The current trip to and from Fort Sumter typically requires 2.25 hours from Liberty Square. This includes one hour at Fort Sumter. A secondary departure point from North Charleston would increase the time visitors spend on the ferry by as much as 30 to 45 minutes each way. In addition, because of the travel time considerations, at least one more ferry would be required for the park to meet the current visitor level daily capacity. Since the park can meet these capacities with ferry boats located closer to Fort Sumter, this alternative is not practical given time and financial constraints. This alternative was therefore eliminated from further consideration. However, as stated above, the National Park Service recognizes that various entities in the Greater Charleston area will continue to explore the feasibility of linking selected areas through the integration of water and/or surface transportation systems, which may complement the action selected by the National Park Service. The National Park Service supports these efforts and will continue to work with the appropriate local, state, and federal agencies, as well as other organizations, in planning and implementing future regional transportation systems.

Multiple departure points with shuttles from various points in the harbor to the main departure points (interconnectivity). In addition to the partial dependency of this alternative on a water shuttle system, this alternative was rejected for the following reasons: the potential to exceed the carrying capacity at Fort Sumter, the limitations of providing the visitor with the opportunity to learn about the Civil War through interpretation and exhibits, the lack of a safe, deep water access, and the increased cost and management requirements. Providing multiple shuttle services and ferry departure points could exceed the carrying capacity for visitors at Fort Sumter. It would be much more expensive to construct and operate numerous departure points with several ferry boats providing visitor services compared to a single departure point, or compared to a system involving two departure points. It would also be much more difficult to

manage a multiple departure point system from an operations and safety perspective. The multiple departure point alternative was therefore eliminated from further consideration.

Secondary departure point at the end of Market Street, Charleston. This alternative was rejected because it would be located too close to the existing Liberty Square facility, which would limit ferry service to one general location in the Charleston area. In addition, this alternative does not take into consideration the needs of stakeholders in the Mount Pleasant/East Cooper River area as identified in the various working group meetings and the public scoping meetings. This alternative was therefore eliminated from further consideration.

HOW THE PREFERRED ALTERNATIVE MEET THE OBJECTIVES OF THE PROPOSED ACTION

Alternative A, the no action alternative, would not meet the goals and objectives of the Fort Sumter National Monument, for the following reasons:

> Continuing operation of the park with only a single departure point would not be responsive to stakeholder group requests for consideration of a secondary ferry departure point. These requests have been made in response to the rapidly growing greater Charleston area and the projected intense use of the park, and the concurrent need for a modification of the original park vision.
>
> The continuance of operations under the existing single departure point would ultimately restrict the diversity and quality of the visitor's experience, in view of the rapidly growing nature of the area, and anticipated increased visitor demand.

Alternative B, the proposed action, would meet the goals and objectives of the Fort Sumter National Monument for the following reasons:

> Provision of a secondary departure point would allow visitors to access the park facilities from both sides of the Cooper River, thereby better serving the greater region.
>
> A secondary departure point would allow visitors more flexibility in making decisions concerning how to gain access to the park.
>
> A secondary departure point would allow for a more diverse visitor experience by providing access to the park from a different part of Charleston Harbor. This experience would provide another location for interpretative services to supplement the existing facility, as well as provide for ferry services. An increased opportunity to expand educational benefits to the community and region would also be realized.
>
> A secondary departure point would allow operators to run ferry services from two locations, providing direct and indirect economic benefits to the region.
>
> A secondary departure point would allow visitors the opportunity to reduce the drive time to reach a departure point within the Greater Charleston community.

COMPARISON OF ALTERNATIVE EFFECTS

The terms used to define the magnitude or intensity of the effects (e.g., negligible, minor) are described in Table 5. Table 6 compares and contrasts the alternatives and the degree to which each accomplishes the purpose or fulfills the need identified in the "Purpose and Need" section. A summary comparison of the effects of the alternatives, based on the evaluations of the impact topics in the "Environmental Consequences" section of this environmental assessment, is provided in Table 7.

TABLE 5
IMPACT TOPIC THRESHOLD DEFINITIONS

Impact Topic	Negligible	Minor	Moderate	Major	Duration
Hydrology and water quality	Impacts would not be detectable. Water quality parameters would be well below all water quality standards for the designated use of the water. Both quality and quantity of flows would be within historical conditions.	Impacts would be measurable, but water quality parameters would be well within all water quality standards for the designated use. Both quality and quantity of flows would be within the range of historical conditions, but measurable changes from normal flows would occur. State water quality and antidegradation policy would not be violated.	Changes in water quality or hydrology would be readily apparent, but water quality parameters would be within all water quality standards for the designated use. Water quality or flows would be outside historic baseline on a limited time and space basis. Mitigation would be necessary to offset adverse effects, and would likely be successful. State water quality and antidegradation policy would not be violated.	Changes in water quality or hydrology would be readily measurable, and some quality parameters would periodically be approached, equaled, or exceeded. Flows would be outside the range of historic conditions, and could include flow cessation or flooding. Extensive mitigation measures would be necessary and their success would not be assured. State water quality regulations and antidegradation policy may be violated.	Short- term - Following implementation activities, recovery would take less than one year Long- term - Following implementation activities, recovery would take longer than one year

TABLE 5 (CONTINUED)
IMPACT TOPIC THRESHOLD DEFINITIONS

Impact Topic	Negligible	Minor	Moderate	Major	Duration
Wetlands and floodplains	Wetlands or floodplains would not be affected, or effects to the resource would be below or at the lower levels of detection. No U.S. Army Corps of Engineers 404 permit would be necessary.	The effects to wetlands or floodplains would be detectable and relatively small in terms of area and the nature of the change. A U.S. Army Corps of Engineers 404 permit would not be required.	The alternative would result in effect to wetlands or floodplains that would be readily apparent, such that a U.S. Army Corps of Engineer 404 permit could be required.	Effects to wetlands or floodplains would be observable over a relatively large area, and would require a U.S. Army Corps of Engineers 404 permit. The character of the wetland or floodplain would be substantially changed.	Short- term - Following implementation, recovery would take less than one year Long- term - Following implementation, recovery would take longer than one year
Soils	Soils would not be affected or the effects to soils would be below or at the lower levels of detection. Any effects to soil productivity or fertility would be slight.	The effects to soils would be detectable. Effects to soil productivity or fertility would be small, as would the area affected. If mitigation was needed to offset adverse effects, it would be relatively simple to implement and would likely be successful.	The effect on soil productivity or fertility would be readily apparent, and result in a change to the soil character over a relatively wide area.	The effect on soil productivity or fertility would be readily apparent, and substantially change the character of the soils over a large area in and out of the park. Mitigation measures to offset adverse effects would be needed, extensive and their success would not be guaranteed.	Short- term – Effects only during project implementation activities Long- term – Effects extend beyond project implementation activities.

TABLE 5 (CONTINUED)
IMPACT TOPIC THRESHOLD DEFINITIONS

Impact Topic	Negligible	Minor	Moderate	Major	Duration
Vegetation	Individual native plants may occasionally be affected, but measurable or perceptible changes in plant community size, integrity, or continuity would not occur.	Effects to native plants would be measurable or perceptible, but would be localized within a small area. The viability of the plant community would not be affected and the community, if left alone, would recover.	A change would occur to the native plant community over a relatively large area that would be readily measurable in terms of abundance, distribution, quantity, or quality. Mitigation measures to offset/minimize adverse effects would be necessary and would likely be successful.	Effects to native plant communities would be readily apparent, and would substantially change vegetative community types over a large area, inside and outside the park. Extensive mitigation would be necessary to offset adverse effects and their success would not be assured.	Short- term - Recovers in less than 1 year Long- term - Takes more than 1 year to recover

TABLE 5 (CONTINUED)
IMPACT TOPIC THRESHOLD DEFINITIONS

Impact Topic	Negligible	Minor	Moderate	Major	Duration
Wildlife and Aquatic Life	Wildlife and aquatic life would not be affected or the effects would be at or below the level of detection and would not be measurable or of perceptible consequence to wildlife populations.	Effects to wildlife and aquatic life would be measurable or perceptible, but localized within a small area. While the mortality of an individual animal might occur, the viability of wildlife populations would not be affected and the community, if left alone, would recover.	A change in wildlife and aquatic life would occur over a relatively large area. The change would be readily measurable in terms of abundance, distribution, quantity, or quality of population. Mitigation measures would be necessary to offset adverse effects, and they would likely be successful.	Effects to wildlife and aquatic life would be readily apparent, and would substantially change wildlife populations over a large area in and out of the national park. Extensive mitigation would be needed to offset adverse effects, and its success could not be assured.	Plants and Animals Short- term - Recovers in less than 1 year Long- term - Takes more than 1 year to recover

TABLE 5 (CONTINUED)
IMPACT TOPIC THRESHOLD DEFINITIONS

Impact Topic	Negligible	Minor	Moderate	Major	Duration
Endangered, threatened, and protected species, and critical habitats	No Effect: Impacts would not affect listed or protected species or designated critical habitat.	May Affect/Is Not Likely to Adversely Affect: Effects on special status species would be discountable (i.e., adverse effects are unlikely to occur or could not be meaningfully measured, detected, or evaluated) or completely beneficial.	May Affect/Likely to Adversely Affect: Adverse effects to a listed species might occur as a result of the proposed action and the effect would either not be discountable or completely beneficial. Moderate impacts to species would result in a local population decline due to reduced survivorship, declines in population, and/or a shift in the distribution; no casualty or mortality would occur.	Likely to jeopardize the continued existence of a species/Adversely modify critical habitat: Effects could jeopardize the continued existence of a listed or proposed species or adversely modify designated critical habitat within and/or outside the park boundaries. Major impacts would involve a disruption of habitat and breeding grounds of a protected species such that casualty or mortality would result in removal of individuals of a protected species from the population.	Short- term – Effects only during project implementation activities Long- term – Effects extend beyond project implementation activities

TABLE 5 (CONTINUED)
IMPACT TOPIC THRESHOLD DEFINITIONS

Impact Topic	Negligible	Minor	Moderate	Major	Duration
Cultural Resources	The effect is at the lowest levels of detection– barely perceptible and not measurable.	Archaeological resources—affects an archeological site(s) with modest data potential and no significant ties to a living community's cultural identity. National Register properties—does not affect the character-defining features of a National Register of Historic Places eligible or listed structure, site, district, or cultural landscape.	Archeological resources—affects an archeological site(s) with high data potential and no significant ties to a living community's cultural identity. National Register properties—changes a character defining feature(s) of the eligible or listed structures, sites, districts, or cultural landscapes, but does not diminish the integrity of the resource to the extent that its National Register eligibility is jeopardized.	Archaeological resources—affects an archeological site(s) with exceptional data potential or that has significant ties to a living community's cultural identity. National Register properties—changes a character defining feature(s) of a National Register eligible or listed structure, site, district, or cultural landscape, diminishing the integrity of the resource to the extent that it is no longer eligible to be listed in the National Register.	Short- term - Effects on the natural elements of a cultural landscape may be comparatively short-term (e.g., 3 to 5 years) until new vegetation grows or historic plantings are restored. Long- term - Because most cultural resources are non- renewable, any effects on archeological, historic, or ethnographic resources, and on most elements of a cultural landscape, would be long- term.

TABLE 5 (CONTINUED)
IMPACT TOPIC THRESHOLD DEFINITIONS

Impact Topic	Negligible	Minor	Moderate	Major	Duration
Visitor use and experience	Visitors would not be affected, or changes in visitor use and/or experience would be below or at the level of detection. The visitor would not likely be aware of the effects associated with the alternative.	Changes in visitor use and/or experience would be detectable, although the changes would be slight. The visitor would be aware of the effects associated with the alternative, but the effects would be slight.	Changes in visitor use and/or experience would be readily apparent. The visitor would be aware of the effects associated with the alternative and would likely be able to express an opinion about the changes.	Changes in visitor use and/or experience would be readily apparent and have important consequences. The visitor would be aware of the effects associated with the alternative and would likely express a strong opinion about the changes.	Short- term – Effects occur only during project implementation activities Long- term – Effects extend beyond project implementation activities
Social and Economic Considerations	Impacts would occur if effects were not detectable and would have no discernible effect on the demographics, economy, and tourism.	Impacts would result if effects were slightly detectable, but would not be expected to have an overall effect on the demographics, economy and tourism.	Impacts would occur if impacts were clearly detectable and could have an appreciable effect on the demographics, economy and tourism.	Impacts would occur if effects would be highly noticeable and would result in substantial changes to the demographics, economy and tourism.	Short- term – Effects occur only during project implementation activities Long- term – Effects extend beyond project implementation activities

TABLE 5 (CONTINUED)
IMPACT TOPIC THRESHOLD DEFINITIONS

Impact Topic	Negligible	Minor	Moderate	Major	Duration
Park operations	Park operations would not be affected or the effect would be at or below the lower levels of detection, and would not have an appreciable effect on park operations.	The effect would be detectable but would be of a magnitude that would not have an appreciable adverse or beneficial effect on park operations. If mitigation were needed to offset adverse effects, it would be relatively simple and likely successful.	The effects would be readily apparent and would result in a substantial change in park operations in a manner noticeable to staff and the public. Mitigation measures would probably be necessary to offset adverse effects and would likely be successful.	The effects would be readily apparent and would result in a substantial change in park operations in a manner noticeable to staff and the public and be markedly different from existing operations. Mitigation measures to offset adverse effects would be needed, would be extensive, and their success could not be guaranteed.	Short- term – Effects occur only during project implementation activities Long- term – Effects extend beyond project implementation activities
Transportation	Effects would not be detectable and would have no discernible effect on traffic flow and/or traffic safety conditions.	Effects would be slightly detectable but not expected to have an overall effect on traffic flow and/or traffic safety conditions.	Impacts are clearly detectable and could have an appreciable effect on traffic flow and/or traffic safety conditions.	Impacts would have a substantial, highly noticeable influence on traffic flow and/or traffic safety conditions.	Short- term – Effects occur only during project implementation activities Long- term – Effects extend beyond project implementation activities

TABLE 6
COMPARATIVE SUMMARY OF ALTERNATIVES AND EXTENT TO WHICH EACH ALTERNATIVE MEETS THE PROJECT OBJECTIVES

Alternative A – No Action/Continue Current Management	Alternative B – Preferred Alternative
The no action alternative, continued operation of one ferry departure point from Liberty Square to Fort Sumter, while meeting the short- term needs of the public, does not meet the increased demand for alternative means of water transport to Fort Sumter. Given the rapid growth in the greater Charleston area and the projected intense use of the park, this would constitute a long- term, minor to moderate, adverse effect. Under the no action alternative, impacts on natural and cultural resources would be negligible. While the no action alternative preserves the important historic, cultural and natural aspects of the park and region, it does not provide the widest range of beneficial uses and visitor experiences. **Does Project Meet Objectives?** No. Continuing the existing single-departure point to Fort Sumter from Liberty Square would not provide the widest range of beneficial uses and visitor experiences.	**The preferred alternative** of providing a secondary ferry departure point in the Mount Pleasant/East Cooper River area while maintaining the Liberty Square primary departure point would attain the widest range of beneficial uses of the environment, resource protection, visitor safety and enjoyment, and cultural resource protection, without degradation of resources. Alternative B would provide a high quality and conveniently located, ferry facility that would service the Mount Pleasant/East Cooper River area and beyond. The secondary departure point would provide convenient access to the park from the east side of the Cooper River, as well as provide National Park Service interpretive services for visitors. The majority of the environmental impacts of constructing and operating a secondary departure point in the Mount Pleasant/East Cooper River area would be negligible to minor, long- term, adverse effects. Moderate, long- term, direct adverse impacts are projected for some resources areas, but these can all be avoided or minimized through careful site selection, on- site design and implementation of mitigation measures. A site-specific environmental assessment will also be required to assure that potentially adverse effects are avoided or minimized in accordance with the National Environmental Policy Act and other state, federal and local requirements. **Does Project Meet Objectives?** Yes. The preferred alternative would provide a long- term solution to the area's need for a secondary ferry departure point, allowing the widest range of beneficial uses of the environment, resource protection, visitor safety and enjoyment, and cultural resource protection, without degradation of resources.

TABLE 7
COMPARISON OF IMPACTS OF THE ALTERNATIVES

Impact Topic	Alternative A: No Action/Continue Current Management	Alternative B: Preferred Alternative
Hydrology and Water Quality	Stormwater runoff from impervious areas at the Liberty Square facility during continued operation under the no action alternative would constitute a negligible, long- term adverse effect on local or regional surface water quality and hydrology. Stormwater runoff associated with the no action alternative would have negligible, long- term cumulative adverse effects on surface water quality since the amount of runoff is very small in comparison with the amounts contributed by the surrounding urbanized area. Under the no action alternative, dredging by the US Army Corps of Engineers in Charleston Harbor would be conducted regardless of the presence of the National Park Service facility at Liberty Square. No dredging impacts associated with Liberty Square would occur.	Alternative B would have negligible, adverse effects on the surface water quality and hydrology of the Cooper River or other bodies of water in the vicinity of ferry operations. All actions associated with the secondary ferry departure point would be localized in nature and would have no adverse effect on hydrology of the estuary. Construction of a secondary ferry departure point facility under Alternative B would potentially have minor, short-term, adverse effects on water quality associated with potential ground disturbing activities such as the dock, access roads, or parking areas. These adverse effects would be minimized and mitigated by implementation of best management practices. Operation of a secondary ferry departure point facility under Alternative B would have minor, to moderate, long-term, adverse effects on water quality and hydrology related to maintenance dredging and stormwater runoff. These effects would be mitigated by implementation of suitable best management practices. Treated wastewater volumes would not increase appreciably compared to existing conditions, therefore, negligible, adverse, long-term effects would occur in the local, Mount Pleasant service area.

TABLE 7 (CONTINUED)
COMPARISON OF IMPACTS OF THE ALTERNATIVES

Impact Topic	Alternative A: No Action/Continue Current Management	Alternative B: Preferred Alternative
Wetlands and Floodplains	The no action alternative would have no adverse effects on wetlands since no wetlands occur on the site and no construction is planned. This alternative would have long- term, negligible, adverse effects on the local floodplain since it would continue to operate in a floodplain area.	The proposed second ferry departure point would have moderate, direct, long- term, adverse effects on wetlands in the Mount Pleasant/East Cooper River area, and minor, direct, long- term adverse effects on floodplains in this area. Effects on wetlands and floodplains would be largely avoided and/or minimized through proper site selection and planning during the subsequent site- specific environmental assessment process.
Soils	The no action alternative would result in no effects on soils, since no construction or soil disturbing activities are planned.	Short- term, adverse, local, negligible effects to soils in the Mount Pleasant/East Cooper River area under Alternative B would result from potential ground disturbance activities. Soils in this urbanized area have likely been previously disturbed, and effects would be mitigated through the use of best management practices.
Vegetation, Wildlife and Aquatic Resources	The no action alternative would result in no adverse effects on terrestrial or aquatic wildlife or habitat, since no additional activities or construction of facilities are planned.	Under Alternative B, negligible to minor, short- and long-term, localized adverse effects to vegetation, wildlife, and aquatic resources would result from construction (if required) and operation of a secondary ferry departure point.

TABLE 7 (CONTINUED)
COMPARISON OF IMPACTS OF THE ALTERNATIVES

Impact Topic	Alternative A: No Action/Continue Current Management	Alternative B: Preferred Alternative
Endangered, Threatened, or Protected Species and Critical Habitats	The no action alternative may affect but is not likely to adversely affect state or federally listed species of plants and animals. These species are extremely rare and would only occasionally occur in the vicinity of Liberty Square, Fort Sumter, or along the ferry route to Fort Sumter.	Alternative B may affect but is not likely to adversely affect state and federally listed species in the Mount Pleasant/East Cooper River area, along the ferry route to Fort Sumter, or in the vicinity of Fort Sumter. These species are extremely rare and would only occasionally occur in the vicinity of Liberty Square, Fort Sumter, or along the ferry route to Fort Sumter.
Cultural Resources	No new soil disturbance, excavation, or construction under the no action alternative is proposed in previously undisturbed areas. The no action alternative would not have any effect on archaeological sites, historic structures, cultural landscapes, ethnographic resources or museum collections.	Construction of a proposed secondary departure point in previously undisturbed areas under Alternative B may have potential long- term, direct or indirect, adverse effects on cultural resources. However, effects on these resources would be largely avoided and/or minimized through proper site selection and planning during the site-specific environmental assessment process. Alternative B would potentially make a minor contribution to long-term, adverse, cumulative effects on cultural resources outside the park.

TABLE 7 (CONTINUED)
COMPARISON OF IMPACTS OF THE ALTERNATIVES

Impact Topic	Alternative A: No Action/Continue Current Management	Alternative B: Preferred Alternative
Visitor Use and Experience	Alternative A would have long- term, moderate to major, beneficial effects on visitor use and experience because the facilities at Liberty Square would continue to be available to all Fort Sumter visitors and they would receive detailed information concerning the history of Fort Sumter and the regional historical context. Long- term, minor to moderate, adverse effects may occur to visitors from the Mount Pleasant/East Cooper River area due to traffic congestion in crossing the Cooper River. This would be partially relieved when the new Cooper River Bridge is open to traffic. If visitors are limited to one departure point located in a congested area, some visitors may choose not to visit Fort Sumter.	Alternative B provides long- term, moderate to major, beneficial effects on visitor use and experience by providing visitors with a choice for their departure point in addition to contributing to local, regional, and national efforts to preserve cultural resources and to interpret them for public education and enjoyment. Short- term, minor, adverse effects on visitor use and experience may occur during construction of the Mount Pleasant/East Cooper River departure facilities, if required. Short- and long-term, minor, beneficial effects may occur to visitors from the Mount Pleasant/East Cooper River area due to avoidance of the traffic congestion in crossing the Cooper River. This would be partially relieved when the new Cooper River Bridge is open to traffic, but departure facilities on both sides of the Cooper River would still be more convenient to visitors than would one departure facility, providing a long- term, beneficial, moderate effect on visitor use and experience.

TABLE 7 (CONTINUED)
COMPARISON OF IMPACTS OF THE ALTERNATIVES

Impact Topic	Alternative A: No Action/Continue Current Management	Alternative B: Preferred Alternative
Social and Economic Considerations	The no action alternative would have no short- or long- term, effect on demographics in the greater Charleston area. The no action alternative would have negligible, short- and long- term adverse effects on economics in the greater Charleston area. The no action alternative would have minor, short- and long- term adverse effect on tourism in the greater Charleston area.	The preferred alternative would have no short- or long- term, effect on demographics in the greater Charleston area. The no action alternative would have negligible, short- and long- term beneficial effects on economics in the greater Charleston area. The preferred alternative would have no short- or long- term effect on tourism in the greater Charleston area.

TABLE 7 (CONTINUED)
COMPARISON OF IMPACTS OF THE ALTERNATIVES

Impact Topic	Alternative A: No Action/Continue Current Management	Alternative B: Preferred Alternative
Park Operations	Implementation of Alternative A would continue the current management strategies, and there would be no change in park operations. Under Alternative A, ferry departures would continue to occur from Liberty Square, and park staff would continue to operate and maintain facilities comparable to existing conditions. Visitation to the facilities at Liberty Square would be expected to increase over time, creating a long- term need for additional park staff to respond to the need for additional park services. Existing staff shortages, such as skilled craftsmen, if not filled in the future, would create short- term and long- term, negligible to minor, adverse effects.	Implementation of Alternative B would cause increased costs for maintenance and two additional maintenance personnel, additional personnel time to manage the concessionaire contract, and an estimated six additional personnel needed to provide interpretive services. Provision of these staff and materials would have long-term, major beneficial impacts on park operations. The increase in park staff in interpretive and maintenance personnel would distribute workloads and result in more dispersed operations. Additional staff members would allow for a higher level of monitoring visitor activities and educating visitors about park resources. Existing staff shortages, such as skilled craftsmen, if not filled in the future, would create short- term and long- term, negligible to minor, adverse effects. If existing vacancies are not filled, long- term, moderate to major, adverse effects could be expected.
Transportation	Alternative A would have negligible to minor, short- and long- term, adverse effects on local and regional transportation from utilizing only the Liberty Square departure point. Cumulative adverse effects would also be considered negligible over the long- term.	Alternative B, the Preferred Action, would have no direct or cumulative adverse or beneficial effect on the transportation system in the Charleston or Mount Pleasant area.

