



San Juan National Historic Site

Long-Range Interpretive Plan



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Prepared by the Department of Interpretive Planning
Harpers Ferry Center
and
San Juan National Historic Site

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Acronyms

AV:	audiovisual
CLR:	Cultural Landscape Report
GMP:	General Management Plan
HFC:	Harpers Ferry Center
IDP:	Interpretive Development Program
IPM:	Integrated Pest Management
LRIP:	Long-Range Interpretive Plan
NHS:	National Historic Site
NPS:	National Park Service
RH:	Relative Humidity
UNESCO:	United Nations Educational, Scientific, and Cultural Organization
USDOI:	United States Department of Interior

INTRODUCTION AND BACKGROUND

Introduction

The fortifications of San Juan, Puerto Rico, have dominated the Caribbean landscape for over four centuries. They stand as a formidable testimony to the people and issues of the day bearing symbolic witness to changing uses and values over time. Designated by the United Nations Educational, Scientific and Cultural Organization as a World Heritage Site in 1983, today these awe-inspiring structures are protected by San Juan National Historic Site, a unit of the National Park Service, United States Department of Interior.

On the islands that we know today as Puerto Rico, the Spanish Empire constructed, modified, and maintained an outpost settlement whose primary goal was to protect the strategic port of San Juan. This outpost provided access to the Caribbean Sea, the Caribbean Islands, New Spain (Mexico and Central America) and South America. From 1521-1898 Spanish military personnel and the residents of San Juan successfully defended the territorial interests of Spain. Following the 1898 Spanish American War, the fortifications were transferred to the United States.

This shift in world power at the end of the 19th century marked the beginning of a significant period of change, both for the fortifications and the people of this island. The forts became strategic outposts for the United States during World War I, World War II, and the Cold War. The forts were upgraded by the U. S. Army with a variety of military defense structures and support buildings and renamed Fort Brooke. Although an active military reservation, the U.S. military recognized the emi-

nent historic value of the Spanish fortifications as one of the finest surviving examples of military engineering and worked to protect them. The United States Secretary of Interior designated the fortifications a national historic site in 1949. Twelve years later, in 1961, they were transferred to the National Park Service and the Commonwealth of Puerto Rico.

Today three forts - San Felipe del Morro, San Cristóbal and San Juan de la Cruz, (better known as El Cañuelo) and most of what remains of the fortress wall that surrounds the City of Old San Juan along with the San Juan Gate compose San Juan National Historic Site (NHS). The remaining sections of the fortification system are managed by the Commonwealth of Puerto Rico. The slow transference from a military reservation to a unit of the National Park Service (NPS) parallels the evolution of the island's residents from Spanish colonists to United States citizens in the Commonwealth of Puerto Rico, a territory of the United States. For many native Puerto Ricans the forts represent their unique cultural heritage. Images of the forts, particularly the sentry boxes or garitas are found throughout all of Puerto Rico.

San Juan NHS has received approval from the Washington Office, NPS to proceed with planning for interpretive media projects using 80% fee money. These projects are defined through the NPS' Project Management Information System program. In light of these upcoming projects and the significant improvements required, San Juan NHS requested the NPS' Interpretive Design Center, commonly referred to as "Harpers Ferry Center or "HFC", to undertake comprehensive

interpretive planning with park and regional staff, partners, historians, stakeholders, and media specialists. Partners and Stakeholders included private citizens and staff from Puerto Rico National Park Company, Puerto Rico Tourism Company, Eastern National, US Forest Service, and State Historic Preservation Office, among others.

This Long-Range Interpretive Plan (LRIP) is a direct result of two workshops held in August 2003 and May 2004. LRIP recommendations will guide the development and implementation of interpretive facilities, media, personal services and partnerships that support the delivery of the interpretive program for the next decade. The goal of the planning team is to promote park resource values through specially planned visitor experiences and excellence in interpretation.

Executive Summary

The fortifications of San Juan, Puerto Rico are protected by San Juan National Historic Site (NHS), a unit of the National Park Service, United States Department of Interior and the Commonwealth of Puerto Rico, a territory of the United States. They are also designated as a World Heritage Site by the United Nations Educational, Scientific and Cultural Organization. Today three forts - San Felipe del Morro, San Cristóbal and San Juan de la Cruz, (better known as El Cañuelo) and most of what remains of the fortress wall that surrounds the City of Old San Juan along with the San Juan Gate compose San Juan NHS. The remaining sections of the fortification system are managed by the Commonwealth of Puerto Rico. Over one million visitors travel to visit this historic site each year.