AFFECTED ENVIRONMENT, EVALUATION METHODOLOGY, AND ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This section describes the features of the affected environment and the potential environmental consequences of Alternative A, no action, and Alternative B, the Preferred Alternative. It is organized according to impact topics, which distill the issues and concerns into distinct subject areas for analysis. This approach allows for a standardized comparison between alternatives based on the most relevant issues. Only those topics retained for further consideration in the general management plan amendment and environmental assessment are included in this section.

The National Environmental Policy Act requires consideration of context, intensity and duration of effects, indirect effects, cumulative effects, and measures to mitigate for effects. The effects of the secondary ferry departure point alternative in this general management plan amendment and environmental assessment are therefore defined using these terms. National Park Service policy also requires that "impairment" of resources be evaluated in all environmental documents.

AFFECTED ENVIRONMENT

Detailed information on resources as they relate to issues is provided prior to each impact topic analysis. In general, for the No Action alternative, the affected environment is defined as the existing National Park Service Liberty Square facility, the corridor within which ferry boats carry visitors to and from Fort Sumter, and all areas within the boundaries of Fort Sumter. The affected environment for the secondary ferry departure point is defined as the Mount Pleasant/East Cooper River area, the ferry corridor to Fort Sumter, and Fort Sumter.

PARK DESCRIPTION

Fort Sumter sits on a man- made island of 2.5 acres located at the northeastern terminus of a marshy shoal. The shoal extends east from James Island to the inlet of Charleston Harbor. Park boundaries include 122.5 acres of submerged land surrounding the island. The entrance channel of Charleston Harbor lies 1200 yards to the northeast. Beyond that is the southwestern terminus of Sullivan's Island where Fort Moultrie is located. To the south and west between Fort Sumter and Fort Johnson on James Island, is a shoal and marsh area known as Spider Island. Spider Island was developed as a spoil bank from earlier dredging of the south channel. To the south is more shallow shoal and marsh extending to the southern limit of the Charleston Harbor entrance- - Cummings Point on Morris Island. The City of Charleston is located 3.3 miles to the northwest.

On November 7, 1986, Public Law 99- 637 authorized the Secretary of the Interior to acquire an 8.88- acre site along the Cooper River at the foot of Calhoun Street for the development of the Liberty Square facility on the Charleston peninsula. The legislation also authorized the National

Park Service to cooperate with the City of Charleston to lease a portion of the National Park Service land for construction of the South Carolina Aquarium. In 1995, the Service leased a 1.5-acre parcel of the ferry boat property to the City of Charleston for construction of the South Carolina Aquarium.

The Liberty Square facility provides a departure point for visitors going to Fort Sumter, including a pier, terminal building, utilities, and site improvements. Visitors can view interpretive exhibits, interact with park staff, view Fort Sumter from the dock, purchase tickets, and board a ferry to Fort Sumter. The site is the sole National Park Service- owned and operated embarkation point for visitors to Fort Sumter. Visitors currently may also board a commercial ferry to Fort Sumter at Patriots Point located in Mount Pleasant to the east, across the Cooper River from Liberty Square.

PROJECT SITE DESCRIPTION

The proposed project area for the secondary ferry departure point encompasses the Mount Pleasant/East Cooper River area along the shoreline. A specific project "site" has not yet been identified, and therefore a site description is not included in this environmental assessment. Once the prospectus process has been completed and a specific, secondary departure point has been identified, an environmental assessment would be completed for this site.

For the no action alternative, the project site is defined as the existing primary departure point, Liberty Square.

Since park operations at Fort Sumter are not expected to change under either Alternative A or B, Fort Sumter is not the focus of this environmental assessment. Conditions at Fort Sumter would remain similar to existing conditions, with similar numbers of visitors at the Fort.

METHODOLOGY

General Evaluation Methodology

The impact analyses and conclusions are based upon the review of existing literature and Fort Sumter National Monument studies, information provided by local experts, other agencies, professional judgments and park staff insights, the South Carolina State Historic Preservation Office, and public input. An assessment of the effects of the alternatives is provided for each resource topic that has been brought forward from the public scoping process. For each resource topic, the analysis includes a brief description of the affected environment and an evaluation of effects.

The impact analyses involved the following steps:

Identify the area that could be affected.

Compare the area of potential effect with the resources that are present.

Identify the intensity (negligible, minor, moderate, or major), context (local, parkwide, regional), duration (short- or long- term), and type (direct or indirect) of effect, both as a result of this action and from a cumulative effects perspective.

Identify whether effects would be beneficial or adverse. The criteria used to define the intensity of effects associated with the analyses are presented in Table 5.

Propose mitigation measures to be taken to protect natural and cultural resources as applicable. Examples are provided in Table 4.

General Definitions

The following definitions were used to evaluate the context, intensity, and duration of effects associated with project alternatives:

Context is the setting in which an impact is analyzed, such as local, parkwide, or region. The Council on Environmental Quality (CEQ 1978) requires that resource analyses include discussions of context.

Effect Intensity - Refer to Table 5 for complete descriptions of effect intensities used to assess effects for this analysis.

Duration of the effects in this analysis is defined as follows:

Short term – when effects occur only during construction or last less than one year; or

Long term – when effects that last longer than one year.

Direct versus Indirect Impacts - The following definitions of direct and indirect effects were used in this evaluation:

Direct - an effect that is caused by an action and occurs at the same time and place; or

Indirect - an effect that is caused by an action but is later in time, or farther removed in Distance, but still reasonably foreseeable.

Cultural Resource Analysis Method

Effects on cultural resources are described in terms of type, context, duration, and intensity, as described above, which is consistent with the regulations of the Council on Environmental Quality (CEQ 1978) that implement the National Environmental Policy Act. The impact analyses are also used to comply with the requirements of Section 106 of the National Historic Preservation Act.

In accordance with the Advisory Council on Historic Preservation's regulations implementing Section 106 of the National Historic Preservation Act (36 CFR Part 800, Protection of Historic Properties), effects on cultural resources were identified and evaluated by:

Determining the area of potential effects;

Identifying cultural resources present in the area of potential effects that are either listed in or eligible to be listed in the National Register of Historic Places;

Applying the criteria of adverse effect to affected cultural resources either listed in or eligible for inclusion in the National Register; and

Considering ways to avoid, minimize, or mitigate adverse effects.

The Advisory Council's regulations for Section 106 compliance require a determination of either *adverse effect* or *no adverse effect* for cultural resources. An adverse effect occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualifies it for inclusion in the National Register. For example, this could include diminishing the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association. Adverse effects also include reasonably foreseeable effects caused by the alternative that would occur later in time, be farther removed in distance, or be cumulative (36 CFR Part 800.5, *Assessment of Adverse Effects*). A determination of no adverse effect means there is an effect, but the effect would not diminish in any way the characteristics of the cultural resource that qualify it for inclusion in the National Register.

The Council on Environmental Quality regulations (CEQ 1978) and *Director's Order #12 and Handbook: Conservation Planning, Environmental Impact Analysis, and Decision Making* (NPS 2001b) call for a discussion of the appropriateness of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact, such as reducing the intensity of an impact from major to moderate or minor. Any resulting reduction in intensity of impact because of mitigation, however, is an estimate of the effectiveness of mitigation under the National Environmental Policy Act only. It does not suggest that the level of effect as defined by Section 106 is similarly reduced. Although adverse effects under Section 106 may be mitigated, the effect remains adverse.

A Section 106 summary is included in the impact analysis for cultural resources. The summary is intended to meet the requirements of Section 106 and is an assessment of the effect of implementing the alternative on cultural resources, based on the criterion of effect and criteria of adverse effect found in the Advisory Council's regulations.

Cumulative Effects Analysis Method

The Council on Environmental Quality (CEQ 1978) regulations for implementing the National Environmental Policy Act require assessment of cumulative effects in the decision- making process for federal projects. Cumulative effects are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non- federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative effects are considered for both the no action and the preferred action alternatives, and are presented at the end of each impact topic discussion analysis.

Cumulative effects were determined by combining the effects of the alternative with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other past, ongoing, or reasonably foreseeable future actions at the park and in the Greater Charleston area and Mount Pleasant. The number of visitors allowed at Fort Sumter is expected to remain at or below existing levels, therefore cumulative effects for Fort Sumter would be considered

similar to existing conditions. The number of visitors expected at Liberty Square is projected to increase. However, effects could potentially be derived from continued regional development on both public and private lands in the vicinity. Such urban development and other infrastructure improvements include:

- Charleston Harbor Deepening and Widening Project;
- Charleston Harbor Project;
- Cooper River Bridge Replacement Project Hwy 17 to Mount Pleasant;
- Mount Pleasant Riverfront Park;
- Expansion of Charleston Area Regional Transportation Authority (CARTA) Services in Mount Pleasant;
- Mount Pleasant/East Cooper River area developments including projects associated with the Patriots Point Development Authority, including Hilton Resort development and City of Mount Pleasant multi- family re- zonings;
- Charleston Downtown Waterfront mixed use development; and
- Regional Development (including, but not limited to: Charleston Naval Base Adaptive Reuse, Charleston International Airport Expansion, College of Charleston Expansion, and City of North Charleston Noisette Project).

Impairment Analysis Method

In addition to determining the environmental consequences of the Preferred and No Action alternatives, the 2001 *National Park Service Management Policies and Director's Order #12* (NPS 2001b) requires analysis of potential effects to determine if actions would impair park resources.

The fundamental purpose of the National Park Service, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. National Park Service managers must always seek ways to avoid or minimize to the greatest degree practicable adverse effects on park resources and values. However, the laws do give National Park Service management discretion to allow effects to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given National Park Service management discretion to allow certain effects within parks, that discretion is limited by statutory requirement that the National Park Service must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an effect that, in the professional judgment of the responsible National Park Service manager, would harm the integrity of park resources or values, including opportunities that otherwise would be present for the enjoyment of those resources or values. An adverse effect to any park resource or value may constitute an impairment. However, an impact would more likely constitute an impairment to the extent it affects a resource or value whose conservation is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;

Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or

Identified as a goal in the park's Master Plan or general management plan or other relevant National Park Service planning documents.

Impairment may result from National Park Service activities in managing the park, visitor activities or from activities undertaken by concessionaire, contractors, and others operating in the park. A determination of impairment is made for each resource topic within each "Conclusion" section of this environmental assessment under "Environmental Consequences."

HYDROLOGY AND WATER QUALITY

Affected Environment

This section describes the hydrology and water quality of the project area, which includes the Charleston Harbor area, and the associated lower portions of the Cooper River in the vicinity of Liberty Square and Mount Pleasant.

The Charleston Harbor Watershed

Key features of regional surface waters within the Charleston Harbor watershed are summarized below from the Charleston Harbor Study (SCDHEC 2000).

The watershed lies entirely within the South Carolina Coastal Plain and consists of sedimentary deposits of sand, gravel, clay, marl, and limestone resting on metamorphic and igneous rocks. Overlying these deposits are marine and riverine sediments and a thin veneer of sand, clay, and shell comprising Pleistocene and recent formations.

The Charleston Harbor estuary is formed by the confluence of the Ashley, Cooper, and Wando rivers. The average depth of the estuary basin is 12 feet (3.7 m) at mean low water (MLW), but navigation channels have been deepened to approximately 40 feet (12.2 m) MLW. The mean tidal range is 5.2 feet (1.6 m), and spring tides average 6.2 feet (1.9 m).

The diversion of the Santee River into the Cooper in 1941 effectively increased the drainage area of the Charleston Harbor Estuary over eleven times to a watershed of approximately 15,800 square miles (41,000 km^2). The Cooper River was thus transformed from a tidal slough, and Charleston Harbor was transformed from a well- mixed estuary to a partially- mixed estuary and efficient sediment trap. Following the project's completion, the increased shoaling in the harbor required annual removal of 7,600,000 cubic yards (5,800,000 m^3) to maintain authorized navigation channels. To alleviate the shoaling problems, an 11 mile (18- km) rediversion canal from Lake Moultrie to the Santee River was constructed that reduced the Santee flow into the Cooper River at Pinopolis Dam to approximately 4,520 cubic feet per second (128 m^3/s).

Liberty Square Area

The Cooper River is approximately one mile wide in the vicinity of Liberty Square. The average depth at mean low water is 10 to 25 feet, although a navigation channel in the river near the

Town Creek Channel is maintained by periodic dredging by the U.S. Army Corps of Engineers harbor maintenance program. The average tidal amplitude in the vicinity of Liberty Square is approximately 5.2 feet. Flow velocities in the river are variable due to tidal flows and regulated releases of fresh water from Lake Moultrie via Pinopolis Dam (SCDHEC 2000 and NPS 1997).

The majority of the shoreline of the Cooper River at Liberty Square is composed of unconsolidated fill material or bulkheads. The bottom of the river along the shoreline at Liberty Square is composed of a variety of mud, clay, sand, and shell fragments. Concrete docks and wooden pilings support former or existing piers, trestles, and ship ways extend into the river at several locations in downtown Charleston (SCDHEC 2000).

Stormwater in the vicinity of Liberty Square is collected by a municipal deep tunnel drainage system before it is discharged into the Cooper River (Tucker 2003).

The nearest surface water source for the City of Charleston potable supply comes from the Back River Reservoir, approximately 13 miles from Liberty Square (SCDHEC 2000).

Mount Pleasant/East Cooper River Area

The lower portion of the Cooper River estuary along the Mount Pleasant shoreline is characterized by an extensive network of tidal creeks and freshwater channels. Tidal exchange occurs with the ocean four times a day (2 high and 2 low tides). The main tidal creeks include Shem Creek, located approximately 400 feet south of US Highway 17, and Hobcaw Creek, located approximately 8,000 feet north of US Highway 17 in Mount Pleasant. The tidally influenced Intercoastal Waterway is located in the southern portion of the Mount Pleasant/East Cooper River area, between Sullivans Island and Mount Pleasant. Numerous smaller creeks and drainages also occur in the Mount Pleasant/East Cooper River area. Land elevations throughout the area range from approximately 12 to 17 feet above sea- level, and stormwater drainage occurs from upland areas to the estuary.

A large portion of the Mount Pleasant/East Cooper River area includes Patriots Point, a man-made land mass located immediately south of Highway 17. This area consists largely of dredge spoil material from Charleston Harbor (DePass 1978). The Patriots Point Development Authority intends to apply for state and federal permits to perform maintenance dredging for an access channel and ferry boat berthing area adjacent to the Patriots Point Naval Museum in Mount Pleasant as well as for maintenance dredging in portions of the Charleston Harbor Resort and Marina, located immediately to the south of the ferry boat facility. Approximately 69,000 cubic yards of material will be dredged from the area of the access channel and ferry boat berthing area to meet the required depth and approximately 9,500 cubic yards of material will be removed from the Charleston Harbor Marina.

Dredging operations will be conducted in accordance with permits requirements and US Environmental Protection Agency, South Carolina Office of Coastal Resource Management, South Carolina Department of Health and Environment, Bureau of Water Control and the US Army Corps of Engineers standards. A sampling and analysis plan is required to assure that the material to be dredged is suitable for upland disposal and to determine if the activity will affect surrounding water quality.

Regional Groundwater

The Mount Pleasant/East Cooper River Area is underlain by a series of aquifers and confining units of the Atlantic Coastal Plain sediments. The upper surficial aquifer is composed of surficial sands and clays and extends approximately 20 feet below the surface and is separated from the lower surficial aquifer by a clay and sand layer. The lower surficial aquifer is directly connected to the Cooper River, and its interface with the shipping channel is kept open by periodic dredging by the United States Army Corps of Engineers (NPS 1997). Approximately 66 percent of drinking water distributed by the Mount Pleasant waterworks is derived from the Middendorf Aquifer which is located between 1800 and 2000 feet below the ground surface (Mount Pleasant Waterworks 2002). Groundwater generally moves from toward the east-southeast in the region.

Regional Water Quality

The water quality in Charleston Harbor is generally considered good, but problems do exist according to local studies conducted (SCDHEC 2000, 2000a). Wasteload assimilation, nonpoint source runoff impacts, and toxic pollutants are problems. Ninety- five per cent of the total pollutant loading in the Cooper River are from point sources (pollutants emanating from a confined, discrete source) and of human origin. Due to decreasing dissolved oxygen and increasing levels of turbidity and coliform bacteria, some important areas of the Charleston Harbor Estuary only partially support aquatic life and recreational uses.

Trends of decreasing nutrient concentrations suggest some improvements in water quality, although some estuarine zones in tributary subbasins still exhibit high nutrient concentrations and hypereutrophic conditions. The estuary also contains several "hot spots" where heavy metals and organic compounds exceed the low range for toxic effects on estuarine organisms. In some areas, fish advisories have been issued for mercury (SCDHEC 2002a).

The Charleston Harbor estuary has a high ratio of intertidal marsh to water surface area ($\geq$ 3:1) and a large, consistent tidal range. These conditions, in combination with high rates of primary production and nutrient cycling in the wetlands, contribute significantly to the role of intertidal marshes in affecting estuarine water quality. Intertidal marshes tend to remove inorganic nitrogen (as nitrate) and export organic matter and perhaps ammonia. These factors directly influence biochemical oxygen demand and oxygen dynamics, as well as eutrophication levels (SCDHEC 2000).

The Charleston Harbor Estuary is managed as a single homogeneous unit by current water quality (Clean Water Act 1972) and coastal resource management standards (Coastal Zone Management Act 1972). With the exception of Shem Creek, the South Carolina Department of Health and Environmental Control (SDHEC 2002 a) has classified the entire Charleston Harbor, including the area in the vicinity of the Liberty Square facility and the Mount Pleasant/East Cooper River Area, as follows:

Aquatic life use support: Fully supported

Recreational use support: Fully supported

Shem Creek is listed as only partially supporting these two uses because of problems with elevated levels of fecal coliform bacteria and low dissolved oxygen levels, according to the SCDHEC 303(d) report (SDHEC 2002 b). Consequently, this tidal creek has been placed on the 303(d) list, which is a state listing of impaired and threatened waterbodies.

The National Park Service requires ferry boats to comply with United States Coast Guard requirements for sewage disposal. Ferry boats are not allowed to pump treated wastewater into the Charleston Harbor within 500 yards of any National Park Service dock or any other structure along the water's edge at Liberty Square.

Impacts of Alternative A: No Action / Continue Current Management

Under Alternative A, no construction of any new facilities at Liberty Square or Fort Sumter would occur. Consequently, this alternative would have no adverse direct impacts on water quality, hydrology, or hydrogeology that are associated with construction activities.

During operation, the National Park Service would not conduct maintenance dredging of the ferry dock area at Liberty Square under the no action alternative. However, the U.S. Army Corps of Engineers conducts periodic maintenance dredging in the Charleston Harbor as part of their ongoing Harbor Maintenance Program (Tucker 2003). There would be no dredging impacts associated with Liberty Square under the no action alternative.

During operation of the Liberty Square facility, stormwater flow from impervious areas would continue to flow into the existing storm drainage system. This would constitute a negligible, long- term, adverse effect on water quality of the adjacent Cooper River estuary, since the relative amount of runoff contributed is very low in comparison with the surrounding area.

The no action alternative would have no adverse effect on the hydrology of the Cooper River or other bodies of water in the project area. All actions associated with the no action alternative are localized in nature and would have no adverse effect on regional hydrology, surface water quality or ground water quality.

There would be no increase in the amount of wastewater generated onboard the ferry boats since the number of trips to Fort Sumter would not increase. Increases in the amount of wastewater generated at Liberty Square would increase relative to increases in the number of visitors using this facility. However, compared to the Charleston area, the adverse effects of treating this amount of wastewater would be considered negligible and long- term on a local and regional level.

Cumulative effects. During operation, the amount of stormwater runoff from the Liberty Square facility would be negligible compared with the amount of nonpoint runoff from the surrounding City of Charleston. This alternative would therefore have negligible, long- term cumulative adverse effects on water quality with respect to stormwater runoff. Dredging in the Charleston Harbor by the U.S. Army Corps of Engineers would be conducted regardless of the National Park Service presence.

Conclusion. Stormwater runoff from paved or impervious areas comprising the Liberty Square facility would occur during operation. Compared with the amount of nonpoint runoff from the surrounding urbanized City of Charleston, this would constitute a negligible, long- term adverse effect on water quality. There would be no adverse effects on local or regional hydrology or ground water quality. The no action alternative would have negligible, long- term cumulative adverse effects on water quality with respect to stormwater runoff.

Dredging of the Charleston Harbor by the U.S. Army Corps of Engineers would be conducted regardless of the National Park Service presence.

Alternative A would not produce major adverse impacts on water quality and hydrology whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in National Park Service planning documents. Consequently, there would be no impairment of water quality and hydrology as a result of the implementation of Alternative A.

Impacts of Alternative B: The Preferred Alternative

Alternative B would involve construction of a secondary ferry departure point at an undetermined location in the Mount Pleasant/East Cooper River area. Alternative B would have a potential for producing soil erosion and surface water runoff during construction since some degree of soil disturbance would occur. Possible facility construction that could involve ground disturbing activities include the landward portion of the dock, the parking lot, any access road construction if necessary, or other cleared areas. These types of construction activities, if required, would result in minor, short- term, direct, adverse effects that would be mitigated by the implementation of appropriate best management practices (see Table 4).

During operation, Alternative B would result in minor to moderate, long- term adverse effects on water quality since maintenance dredging of a new or previously existing dock area would most likely be required, depending on the departure point location selected. These adverse effects would be mitigated by implementing best management practices such as silt curtains and timing of dredging to the period of lowest biological activity in mid- winter. Minor, long- term adverse effects on water quality would also result from stormwater runoff from the facility during operation. Adverse effects on groundwater from maintenance dredging would be comparable to existing conditions.

Requirements for treated wastewater disposal from ferry boats originating from the Mount Pleasant/East Cooper River departure point would be included in the future prospectus. Since the total number of ferry boats operating is not expected to increase due to the unchanged carrying capacity at Fort Sumter, wastewater volume would not increase, resulting in no increase in effect compared to existing conditions. Wastewater generated as a result of either using existing facilities or constructing new facilities along the Mount Pleasant/East Cooper River would be similar to existing conditions or result in negligible adverse, long- term effects. However, all wastes generated would be tied to existing sewer lines servicing Mount Pleasant and treated wastewater volumes would not increase appreciably compared to existing conditions.

Alternative B would have negligible adverse effects on the hydrology of the Cooper River, other bodies of water in the project area, or groundwater. All actions associated with the implementation of Alternative B would be localized in nature and would have no adverse effect on regional hydrology.

Cumulative Effects. Alternative B would result in minor short- term cumulative adverse effects on water quality as a result of dredging. The localized area of dredging required for the secondary ferry departure point dock would be small in comparison with the adverse effects of the dredging involved with the ongoing Charleston Harbor maintenance program. Minor, long-term cumulative effects on water quality would also result from stormwater runoff during operation of a secondary departure point, since the total impervious area for the secondary ferry departure point would be relatively small.

Conclusion. Alternative B would have negligible, adverse effects on the hydrology or ground water quality of the Cooper River or other bodies of water in the vicinity of ferry operations. All actions associated with the secondary ferry departure point would be localized in nature and would have no adverse effect on hydrology of the estuary.

Construction of a secondary ferry departure point facility under Alternative B would potentially have minor, short- term, adverse effects on water quality associated with potential ground disturbing activities such as dock, access road, or parking area construction. These adverse effects would be minimized and mitigated by implementation of best management practices.

Operation of a secondary ferry departure point facility under Alternative B would have minor to moderate, long- term, adverse effects on water quality and hydrology related to maintenance dredging and stormwater runoff. These adverse effects would be mitigated by implementation of suitable best management practices. Treated wastewater volumes would not increase appreciably compared to existing conditions, therefore, negligible, adverse, long- term effects would occur in the local, Mount Pleasant service area.

Alternative B would not produce major adverse impacts on water quality and hydrology whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in National Park Service planning documents. Consequently, there would be no impairment of water quality and hydrology as a result of the implementation of Alternative B.

WETLANDS AND FLOODPLAINS

Affected Environment

Wetlands

Wetland habitats do not occur at the Liberty Square facility. The site is located in an urbanized section of Charleston that directly borders the Cooper River estuary. A vertical bulkhead is located between the site and the river. The shoreline consists of fill material placed in the area historically (NPS 1997).

The Town of Mount Pleasant shoreline along the East Cooper River includes a variety of freshwater and salt water wetlands, based on a site survey conducted in March 2003 and a review of the available U.S. Fish and Wildlife National Wetland Inventory (NWI) maps (USFWS 2003a). Two types of habitats are present – estuarine types associated with salt marshes, tidal flats, mud bottoms, tidal channels, and open estuarine habitats, and; emergent and forested wetlands associated with streams, ponds, lakes and freshwater depressions in the area. The dominant vegetated wetland type is smooth cordgrass marsh. Other species of salt marsh plants in the area include black needle rush (*Juncus roemarianus*), salt meadow cordgrass (*Spartina patens*), glasswort (*Sarcocornia perennis*), and sea oxeye (*Borrichia frutescens*) (NPS 1998). This habitat occurs in a well- developed fringe along the majority of the shoreline of the Mount Pleasant/East Cooper River area, including tidal creeks. A variety of other wetland habitats also occurs in this area, as summarized in Appendix B, Table B.1.

The United States Fish and Wildlife Service NWI maps (USFWS 2003 a) are useful as guides during the planning stages of a project, but they do not allow for detailed assessment of the types and acres of wetlands present and their associated functions and values. Consequently, formal wetland delineations in the Mount Pleasant/East Cooper River area would be conducted at a future date as part of a separate, site- specific environmental assessment. A summary of the functions and values of the types of habitats present in the Mount Pleasant/East Cooper River area is provided in Appendix B.

Detailed summaries of the types, functions and values of wetlands in the South Carolina coastal region are found in *The Ecological Characterization of the Sea Island Coastal Region of South Carolina and Georgia* (USFWS 1980) and the Charleston Harbor Project report (SCDHEC 2000). Porcher (1995) provided a detailed assessment of selected unique and valuable plant community types and natural areas in the Charleston area, including wetlands, as part of the Charleston Harbor Study (SCDHEC 2000).

The National Park Service is directed to protect wetlands from adverse effects to the greatest extent practicable (NPS 2002a). The National Park Service must avoid direct or indirect adverse effects on wetlands, or where adverse effects cannot be avoided, degradation or loss must be minimized by every practicable effort. Laws and regulations regarding wetlands and coastal zone protection are identified in Table 1.

Floodplains

Liberty Square lies within the 100- year floodplain and the coastal high hazard zone (NPS 1997). The base water flood elevation at the Liberty Square site is 17 feet (NPS 1997). This is defined as "the height of the base flood, usually in feet, in relation to the National Geodetic Vertical Datum of 1929, the North American Vertical Datum of 1988, or other datum referenced in the Flood Insurance Study report, or average depth of the base flood, usually in feet, above the ground surface" (FEMA 2003a, b). The East Cooper River/Mount Pleasant area along the shoreline also lies within the 100- year floodplain and the coastal high hazard zone (FEMA 2003 b). However, large portions of the area inland from the shore are located outside the 100- year floodplain (DePass 1978).

The entire City of Charleston is located within the 500- year flood zone (NPS 1997). The majority of the City is located at a slightly higher elevation (4 foot maximum differential) than Liberty Square (NPS 1997). There is little change in topography across the project area at this location. The site would be inundated by floodwater in the event of a hurricane or major tropical storm as a result. Facilities located in these coastal high- hazard areas are required to meet Charleston County floodplain management standards.

A Statement of Findings for Executive Order 11988 "*Floodplain Management*" would be conducted and included in the site- specific environmental assessment once a specific departure point is identified.

Impacts of Alternative A: No Action / Continue Current Management

Wetlands

Since no wetlands are present at Liberty Square, continuing operation of ferry boats from this location would have no direct or indirect adverse effects on wetlands. In addition, under the no action alternative, no new facilities would be constructed at Fort Sumter that would effect wetlands.

Floodplains

The existing facilities at Liberty Square are located in the 100- year floodplain. The area is subject to flooding during hurricanes or large tropical storms. The area is highly developed, and continued operation of Liberty Square relative to the surrounding urbanized City of Charleston would result in long- term, negligible, adverse local floodplain effects.

Cumulative Effects. Under current management, the existing facility would have no adverse effects on wetlands, and long- term, negligible, adverse effects on the local floodplain.

Conclusion. The no action alternative would result in no adverse effects of any type on wetlands. This alternative would have long- term, negligible, adverse effects on the local floodplain.

Alternative A would not produce major adverse impacts on floodplains or wetlands whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in National Park Service planning documents. Consequently, there would be no impairment of floodplains or wetlands as a result of the implementation of Alternative A.

Impacts of Alternative B: The Preferred Alternative

Wetlands

The Preferred Alternative would have moderate, direct, long- term adverse effects on wetlands at sites in Mount Pleasant along the East Cooper River, since any proposed ferry departure

point would by necessity be located a in low lying waterfront area, probably occupied by smooth cordgrass marsh. Alternative B could potentially result in effects on wetlands or floodplains that would be readily apparent.

A joint state/federal permit under Section 404 of the Clean Water Act would be required if placement of fill in waters of the United States is involved. Section 10 of the Rivers and Harbors Act (structures placed in navigable waters) would be addressed within the joint permit application process. The Section 404 regulations require that the National Park Service would be required to select the least environmentally damaging practicable alternative. This process would be documented in a site- specific National Environmental Policy Act environmental assessment once a specific departure point is identified.

Floodplains

The location of a secondary departure point in the Mount Pleasant/East Cooper River area would occur within the 100- year floodplain. The facility would include paved areas, a dock and ancillary facilities. If construction were necessary, this could result in increased runoff of suspended material to the Cooper River estuary. During operation, any increase in impervious surface could also potentially cause stormwater runoff into the Cooper River during storm events. This would have minor, direct, long- term, adverse effects on floodplain values since the facility is small in comparison to the built environment in the Mount Pleasant area.

The National Park Service is mandated under Director's Order 77- 1 to avoid and minimize potentially adverse effects through proper siting and design procedures that would be addressed in a separate, site- specific environmental assessment. The specific mitigation measures listed in Table 4 would be used to avoid or minimize effects on floodplains.

Cumulative effects. Under the Preferred Alternative, minor, long- term, direct, adverse effects on floodplains would occur. The preferred alternative would have moderate, direct, long- term impacts on wetlands. Urban development in the region has resulted in the presence of many structures within the 100- year floodplain and filling of wetlands. The proposed secondary ferry departure point would make a negligible to minor relative contribution to these regional effects, however, since the acreage involved would be small, and mitigation measures would be taken to avoid and minimize potential adverse effects during any construction and operation (see Table 4).

Conclusion. The proposed second ferry departure point would have negligible to moderate, long- term, adverse effects on floodplains and wetlands in the Mount Pleasant/East Cooper River area. However, these effects could be largely avoided and/or minimized through proper site selection and planning during the environmental assessment process. Compensation in the form of restoration would also be required to offset effects on wetlands.

Alternative B would not produce major adverse impacts on floodplains or wetlands whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in National Park Service planning documents.

Consequently, there would be no impairment of floodplains or wetlands as a result of the implementation of Alternative B.

SOILS

Affected Environment

Liberty Square is located in a highly urbanized section of downtown Charleston. The soils at Liberty Square have been previously disturbed during construction of the facility and consist of artificial fill deposited along the Cooper River over the years (NPS 1997). Contaminated soils were removed from the Liberty Square site during construction of the facility.

The Mount Pleasant/East Cooper River area is also urbanized. Three soil series occur within the Mount Pleasant/East Cooper River area: Capers, Mine Pits and Dumps, and Tidal Marsh. These soils and the soils of the entire Charleston Harbor area are mapped and discussed in detail in the Soil Survey of Charleston County, South Carolina (USDA 1971). Charleston Harbor is located entirely within the South Carolina Coastal Plain, which is characterized by very deep, poorly drained, slowly permeable soils that formed in clayey marine sediments and alluvial materials (Park 1985, SCDHEC 2000, USGS 1990). The Charleston Harbor watershed consists of sedimentary deposits of sand, gravel, clay, marl, and limestone resting on metamorphic and igneous rock. Overlying these deposits are marine and riverine sediments and a thin veneer of sand, clay, and shell (SCDHEC 2000).

Impacts of Alternative A: No Action / Continue Current Management

Under Alternative A, no new facilities would be constructed. No ground disturbance would occur and soils would not be impacted.

Cumulative effects. Under Alternative A, the existing facility would have no effects on soils.

Conclusion. Continuation of Alternative A would result in no effects on soils, since no construction or soil disturbing activities are planned.

Alternative A would not produce major adverse effects on soils whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in National Park Service planning documents. Consequently, there would be no impairment of soils as a result of the implementation of Alternative A.

Impacts of Alternative B: The Preferred Alternative

The Preferred Alternative could involve soil disturbance in the Mount Pleasant/East Cooper River area if construction of facilities is associated with a secondary ferry departure point. Soil disturbances would be avoided if construction is not required. Soils in the urbanized Mount Pleasant/East Cooper River area have likely been previously disturbed. Soil disturbance associated with the Preferred Alternative would be considered a short- term, negligible, local,

adverse effect. Specific details concerning acreages of soil disturbance would be addressed in a future, site- specific environmental assessment.

Construction impacts such as soil erosion and fugitive dust would be mitigated by construction site best management practices including watering and the use of silt fencing (Table 4).

Cumulative effects. Under the Preferred Alternative, negligible, short- term, adverse effects could occur. Cumulatively, the preferred alternative would make no detectable contribution to effects in the Mount Pleasant/East Cooper River area since the area involved is estimated to be relatively small, and the incremental adverse effects related to this alternative would be negligible, localized and short- term. Mitigation measures (Table 4) would be taken to minimize potential adverse effects.

Conclusion. Short- term, adverse, local, negligible effects to soils in the Mount Pleasant/East Cooper River area would result from potential ground disturbance activities proposed under Alternative B. Soils in this urbanized area have likely been previously disturbed, and impacts would be mitigated through the use of best management practices. The amount of soil disturbance would be addressed in a future, site- specific environmental assessment.

Alternative B would not produce major adverse effects on soils whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in National Park Service planning documents. Consequently, there would be no impairment of soils as a result of the implementation of Alternative B.

VEGETATION, WILDLIFE AND AQUATIC RESOURCES

Affected Environment

Vegetation within the Liberty Square site consists primarily of warm- season grasses that are regularly mowed (NPS 1998). The area is highly urbanized and disturbed and provides wildlife habitat of limited value.

The Mount Pleasant/East Cooper River area is comprised of uplands, open water, emergent herbaceous wetlands, and estuarine marsh. Land cover within the Mount Pleasant/East Cooper River area includes forested uplands, urban areas, forested wetlands, and disturbed scrub/shrub habitat types. The forested community consists of a mix of maritime and marl forests (SCDHEC 2000). The marl forest supports a canopy cover consisting of loblolly, slash, and short- and long- leaf pines, oak/hickory hardwoods, and disturbed scrub/shrub. Maritime species of note are live oak (*Quercus virginiana*), southern red cedar (*Juniperus silicicola*), tough bumelia (*bumelia tenax*) and cabbage palm (*Sabal palmetto*). The disturbed scrub/shrub habitat is the most prevalent wooded habitat fringing the Charleston Harbor. The shoreline along the Mount Pleasant/East Cooper River area consists of extensive marsh vegetation due to the gently sloping coastal plain and the tidal range (SCDHEC 2000).

The Charleston Harbor estuary and Lower Cooper River do not support extensive subtidal seagrass beds or benthic algae communities. This is likely due to the low transparency of the

estuarine waters combined with lack of suitable substrate as a result of regular dredging in some areas. A few species of coastal/estuarine algae (*Polyphyra sp.* and *Ulva sp.*) are found in the intertidal areas of the Lower Cooper River basin (SCDHEC 2000).

Common benthic invertebrate species inhabiting the Charleston Harbor estuary include mollusks, polychaetes, oligochaetes, nematodes, and amphipods. Within the harbor basin, several sites show evidence of reduced benthic diversity, low faunal abundance, or small- scale differences in community composition. This is likely a result of the dredging activities or the presence of industrial and sewage outfalls. Among the three river systems, average diversity values are lower in the Cooper River than in the Ashley and Wando rivers. The lower benthic diversity in the Cooper River may reflect adverse effects from the greater number of industrial and port facilities in this system and the frequent dredging as compared to the other two river systems (SCDHEC 2000).

In general, the Charleston Harbor area provides a wide variety of wildlife habitat and is designated as a state sanctuary for several species of ecological, commercial, and recreational significance (NPS 1997). The Mount Pleasant/East Cooper River area supports a diverse array of flora and fauna, including more than 80 species of plants, over 250 species of birds, 67 species of mammals, over 570 species of invertebrates and fish, and at least 580 species of plankton (SCDHEC 2000).

A number of birds and other terrestrial animals are common to the Charleston Harbor area. The abundance of birds is due to the location on the Atlantic Flyway and the presence of extensive tidal flats and wetlands. Historically, the Charleston Harbor estuary has supported a high density of waterbird nesting areas. Although the estuary still supports waterbird foraging and nesting populations, recent surveys suggest that population size has been reduced from historic levels. Animals common to the Charleston Harbor and Mount Pleasant/East Cooper River area include frogs, toads, turtles, snakes, and rodents. Diamondback terrapins (*Malaclemys terrapin*) are widely found in the marshes and tidal creeks of the Charleston Harbor estuary (SCDHEC 2000).

Appendix B contains a list of notable aquatic species in the Charleston Harbor estuary. The shallow marsh habitats of the harbor and Mount Pleasant/East Cooper River area provide habitats for adult and juvenile fish and crustaceans. The marshes provide abundant food resources and a diversity of habitat. Many species of note are either commercially or recreationally valuable. The Charleston Harbor estuary contributes a significant portion of the state's shrimp and crab landings. Spot (*Leiostomus xanthurus)*, Atlantic croaker (*Micropogon undulates)*, red drum (*Sciaenops ocellatus)*, spotted seatrout (*Cynoscion nebulosus)*, and flounder (*Paralichthys sp.)* inhabit the estuary and are recreationally important. The estuary also supports numerous ecologically important species such as bay anchovy (*Anchoa mitchilli)* and grass shrimps (*Palaemontes pugio*), which serve as food for economically and recreationally important species (SCDHEC 2000).

Essential fish habitat as defined by the National Marine Fisheries Service may occur in the vicinity of Liberty Square and the Mount Pleasant/East Cooper River area of the Charleston Harbor. Essential fish habitat is defined as "...those waters and substrate necessary to fish for

spawning, breeding, feeding or growth to maturity" (NMFS 2001). Coordination with the National Marine Fisheries Service is on- going concerning essential fish habitat and this project.

Impacts of Alternative A: No Action / Continue Current Management

Under Alternative A, no additional facilities would be constructed at Liberty Square. Upland habitats on or in the vicinity of Liberty Square would therefore not be affected by construction under Alternative A. Continued management of Fort Sumter National Monument would be in accordance with all National Park Service policies and the protection of vegetation, wildlife and aquatic resources would continue to occur, providing a long- term, beneficial effect.

Cumulative effects. Under Alternative A, no construction activities would be conducted at Liberty Square. Consequently, there would no cumulative adverse impacts on any type on vegetation, wildlife, or aquatic resources resulting from construction.

Periodic dredging of Charleston Harbor by the US Army Corps of Engineers would continue to be conducted regardless of the National Park Service.

Conclusion. Alternative A would involve no construction activities, and therefore would not have any adverse direct impacts on vegetation, wildlife and aquatic resources. During continued operation of the Liberty Square facility, no maintenance dredging would be conducted by the National Park Service. Occasional maintenance dredging by the US Army Corps of Engineers in the vicinity of the docks would, result in negligible, direct, long- term adverse impacts on aquatic life in the area.

Alternative A would not produce major adverse effects on vegetation, wildlife, or aquatic resources whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in National Park Service planning documents. Consequently, there would be no impairment of vegetation, wildlife, or aquatic resources as a result of the implementation of Alternative A.

Impacts of Alternative B: The Preferred Alternative

Any construction, if required, of a proposed secondary ferry departure point could potentially impact plant and animal species at a site in the Mount Pleasant/East Cooper River area. Should construction activities occur, the potential effects of the proposed project could include effects on wildlife resulting from ground disturbance, noise, and movement of workers, equipment, and materials, and/or direct elimination of habitat as a result of parking lot, access road, dock, or other facility construction.

Potential construction disturbances to vegetation and terrestrial wildlife would be temporary, and would not affect the species' ability to undertake foraging, resting, and breeding activities, and upon completion of the construction, the community would recover. To reduce potential effects on wildlife, construction activities occurring near sensitive habitats would be scheduled to minimize potential effects during periods of breeding, nesting and rearing of young. Construction would occur only during daylight hours to reduce effects on nocturnal foraging or

resting periods. Direct effects to wildlife habitat would be avoided where possible by conducting surveys of proposed ferry departure point facility support features and avoiding natural resources as appropriate. The disturbed scrub/shrub habitat, the most prevalent wooded habitat fringing the Charleston Harbor, provides relatively low value habitat for birds and other terrestrial wildlife (Post, n.d.). Therefore, there would be short- and long- term, local, negligible adverse effects on vegetation and terrestrial wildlife species associated with scrub/shrub habitats.

Under Alternative B (Preferred Alternative), initial and periodic maintenance dredging may be required at a location in the Mount Pleasant/East Cooper River area to a depth of up to 15 feet mean low water. Aquatic wildlife in the Mount Pleasant/East Cooper River area could be affected as a result of the dredging. There would be direct effects on benthic invertebrate populations, as well as indirect effects on fisheries and other aquatic species resulting from lack of food source and increased turbidity. Because the lower Cooper River basin currently experiences reduced benthic diversity and low faunal abundance, this would constitute negligible to minor, short- and long- term, adverse, localized effects. The effects could be mitigated by dredging in mid- winter to avoid spawning and migration seasons.

In addition, coordination with the National Marine Fisheries Service concerning potential effects to essential fish habitat is on- going. A site- specific environmental assessment will be prepared once a secondary departure site has been determined, and additional coordination with the National Marine Fisheries Service will be conducted at that time.

Cumulative effects. Any incremental adverse effect to vegetation and terrestrial wildlife produced by Alternative B (Preferred Alternative), when viewed in the context of ecosystems along the lower Cooper River/Charleston Harbor, would be negligible.

Regular dredging occurs in the Charleston Harbor basin, which has resulted in reduced benthic diversity and low faunal abundance in the Mount Pleasant/East Cooper River area. Under Alternative B, potential initial dredging, as well as periodic maintenance dredging at a secondary departure point may also occur. This dredging would negligibly contribute to the impact to the already reduced aquatic diversity when combined with other actions in the Charleston Harbor.

Conclusion. Under Alternative B (Preferred Alternative), negligible to minor, short- and long-term, localized adverse effects to vegetation, wildlife, and aquatic resources would result from construction (if required) and operation of a secondary ferry departure point.

Alternative B would not produce major adverse effects on vegetation, wildlife, or aquatic resources whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in National Park Service planning documents. Consequently, there would be no impairment of vegetation, wildlife, or aquatic resources as a result of the implementation of Alternative B.

ENDANGERED, THREATENED, OR PROTECTED SPECIES AND CRITICAL HABITATS

Affected Environment

The Charleston Harbor and environs provides habitat for a variety of state and federally listed species of plants and animals. The assessment presented in this section is based on information from the Fort Sumter general management plan (NPS 1998), the environmental assessment for Liberty Square (NPS 1997), and information from the South Carolina Department of Natural Resources (SCDNR 2003a, b), including the detailed occurrence data from the Heritage Program 1:24,000 scale quadrangle topographic maps. Coordination letter responses from the U.S. Fish and Wildlife Service and the South Carolina Department of Natural Resources (SCDNR 2003b) requesting the most recent information on listed species in the area are included in Appendix A.

The presence of any of the listed species in areas potentially affected by a specific secondary ferry departure point in the Mount Pleasant/East Cooper River area will be confirmed in a future, site- specific environmental assessment. This section of the environmental assessment assesses the known occurrences of listed species in the project area, and the potential for the secondary departure point to impact these resources.

Liberty Square

Table 8 lists species of plants and animals that could potentially occur in Charleston Harbor, including the Liberty Square site. The status of each of the species along with information on their preferred habitat and potential to occur in the area is included on Table 8.

The South Carolina Department of Natural Resources (SCDNR 2003b) stated that the federally endangered shortnose sturgeon is the only federally listed species that is known to occur in Charleston Harbor. The shortnose sturgeon is known to inhabit the Cooper River but likely spawns much further upstream in less saline water (as far as Pinopolis Dam). Some catches of this species have been recorded by recreational fisherman near the dam. Trawl nets used by commercial fisherman near Bushy Park and DuPont have resulted in capture of less than 20 sturgeon since 1984. A single dead specimen of this species has been recorded approximately ½ mile north of Liberty Square (Collins, personal communication, *in* NPS 1997). The habitat at Liberty Square would not be considered suitable for this species because of the high salinity and lack of food sources (benthic invertebrates) at this location. Sturgeon could occur briefly near Liberty Square as they proceed upstream to spawn in less saline areas.

The US Fish and Wildlife Service (Sisson 2003) stated that the West Indian Manatee occurs in Charleston Harbor, especially between May and September. This species has been observed in the last two years in the vicinity of the Fort Moultrie dock (Tucker 2003). It could also potentially occur in the vicinity of Liberty Square, along the ferry route to Fort Sumter, or in the vicinity of Fort Sumter.

TABLE 8
LIST OF FEDERALLY PROTECTED SPECIES OF PLANTS AND ANIMALS THAT COULD POTENTIALLY OCCUR IN THE VICINITY OF THE SECONDARY DEPARTURE POINT ALTERNATIVE SITES BASED ON INFORMATION IN (NPS 1997), USFWS (2003A) AND OTHER SOURCES[3-11].

Common Name (Scientific Name)	Federal Status (2003)[1]	Preferred Habitat[4]	Potential For Species to Occur in Charleston Harbor
Animals			
1. West Indian manatee (*Trichechus manatus*)	E	Coastal waters and slow- moving rivers with a salinity ranging from saltwater to freshwater and with a depth usually from 1.5 - 6 m (5 - 20'). It seems to prefer water temperatures above about 20 deg C (68 deg F)[4].	Low - Occurs only occasionally in the vicinity of Liberty Square or the Mount Pleasant/East Cooper River area (SCDNR 2003b). West Indian Manatees are occasional seasonal visitors to Charleston Harbor and South Carolina and are not expected to occur in the vicinity of Liberty Square. A cow and calf were observed in 1994 in Charleston Harbor just off of the Battery (NPS 1997) and have occurred in the area during the past two years, most recently at the Fort Moultrie National Monument dock (Tucker 2003). This species is most likely to occur in the Harbor between May and September, and frequent areas where fresh water enters the bay (Sisson 2003).
2. Arctic peregrine falcon (*Falco peregrinus tundrius*)	DM	Delisted taxon, being monitored.	Very low; occasional migrant species/not listed. Not known to occur in the vicinity of Liberty Square or the Mount Pleasant/East Cooper River area (SCDNR 2003b).

TABLE 8 (CONTINUED)
LIST OF FEDERALLY PROTECTED SPECIES OF PLANTS AND ANIMALS THAT COULD POTENTIALLY OCCUR IN THE VICINITY OF THE SECONDARY DEPARTURE POINT ALTERNATIVE SITES BASED ON INFORMATION IN (NPS 1997), USFWS (2003A) AND OTHER SOURCES[3-11].