The park requested Servicewide planning money to replace their very outdated 1985 General Management Plan (GMP). During 2002, the Southeast Regional Office conducted an Interpretive Review and recommended that the park also seek funding for a Long-Range Interpretive Plan (LRIP). While it is best that a GMP precede an LRIP, the planning money for the LRIP became available first, in 2003. Park managers felt that it was critical to proceed with the development of the LRIP to better protect park resources, communicate their values, and serve visitors. To date, the request for a new GMP has not been funded. It is the intent of the park management staff to utilize the work of this plan to inform the future GMP.

The park requested the National Park Service's

Interpretive Design Center, commonly referred to as "Harpers Ferry Center" (HFC) to undertake the planning effort. During the August 2003 and May 2004 LRIP workshops, a wide cross-section of park partners and media specialists assisted the staff in re-defining park purpose and significance statements, the development of interpretive themes and visitor experience goals, and the evaluation of existing conditions. This LRIP will guide the development and implementation of interpretive facilities, media, personal services and the partnerships that support the delivery of the interpretive program for the next decade. It is critical to acknowledge that successful implementation of recommendations to produce new interpretive media and create additional interpretive positions is funding dependent.

Superintendent Walter Chavez approved the draft-LRIP in August 2004. The 2-year delay in the publication of the LRIP is due to several factors. In essence, the park staff and planner have been busy addressing program deficiencies identified during the planning process. Actions included:

- Superintendent Chavez requested the planner to work with HFC media specialists to obtain Class C estimates for all LRIP recommended media projects. These estimates were provided to the park in January 2005.
- Media projects: In anticipation of the numerous media projects that would be going through HFC, in the fall 2005 an HFC project manager was assigned to assist the park. During 2005 several media projects were funded - the development of a Parkwide Wayside Exhibit Proposal/Plan, a Wayfinding Assessment/Plan



Park Guide Kina Gonzalez gives a program in the tunnels at Fort San Cristobal, NPS Photo

and the captioning of two park films for programmatic accessibility. During 2006, funding was secured to begin the early planning stages for a parkwide Exhibit Proposal and related visitor assessment.

- The Chief of Interpretation implemented a training program for park rangers, park guides, and visitor use assistants. Topics addressed customer service and several Interpretive Development Program modules. The park also instituted training for local tour operators that provide fort tours through the park permit program.
- Minor modifications were made to the interior of the Visitor Center (through the movement of some exhibits and fee collection facilities) to ease overcrowding and improve visitor flow.
- More cruise ship and local visitors now have access to park programs and facilities. The park expanded the operating hours of Forts San Cristóbal and El Morro for six months of the year and offer several new special programs and events.
- During spring/summer 2006, the Planner and the Chief of Interpretation worked together to finalize this LRIP for production.

The intended audience for the San Juan NHS LRIP includes park and Regional Office staff, partners, stakeholders, media specialists, and future contractors. This plan is congruent with all other park planning documents. The LRIP identifies four primary interpretive themes to guide all interpretive program development - interpretive services and media - for the next decade.

The planning team consistently identified seven major areas of emphasis in order to interpret park themes and achieve park management goals for interpretation and visitor services. All recommendations reflect and support this program emphasis. The planning team defined the need to:

1. Integrate wayfinding and safety messages in all interpretive services and media. An emphasis on visitor safety during initial visitor contacts is a critical planning need considering that the park receives many tort claims.
2. Continue to provide bilingual (English and Spanish) interpretive services and media. For ease of visitor assistance across the printed media, a color designation will indicate the language; and use of English will precede the use of Spanish in the presentation of park messages. (Reprint orders of the NPS produced unigrid brochure indicate by visitor choice, that visitor use of the English brochure outnumbers the use of the Spanish brochure.)
3. Provide an increased amount of in-depth interpretive educational opportunities through an appropriate mix of personal services and interpretive media, in addition to basic information and orientation services.
4. Develop the same level of programming excellence for local year-round-residents and international visitors.
5. Expand visitor understanding that fort structures and features (San Cristóbal, El Morro, San Juan de la Cruz, and the city walls) are individual components of a major fortification system.