Common Name (Scientific Name)	Federal Status (2003)[1]	Preferred Habitat[4]	Potential For Species to Occur in Charleston Harbor
3. Bald eagle (*Haliaeetus leucocephalus*)	AD, T	Still listed as Threatened in SC. Known to occur in the Charleston Harbor area, but does not nest in the vicinity of Liberty Square or the Mount Pleasant East Cooper River area (SCDNR 2003b). Prefers large trees in remote areas overlooking water.	Low – species could forage in Charleston Harbor but is not known to nest in the vicinity of Liberty Square or the Mount Pleasant/East Cooper River area (SCDNR 2003b).
4. Bachman's warbler (*Vermivora bachmanii*)	E	"Breeding habitat consisted of bottomland forests, usually those associated with water. Used canebrakes and other areas with dense understories."[5]	Very Low – species has not been recorded recently and is not known to occur in the vicinity of Liberty Square or the Mount Pleasant/East Cooper River area (SCDNR 2003b).
5. Wood stork (*Mycteria americana*) -	E	"It frequents mangroves, swamps, marshes, and streams. It forages in very shallow water by placing its open bill in the water and systematically moving it until it contacts a prey item"[6] Prefers seasonally flooded ponds for feeding.	Very Low - Not known to occur in to occur in the vicinity of Liberty Square or the Mount Pleasant/East Cooper River area (SCDNR 2003b).

TABLE 8 (CONTINUED)
LIST OF FEDERALLY PROTECTED SPECIES OF PLANTS AND ANIMALS THAT COULD POTENTIALLY OCCUR IN THE VICINITY OF THE SECONDARY DEPARTURE POINT ALTERNATIVE SITES BASED ON INFORMATION IN (NPS 1997), USFWS (2003A) AND OTHER SOURCES[3-11].

Common Name (Scientific Name)	Federal Status (2003)[1]	Preferred Habitat[4]	Potential For Species to Occur in Charleston Harbor
6. Red- cockaded woodpecker (*Picoides borealis*)	E	Prefers old (>70 years) pine trees infected with *Fomes* fungus for nesting trees. Could forage in project area.	Very Low - Could forage in area, otherwise very low probability of nesting or otherwise being present. Not known to occur in the vicinity of Liberty Square or the Mount Pleasant/East Cooper River area (SCDNR 2003b).
7. Piping plover (*Charadrius melodus*) -	E, T (T In South Carolina)[2]	"Breeding habitat is commonly coastal beaches with sand, gravel, or pebbles."[6] "The non- breeding habitat of the Piping Plover is very similar to its nesting habitat."[6]	Potentially present in project area. However, not known to occur in the vicinity of Liberty Square or the Mount Pleasant/East Cooper River area (SCDNR 2003b).

TABLE 8 (CONTINUED)
LIST OF FEDERALLY PROTECTED SPECIES OF PLANTS AND ANIMALS THAT COULD POTENTIALLY OCCUR IN THE VICINITY OF THE SECONDARY DEPARTURE POINT ALTERNATIVE SITES BASED ON INFORMATION IN (NPS 1997), USFWS (2003A) AND OTHER SOURCES[3-11].

Common Name (Scientific Name)	Federal Status (2003)[1]	Preferred Habitat[4]	Potential For Species to Occur in Charleston Harbor
8. Shortnose sturgeon (*Acipenser brevirostrum*)	E	The shortnose sturgeon is known to inhabit the Cooper River but probably spawns much further upstream in less saline water (as far as Pinopolis Dam). Some catches of this species have been recorded by recreational fisherman near the dam. Trawl nets by commercial fisherman near Bushy Park and DuPont have resulted in capture of less than 20 sturgeon since 1984. A single dead specimen of this species has been recorded approximately ½ mile north of the Liberty Square site (Collins, personal communication, *in* NPS 1997). The habitat at the Liberty Square site would not be considered to be ideal for this species because of the high salinity and lack of food sources (benthic invertebrates) at this location. Sturgeon are probably moving by the site as they proceed upstream to spawn in less saline areas.	Low - Rare occasional migrant; only species listed by (SCDNR 2003b) as being present in Charleston Harbor.

TABLE 8 (CONTINUED)
LIST OF FEDERALLY PROTECTED SPECIES OF PLANTS AND ANIMALS THAT COULD POTENTIALLY OCCUR IN THE VICINITY OF THE SECONDARY DEPARTURE POINT ALTERNATIVE SITES BASED ON INFORMATION IN (NPS 1997), USFWS (2003A) AND OTHER SOURCES[3-11].

Common Name (Scientific Name)	Federal Status (2003)[1]	Preferred Habitat[4]	Potential For Species to Occur in Charleston Harbor
9. Kemp's ridley sea turtle (*Lepidochelys kempii*)	E	This species occurs mainly in tropical and temperate waters and coastal areas of the Gulf of Mexico and the northwestern Atlantic Basin. The major nesting beach for Kemp's ridley sea turtle is on the northeastern coast of Mexico. The majority of the Kemp's ridley sea turtle population feeds and nests in the Gulf of Mexico and adults are generally restricted to the Gulf of Mexico.	Very low - Not known to occur in the vicinity of Liberty Square or the Mount Pleasant/East Cooper River area (SCDNR 2003b).
10. Leatherback sea turtle (*Dermochelys coriacea*)	E	Leatherback sea turtles prefer tropical and temperate, subpolar waters, extending from Nova Scotia, south to Puerto Rico and the U.S. Virgin Islands. Leatherback turtles prefer to nest on open beaches. Nesting occurs from February to July with sites located from Georgia to the U.S. Virgin Islands. During the summer, leatherbacks tend to be found along the east coast of the U.S. from the Gulf of Maine south to the middle of Florida. This species is a highly migratory, deep water species.	Very low - Not known to occur in the vicinity of Liberty Square or the Mount Pleasant/East Cooper River area (SCDNR 2003b).

TABLE 8 (CONTINUED)
LIST OF FEDERALLY PROTECTED SPECIES OF PLANTS AND ANIMALS THAT COULD POTENTIALLY OCCUR IN THE VICINITY OF THE SECONDARY DEPARTURE POINT ALTERNATIVE SITES BASED ON INFORMATION IN (NPS 1997), USFWS (2003A) AND OTHER SOURCES[3-11].

Common Name (Scientific Name)	Federal Status (2003)[1]	Preferred Habitat[4]	Potential For Species to Occur in Charleston Harbor
11. Loggerhead sea turtle (*Caretta caretta*)	T	Loggerhead sea turtles are circumglobal, inhabiting continental shelves, bays, estuaries, and lagoons in temperate, subtropical, and tropical seas for resting and foraging. In the Atlantic, the loggerhead turtle's range extends from Newfoundland to as far south as Argentina. During the summer, nesting occurs in the lower latitudes. The primary Atlantic nesting sites are along beaches on the east coast of Florida, with additional sites in Georgia, the Carolinas, and the Gulf Coast of Florida.	Very low - Not known to occur in the vicinity of Liberty Square or the Mount Pleasant/East Cooper River area (SCDNR 2003b).

TABLE 8 (CONTINUED)
LIST OF FEDERALLY PROTECTED SPECIES OF PLANTS AND ANIMALS THAT COULD POTENTIALLY OCCUR IN THE VICINITY OF THE SECONDARY DEPARTURE POINT ALTERNATIVE SITES BASED ON INFORMATION IN (NPS 1997), USFWS (2003A) AND OTHER SOURCES[3-11].

Common Name (Scientific Name)	Federal Status (2003)[1]	Preferred Habitat[4]	Potential For Species to Occur in Charleston Harbor
12. Green sea turtle (*Chelonia mydas*)	E, T (T in South Carolina)[3]	Green sea turtles are circumglobal, inhabiting tropical and temperate waters. In the southeastern United States, green turtles are found around the U.S. Virgin Islands, Puerto Rico, and the continental U.S. from Texas to Massachusetts. Primary nesting sites in U.S. Atlantic waters are along beaches on the east coast of Florida, with additional sites in the U.S. Virgin Islands and Puerto Rico. Females deposit egg clutches on high- energy beaches, usually on islands, where a deep nest cavity can be dug above the high water line. Hatchlings leave the beach and move into convergence zones in the open ocean. They leave this deep- water habitat and enter benthic feeding grounds. Most commonly these foraging habitats are pastures of seagrasses and/or algae, but small green turtles can also be found over coral reefs, worm reefs and rocky bottoms. Coral reefs or rocky outcrops near feeding pastures are often used as resting areas, both at night and during the day.	Very low - Not known to occur in the vicinity of Liberty Square or the Mount Pleasant/East Cooper River area (SCDNR 2003b).

TABLE 8 (CONTINUED)
LIST OF FEDERALLY PROTECTED SPECIES OF PLANTS AND ANIMALS THAT COULD POTENTIALLY OCCUR IN THE VICINITY OF THE SECONDARY DEPARTURE POINT ALTERNATIVE SITES BASED ON INFORMATION IN (NPS 1997), USFWS (2003A) AND OTHER SOURCES[3-11].

Common Name (Scientific Name)	Federal Status (2003)[1]	Preferred Habitat[4]	Potential For Species to Occur in Charleston Harbor
13. Finback whale (*Balaenoptera physalus*)	E	"Fin whales are a pelagic and nearshore species, sometimes occurring in water as shallow as 30 meters."[4]	Very low - Not known to occur in the vicinity of Liberty Square or the Mount Pleasant/East Cooper River area (SCDNR 2003b).
14. Humpback whale (*Megaptera novaeangliae*)	E	"… polar to tropical waters, including the waters of the Artic, Atlantic, and Pacific Oceans, as well as, the waters surrounding Antarctica and the Bering Strait. During migration, they are found in coastal and deep oceanic waters. Generally, they do not come into coastal waters until they reach the latitudes of Long Island, New York and Cape Cod, Massachusetts. This occurs among humpbacks all over the world." [4]	Very low - Not known to occur in the vicinity of Liberty Square or the Mount Pleasant/East Cooper River area (SCDNR 2003b).
15. Right whale (*Baleana glacialis*)	E	"North Atlantic Ocean."[4]	Very low - Not known to occur in the vicinity of Liberty Square or the Mount Pleasant/East Cooper River area (SCDNR 2003b).

TABLE 8 (CONTINUED)
LIST OF FEDERALLY PROTECTED SPECIES OF PLANTS AND ANIMALS THAT COULD POTENTIALLY OCCUR IN THE VICINITY OF THE SECONDARY DEPARTURE POINT ALTERNATIVE SITES BASED ON INFORMATION IN (NPS 1997), USFWS (2003A) AND OTHER SOURCES[3-11].

Common Name (Scientific Name)	Federal Status (2003)[1]	Preferred Habitat[4]	Potential For Species to Occur in Charleston Harbor
16. Sei whale (*Balaenoptera borealis*)	E	"These pelagic whales are found far from shore." [4]	Very low - Not known to occur in the vicinity of Liberty Square or the Mount Pleasant/East Cooper River area (SCDNR 2003b).
17. Sperm whale (Physeter catodon)	E	"Sperm whales swim through deep waters to depths of 2 miles, apparently limited in depth only by the time it takes to swim down and back to the surface. Their distributions are depend upon season and sexual/social status, however they are most likely to be found in waters inhabited by squid- at least 1,000 m deep and with cold- water upswellings." [4]	Very low - Not known to occur in the vicinity of Liberty Square or the Mount Pleasant/East Cooper River area (SCDNR 2003b).

TABLE 8 (CONTINUED)
LIST OF FEDERALLY PROTECTED SPECIES OF PLANTS AND ANIMALS THAT COULD POTENTIALLY OCCUR IN THE VICINITY OF THE SECONDARY DEPARTURE POINT ALTERNATIVE SITES BASED ON INFORMATION IN (NPS 1997), USFWS (2003A) AND OTHER SOURCES[3-11].

Common Name (Scientific Name)	Federal Status (2003)[1]	Preferred Habitat[4]	Potential For Species to Occur in Charleston Harbor
Plants			
1. Sea- beach amaranth (*Amaranthus pumilus*)	T	"…occurs on barrier island beaches, where its primary habitat consists of overwash flats at accreting ends of islands and lower foredunes and upper strands of noneroding beaches. It occasionally establishes small temporary populations in other habitats, including sound-side beaches, blowouts in foredunes, and sand and shell material placed as beach replenishment or dredge spoil. Seabeach amaranth appears to be intolerant of competition and does not occur on well-vegetated sites. The species appears to need extensive areas of barrier island beaches and inlets, functioning in a relatively natural and dynamic manner. These characteristics allow it to move around in the landscape as a fugitive species, occupying suitable habitat as it becomes available" (Weakley and Bucher 1991 ion USFWS 2003)[7,8].	Very low - Not known to occur in the vicinity of Liberty Square or the Mount Pleasant/East Cooper River area (SCDNR 2003b).

TABLE 8 (CONTINUED)
LIST OF FEDERALLY PROTECTED SPECIES OF PLANTS AND ANIMALS THAT COULD POTENTIALLY OCCUR IN THE VICINITY OF THE SECONDARY DEPARTURE POINT ALTERNATIVE SITES BASED ON INFORMATION IN (NPS 1997), USFWS (2003A) AND OTHER SOURCES[3-11].

Common Name (Scientific Name)	Federal Status (2003)[1]	Preferred Habitat[4]	Potential For Species to Occur in Charleston Harbor
2. Canby's dropwort (*Oxypolis canbyi*)	E	"Found in shallow ponds in pine lands, shallow grass and sedge sloughs, peat- muck swamps, bogs, and other areas of the Coastal Plain that are almost always wet. Soil/site disruption, harvesting, planting, and grazing can lead to habitat loss as can drainage for pastures, crops, or pine plantations or pond deepening for stock ponds or irrigation."[9]	Very low - Not known to occur in the vicinity of Liberty Square or the Mount Pleasant/East Cooper River area (SCDNR 2003b).
3. Pondberry (Lindera melissifolia)	E	"One of the rarest shrubs. Found in shallow sink- hole depressions, along margins of swamps and ponds, and in other wet areas of the Coastal Plain. Found around swampy hardwood sites, often in standing water and in soils that never dry. Clearing or forest harvesting can change water levels and disrupt habitat. Draining or deepening wet areas and disturbing soil reduce habitat."[10]	Very low - Not known to occur in the vicinity of Liberty Square or the Mount Pleasant/East Cooper River area (SCDNR 2003b).
4. Chaff- seed (Schwalbea americana)	E	"Found along low, sandy ridges in pine-palmetto- gallberry flatwoods and along sandy roadsides, old fields, and under open pine plantations".[11]	Very low - Not known to occur in the vicinity of Liberty Square or the Mount Pleasant/East Cooper River area (SCDNR 2003b).

TABLE 8 (CONTINUED)

LIST OF FEDERALLY PROTECTED SPECIES OF PLANTS AND ANIMALS THAT COULD POTENTIALLY OCCUR IN THE VICINITY OF THE SECONDARY DEPARTURE POINT ALTERNATIVE SITES BASED ON INFORMATION IN (NPS 1997), USFWS (2003A) AND OTHER SOURCES[3-11].

1. USFWS 2003a. http://endangered.fws.gov/wildlife.html. Internet web page.

   E = endangered; T = Threatened; C2 = Candidate 2 Species (Candidate species are plants and animals for which the Fish and Wildlife Service (Service) has sufficient information on their biological status and threats to propose them as endangered or threatened under the Endangered Species Act (ESA), but for which development of a proposed listing regulation is precluded by other higher priority listing activities. Species are assigned a listing priority from 1 to 12 based on the magnitude of threats they face, the immediacy of the threats, and taxonomic uniqueness (for example, full species have higher priority than subspecies). The species' listing priority dictates the relative order in which proposed listing rules are prepared, with the species at greatest risk (listing priority 1 through 3) being proposed first.

   D, M: Delisted Taxon, Recovered, Being Monitored First Five Years in the Entire Range.

   A, D: Proposed for delisting in the entire range on July 6, 1999. Continues to be listed as threatened in the U.S.A., conterminous (lower 48) States.

2 E,T (Piping Plover)(USFWS 2003a):

   Endangered

   "On December 11, 1985, the piping Plover was designated as Endangered in the Great Lakes watershed in States of IL, IN, MI, MN, NY, OH, PA, and WI and Canada (Ont.). Within the area covered by this listing, this species is known to occur in: Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, Wisconsin; Canada (Great Lakes-Ontario). The U.S. Fish & Wildlife Service Great Lakes-Big Rivers Region (Region 3) is the lead region for this entity".

   Threatened

   "On December 11, 1985, the piping Plover was designated as Threatened in the Entire range, except those areas where listed as endangered above. Within the area covered by this listing, this species is known to occur in: Alabama, Colorado, Connecticut, Delaware, Florida, Georgia, Iowa, Indiana, Kansas, Kentucky, Louisiana, Massachusetts, Maryland, Maine, Minnesota, Missouri, Mississippi, Montana, North Carolina, North Dakota, Nebraska, New Hampshire, New Jersey, New York, Ohio, Oklahoma, Puerto Rico, Rhode Island, South Carolina, South Dakota, Texas, Virginia, Wisconsin; Canada, Mexico, West Indies. The U.S. Fish & Wildlife Service Northeast Region (Region 5) is the lead region for this entity".

TABLE 8 (CONTINUED)

LIST OF FEDERALLY PROTECTED SPECIES OF PLANTS AND ANIMALS THAT COULD POTENTIALLY OCCUR IN THE VICINITY OF THE SECONDARY DEPARTURE POINT ALTERNATIVE SITES BASED ON INFORMATION IN (NPS 1997), USFWS (2003A) AND OTHER SOURCES[3-11].

3 E, T (Green Sea Turtle) (USFWS 2003a):

Endangered

"On July 28, 1978, the green sea turtle was designated as Endangered in the Breeding colony populations in FL and on Pacific coast of Mexico. Within the area covered by this listing, this species is known to occur in: Florida; Mexico (Pacific Coast breeding pops.). The U.S. Fish & Wildlife Service Southeast Region (Region 4) is the lead region for this entity".

Threatened

"On July 28, 1978, the green sea turtle was designated as Threatened in the Wherever found except where listed as endangered. Within the area covered by this listing, this species is known to occur in: Alabama, American Samoa, California, Connecticut, Delaware, Florida, Georgia, Guam, Hawaii, Louisiana, Maryland, Northern Mariana Islands, Mississippi, North Carolina, New York, Oregon, Puerto Rico, South Carolina, Texas, Virginia, Virgin Islands, Washington; Palau, circumglobal in tropical and temperate waters. The U.S. Fish & Wildlife Service Southeast Region (Region 4) is the lead region for this entity".

4 Animal Info - Information on Rare, Threatened and Endangered Mammals 2003. Information accessed at http://www.animalinfo.org/

Animal Diversity Web 2003. Information accessed at: http://animaldiversity.ummz.umich.edu

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9 University of Georgia 2003. Warnell School of Forest Resources: Service and Outreach: Information Library: Environment: Federally Protected Species Fact Sheets for the Southeastern United States: Plants. Information Accessed at: http://www.forestry.uga.edu/warnell/service/library/index.php3?docID=69

TABLE 8 (CONTINUED)

LIST OF FEDERALLY PROTECTED SPECIES OF PLANTS AND ANIMALS THAT COULD POTENTIALLY OCCUR IN THE VICINITY OF THE SECONDARY DEPARTURE POINT ALTERNATIVE SITES BASED ON INFORMATION IN (NPS 1997), USFWS (2003A) AND OTHER SOURCES[3-11].

10 University of Georgia 2003. Warnell School of Forest Resources: Service and Outreach: Information Library: Environment: Federally Protected Species Fact Sheets for the Southeastern United States. Information Accessed at: http://www.forestry.uga.edu/warnell/service/library/index.php3?docID=67

11 University of Georgia 2003. Warnell School of Forest Resources: Service and Outreach: Information Library: Environment: Federally Protected Species Fact Sheets for the Southeastern United States. Information Accessed at: http://www.forestry.uga.edu/warnell/service/library/index.php3?docID=190

12 Tucker, John. 2003. Personal communication with John Tucker, Superintendent of the Fort Sumter National Monument, Charleston, South Carolina.

13 Sisson, Paula. 2003. Personal communication with Paula Sisson, U.S. Fish and Wildlife Service, Charleston, S.C.

14 Swartz, Steven. 2003. Personal communication with Steven Swartz, National Marine Fisheries Service, Chief, Protected Resources, Miami, Florida.

Mount Pleasant/East Cooper River Area

Based on the detailed 1:24,000 topographic quadrangle records of state and federally listed species of plants and animals information in the South Carolina Heritage Program database (SCDNR 2003a), and a letter from the South Carolina Department of Natural Resources (SCDNR 2003b) it was determined that three colonial waterbird rookeries are known to occur in the Charleston quadrangle in the Mount Pleasant/East Cooper River area. No other species were reported by South Carolina Department of Natural Resources to occur in this area. Detailed site- specific surveys for listed species would be conducted as part of future environmental assessment to determine if the project would affect these resources.

Species identified by the U.S. Fish and Wildlife Service (NPS 1997) as listed in Table 8 could potentially occur in the Charleston Harbor area, and therefore, could occur in the Mount Pleasant/East Cooper River Area. Table 8 indicates, however, that the potential for the majority of these species to occur in the area is low or very low. The US Fish and Wildlife Service (Sisson 2003) stated that the West Indian Manatee occurs in Charleston Harbor, especially between May and September. This species has been observed in the last two years in the vicinity of the Fort Moultrie dock (Tucker 2003). It could also occur in the Mount Pleasant/East Cooper River area, along the ferry route to Fort Sumter, or in the vicinity of Fort Sumter.

Impact Determinations to Federally Listed Threatened and Endangered Species

The National Park Service is in the process of informally consulting with the U.S. Fish and Wildlife Service, as required by Section 7 of the Endangered Species Act, to seek concurrence with these impact determinations. An environmental assessment would be prepared once a site-specific secondary departure location is identified, which would provide site- specific detailed analyses.

Impacts of Alternative A: No Action / Continue Current Management

Alternative A may affect but is not likely to adversely affect any state or federally listed species of plants and animals or their designated critical habitat, since these species are extremely rare and would only occasionally pass by Liberty Square, Fort Sumter, or the ferry route to Fort Sumter.

Cumulative Effects. Alternative A would may have but is not likely to have a cumulative adverse effect on state or federally listed species of plants and animals or their designated critical habitat, since these species are extremely rare and would only occasionally pass Liberty Square, Fort Sumter, or the ferry route.

Conclusion. Alternative A may affect but is not likely to adversely affect state or federally listed species of plants and animals or their designated critical habitat, since these species are extremely rare and would only occasionally pass by park facilities or ferry routes.

Alternative A would not produce major adverse effects on endangered, threatened, or protected species or critical habitats or values whose conservation is (1) necessary to fulfill specific

purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in National Park Service planning documents. Consequently, there would be no impairment of endangered, threatened, or otherwise protected species or critical habitats as a result of the implementation of Alternative A.

Impacts of Alternative B: The Preferred Alternative

Alternative B may affect but is not likely to adversely affect state or federally listed species and their designated critical habitats. If new construction was necessary, a site- specific survey for listed species would be required, and any potential effects on listed species would be avoided. Potential effects would therefore be discountable (i.e., adverse effects are unlikely to occur or could not be meaningfully measured, detected, or evaluated).

Cumulative Effects. Alternative B may affect but is not likely to adversely affect state or federally listed species or their designated critical habitats. Potentially adverse effects can be avoided by conducting site- specific surveys. Potential cumulative effects would therefore be discountable (i.e., adverse cumulative effects are unlikely to occur or could not be meaningfully measured, detected, or evaluated). The potential for cumulative adverse effects on these species does exist however, and would be considered in future site- specific environmental assessments.

Conclusion. Alternative B may affect but is not likely to adversely affect state or federally listed species or their designated critical habitats. Effects are not likely to occur since site- specific surveys would be conducted, and these resources could be avoided. Potential effects would therefore be discountable (i.e., adverse effects are unlikely to occur or could not be meaningfully measured, detected, or evaluated).

The implementation of Alternative B would not result in major adverse impacts on endangered, threatened, or protected species or critical habitats whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in National Park Service planning documents. Consequently, there would be no impairment of endangered, threatened, or protected species or critical habitats as a result of the implementation of Alternative B.

CULTURAL RESOURCES

Affected Environment

This section is based on existing literature from previous National Park Service studies, and other available information. No ground surveys for historic and archeological resources have been conducted for this general management plan amendment/environmental assessment. Should new construction activity be necessary, it may occur in previously disturbed areas or undisturbed areas. Determinations of potential impacts have to consider depth of fill, as well as the horizontal extent of ground disturbance. Site- specific, detailed investigations will be conducted for the secondary departure point in a separate environmental assessment once a

location is identified. Consequently, ethnographic resource and cultural landscape inventories have not been prepared for the affected areas. Fort Sumter National Monument museum collections contain artifacts and associated field records from all fieldwork projects undertaken on park lands. The following subsections provide an overview of existing information concerning historic resources.

Liberty Square

The Liberty Square facility is situated within the municipal limits of the City of Charleston and is bordered by the Cooper River on the west, modern development on the north and south, and Concord Street on the west. The shoreline consists of fill material placed in the area historically (NPS 1997). The existing ferry docks for the Liberty Square facility are constructed within the Cooper River and a vertical bulkhead is located between the site and the river. The property contained railroad spur lines by 1958, which led from the shoreline southwest to the intersection of Concord and Laurens streets. The rail spurs then led northward along Washington Street to the freight station of the Seaboard Coast Line (USGS 1979). The rail lines were shipways and trestles constructed during World War II when ocean- going tug boats were constructed on this site. The freight station is roughly 1,500 feet northeast of Liberty Square.

The Liberty Square facility was the subject of an Environmental Assessment in 1997 after its purchase by the National Park Service and prior to its recent development (NPS 1977). The property did not include any known significant surface or subsurface cultural resources (NPS 1997). Archaeological potential was low due to past deposition of fill and subsequent development. The property is two blocks east of the Charleston National Register Historic District's eastern edge (East Bay Street). Consultation with the City of Charleston Board of Architectural Review was planned to minimize visual impacts of construction on the historic district (NPS 1997). The following brief description of the known cultural resources near Liberty Square listed on the National Register of Historic Places (NRHP) is included for information on the general area:

> *Charleston Historic District* – This district is bounded roughly by the Ashley River, the Cooper River, East Bay Street, America Street, Morris Street, King Street, Calhoun Street, Coming Street, Ashley Avenue, and President Street (see Figure 5). The district was listed on the National Register of Historic Places in 1966; boundary increases were listed in 1970, 1978, 1984, 1985, and 1986 (SCDAH 2003). Eighty- one of the over 700 properties within the boundaries are contributing resources. The properties are primarily single dwellings dating to the eighteenth and nineteenth centuries. The district also is listed as a National Historic Landmark (NPS 2003).

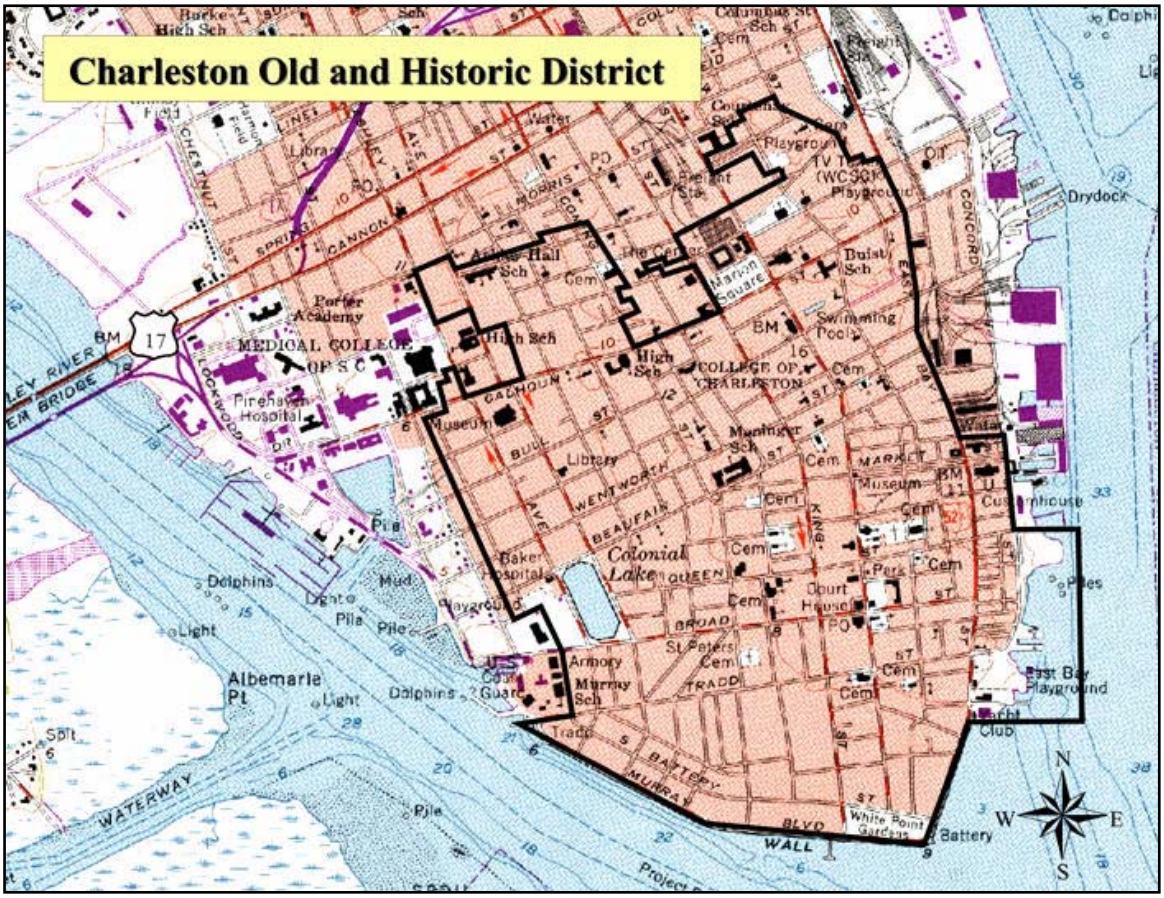

Figure 5. Boundaries of the Charleston National Register Historic District (Source: SCDAH 2003; background: Charleston, SC quadrangle, USGS)

Town of Mount Pleasant along the East Bank of the Cooper River

The Town of Mount Pleasant was incorporated in 1872. Several earlier settlements were included in the town, including the hamlet of Greenwich Village (1766), the Hibben Ferry tract (1770), Mount Pleasant Plantation (1808), Hilliardsville (1847), and Lucasville (1853). The boundaries were Shem Creek on the north, Simmons Street on the east, Cove Inlet on the south, and Charleston Harbor on the west (Town of Mount Pleasant 2003). Originally situated within Charleston County, Mount Pleasant served as the county seat of Berkeley County from 1883 to 1895. The town rejoined Charleston County in 1895 (Town of Mount Pleasant 2003).

Development in the Town of Mount Pleasant south of Shem Creek extended up to a narrow band of marshland along the Charleston Harbor by the 1970s. The marshland is spanned by a number of piers that have increased in number and length since 1979 (USGS 1979, Terraserver 2003). The shoreline immediately south of Shem Creek is called Haddrell Point; two buildings were added to the two existing buildings on the point between 1958 and 1979 (USGS 1979).

The Grace Memorial Bridge carried vehicular traffic from the City of Charleston eastward, over the Cooper River on Route 17, to the Town of Mount Pleasant by 1958 (USGS 1979). By 1979 a second bridge span was added south of the original span, and the Route 17 highway was added in

its present location, leading northeastward from the bridges. The former Route 17, leading southeastward from the bridges to Shem Creek, became B.R. 17, or Coleman Boulevard. A spoil area was added along the western bank of the Town of Mount Pleasant by 1979, from south of the new bridge span to Shem Creek, roughly 7,000 feet to the southeast. The triangular land mass of spoil dirt became the site of the USS Yorktown State Park in the 1970s and featured a dock leading to the historic naval vessel the USS Yorktown by 1979. An access road led from Coleman Boulevard to the parking area for the USS Yorktown by 1979, and the southwestern tip of the spoil area was named Patriots Point. By 1999 much of the spoil area had been developed. The parking lot for the USS Yorktown visitors had been expanded, and a golf course and a Hilton Hotel had been constructed. Additional docks had been constructed from the Hilton Hotel and from Patriots Point northward to the USS Yorktown by 1999 (Terraserver 2003).

The East Cooper River shoreline from the Grace Memorial Bridge northward approximately 2,000 feet to an unnamed creek was undeveloped marshland in 1958 and remains undeveloped (USGS 1979 and Terraserver 2003). The shoreline leads from this unnamed creek north-northwestward approximately 1,500 feet to Remley Point, at the mouth of the Wando River.

The following is a discussion of the known cultural resources near the Cooper River shoreline of Mount Pleasant listed on the National Register of Historic Places. The resources are described from the south to the north:

> *Mount Pleasant Historic District* - Bounded by Charleston Harbor (Cooper River) on the southwest, Shem Creek on the northwest, Royal Avenue on the northeast, and McCants Drive on the southeast (see Figure 6). The district was listed on the National Register of Historic Places in 1973 (NPS 2003). The district features mixed architectural styles, including designs by Edward Brickell White (Dai- Sho Electronics 2001). There are ten contributing properties, including the Old Courthouse (SCDAH 2003). The Old Courthouse, at 331 King Street, was listed on the National Register individually in 1971 (NPS 2003). The building, constructed in 1884, is of the Late Victorian style (McIver 1960 and Dai- Sho Electronics 2001).

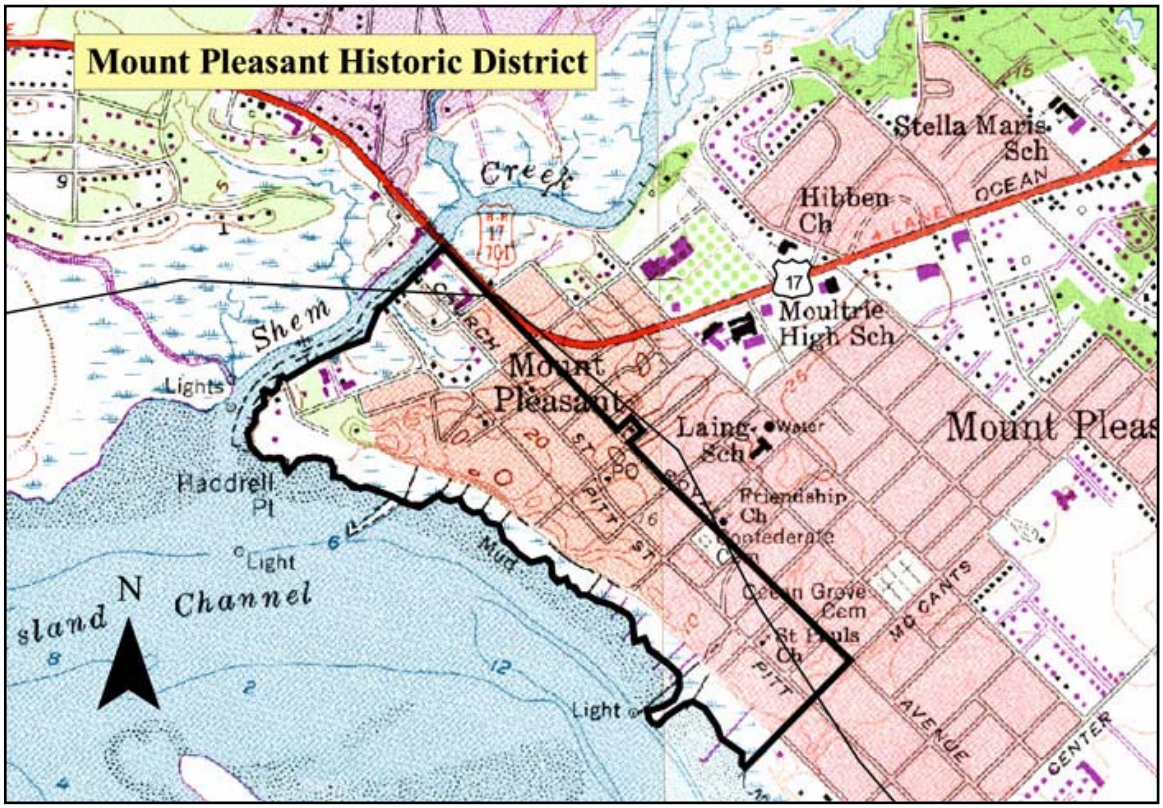

Figure 6. Boundaries of the Mount Pleasant National Register Historic District (Source: SCDAH 2003; background: Charleston, SC [left] and Fort Moultrie [right] quadrangles, USGS)

The following four historic vessels are now docked on the east side of Charleston Harbor, west of Mount Pleasant, at the Patriots Point Naval & Maritime Museum. They are open to the public:

USS YORKTOWN (CV- 10) – an aircraft carrier that was the second of the nation's Essex class. Listed on the National Register of Historic Places in 1982, and as a National Historic Landmark, the ship was designed by Newport News Shipbuilding and Dry Dock (NPS 2003 and Dai- Sho Electronics 2001). The vessel supported American ground troops at key battles in the Pacific during World War II (NPS 2003).

USCGC INGHAM (also known as U.S. Coast Guard Cutter INGHAM [WPG- 35]) – the Coast Guard cutter was built in 1936 at the Philadelphia Navy Yard (Historic Naval Ships Association [HNSA] 1997a). The vessel was listed on the National Register of Historic Places in 1992 and also is a National Historic Landmark (NPS 2003). The ship is one of only two preserved Secretary class cutters and served with distinction during World War II, the Korean War, and the Vietnam War. The vessel is the National Memorial to Coast Guardsmen Killed in Action in World War II and Vietnam (HNSA 1997a).

USS CLAMAGORE (SS- 343) – this diesel attack submarine was listed on the National Register of Historic Places in 1994. The vessel was designed by Electric Boat Works and also is a National Historic Landmark (Dai- Sho Electronics 2001).

USS LAFFEY – an Allen M. Sumner class destroyer built in 1943 (HNSA 1997b). Listed on the National Register of Historic Places in 1983, and as a National Historic Landmark, Bath Iron Works supplied the architectural design (NPS 2003, Dai- Sho Electronics 2001). The ship is the only surviving World War II destroyer that saw service in the Atlantic, and played a key role in the D Day invasion at Normandy).

Remley Point Cemetery – 0.2 miles northeast of the junction of Third and Fourth Avenues. Remley Point is situated on the Cooper River, roughly 3,500 feet north of the Grace Memorial Bridge (Rt. 17). The cemetery was listed on the National Register of Historic Places in 2002 (NPS 2003). The location, however, appears to be roughly 2,500 feet inland from Remley Point's shoreline (USGS 1979).

Although the following cultural resource is not along the East Cooper River, it is situated in Charleston Harbor, approximately one mile south- southwest of Patriots Point and 1.5 miles southeast of Liberty Square:

Castle Pinckney - located at the southern end of Shutes Folly Island, the marshy island lies between two shipping channels and is surrounded by mud flats (USGS 1979). Castle Pinckney is a brick fortification built in 1809 and is one of the only round- sided forts remaining in North America (South Carolina Ports 2002). The fort was the first Federal fort taken over by the Confederates during the Civil War, and served as a prison for Union soldiers. Castle Pinckney has since served as a lighthouse station and storage area, and was listed on the National Register of Historic Places in 1970 (NPS 2003). A breakwater was constructed south of the building in 1999 to stabilize the fort and prevent further erosion of the island (South Carolina Ports 2002).

Impacts of Alternative A: No Action / Continue Current Management

Since no known cultural resources are present at Liberty Square, continuing current management practices, including the existing operation of the ferry from this location, would have no adverse effects on cultural resources. In addition, under the no action alternative, no major construction is planned elsewhere at Fort Sumter that would possibly impact cultural resources.

Cumulative Effects. Because maintenance of the existing systems and operation of Liberty Square does not require disturbance in previously undisturbed areas, Alternative A would not contribute either beneficially or adversely to cumulative impacts on cultural resources at Liberty Square or Fort Sumter National Monument. Effects to park- wide or regional cultural resources caused by development, vandalism, theft, or looting would not be changed under the no action alternative.

Conclusion. Because no new soil disturbance, excavation, or construction is proposed in previously undisturbed areas, Alternative A would be unlikely to have any effect on archaeological sites, historic structures, cultural landscapes, ethnographic resources or museum collections.

Alternative A would not produce adverse effects on cultural resources or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation

of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in National Park Service planning documents. Consequently, there would be no impairment of cultural resources or values as a result of the implementation of Alternative A.

Impacts of Alternative B: The Preferred Alternative

Specific effects of the Preferred Alternative are unknown at the present time, since a specific site for the proposed secondary ferry departure point has not yet been delineated. However, the general study area has three areas with different potential cultural resource impacts: south of Shem Creek, north of Shem Creek and south of the Route 17 Cooper River bridges, and north of the bridges to the mouth of the Wando River at Remley Point.

If the secondary departure point is situated south of Shem Creek, the Preferred Alternative has the potential for direct and indirect (visual and noise) adverse impacts on the Mount Pleasant Historic District. Locating the departure point on the spoil area north of Shem Creek and south of the Route 17 Cooper River bridges would not adversely impact known cultural resources. The spoil area is modern made land and therefore has low potential for undiscovered cultural resources. Additional research would be required to address potential submerged resources. The existing use of the spoil area for docking of historic museum ships is apparently compatible with the presence of a ferry departure point and would not detract from the qualities that make the vessels eligible for the National Register of Historic Places. This would be expected to be the case in the future as well. The shoreline north of the bridges to Remley Point has low potential to impact the historic cemetery at Remley Point. However, this resource would be avoided in the design of an access road, parking facilities, and construction staging areas, if such activities are needed. Castle Pinckney is within view of likely routes from a secondary ferry route to Fort Sumter, but the island is only accessible by boat and the southern end near the building has been reinforced against erosion. Since the number of trips to Fort Sumter would not increase, Castle Pinckney would not be affected.

Under the Preferred Alternative, the site- specific location for the secondary departure point would be surveyed for archeological and historical resources prior to any construction. Work would be monitored and contracts would include work- stoppage provisions if resources were discovered. A more intensive search of known cultural resources would be conducted for the site- specific departure point once a location is determined. This information would be included in a separate environmental assessment. A comprehensive study of the Charleston Harbor area was conducted in the 1990s and supporting studies would be consulted for predictive modeling of archaeological site locations (Cable 1996) and sensitivity zones of submerged archaeological resources (Watts 1995). Known cultural resources would be avoided if possible, or impacts would be minimized if avoidance is not feasible, or mitigated, in consultation with the State Historic Preservation Office.

As a result, implementation of Alternative B could have negligible to minor, adverse effects on archeological and historic resources.

Cumulative Effects. Under the Preferred Alternative, long- term, direct or indirect, adverse impacts to cultural resources are possible, however further study of resources would be

conducted once the secondary departure point is identified. Because land- disturbing activities may take place, there is potential for Alternative B to affect undisturbed in- situ cultural resources. The Preferred Alternative would potentially make a minor contribution to long-term, adverse, cumulative effects on cultural resources in the Mount Pleasant/East Cooper River area. Effects would be avoided when possible, or minimized if avoidance is not feasible, or mitigated, in consultation with the State Historic Preservation Office.

Conclusion. Construction, if needed, of a proposed secondary departure point in previously undisturbed areas would have potential long- term, direct or indirect, adverse effects on cultural resources. However, these should be largely avoided and/or minimized through proper site selection and planning during the environmental assessment process. Alternative B would potentially make a minor contribution to long- term, adverse, cumulative effects on cultural resources outside the park.

Alternative B would not produce major adverse effects on cultural resources or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in National Park Service planning documents. Consequently, there would be no impairment of cultural resources or values as a result of the implementation of Alternative B.

SECTION 106 SUMMARY

This environmental assessment provides detailed descriptions of two alternatives (including a no action alternative), analyzes the potential effects associated with possible implementation of each alternative, and describes the rationale for choosing the Preferred Alternative. Also contained in the environmental assessment are mitigation measures that would help avoid adverse effects on cultural resources (see Table 4).

If any resources are encountered, adequate mitigation of project effects (in consultation with appropriate agencies) or adjustment of the project design would take place to avoid or limit the adverse effects on prehistoric and historic archaeological resources.

In keeping with 36 CFR 800.8 (c) et seq, this environmental document will utilize the National Environmental Policy Act process for accomplishing Section 106 compliance. To this end, the environmental assessment has identified consulting parties who were contacted during the scoping process, including the South Carolina State Historic Preservation Office (SHPO) and affiliated Native American tribes (Appendix A). Letters inviting consultation on this project were sent to the fifteen federally recognized tribes with ties to South Carolina, as well as the ten non- federally recognized tribes and related organizations in South Carolina.

During planning for this project, the Area of Potential Effect was defined, and files were searched to identify any historic properties that might be affected by this project. The project will be reviewed by the National Park Service Southeast Archeological Center and the National Park Service Regional Historian.

The environmental assessment will be sent to affiliated Native American groups for their review and comment to ensure that no ethnographic resources valued by tribes would be affected by project implementation. This environmental document also will be sent to the South Carolina State Historic Preservation Officer for review and comment and for State Historic Preservation Office concurrence with the National Park Service's definition of the Area of Potential Effect. This environmental assessment finds that the project could have a negligible to moderate, long-term, adverse effect on known historic properties listed in or eligible for inclusion in the National Register of Historic Places; concurrence with this determination also will be sought from the South Carolina State Historic Preservation Office.

In the unlikely event that cultural resources are encountered during project implementation, work will be halted and the discovery process would be initiated as outlined in 36 CFR 800.13.

Pursuant to 36 CFR 800.5, implementing regulations of the National Historic Preservation Act (revised regulations effective January 2001), addressing the criteria of effect and adverse effect, the National Park Service finds that the secondary departure point would potentially result in negligible to moderate adverse effects. However, the presence or absence of eligible resources cannot be determined until the survey of a specific location is conducted. The results of the investigation and environmental assessment will be provided to the South Carolina State Historic Preservation Office with an appropriate recommendation, in compliance with 36 CFR 800.

VISITOR USE AND EXPERIENCE

Affected Environment

The Fort Sumter National Monument experience includes the opportunity to appreciate the full range of significant historical events that occurred at Fort Sumter and Charleston Harbor during the American Revolution and the American Civil War. As part of the overall history of the area, the National Park Service interprets the role of Fort Moultrie in the evolution of US Coastal defense from the American Revolution through WW II (1776- 1947) including the role of Fort Sullivan's Island with regard to its effect on the course of the Revolutionary War and contribution to the ultimate American Victory.

Fort Sumter is preserved as a stabilized ruin that includes fortifications, artillery pieces, an esplanade and monuments. Visitors receive the Fort Sumter story through contemporary interpretive means including exhibits, signage and technical review with National Park Service staff at Liberty Square and Fort Sumter. A special recorded interpretive presentation is also provided on board the ferry. The Liberty Square departure point was created in partnership with the State of South Carolina and the City of Charleston in 1986. Public Law 99- 637 stated that the purpose of the partnership was "to provide for needed facilities for visitors to Fort Sumter National Monument."

The Fort Sumter National Monument unit is nearing maximum visitation carrying capacity during peak months. The peak visitor period in Charleston and at Fort Sumter is from March to August. During this period, 65% of tourism for the year occurs. Approximately 1.3 million of

Charleston's two million "attraction traffic" tourists visited during this six- month period. The highest visitation months were April with 261,677 and July with 249,209 visitors (Charleston Metro Chamber of Commerce 2000).

During peak months, Fort Sumter receives 1,800 to 2,000 visitors per day. The daily ferry schedule during the peak season includes six trips per day with an additional trip established for Boy Scouts. Round trips take an average of 2¼ hours and each ferry trip is scheduled to allow one hour for visitors to tour the Fort (NPS 1998). The maximum capacity allowed at Fort Sumter at any given time is 385 visitors. In order to accommodate additional visitors, additional ferry trips would be required during the day. In order to honor the maximum capacity of Fort Sumter, trips must be scheduled to avoid visitors from two ferry boats being at the Fort at the same time. In order to minimize visitor impacts and promote a good visitor experience, a maximum ratio of 100 visitors to 1 interpretive park staff was also recommended in the 1998 general management plan (NPS 1998). During peak months, Fort Sumter currently operates at visitor capacity. Fort Sumter currently has available significant visitor capacity from September through February. During non- peak tourism periods, ferry schedules are reduced to 3 to 5 trips per day, depending on the season and anticipated demand.

Annual visitation trends are summarized in Table 9. Visitation rose from 102,235 in 1980 to 300,273 in 2002 for the Liberty Square and the Mount Pleasant location at Patriots Point, respectively (Table 9). The Fort Sumter Visitor Center education facility and dock officially opened at Liberty Square on August 15, 2001. The number of visitors departing from Liberty Square and Patriots Point increased approximately 26% between 2000 and 2002.

TABLE 9
FORT SUMTER VISITATION TRENDS, 1980- 2002

Locations/Percent Departing							
Year	**Charleston**	**(%)**	**Patriots Point**	**(%)**	**Boy Scouts**	**(%)**	**Total**
1980	102,235						102,235
1991	113,393	52.2	103,871	47.8			217,263
1992	110,859	49.2	114,564	50,8			225,423
1993	105,928	48.0	114,726	52.0			220,654
1994	104,536	47.2	116,707	52.8			221,243
1995	101,253	48.2	108,624	51.8			209,877
1996	104,896	47.6	109,356	49.6	6,127	2.8	220,379
1997	110,410	47.2	115,004	49.2	8,488	3.6	233,902
1998	114,489	47.0	120,522	49.5	8,579	3.5	243,590
1999	106,664	44.9	121,139	51.0	9,696	4.1	237,499
2000	106,034	44.5	122,872	51.5	9,570	4.0	238,476
2001	127,156	47.5	129,445	48.4	11,015	4.1	267,616
2002	173,429	57.8	114,724	38.2	12,120	4.0	300,273

Source: NPS 2002.

Over 65,000 Scouts from across the nation have attended the overnight camping program in Patriots Point from 1996 to 2002. While in the area, they visit the Naval & Maritime Museum, Cold War Submarine Memorial, the USS Yorktown, and Fort Sumter National Monument.

The ferry trip between the departure point and Fort Sumter is a valuable part of the visitor experience. As the ferry moves through the harbor, it passes many significant historic sites that relate to Fort Sumter such as Castle Pinckney and Fort Johnson. The National Park Service provides significant interpretive dialogue to visitors using the ferry boats, including a discussion of the chronology of the Fort Sumter story and the history of related sites and preservation activities.

There is substantial local support for ferry service from both the Charleston (west) and Mount Pleasant (east) sides of the Cooper River. Reasons for the growing need for two departure points include availability of different types of attractions, less traffic, transportation options, and strong visitor demographics on the Mount Pleasant side of the Cooper River resulting from steady residential growth and new hotel and maritime tourism developments.

US 17 connects Mount Pleasant and Charleston via two parallel bridges that cross the Cooper River. The Grace Bridge is two lanes southbound and carries US 17 traffic from Mount Pleasant into Charleston, and the Pearman Bridge is one lane southbound and two lanes northbound. The outbound bridge is congested, particularly during peak commuter hours. However, a new eight- lane bridge is being constructed to replace the two bridges and should be operational by 2006.

Impacts of Alternative A: No Action / Continue Current Management

Under Alternative A, ferry service would be provided only from Liberty Square in downtown Charleston. This alternative would continue to contribute to local, regional, and national efforts to preserve cultural resources and to interpret them for visitor education and enjoyment. The National Park Service would continue to play a significant role in the high quality visitor attractions available in the Charleston area, providing long- term, moderate to major, beneficial effects on visitor use and experience.

Visitors originating from the Mount Pleasant/East Cooper River area would continue to be required to cross the congested Cooper River bridges to access the Liberty Square departure point. If visitors are limited to one departure point located in a congested area, some visitors may choose not to visit Fort Sumter. Those visitors that do choose to visit Fort Sumter may experience congested conditions that could possibly detract from the visitor experience, particularly during the peak visitation months. In this context this would result in a minor to moderate direct long- term adverse effect on visitor use and experience.

All visitors that access Fort Sumter via ferry would continue to utilize Liberty Square. These visitors would have a benefit from the exposure to the Liberty Square Visitor Education Center and information provided by park rangers. In this context, implementation of Alternative A would result in moderate to major, beneficial, long- term effects on visitor use and experience.

In conclusion, depending on the values and interests of each visitor, Alternative A may have a beneficial or adverse effect on visitor experience and travel time. Some may view a single departure point as meeting their need for access to Fort Sumter, while others would consider one departure point limiting and detrimental to their experience due to disadvantages associated with traffic conditions.

Cumulative Effects. Growth in the Charleston area, including the Charleston Downtown Waterfront mixed use development, the Town of Mount Pleasant multi- family rezoning actions, and other residential and commercial developments, are directly related to regional population growth. When regional growth is added to growth in tourism, fostered by new tourist attractions such as the Hilton Hotel Resort (under Patriots Point Development Authority), there will be an additional demand to visit Fort Sumter. As visitation levels during peak season are currently near Fort Sumter's maximum carrying capacity, visitors may find that they will have to wait longer for a ferry trip, or possibly be turned away and not able to visit Fort Sumter. Pressure may build to extend the daily operation hours or the peak season ferry schedules. This would result in a minor to moderate, long term, adverse cumulative effect on visitor experience.

The increased growth in local and tourist- related development in the Mount Pleasant/East Cooper River area requires potential Fort Sumter visitors to travel across the Cooper River to access the ferry departure point. As traffic congestion increases and a seat on the ferry becomes more difficult to reserve, potential visitors from the Mount Pleasant/East Cooper River area may become less inclined to visit Fort Sumter. This would be a minor to moderate, long term, adverse cumulative effect on visitor experience. However, once construction of the Cooper River Bridge Replacement Project is completed, roadway capacity to US 17 crossing the Cooper River between Mount Pleasant and Charleston will be added. This will reduce the congestion between the Mount Pleasant/East Cooper River area and the Liberty Square departure point in downtown Charleston. This would have a minor to moderate, long- term, beneficial cumulative effect on visitor experience for visitors from the Mount Pleasant/East Cooper River area.

Conclusion. Alternative A would have long- term, moderate to major, beneficial effects on visitor use and experience because the facilities at Liberty Square would continue to be available to all Fort Sumter visitors and they would receive detailed information concerning the history of Fort Sumter and the regional historical context. Long- term, minor to moderate, adverse effects may occur to visitors from the Mount Pleasant/East Cooper River area due to traffic congestion in crossing the Cooper River. If visitors are limited to one departure point located in a congested area, some visitors may choose not to visit Fort Sumter. This would be relieved when the new Cooper River Bridge is open to traffic.

Impacts of Alternative B: The Preferred Alternative

Alternative B, the Preferred Alternative, includes a secondary ferry departure location in the East Cooper River/Mount Pleasant area, as well as the primary Liberty Square ferry departure facility in Charleston. This alternative would continue to contribute to local, regional, and national efforts to preserve cultural resources and to interpret them for public education and enjoyment. The National Park Service would continue to play a significant role in the high

quality visitor attractions available in the Charleston area with extensive exhibits and educational materials, as well as provide information from the East Cooper River/Mount Pleasant departure point. Alternative B therefore provides long- term, moderate to major, beneficial effects on visitor use and experience.

Fort Sumter visitors would have a choice of ferry departure locations and could access the most convenient location according to their needs. Visitors from the Mount Pleasant area would not be required to drive across the Cooper River bridges and through downtown Charleston to access the ferry. This could result in additional Fort Sumter visitors due to more accessible ferry locations, providing visitors a choice in their departure point. This could constitute a major, long term, and beneficial effect.

The preferred alternative may have short- term, minor, adverse effect on visitor use and experience associated with construction of the secondary departure site. If construction activities were not needed, this temporary effect would be avoided. Construction equipment may interfere with traffic flow, cause temporary traffic congestion, and create construction equipment related air quality and noise effects. This could cause short- term, minor, adverse effects on visitors entering or exiting the departure point area.

Cumulative Effects. Growth in the Charleston area, including the Charleston Downtown Waterfront mixed use development, Town of Mount Pleasant multi- family rezonings, and other residential and commercial developments, are directly related to regional population growth. When regional growth is added to growth in tourism, fostered by new tourist attractions such as the Hilton Hotel Resort (under Patriots Point Development Authority), there will be additional demand to visit Fort Sumter. As visitation levels during peak season are currently near Fort Sumter's maximum carrying capacity, visitors may find that they have to wait longer for a ferry trip, or possibly be turned away and not able to visit Fort Sumter. Pressure may build to expand the daily operation hours or to extend the peak season ferry schedules. This would constitute a minor to moderate, long term, adverse effect on visitor experience. Visitors originating from the local and tourist- related development in the Mount Pleasant/East Cooper River area would not be required to drive across the Cooper River bridges to access the ferry departure point. This would constitute a moderate, long term, beneficial effect on visitor experience.

Conclusion. Alternative B provides long- term, moderate to major, beneficial effects on visitor use and experience by providing visitors with a choice for their departure point in addition to contributing to local, regional, and national efforts to preserve cultural resources and to interpret them for public education and enjoyment. Short- term, minor, adverse effects on visitor use and experience may occur during construction of the Mount Pleasant/East Cooper River departure facilities, if required. Short- and long- term, minor, beneficial effects may occur to visitors from the Mount Pleasant/East Cooper River area due to avoidance of the traffic congestion in crossing the Cooper River. This would be partially relieved when the new Cooper River Bridge is open to traffic, but departure facilities on both sides of the Cooper River would still be more convenient to visitors than would one departure facility, providing a long- term, beneficial, moderate effect on visitor use and experience.

SOCIAL AND ECONOMIC CONSIDERATIONS

Affected Environment

The Charleston Metropolitan area has experienced rapid growth since 1990. Greater Charleston redevelopment activity, Charleston Area Regional Transportation Authority expansion, a regional 40% increase in tourism jobs over the past decade, and new regional town centers along Interstate highways in the region have contributed to the growth patterns in the Charleston area. The need for this general management plan amendment/environmental assessment is reflective of the rapid growth that has occurred in the greater Charleston area.

The State of South Carolina, and regional, county and municipal planning activities are underway to address the social and economic future of the region, and these planning activities affect the park as well. Many local planning initiatives address the social and economic conditions including:

The Charleston Century V City Plan (No Date)

Measuring for Success 2002 (2002)

The Cooper River Bridge Replacement Project (No Date)

The Charleston Downtown Plan (1999)

Mount Pleasant, North Charleston and the Berkeley Charleston Dorchester Council of Governments have prepared comprehensive plans to address changing social and economic conditions. These plans call for new economic initiatives to guide growth, preserve historic structures, create town centers, and plan highway corridors. The Fort Sumter National Monument is also a player in these social and economic considerations. Fort Sumter is among the top "paid" admission attractions in Charleston according to a survey done in 2000 (Charleston Metro Chamber of Commerce 2000). The survey also indicated that the park generates regional revenue streams from approximately 6% of Charleston tourism, and is an educational and cultural icon for the nation.

Demographics

The population for the Charleston Metropolitan Statistical Area, which includes Berkeley, Charleston and Dorchester Counties, was 549,033 in 2000 according to the U.S. Census, growing from 506,875 in 1990. Table 10 indicates the population growth trends in the Charleston Metro Area as determined by federal census counts.

TABLE 10
POPULATION GROWTH TRENDS CHARLESTON METRO AREA, 1990- 2000

Place	1990 Census	2000 Census	% Change 1990- 2000
Berkeley County	128,776	142,651	10%
Goose Creek	24,692	29,208	18.3%
Hanahan	13,176	12,937	- 1.8%
Charleston County	295,039	309,969	5.1%
Charleston	80,414	96,650	20.2%
Isle of Palms	3,680	4,583	24.5%
Mount Pleasant	30,108	47,609	58.1%
North Charleston	70,218	79,641	13.4%
Dorchester County	83,060	96,413	16.1%
Summerville	22,519	27,752	23.2%
Charleston Metro	**506,875**	**549,033**	**8.3%**
South Carolina	3,486,703	4,012,012	15.1%

Source: U.S. Census Bureau 2000.

The three largest cities in the Charleston region and their 2000 population were Charleston (96,650), North Charleston (79,641) and Mount Pleasant (47,609). Mount Pleasant grew 58.1% over the past decade. The population of the area is projected to continue to grow at a rapid rate in the future. The Charleston metropolitan area 2000 population of 549,033 is projected to reach 690,000 by the year 2020, an increase of nearly 26 percent.

Approximately 25% of park visitors are local residents (Kleckner and Unsworth 2000). Demographic growth is therefore a basic factor contributing to demand for access to the park. The Mount Pleasant/East Cooper River area population is also experiencing an increase in multi- family construction. Retail and mixed- use developments are attracting residential growth near the waterfront. Mixed- use development is also proposed within the land owned by the Patriots Point Development Authority.

Economics

Tourism has replaced government spending in the local and state economy in recent years. The closing of the Charleston Navy Base represented a significant decrease in regional employment in the 1990's. Charleston and the State of South Carolina worked cooperatively to replace this federal military resource and retargeted tourism and historic preservation to create jobs and construction projects. This strategy was successful. Between 1990 and 1999, service employment increased a substantial 40% due to increases in tourism in the region. Unemployment was 3.1% in 1993, and 6.9% in 1998 following the closing of the Charleston Naval Base. Even in the midst

of a national recession, the unemployment rate in Charleston County was only 3.8% in November 2002 (South Carolina Employment Security Commission 2002).

The travel and tourism industry contributed $14.7 billion to the State of South Carolina economy in 2001 (SCPRT 2001). Travel and tourism is the fourth largest segment of the state's gross domestic product. Tourism generated $743 million in state and local sales taxes in 2001. Charleston is the most popular destination in South Carolina for historic sites and museums and a leader in travel and tourism.

A study to evaluate the economic effect of modifying departure points to Fort Sumter indicated that based upon projections of linkage to the South Carolina Aquarium alone, Fort Sumter would experience a net increase of approximately 10% more visitors per year (Kleckner and Unsworth 2000). The study also evaluated monetary effects on the Patriots Point and Mount Pleasant economy if changes occurred to create a single ferry departure point to Fort Sumter. "Patriots Point potentially may lose between 2% - 12% of annual revenues ($114,600 - $641,600) due to relocating the Fort Sumter departure to the new site next to the South Carolina Aquarium." The study further indicated that Mount Pleasant should experience an increase in visitation and revenues due to incidental visits of tourists staying locally.

National Park Service visitors usually stay in Charleston, Mount Pleasant and other area communities. While visiting historic and cultural sites, the tourists will dine, shop, and use area hotel accommodations. The park indirectly serves as a valuable economic and tourism engine for the Charleston region. Other principle economic engines are: the Charleston Historic District, Charleston Harbor, Patriots Point, the College of Charleston, Charleston Hospital District, regional shopping center hubs, special events, marina developments, the Charleston Airport, and the Charleston Convention Center.

Tourism

The National Park Service units in Charleston are gathering places for environmental, historical, and educational tourism, with 41% of Charleston tourists visiting museums or historic places (Crotts 1998). Approximately 7.3% of the projected 4.1 million tourists who visit Charleston annually also visit Fort Sumter National Monument. The Fort Sumter Group of the National Park Service is therefore a key element of the economic fabric of Charleston and of the revenues generated by tourism in the Charleston metropolitan area.

The rapid growth of tourism and travel in the Charleston region continues to influence the number of visitors, types of visitors and the amount of spending related to the region and to Fort Sumter National Monument facilities. In addition, Fort Sumter provides major social and educational benefits to the children of the region, and to kindergarten through twelfth grade schools, universities, and museums and other institutions of learning in the Southeast United States.

The size and configuration of the attractions in the waterfront area would likely serve as a critical mass of attractors that would generate increased visitors to Fort Sumter (NPS no date). These attractions include the South Carolina Aquarium, Patriots Point Naval Museum, Charleston City Market, Charleston Waterfront Park, the Charleston Visitor Center and others.

Impacts of Alternative A: No Action / Continue Current Management

Under Alternative A, ferry service would be provided from the primary departure point only at the Liberty Square in downtown Charleston. The no action alternative would have no short- or long- term effect on demographics in the greater Charleston area. The no action alternative would have negligible, short- and long- term adverse effects on economics in the greater Charleston area. As the departure point in the Mount Pleasant/East Cooper River area would no longer be operational, visitation in the Mount Pleasant area could be reduced. Visitation in the downtown area would increase, as Liberty Square would provide the sole departure point to Fort Sumter. However, less convenient access to Fort Sumter could result in some Charleston area visitors deciding not to visit Fort Sumter and could choose to leave the area sooner. The no action alternative would therefore have minor, short- and long- term adverse effect on tourism in the greater Charleston area.

Cumulative Effects. The Charleston area is a rapidly growing metropolitan area. The developments that are proposed for the region, including the developments in Mount Pleasant, the Charleston Harbor projects, and all of the other proposed regional developments are being undertaken as a response to the growth in population that is projected for the greater Charleston area. Consequently, the no action alternative would have no effect on the population growth in the area. The Charleston Harbor Deepening and Widening Project, and some of the regional developments such as the Charleston Naval Base Adaptive Reuse will boost the economy of the greater Charleston area. Consequently, the relatively small economic benefits provided by the no action alternative would have negligible, short- and long- term effects on the economics of the area. The Charleston International Airport Expansion and the Hilton Resort Development would help to boost tourism in the greater Charleston area. Therefore, the no action alternative would have minor, short- and long- term adverse effect on tourism in the greater Charleston area.

Conclusion. The no action alternative would have no short- or long- term, effect on demographics in the greater Charleston area. The no action alternative would have negligible, short- and long- term adverse effects on economics in the greater Charleston area. The no action alternative would have minor, short- and long- term adverse effect on tourism in the greater Charleston area.

Impacts of Alternative B: The Preferred Alternative

Under Alternative B, ferry service would be provided from the primary departure point at Liberty Square in downtown Charleston and a secondary departure point in the Mount Pleasant/East Cooper River area. The preferred alternative would have no short- or long- term, effect on demographics in the greater Charleston area. If construction activities are required to support the development of a new departure point in the Mount Pleasant/East Cooper River area, the preferred alternative would have negligible, short- term beneficial effects on economics in the local area. This, as well as the additional employees required to staff and maintain the new departure point would result in a negligible long- term, beneficial impact to the economy of the greater Charleston area. As both departure points in the Mount Pleasant/East Cooper River area and downtown Charleston would be operational, visitation in the Mount Pleasant area and in

downtown Charleston would be similar to existing conditions and as projected into the future. The increased accessibility could encourage those visitors to visit the park that may have elected to not travel to Liberty Square. The preferred alternative would have no short- or long- term effect on tourism in the greater Charleston area.

Cumulative Effects. The Charleston area is a rapidly growing metropolitan area. The developments that are proposed for the region, including the developments in Mount Pleasant, the Charleston Harbor projects, and all of the other proposed regional developments are being developed as a response to the growth in population that is projected for the greater Charleston area. The preferred alternative would, therefore, have no effect on the population growth in the area. The Charleston Harbor Deepening and Widening Project, and some of the regional developments such as the Charleston Naval Base Adaptive Reuse will boost the economy of the greater Charleston area. Over time, some ancillary businesses could locate near the departure points that would add slightly to the economy. The expected benefits of such business opportunities would be negligible, short- and long- term effects on the economics of the area. The Charleston International Airport Expansion and the Hilton Resort Development would help to boost tourism in the greater Charleston area. Consequently, the preferred alternative would have no short- or long- term effect on tourism in the greater Charleston area.

Conclusion. The preferred alternative would have no short- or long- term, effect on demographics in the greater Charleston area. The preferred alternative would have negligible, short- and long- term beneficial effects on economics in the greater Charleston area. The preferred alternative would have no short- or long- term effect on tourism in the greater Charleston area.

PARK OPERATIONS

Affected Environment

The superintendent of Fort Sumter National Monument is responsible for managing the park, its staff, concessionaires, all of its programs, and its relations with persons, agencies, and organizations interested in the park. Over the past 10 years, limited funding increases have reduced the park staff and the ability to provide service delivery to visitors and resources. The lack of skilled craftsmen to preserve cultural and historic resources is also a limiting factor in existing park operations.

Even with limited resources, park management has been able to maintain the park and improve park facilities. The Fort Sumter museum was renovated in 1994. New exhibits were built to meet Americans with Disabilities Act requirements. The dock was replaced in 1991 after it was destroyed by Hurricane Hugo. Park personnel maintain electric cables, utilities, septic fields, and microwave telephone service. The Liberty Square departure point and all park units are maintained and supervised by park personnel. Park operations provide the full scope of functions and activities to accomplish management objectives and meet requirements in law enforcement, emergency services, public health and safety, resource protection and management, visitor services, interpretation and education, community services, utilities, facility maintenance and fee collection.

The general management plan/environmental assessment (NPS 1998) recommends a ratio of one National Park Service ranger for every 100 visitors at Fort Sumter National Monument. Park operations during recent six- month peak seasons were operating at or near the recommended capacity for Fort Sumter set as a management goal in the 1998 plan. The maximum capacity of Fort Sumter is set at 385 visitors at any one time. This would require three park rangers to be stationed at Fort Sumter National Monument during the peak season. Depending on seasonal visitation rates, the ferry service provides 2 scheduled ferry trips per day during non- peak season and six trips per day in peak season , with one additional trip per day for the Boy Scouts. Each ferry will carry up to 385 passengers, but the average is 261 passengers per trip. Table 11 indicates the number and time of departures and number of passengers during 2002 from both Liberty Square and Patriots Point.

TABLE 11
DEPARTURE SCHEDULES AND PASSENGER COUNT BY BOAT - 2002

	Departure Place/Time								
Month	**LS 9:30AM**	**LS 11AM**	**LS 12 Noon**	**LS 2:30PM**	**PP 10:45AM**	**PP 1:30PM**	**PP 4PM**	**Scouts**	**Special**
Jan		1,699		3,400		2,598		1,014	
Feb		3,432		4,093		3,241		1,440	
Mar	4,583		6,409	7,256	5,517	5,091	395	1,399	381
Apr	5,959		7,343	8,381	5,806	5,337	4,178	837	
May	5,226		6,578	6,882	5,404	4,907	3,744	848	
Jun	4,967		7,093	7,401	5,713	5,412	3,421	1,178	
Jul	6,394		9,278	9,286	7,583	6,697	5,016	877	
Aug	3,718		5,905	6,883	4,729	4,246	3,398	835	
Sep	2,818		4,214	4,832	3,339	3,310	206	1,317	
Oct	3,195		5,183	5,605	4,077	3,417		855	
Nov	2,001		3,540	3,689	2,539	2,151		913	
Dec	491	1,345	1,515	2,835	755	2,116		607	
Total	39,352	6,476	57,058	70,543	45,462	48,523	20,358	12,120	381
								Grand Total	**300,273**

Liberty Square (LS); Patriots Point (PP)

Source: NPS, No Date.

The current ferry service operates as a concession for the National Park Service. The ferry currently services both the Liberty Square departure point and the Patriots Point departure point. Liberty Square is owned and operated by the National Park Service. The dock at the Patriots Point departure facility is privately owned by the existing concessionaire, who also leases land from Patriots Point Development Authority, an entity of the State of South Carolina.

Impacts of Alternative A: No Action / Continue Current Management

Implementation of Alternative A would continue the current management strategies, and there would be no change in park operations. Under Alternative A, ferry departures would continue to occur from Liberty Square, and park staff would continue to operate and maintain facilities comparable to existing conditions. Visitation to the facilities at Liberty Square would be expected to increase over time, creating a long- term need for additional park staff to respond to the need for additional park services. Existing staff shortages, such as skilled craftsmen, if not filled in the future, would create short- term and long- term, negligible to minor, adverse effects.

Cumulative effects. No known cumulative impacts on park operations would be expected.

Conclusion. Implementation of Alternative A would have negligible to minor, short- and long-term, adverse effects to park operations due to staff shortages and increased visitation expected at the Liberty Square departure point. No cumulative impacts on park operations would be expected.

Impacts of Alternative B: The Preferred Alternative

Implementation of Alternative B would cause increased costs for maintenance and two additional maintenance personnel, additional personnel time to manage the concessionaire contract, and an estimated six additional personnel needed to provide interpretive services. Provision of these staff and materials would have long- term, major beneficial impacts on park operations. The increase in park staff in interpretive and maintenance personnel would distribute workloads and result in more dispersed operations. Additional staff members would allow for a higher level of monitoring visitor activities and educating visitors about park resources. However, existing staff shortages, such as skilled craftsmen, if not filled in the future, would create short- term and long- term, negligible to minor, adverse effects. If existing vacancies and increased staffing and cost needs are not met (existing and future), moderate to major, adverse effects would be expected over the long- term, causing adverse effects to visitors and ultimately resources.

Cumulative effects. No known cumulative impacts on park operations would be expected.

Conclusion. The Preferred Alternative would result in long- term, major beneficial impacts on park operations by distributing workloads, dispersing operations, and providing a higher level of monitoring visitor activities and educational opportunities. Should existing staff shortages not be addressed, short- term and long- term, negligible to minor, adverse effects on park operations would occur. No known cumulative impacts on park operations would be expected.

TRANSPORTATION

Affected Environment

The roadway network in the Charleston area includes three Interstate highways (1- 95, I- 26 and I- 526) and seven state- maintained major arterials. Downtown Charleston is the eastern terminus of I- 26, which connects Charleston and Ashville, North Carolina. I- 95, located in the eastern portion of the region, is the primary north- south highway along the eastern seaboard of the United States. US 17 is a north- south major arterial through South Carolina that follows the Atlantic coastline through most of the state. US 17 also provides primary access to the Charleston downtown and Mount Pleasant via bridges over the Ashley River and the Cooper River. I- 526 connects Mount Pleasant to Charleston via North Charleston, crossing the Wando, Cooper and Ashley Rivers north of Charleston. I- 526 provides an alternate east- west connector to US 17.

The unique water and land geography of Charleston presents transportation challenges. The location of the central city on a peninsula that is accessed primarily by bridges tends to funnel traffic into finite areas. This leads to congested conditions and unique urban growth patterns. Even with the challenging geography, the City has good examples of districts and neighborhoods with effective street networks. However, like all large urbanized areas, certain areas in Greater Charleston are suffering from traffic congestion. In a recent study, over 80 percent of those surveyed said they regularly avoid certain areas because they are too congested. Downtown, Ashley Phosphate Road and the Mount Pleasant area were named most frequently as areas to avoid (Community Benchmarking Collaborative 2002).

Roadways that provide access to the Liberty Square area in downtown Charleston include US 17, East Bay Street, and Calhoun Street. US 17 is a 6- lane expressway in the downtown area. The average daily traffic on US 17 in this area was 64,900 vehicles per day in 2002, resulting in a level of service E operating condition (levels of service are defined in Appendix B. East Bay Street is a 4- lane arterial in the downtown area. The average daily traffic on East Bay Street was 19,400 vehicles per day in 2002, resulting in a level of service B operating condition. Calhoun Street is a 2- lane collector near Liberty Square. The average daily traffic on Calhoun Street was 2,000 vehicles per day in 2002, resulting in a level of service A operating condition.

Roadways that provide access to the Mount Pleasant/East Cooper River area include US 17 and Coleman Boulevard. US 17 is a 4- lane arterial located to the east of the Cooper River. The average daily traffic on US 17 in this area is 32,700 vehicles per day, resulting in a level of service C operating condition. Coleman Boulevard is a 4- lane arterial located to the south of US 17. The average daily traffic on this section of Coleman Boulevard is 31,100 vehicles per day, resulting in a level of service C operating condition. The Charleston and Mount Pleasant areas are connected by two bridges that cross the Cooper River and carry US 17 traffic. The Grace Bridge is two lanes southbound and the Pearman Bridge is one lane southbound and two lanes northbound. The average daily combined traffic on the bridges is 64,900 vehicles per day resulting in a level of service F operating condition.

While tourism is an economic boon to the area, the tourist attractions identified in the Socioeconomics section of this report add to the congested traffic conditions in the Charleston area. These tourist attractions, as well as other Charleston area attractions, generate approximately 4.1 million tourist visits per year. Approximately 80 percent of the tourists arrive by car according to a Visitor Inquiry Survey taken by the Charleston Metro Chamber of Commerce (Charleston Metro Chamber of Commerce 2000).

The South Carolina Department of Transportation estimates that automobile miles traveled per person annually in the greater Charleston area will rise about 75% between 1990 and 2015, representing significantly increased roadway congestion levels. To help address these transportation problems, transportation planning is conducted on a regional basis by the Berkeley- Charleston- Dorchester Council of Governments. This Council of Governments prepares plans for the 800 square mile Charleston Metropolitan Region, including all three counties in the Berkeley, Charleston, and Dorchester County Region. The Council of Governments also prioritizes short range transportation improvement projects and authorizes funding for these projects in the regional Transportation Improvement Program. Projects are prioritized based on need, so Mount Pleasant often competes with the City of Charleston for these transportation improvement dollars.

The existing Grace and Pearman Bridges across the Cooper River that carries US 17 are scheduled to be replaced. An eight lane bridge with bicycle and pedestrian lanes is currently under construction. Construction should be completed by 2006, but is currently ahead of schedule. Operating conditions on the new bridge are anticipated to be level of service C or better. None of the other roadways that provide access to the Liberty Square area or the Mount Pleasant/East Cooper River area are planned or programmed for improvement.

The Charleston Area Regional Transportation Authority system provides mass transit services for the greater Charleston area. Services include fixed route bus services to outlying areas, DASH circulator routes in the downtown Charleston area, and curb- to- curb demand response service for eligible riders. The Liberty Square site is served by DASH route 11 (Market/Waterfront Shuttle) and DASH route 2 (Beltline). The Mount Pleasant/East Cooper River area is served by route 8 (Isle of Palms) and route 23 (US 17 North). A recent ½ cent sales tax referendum that was intended to fund mass transit and other public services was passed by voters, but was later overturned by the court system. As a result of this court decision, the future funding of the Charleston transit system is currently in question.

The region is served by the Port of Charleston, the fourth busiest container seaport in the United States. In fiscal year 2003, the port handled 1.68 million, 20- foot equivalent unit containers. The Port consists of four separate terminals: the Columbus Street Terminal and the Union Pier on the Cooper River near downtown Charleston; the North Charleston Terminal on the Cooper River in North Charleston; and the Wando Welch Terminal on the Wando River in Mount Pleasant. Several water taxi services were introduced and operated for several years each during the late 1990's. There have been recent discussions regarding new water taxi services that may be introduced in the near future.

Fort Sumter is located on an island in the mouth of the Charleston Harbor, and the only access is by boat. Concessionaires currently operate ferry systems to Fort Sumter from departure points located at Liberty Square in downtown Charleston and Patriots Point in Mount Pleasant. During the low tourist season, generally the winter months, ferry service is limited to three scheduled departures per day; two departures from Liberty Square and one departure from Patriots Point. Two ferry vessels are required for this service. During the peak tourist season, generally from April through August, service is increased to six scheduled departures per day (NPS 1998).

The Charleston area is served by the Charleston International Airport, located to the northwest of North Charleston. Scheduled service is provided by five airlines including Continental, Delta, Northwest, U.S, Airways, and United Express. In 2002, a total of 791,341 passengers were enplaned on the scheduled, commuter, and charter airlines serving the airport. The Visitor Enquiry Survey Results conducted by the Charleston Metro Chamber stated that 15.8 percent of the surveyed visitors arrived in the Charleston area by air. The Charleston Area Regional Transportation Authority bus system does not directly serve the airport, but does have several routes in the vicinity of the airport.

The region is served by an extensive rail network including Norfolk and Southern, CSX, and SC Public Railways Commission. In addition, Amtrak's Silver Service/Palmetto line stops in Charleston and provides service between Miami, Florida and New York City. However the Visitor Enquiry Survey Results conducted by the Charleston Metro Chamber stated that less than one percent of the surveyed visitors arrived in the Charleston area by rail.

Impacts of Alternative A: No Action / Continue Current Management

The no action alternative would entail providing one departure point at Liberty Square in downtown Charleston. As a result, the Fort Sumter visitors that currently leave from the Patriots Point to Fort Sumter would be required to utilize the Liberty Square departure point. As 20,173 visitors used the Patriots Point departure point in the peak visitation month of July in 2002, this would indicate that an additional 651 persons would utilize the Liberty Square departure point on an average July day if the Patriots Point departure point was no longer available. Assuming an occupancy of three visitors per vehicle, this would result in an additional 217 vehicles accessing the Liberty Square site on an average July day. Average daily traffic volumes would increase on East Bay Street to 19,617 vehicles per day and on Calhoun Street to 2,217 vehicles per day, but levels of service would remain very high at B and A respectively. Operating conditions on US 17 would remain at level of service E, but the no action alternative would add only 0.3 percent to the existing traffic level, a negligible amount of traffic. Completion of the new Cooper River Bridge could increase the levels of service on US 17. A large share of the added traffic would also occur during non- peak hour traffic periods, when levels of service are generally higher. This 217 vehicles would also be reduced from the traffic volumes in the Mount Pleasant area. This small amount of traffic would not increase the level of service in the area, however; since changes to the level of service would not be expected, the general adverse effects would be considered negligible to minor over the short- and long- term.

Cumulative Effects. The Charleston area is a rapidly growing metropolitan area. The development and 26% growth rate that is projected for the region, including the developments in Mount Pleasant, the Charleston Harbor projects, and all of the other proposed regional developments would add traffic to the regional transportation system. However, those projects that are proposed in the vicinity of downtown Charleston, such as the Charleston Downtown Waterfront mixed use development, would add traffic to the roadway network that is also used by visitors accessing the Liberty Square departure point. Two projects that would reduce traffic congestion in the downtown area are: the Cooper River Bridge Replacement Project that will add capacity to US 17 crossing the Cooper River between Mount Pleasant and Charleston; and the expansion of the Charleston Area Regional Transportation Authority bus system that will provide additional bus routes to reduce auto trips into the downtown area. However, the future funding of the mass transit system is currently in question.

While the ship traffic that uses the Cooper River shares the shipping channels with the Fort Sumter ferry boats, there have not been any reported conflicts. Usually, the ships travel the channels during the dark hours when the ferry boats are not in service. Also, the captains of the tugboats that maneuver the ships and the ferry captains maintain radio contact in the event that they do encounter one another. No adverse, short- or long- term effects to the local vessels traffic are projected.

The no action alternative is not expected to change traffic patterns in the local or regional transportation systems. Levels of service would not significantly change due to visitors departing from Liberty Square. Therefore, there are no cumulative adverse or beneficial effects related to transportation projected for the long- term.

Conclusion. Alternative A would have negligible to minor, short- and long- term, adverse effects on local and regional transportation from utilizing only the Liberty Square departure point. Cumulative adverse effects would also be considered negligible over the long- term.

Impacts of Alternative B: The Preferred Alternative

Transportation

Alternative B, utilizing a secondary ferry departure point in the Mount Pleasant/East Cooper River area, would have no effect on the levels of service related to the transportation system in the greater Charleston and Mount Pleasant area. As departure points are currently located at Liberty Square and Patriots Point in the Mount Pleasant/East Cooper River area, traffic volumes associated with implementation of Alternative B are already included in the current traffic counts for each area. Completion of the new Cooper River Bridge could increase the levels of service on US 17, creating a local benefit to automobile travelers.

While the ship traffic that uses the Cooper River shares the shipping channels with the Fort Sumter ferry boats, there have not been any reported conflicts. Usually, the ships travel the channels during the dark hours when the ferry boats are not in service. Also, the captains of the tugboats that maneuver the ships and the ferry captains maintain radio contact in the event that they do encounter one another. Ferry operators are not expected to change their operating hours, routes, or number of trips on average. No adverse, short- or long- term effects to the local vessels traffic are projected.

Cumulative Effects. The Charleston area is a rapidly growing metropolitan area. The development and 26% growth rate that is projected for the region, including the developments in Mount Pleasant, the Charleston Harbor projects, and all of the other proposed regional developments would add traffic to the regional transportation system. However, those projects that are proposed in the vicinity of the Charleston downtown and the Mount Pleasant/East Cooper River area, such as the Charleston Downtown Waterfront mixed use development, the Mount Pleasant Riverfront Park, the Patriots Point Development Authority projects, and the City of Mount Pleasant multi- family rezonings would add traffic to the roadway network that is also used by visitors accessing the Liberty Square and Mount Pleasant/East Cooper River departure points. Two projects that would reduce traffic congestion in the downtown Charleston and the Mount Pleasant/East Cooper River area are: the Cooper River Bridge Replacement Project that will add capacity to US 17 crossing the Cooper River between Mount Pleasant and Charleston and; the expansion of the Charleston Area Regional Transportation Authority bus system that will provide additional bus routes to reduce auto trips into the downtown Charleston area as well as provide bus service to Mount Pleasant. However, the future funding of the mass transit system is currently in question. Also under consideration is the potential of a future water ferry system that could potentially reduce local ground congestion by providing alternate water routes of transportation.

The preferred alternative is not expected to change traffic patterns in the local or regional transportation systems. Levels of service would not significantly change due to visitors departing from two locations. Therefore, there are no cumulative adverse or beneficial effects related to transportation projected for the long- term.

Conclusion. Alternative B, the Preferred Action, would have no direct or cumulative adverse or beneficial effect on the transportation system in the Charleston or Mount Pleasant area.

SUSTAINABILITY AND LONG- TERM MANAGEMENT

Sustainability is the result achieved by managing resources using procedures that do not compromise the environment or its capacity to provide for present and future generations. The National Park Service Guiding Principles of Sustainable Design (1993) directs National Park Service management philosophy. It provides a basis for achieving sustainability in facility planning and design, emphasizes the importance of biodiversity, and encourages responsible decisions. The guidebook articulates principles to be used in the design and management of visitor facilities that emphasize environmental sensitivity in construction, use of non- toxic materials, resource conservation, recycling, and integration of visitors with natural and cultural settings.

The facilities at Liberty Square were built according to the guidelines identified above. Continuation of current management practices, the No Action alternative, or implementation of the Preferred Alternative, would not compromise the environment or the capacity to provide for present and future generations. The Preferred Alternative is proposed in response to regional growth and development and visitor needs.

UNAVOIDABLE ADVERSE IMPACTS

The Fort Sumter National Monument has a unique role in United States history and will continue to be a highly sought after visitor destination. Additional tourism and continued growth in the region increases the need for alternative means of accessing Fort Sumter National Monument. The Preferred Alternative would provide alternative departure points for access to the Fort Sumter, while the No Action Alternative would continue a process of single source water access to the National Park. Neither alternative considered for this analysis would substantially affect the park or produce significant adverse impacts.

CONSULTATION AND COORDINATION

Scoping is defined as the effort to involve agencies and the general public in determining the scope of issues to be addressed in the environmental document. Among other tasks, scoping determines important issues and eliminates issues that are not important; allocates assignments among the interdisciplinary team members and other participating agencies; identifies related projects and associated documents; identifies other permits, surveys, and consultations required by other agencies; and creates a schedule which allows adequate time to prepare and distribute the environmental document for public review and comment before a final decision is made. Scoping includes any interested agency or any agency with jurisdiction by law or expertise (including the Advisory Council on Historic Preservation, the State Historic Preservation Officer, and Indian tribes) to obtain early input.

During scoping for this environmental assessment, the park contacted the fifteen federally recognized tribes with ties to South Carolina, as well as ten non- federally recognized tribes and related organizations in South Carolina via letter on April 21, 2003. Copies of these letters can be found in Appendix A. No responses to the scoping letter were received from any of the tribes.

During development of this environmental assessment, the park contacted the South Carolina State Historic Preservation Officer regarding the project. A copy of the letter sent to the South Carolina State Historic Preservation Officer and Advisory Council can be found in Appendix A.

The U.S. Fish and Wildlife Service and the South Carolina Department of Natural Resources, Heritage Trust Program were contacted by letter regarding this project on September 3, 2003. A copy of these letters requesting verification of threatened and endangered species in the project area is located in Appendix A. The National Marine Fisheries Service was contacted by letter on February 17, 2003 (Appendix A) as well as by telephone during October 2003.

LIST OF PREPARERS

National Park Service

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Fran Norton	Chief of Visitor Services	Fort Sumter National Monument
Rich Hatcher	Historian	Fort Sumter National Monument
Rich Sussman	Chief, Planning and Compliance Division	Southeast Regional Office
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APPENDIX A
COMPLIANCE/CORRESPONDENCE

United States Department of the Interior

FISH AND WILDLIFE SERVICE
176 Croghan Spur Road, Suite 200
Charleston, South Carolina 29407

October 9, 2003

Mr. John Tucker, Superintendent
U.S. Department of the Interior
National Park Service
Fort Sumter National Monument
1214 Middle Street
Sullivan's Island, South Carolina 29482

Re: General Management Plan and Environmental Assessment
Potential Departure Points
Fws Log No. 4-6-04-T-009

Dear Mr. Tucker:

We have reviewed the information received September 15, 2003 concerning the above-referenced project in Charleston County, South Carolina. The National Park Service is preparing an Amendment to the 1998 General Management Plan to reexamine potential departure points for visitor transportation to and from Fort Sumter National Monument. The following comments are provided in accordance with the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667e), and Section 7 of the Endangered Species Act, as amended (16 U.S.C. 1531-1543).

Based on the information received, we will concur with a determination that this action is not likely to adversely affect federally listed or proposed endangered and threatened species. However, we are concerned about the presence of manatees within the proposed project site during warmer months. Manatees are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973. Manatees take advantage of freshwater outfalls provided at marinas such as those that occur in the Charleston Harbor. For the benefit of manatees, we recommend construction activities for this and similar future projects be planned to take place outside of the warm water summer months (May through September) to minimize potential impacts to manatees.

If construction activities occur during these months, (i.e., May through September), we recommend all personnel associated with the project be advised of the potential presence of manatees and the need to avoid collisions with manatees. All construction personnel should be

responsible for observing water-related activities for the presence of manatee(s) and any collisions with manatees should be reported to the Charleston Fish and Wildlife Service Field Office at (843) 727-4707 and the South Carolina Department of Natural Resources at (843) 844-2473.

In view of this, we believe that the requirements of Section 7 of the Endangered Species Act have been satisfied. However, obligations under Section 7 of the Act must be reconsidered if (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered, (2) this action is subsequently modified in a manner which was not considered in this assessment, or (3) a new species is listed or critical habitat is determined that may be affected by the identified action.

Your interest in ensuring the protection of endangered and threatened species and our nation's valuable wetland resources is appreciated. If you have any questions please contact Ms. Paula Sisson of my staff at (843) 727-4707, ext. 18. In future correspondence concerning the project, please reference FWS Log No 4-6-04-T-009.

Sincerely yours,

Joseph F. Cockrell

Joseph F. Cockrell
Acting Field Supervisor

JFC/PTS

United States Department of the Interior

NATIONAL PARK SERVICE
Fort Sumter National Monument
1214 Middle Street
Sullivan's Island, South Carolina 29482
(843) 727-4739/4740

Charles Pinckney National Historic Site
1254 Long Point Road
Mt. Pleasant, South Carolina

Fort Moultrie
1214 Middle Street
Sullivan's Island, South Carolina

IN REPLY REFER TO:

February 5, 2003

Dr. Rodger Stroup
Director
South Carolina Archives and History
8301 Parklane Road
Columbia, SC 29223

Dear Dr. Stroup:

Because of your interest in visitor access to Fort Sumter National Monument, I want to let you know that the National Park Service has decided to re-examine the general management plan for Fort Sumter National Monument to determine whether or not it should be changed to allow more than one departure point for the Fort Sumter ferry service.

The park's current general management plan directed that visitors board the Fort Sumter ferry at only one location - the new Liberty Square visitor education center and dock on the west bank of the Cooper River. That planning decision was a confirmation of a longstanding desire by the Park Service to construct a departure facility in the City of Charleston dating back almost 40 years when Charleston was the significant population center in the region. Since that time, rapid changes have occurred in the Charleston metropolitan area where the population has now exceeded 550,000. Charleston and North Charleston are second and third respectively in population within the State of South Carolina while Mount Pleasant has moved up to become the fifth largest city. Since 1998 the annual number of visitors to the greater Charleston area has increased by 800,000 to 4.1 million with an annual economic impact of $4.5 billion. Because of these changes, and after consulting with local officials, a Park Service working group recommended that the ferry transportation issue be re-examined.

Beginning this month, the Park Service will open the planning process for an in depth public review of the ferry operations to and from Fort Sumter. Major subject areas to be reviewed will include the number of departure points, the criteria for any secondary departure site, and visitor needs at each departure location. We intend to complete this process by the fall of 2003. If this process results in amending the park's general management plan to call for one or more additional ferry departure sites, our next step would be to develop and issue a concession prospectus that reflects that change. In the meantime, the current concession contract for the Fort Sumter ferry has been extended through December 2003, so ferry service to and from Fort Sumter will continue from both Liberty Square and Patriot's Point through this year.

The public will be invited and encouraged to participate in this planning process and a web site will be established to provide up-to-date date information as the work proceeds.

Accredited by the American Association of Museums

If you have any questions regarding this effort, you may contact either me at 843-727-4740, ext. 14 (john_tucker@nps.gov) or Mr. Richard Sussman, Southeast Regional Chief of Planning and Compliance at 404-562-3124, ext. 601 (rich_sussman@nps.gov).

Sincerely,

John Tucker
Superintendent

United States Department of the Interior

NATIONAL PARK SERVICE
Fort Sumter National Monument
1214 Middle Street
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Fort Moultrie
1214 Middle Street
Sullivan's Island, South Carolina

Charles Pinckney National Historic Site
1254 Long Point Road
Mt. Pleasant, South Carolina

IN REPLY REFER TO:

April 21, 2003

Dr. Wenonah Haire, THPO
Catawba Indian Tribe
P.O. Box 188
Catawba, SC 29704

Dear Interested Party:

In accordance with the National Environmental Policy Act of 1969 (Public Law 91-190, as amended), the National Park Service is preparing an Amendment to the 1988 General Management Plan (GMP) and Environmental Assessment (EA) for Fort Sumter National Monument. The purpose of this letter is to request your comments on issues of concern that you might have regarding the GMP Amendment and EA and your input on the future management direction for the park.

The Purpose and Need: Fort Sumter National Monument was established in 1948 to commemorate the historical events at and surrounding Fort Sumter. A GMP was published in 1998 to establish and guide the overall management, development and use of Fort Sumter National Monument in ways that best suit visitors while preserving the park's cultural and natural resources. The objective of the GMP is to support the purpose for which the park was established and to formalize the park's future direction. The 1998 GMP recommended that water based visitor transportation to Fort Sumter leave from one primary departure point at the Fort Sumter visitor education center and dock on the west bank of the Cooper River now called Liberty Square. Since then, the Greater Charleston area has undergone many changes. After a recent review of governmental stakeholder perspectives, a National Park Service working group recognized the need to re-open the public discussion regarding the number and location of departure points. Therefore, the National Park Service is preparing a GMP Amendment and EA that will present and analyze alternatives.

National Park Service managers constantly make difficult decisions about ways to preserve significant natural and cultural resources for public enjoyment, about competing demands for limited resources, about priorities for using available funds and staff, and about differing local and nationwide interest and views of what is most important. The GMP process provides methods and tools for resolving these issues in ways that minimize conflicts and promote mutually beneficial solutions that articulate how public use and enjoyment of the park can be part of a strategy for ensuring that resources are protected unimpaired for future generations.

The Process and Importance of Public Input: The GMP process provides for early identification of concerns, issues, expectations, and values of existing and potential visitors, neighbors, people with traditional cultural ties to lands within the park, cooperating associations, other partners, scientists, scholars, and other government agencies. Public input gathered during this process will be used in the EA to assess and compare the effects of each alternative on the natural and man-made environment. The EA will also recommend selection of a "preferred" management alternative. The National Park Service is requesting your input, in these early stages and throughout this project, concerning the number of departure points, criteria, and visitor needs.

Accredited by the American Association of Museums

Who to Contact: If you are interested in providing input on the GMP Amendment and EA, you are invited to attend any of the above meetings, or respond in writing to:

Mr. John Tucker, Superintendent
Fort Sumter National Monument
1214 Middle Street
Sullivan's Island, South Carolina 29482
Phone (843) 727-4740

Our practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. We will make all submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety. Submitting comments will ensure that you are included on the mailing list for further information. If you do not wish to comment at this time, but want to remain on the mailing list, you must notify the planning team at the address listed above.

Supplementary Information: The Draft and Final GMP Amendment and EA will be made available to known interested parties and appropriate agencies. Please visit our website for additional information: http://www.nps.gov/fosu/gmp. Full public participation by federal, state, and local agencies as well as other concerned organizations and private citizens are invited throughout the preparation of this document. The National Park Service would like to thank you for reviewing this letter, and for preparing and submitting your written comments.

Sincerely,

John Tucker, Superintendent
Fort Sumter National Monument

Federally Recognized Tribes and Related Organizations with Ties to South Carolina

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Glen Brock, Director
Environmental Department
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Billy Cypress, Chairman
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James Billie, Chairman
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South Carolina Tribes and Related Organizations

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United States Department of the Interior

NATIONAL PARK SERVICE
Fort Sumter National Monument
1214 Middle Street
Sullivan's Island, South Carolina 29482
(843) 727-4739/4740

Fort Moultrie
1214 Middle Street
Sullivan's Island, South Carolina

Charles Pinckney National Historic Site
1254 Long Point Road
Mt. Pleasant, South Carolina

IN REPLY REFER TO:

September 3, 2003

U.S. Fish and Wildlife Service
Roger L. Banks
Field Supervisor
176 Croghan Spur Road
Suite 200
Charleston, SC 29407

Dear Mr. Banks,

The National Park Service is preparing an Amendment to the 1998 General Management Plan (GMP) and an Environmental Assessment (EA) for Fort Sumter National Monument. The 1998 GMP recommended that water based visitor transportation to Fort Sumter leave from one primary departure point at the Fort Sumter visitor education center and dock on the west bank of the Cooper River now called Liberty Square (see attached topographic maps). The National Park Service has recognized the need to reexamine the number and location of potential departure points. Therefore, the National Park Service is preparing a GMP Amendment and EA that will present and analyze alternatives.

The purpose of this letter is to request your comments concerning listed threatened and/or endangered species that are known to occur or may occur in the vicinity of the Charleston Harbor potential alternative locations on the east bank of the Cooper River.

If you have any further questions or need any additional information, please contact me at the phone number below, or Alyse Getty of Parsons at 678-969-2302.

Sincerely,

John Tucker, Superintendent
Fort Sumter National Monument
1214 Middle Street
Sullivan's Island, South Carolina 29482
Phone (843) 883-3123, ext. 14

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Fort Sumter National Monument

Liberty Square

United States Department of the Interior

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Fort Moultrie
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Sullivan's Island, South Carolina

Charles Pinckney National Historic Site
1254 Long Point Road
Mt. Pleasant, South Carolina

IN REPLY REFER TO:

September 3, 2003

SC Department of Natural Resources
SC Heritage Trust
Julie Holling
Data Manager
P.O. Box 167
Columbia, SC 29202

Dear Ms. Holling,

The National Park Service is preparing an Amendment to the 1998 General Management Plan (GMP) and an Environmental Assessment (EA) for Fort Sumter National Monument. The 1998 GMP recommended that water based visitor transportation to Fort Sumter leave from one primary departure point at the Fort Sumter visitor education center and dock on the west bank of the Cooper River now called Liberty Square (see attached topographic maps). The National Park Service has recognized the need to reexamine the number and location of potential departure points. Therefore, the National Park Service is preparing a GMP Amendment and EA that will present and analyze alternatives.

The purpose of this letter is to request your comments concerning listed threatened and/or endangered species that are known to occur or may occur in the vicinity of the Charleston Harbor potential alternative locations on the east bank of the Cooper River.

If you have any further questions or need any additional information, please contact me at the phone number below, or Alyse Getty of Parsons at 678-969-2302.

Sincerely,

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TopoZone.com

Map center is UTM 17 605028E 3624235N - **CHARLESTON** quad [Quad Info]

Fort Sumter National Monument

Liberty Square

South Carolina Department of
Natural Resources

Paul A. Sandifer, Ph.D.
Director
William S. McTeer
Deputy Director for
Wildlife and Freshwater Fisheries

September 16, 2003

John Tucker, Superintendent
Fort Sumter National Monument
1214 Middle St.
Sullivan's Island, SC 29482

RE: Amendment to 1998 General Management Plan

Dear Mr. Tucker,

I have checked our database, and the only known occurrences in the Charleston Harbor are of the federally endangered Shortnose Sturgeon. There are also several occurrences of Colonial Waterbird rookeries in the area as well. While these are not of legal significance under the Endangered Species Act, we would appreciate it if you keep them in mind during your project.

Please understand that our database does not represent a comprehensive biological inventory of the state. Fieldwork remains the responsibility of the investigator.

If you need additional assistance, please contact me by phone at 803/734-3917 or by e-mail at JulieH@scdnr.state.sc.us.

Sincerely,

Julie Holling

Julie Holling
SC Department of Natural Resources
Heritage Trust Program

United States Department of the Interior

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Fort Moultrie
1214 Middle Street
Sullivan's Island, South Carolina

Charles Pinckney National Historic Site
1254 Long Point Road
Mt. Pleasant, South Carolina

IN REPLY REFER TO:

February 17, 2003

Dear Interested Party:

In accordance with the National Environmental Policy Act of 1969 (Public Law 91-190, as amended), the National Park Service is preparing an Amendment to the 1988 General Management Plan (GMP) and Environmental Assessment (EA) for Fort Sumter National Monument. The purpose of this letter is to request your comments on issues of concern that you might have regarding the GMP Amendment and EA and your input on the future management direction for the park.

The Purpose and Need: Fort Sumter National Monument was established in 1948 to commemorate the historical events at and surrounding Fort Sumter. A GMP was published in 1998 to establish and guide the overall management, development and use of Fort Sumter National Monument in ways that best suit visitors while preserving the park's cultural and natural resources. The objective of the GMP is to support the purpose for which the park was established and to formalize the park's future direction. The 1998 GMP recommended that water based visitor transportation to Fort Sumter leave from one primary departure point at the Fort Sumter visitor education center and dock on the west bank of the Cooper River now called Liberty Square. Since then, the Greater Charleston area has undergone many changes. After a recent review of governmental stakeholder perspectives, a National Park Service working group recognized the need to re-open the public discussion regarding the number and location of departure points. Therefore, the National Park Service is preparing a GMP Amendment and EA that will present and analyze alternatives.

National Park Service managers constantly make difficult decisions about ways to preserve significant natural and cultural resources for public enjoyment, about competing demands for limited resources, about priorities for using available funds and staff, and about differing local and nationwide interest and views of what is most important. The GMP process provides methods and tools for resolving these issues in ways that minimize conflicts and promote mutually beneficial solutions that articulate how public use and enjoyment of the park can be part of a strategy for ensuring that resources are protected unimpaired for future generations.

The Process and Importance of Public Input: The GMP process provides for early identification of concerns, issues, expectations, and values of existing and potential visitors, neighbors, people with traditional cultural ties to lands within the park, cooperating associations, other partners, scientists, scholars, and other government agencies. Public input gathered during this process will be used in the EA to assess and compare the effects of each alternative on the natural and man-made environment. The EA will also recommend selection of a "preferred" management alternative. The National Park Service is requesting your input, in these early stages and throughout this project, concerning the number of departure points, criteria, and visitor needs.

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Public Meetings: Your input is a key element in the GMP Amendment and EA. You are invited to attend any of the public meetings to be held in March 2003 at the following locations:

Area	*Date and Time*	*Location*
North Charleston	March 4, 2003 5:00-7:00 p.m.	North Charleston City Hall 4900 Lacross Road, North Charleston, SC 29406
Charleston	March 5, 2003 4:00-6:00 p.m.	Charleston Metro Chamber 81 Mary Street, Charleston, SC 29402
Mount Pleasant	March 6, 2003 5:00-7:00 p.m.	Town of Mount Pleasant Municipal Complex 100 Ann Edwards Lane, Mount Pleasant, SC 29464

Additional public meetings will be scheduled upon release of the GMP Amendment and EA during the summer of 2003. Time and place of the additional public meetings will be published in area newspapers.

Upcoming milestones for this planning process are as follows:

Timeframe	Planned Activity
Week of March 3, 2003	Hold Public Meetings
March 14, 2003	Comments requested from Public Meetings
Spring, 2003	Collect Data and compile Draft GMP Amendment and Environmental Assessment
July 2003	Issue Draft GMP Amendment and Environmental Assessment Hold Public Meetings Collect your Comments
August and September 2003	Address your comments and finalize the GMP Amendment and Environmental Assessment

Who to Contact: If you are interested in providing input on the GMP Amendment and EA, you are invited to attend any of the above meetings, or respond in writing to:

Mr. John Tucker, Superintendent
Fort Sumter National Monument
1214 Middle Street
Sullivan's Island, South Carolina 29482
Phone (843) 727-4740

Our practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. We will make all submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety. Submitting comments will ensure that you are included on the mailing list for further information. If you do not wish to comment at this time, but want to remain on the mailing list, you must notify the planning team at the address listed above. Although your comments are always welcome, comments received by March 14, 2003. are most useful for this process.

Supplementary Information: The Draft and Final GMP Amendment and EA will be made available to known interested parties and appropriate agencies. Please visit our website for additional information: http://www.nps.gov/fosu/gmp. Full public participation by federal, state, and local agencies as well as other concerned organizations and private citizens are invited throughout the preparation of this document. The National Park Service would like to thank you for reviewing this letter, and for preparing and submitting your written comments. Please contact the National Park Service if you would like to attend additional planning meetings scheduled for this project.

Sincerely,

John Tucker

John Tucker, Superintendent
Fort Sumter National Monument

Partner ltr 2-17-03

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APPENDIX B
REFERENCE MATERIAL

APPENDIX B
REFERENCE MATERIAL

FEDERAL WETLAND PERMITS

This category includes direct federal activities and any federally permitted, licensed or funded program. Any actions that may require placement of dredged or fill material in wetlands are governed by Section 404 of the Clean Water Act (i.e., Federal Water Pollution Control Act, 33 U.S.C. 1251 - 1376; Chapter 758; P.L. 845, June 30, 1948; 62 Stat. 1155).

Placement of structures (docks, piers, wharves, etc.) in navigable waters is regulated under Section 10 of the Rivers and Harbors Act of 1899, 33 U.S.C. 403(USFWS Digest of Federal Laws 2003).

Overall activities in wetlands are regulated by the U.S. Army Corps of Engineers and the Environmental Protection Agency under the Section 404 program. In practice, the State of South Carolina Ocean and Coastal Resource Management program protects coastal salt marshes and freshwater wetlands under a joint state-federal permitting program with the U.S. Army Corps of Engineers (OCRM 2003).

To obtain a joint Section 404 permit, the project proponent would be required to follow a sequence of avoidance, minimization and compensation. This would require completion of an alternatives analysis that demonstrates that the least environmentally damaging practicable alternative was selected. All of these issues would be addressed in a site-specific National Environmental Policy Act environmental assessment to be conducted once a specific departure point is identified. Mitigation in the form of a combination of restoration, enhancement, creation or preservation would also be required to offset any unavoidable adverse effects on wetlands.

To obtain a Section 404 permit, the types, acreages, functions and values of any wetlands affected by a proposed site would be assessed as part of a site-specific National Environmental Policy Act environmental assessment that is tiered to the Fort Sumter general management plan (NPS 1998). To determine wetland acreages, a formal delineation of wetland boundaries on any proposed future site using the US Army Corps of Engineers “Routine Onsite Method” (USACE 1987) would be required. Functions and values would also be determined using a standard method approved by the U.S. Army Corps of Engineers

STATE WETLAND PERMITS

In 1977, the South Carolina Coastal Tidelands and Wetlands Act was passed which gives Ocean and Coastal Resource Management the duty to protect the quality of the coastal environment and to promote the economic and social improvement of the coastal zone. Ocean and Coastal Resource Management is charged with balancing the public’s desire to utilize South Carolina’s natural resources while protecting environmental quality. Ocean and Coastal Resource

Management's responsibility, as implemented under the Regulations, is to ensure that " potentially adverse effects to these resources are minimized. "

The South Carolina Coastal Zone Management program also addresses the protection of " freshwater wetlands through avoidance and minimization, followed by mitigation for allowable " impacts. The following is a summary of their freshwater wetlands protection program (OCRM " 2003): "

"Ocean and Coastal Resource Management approaches wetland management on a " comprehensive basis, and to provide some flexibility when developing adjacent to wetlands, " Ocean and Coastal Resource Management uses a Wetland Master Planning concept. "

If a pre-development Wetland Master Plan is prepared for a project, identifying all wetlands, " drainage patterns and conceptual development, isolated freshwater wetlands of one acre or less " in total size may be impacted without objection if adequately mitigated and the wetland contains " no endangered species or critical habitat. On-site mitigation is required when available and " usually involves the protection of the remaining wetlands on-site along with an undisturbed " upland buffer. These wetlands and upland buffers are required to be protected in perpetuity " through appropriate protective mechanisms. For more information on Freshwater Wetlands, " contact Ocean and Coastal Resource Management's Federal Certification Section". "

The critical area is defined as tidelands, coastal waters and the beach/sand dunes system. Ocean " and Coastal Resource Management staff determines this jurisdictional boundary, referred to as " the "critical line". A permit is required from Ocean and Coastal Resource Management prior to " any alteration to the critical areas of South Carolina. These activities can include docks, " bulkheads, boat ramps or other alterations such as filling or dredging. "

Before any state or federal permit can be issued for a project in the coastal zone, Ocean and " Coastal Resource Management must review the project to make sure that it is consistent with " the state coastal management policies. This process is called "Coastal Zone Consistency " Certification" and this certification is required of any project taking place in the eight coastal " counties. "

Functions and Values of Salt Marshes (SCDHEC 2000)

Salt marshes are highly productive components of the marine food web of coastal waters and " estuaries. Decaying organic material (detritus) serves as the basis of the food web and is the " major biological contribution of salt marshes. "

Many commercially and recreationally important fish and shellfish species depend on the salt " marshes and estuary for all or part of their life cycle. The Office of Ocean and Coastal Resouce " Management Charleston Harbor Study (South Carolina Department of Health and " Environmental Control 2000), for example, reported that ...: "The Charleston harbor estuary " contributes approximately 20% and 8% of the state's shrimp and crab landings, respectively. " Spot, Atlantic croaker, red drum, spotted seatrout, flounder, and catfish inhabit the estuary and " are recreationally important. ...:"The estuary also supports numerous ecologically important " species such as bay anchovy and grass shrimps, which serve as food for economically and "

recreationally important species. Young of several species of finfish that are spawned in the " lower estuary or ocean enter the shallows of the estuary as juveniles and stay until they reach " larger sizes or until lowering winter temperatures drive them seaward". "

Many birds and other forms of wildlife utilize salt marsh wetlands as habitat and as a source of " food. "

Salt marshes protect adjacent highlands from erosion and storm damage. Tidelands also act as " sponges, "that absorb and release waters during storms or times of flooding. "

Salt marshes treat act as a filter, trapping sediments and pollutants that enter as runoff from " upland areas. The trapping of sediments helps maintain water clarity, a factor important to clam, " oyster, and phytoplankton productivity. Marshes also assimilate pollutants and recycle " nutrients. "

Coastal waters and the adjacent marshes are also significant as aesthetic, recreational and " educational resources. "

Coastal salt marshes provide habitat for several species state- and federally-listed plants and " animals. "

Functions and Values of Other Estuarine Habitats (Tidal Flats, Mud Bottoms, Tidal Channels, and Open Estuarine Waters)(SDHEC 2000):

These habitats serve as important nursery and spawning areas for numerous commercially " important fish and shellfish.

These habitats provide important feeding area for numerous adult fish of importance to " commercial and sports fisheries. "

These habitats provide protected habitat for adult oysters and shellfish. "

These habitats are inhabited by abundant benthic invertebrate populations that provide critical " food supply for migratory and non-migratory seabirds. "

These habitats provide habitat for numerous federally and state listed species of plants and " animals. "

Freshwater Habitats (Palustrine Habitat Types)(Mitsch and Gosselink 1986):

Freshwater wetlands provide valuable fish and wildlife. "

Freshwater wetlands help prevent soil erosion and filter pollutants in stormwater runoff. "

Freshwater wetlands produce decaying plant material that supports a detrital food chain. "

Freshwater wetlands provide buffers against potentially erosive stream flows and help stabilize " stream banks and channels. "

Through groundwater recharge, freshwater wetlands help control flooding by storing surface " and ground water in floodplains and releasing floodwaters gradually. "

Freshwater wetlands provide habitat for various state and federally listed species, as well as " other wildlife. "

"

TABLE B.1
MAJOR TYPES OF US FISH AND WILDLIFE SERVICE NATIONAL WETLAND INVENTORY (NWI) WETLANDS PRESENT IN THE MT. PLEASANT, EAST COOPER RIVER AREA (SOURCE: USFWS 2003)

NWI Wetland Code	Explanation of National Wetland Inventory Code
E2EM1N	[E] Estuarine, [2] Intertidal, [EM] Emergent, [1] Persistent, [N] Regularly Flooded
E1UBL	[E] Estuarine, [1] Subtidal, [UB] Unconsolidated Bottom, [L] Subtidal
E2EM1P	[E] Estuarine, [2] Intertidal, [EM] Emergent, [1] Persistent, [P] Irregularly Flooded
E2FO3P	[E] Estuarine, [2] Intertidal, [FO] Forested, [3] Broad-Leaved Evergreen, [P] Irregularly Flooded
E2FO4P	E] Estuarine, [2] Intertidal, [FO] Forested, [4] Needle-Leaved Evergreen, [P] Irregularly Flooded
E2SS3P	[E] Estuarine, [2] Intertidal, [SS] Scrub-Shrub, [3] Broad-Leaved Evergreen, [P] Irregularly Flooded
E2USN	[E] Estuarine, [2] Intertidal, [US] Unconsolidated Shore, [N] Regularly Flooded
PAB4Hh	[P] Palustrine, [AB] Aquatic Bed, [4] Floating Vascular, [H] Permanently Flooded, [h] Diked/Impounded
PEM1C	[P] Palustrine, [EM] Emergent, [1] Persistent, [C] Seasonally Flooded
PEM1Cd	[P] Palustrine, [EM] Emergent, [1] Persistent, [C] Seasonally Flooded, [d] Partially Drained/Ditched
PEM1Chs	[P] Palustrine, [EM] Emergent, [1] Persistent, [C] Seasonally Flooded, [h] Diked/Impounded, [s] Spoil
PFO1C	[P] Palustrine, [FO] Forested, [1] Broad-Leaved Deciduous, [C] Seasonally Flooded
PFO1R	[P] Palustrine, [FO] Forested, [1] Broad-Leaved Deciduous, [R] Seasonal-Tidal
PFO3R	[P] Palustrine, [FO] Forested, [3] Broad-Leaved Evergreen, [R] Seasonal-Tidal
PSS1C	[P] Palustrine, [SS] Scrub-Shrub, [1] Broad-Leaved Deciduous, [C] Seasonally Flooded
PSS1Ch	[P] Palustrine, [SS] Scrub-Shrub, [1] Broad-Leaved Deciduous, [C] Seasonally Flooded, [h] Diked/Impounded
PSS3C	[P] Palustrine, [SS] Scrub-Shrub, [3] Broad-Leaved Evergreen, [C] Seasonally Flooded

TABLE B.2
NOTABLE AQUATIC SPECIES IN CHARLESTON HARBOR, SOUTH CAROLINA

Species		Habitat Use			Fisheries	
Common Name	**Scientific Name**	**Spawning Ground**	**Nursery Ground**	**Adult Forage**	**Commercial Fishery**	**Recreational Fishery**
Vertebrates						
Shortnose sturgeon[a]	*Acipenser brevirostrum*		X	X		
Atlantic sturgeon	*Acipenser oxyrhynchus*		X	X		
Blueblack herring	*Alosa aestivalis*			X		
Hickory shad	*Alosa mediocris*		X	X		
American shad	*Alosa sapidissima*			X		
American eel	*Anguilla rostrata*		X	X		
Striped bass	*Monroe saxatilis*		X	X		X
Bay anchovy	*Anchoa mitchilli*	X	X	X		
Silver perch	*Bairdiella chrysura*	X	X	X		X
Atlantic menhaden	*Brevoortia tyrannus*		X	X		X
Spotted sea trout	*Cynoscion nebulosus*		X	X		X
Weakfish	*Cynoscion regalis*		X	X		X
Threadfin shad	*Dorosoma petenense*		X	X		

TABLE B.2 (CONTINUED)
NOTABLE AQUATIC SPECIES IN CHARLESTON HARBOR, SOUTH CAROLINA

Species		Habitat Use			Fisheries	
Common Name	Scientific Name	Spawning Ground	Nursery Ground	Adult Forage	Commercia l Fishery	Recreational Fishery
Mummichog	*Fundulus heteroclitus*	X	X	X		
Spot	*Leiostomus xanthurus*		X	X		X
Atlantic silverside	*Menidia menidia*		X	X		
Southern kingfish	*Menticirrhus americanus*		X	X		
Atlantic croaker	*Micropogon undulates*		X	X		X
Striped mullet	*Mugil cephalus*		X	X		
Summer flounder	*Paralichthys dentatus*		X	X		X
Southern flounder	*Paralichthys lethostigma*		X			X
Black drum	*Pogonias cromis*		X	X		
Bluefish	*Pomatomus saltatrix*		X			X
Bighead searobin	*Prionotus tribulus*		X	X		
King mackerel	*Scomberomor us cavalla*		X	X		
Spanish mackerel	*Scomberomor us maculates*		X	X		
Red drum	*Sciaenops ocellatus*		X	X		X

TABLE B.2 (CONTINUED)
NOTABLE AQUATIC SPECIES IN CHARLESTON HARBOR, SOUTH CAROLINA

Species		Habitat Use			Fisheries	
Common Name	**Scientific Name**	**Spawning Ground**	**Nursery Ground**	**Adult Forage**	**Commercia l Fishery**	**Recreational Fishery**
Star drum	*Stellifer lanceoiatus*		X	X		X
Blackcheek tonguefish	*Symphurus plagiusa*	X	X	X		
Hogchoker	*Trinectes maculates*	X	X	X		X
Spotted hake	*Urophycis regius*		X	X		
Invertebrates						
Blue crab	*Callinectes sapidus*	X	X	X	X	X
Lesser blue crab	*Callinectes similes*	X	X	X	X	X
American oyster	*Crassostrea virginica*	X	X	X		
Hardshell clam	*Mercenaria mercenaria*	X	X	X		
Grass shrimp	*Palaemontes pugio*	X	X	X		
Brown shrimp	*Penaeus aztecus*		X	X		X
Pink shrimp	*Penaeus duorarum*		X	X		
White Shrimp	*Penaeus setiferus*		X	X		X

Source: NOAA 1994 in NPS 1997

a: Shortnose sturgeon is a federally endangered species

TABLE B.3

TRANSPORTATION RESEARCH BOARD, LEVELS OF SERVICE[1]

(1)	Level of Service A is free flow, with low volumes and high speeds. Traffic density is low, with speeds controlled by driver desires, speed limits, and physical roadway conditions. There is little or no restriction in maneuverability due to presence of other vehicles, and drivers can maintain their desired speeds with little or no delay.
(2)	Level of Service B is in the zone of stable flow, with operating speeds beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane of operation. Reductions in speed are not unreasonable, with a low probability of traffic flow being restricted. The lower limit (lowest speed, highest volume) of this level of service has been associated with service volumes used in the design of rural highways.
(3)	Level of Service C is still in the zone of stable flow, but speeds and maneuverability are more closely controlled by the higher volumes. Most of the drivers are restricted in their freedom to select their own speed, change lanes, or pass. A relatively satisfactory operating speed is still obtained, with service volumes perhaps suitable for urban design practice.
(4)	Level of Service D approaches unstable flow, with tolerable operating speeds being maintained though considerably affected by changes in operating conditions. Fluctuations in volume and temporary restrictions to flow may cause substantial drops in operating speeds. Drivers have little freedom to maneuver, and comfort and convenience are low, but conditions can be tolerated for short periods of time.
(5)	Level of Service E cannot be described by speed alone, but represents operations at even lower operating speeds than in Level D, with volumes at or near the capacity of the highway. At capacity, speeds are typically, but not always, in the neighborhood of 25 mph; flow is unstable, and there may be stoppages of momentary duration.
(6)	Level of Service F describes forced flow operation at low speeds, where volumes are below capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. The section under study will be serving as a storage area during parts or all of the peak hour. Speeds are reduced substantially and stoppages may occur for short or long periods of time because of the downstream congestion. In the extreme, both speed and volume can drop to zero.

Source: US Department of Transportation 2000. Highway Capacity Manual. Transportation Research Board.