6. Reinforce the importance of San Juan de la Cruz through park management policies and interpretation. This includes implementing interpretation and preservation needs on-site, and, the inclusion of the story of this fort in the design of all interpretive programming.

7. Recognize and support the development of key partnerships to support the delivery of the interpretive program and the park's stewardship responsibilities.

less visitor experience in Old San Juan, and to promote the long-term preservation of these irreplaceable fortifications.

This plan recommends:

- Integration of the management of the fee and interpretive programs at San Cristóbal and El Morro under the Chief of Interpretation; and, the provision of future expanded interpretive fee program activities.
- Replacement or upgrading of all major interpretive media - audiovisual programs, exhibits, publications, waysides, and the park website. A short and long-term project funding approach is identified and the companion LRIP Implementation Plan is included in the appendix. (See Appendix J)
- A significant increase in staffing is required and recommended in order to deliver the basic interpretive services expected by the public; and, to support the level of improved interpretive services and media projects worthy of this National Park area and World Heritage Site.
- Partnering with the Commonwealth of Puerto Rico's historic preservation and tourism agencies, local museum partners and the tourism industry to provide a more cohesive and seam-

The Planning Process

The ultimate goal of the interpretive planning process is the development of a cost-effective, tightly focused, high quality park interpretive program that effectively addresses all audiences and achieves management goals.

This Long-Range Interpretive Plan (LRIP) recommends actions that should occur over the next 10 years. It identifies park themes, describes visitor experience goals, and recommends a wide array of interpretive services, media, programs, and outreach activities to communicate in the most efficient and effective way the park's purpose, significance, themes, and values. It will join a park produced Annual Interpretive Plan and Interpretive Database to make up the Comprehensive Interpretive Plan for San Juan National Historic Site.

Barring legislative changes or major new research, the planning foundation expressed in this LRIP - purpose, significance, themes, and visitor experience goals - will remain constant over the life of this plan. Specific recommendations about media and programs may need to be updated as staffing, funding, technology, or resource conditions change. Further design documents will need to be prepared to implement some of the goals and recommendations in this plan.

Legislation

Authorization for this national historic site comes through the Secretary of Interior under the provisions of the 1935 Historic Sites Act. The "Establishment Order for San Juan National Historic Site", issued by the Secretary of Interior

on February 14, 1949, included three significant provisions. The Establishment Order:

- recognized the historic significance of the Spanish Colonial Empire fortifications;
- designated the ancient fortifications as a national historic site; and
- authorized the development of a cooperative agreement between the Secretary of the Interior and the Secretary of the Army to preserve the fortifications.

Today, the National Park Service (NPS), U.S. Department of Interior (USDOI) administers some of the lands and features of the historic fortifications, while the Commonwealth of Puerto Rico maintains other areas.

The park does not have specific legislation. Currently, the Superintendent is exploring the possibility of having legislation enacted to better protect park resources. The strategic location of the Spanish fortifications and their transfer from the Spanish government to the United States government in 1898 set the stage for the designation of this park area by the Secretary of Interior. Here is a brief synopsis of what occurred:

- On October 18, 1898, the Spanish commissioners transferred to the United States counterpart's title those military buildings existing in the garrison of San Juan. The San Juan Reservation was established on approximately 210.86 acres of land acquired under the Treaty of Paris on December 10, 1898.
- Under an executive order dated June 30, 1903, published as General Order No. 97, Adjutant's General Office, President Theodore Roosevelt reserved for military purposes lands and build-

ings on the islet of San Juan and in other parts of Puerto Rico.

- The reservation was officially designated Fort Brooke in 1943.
- On September 4, 1948 a cooperative agreement between the USDOJ and the Department of the Army enabled the Secretary of the Interior to officially establish a portion of Fort Brooke area as San Juan National Historic Site.
- The Secretary of Interior established the park on February 14, 1949. The official document announcing this designation is commonly referred to as the "Establishment Order for San Juan National Historic Site".
- On September 13, 1961 the Department of the Army transferred Fort San Felipe del Morro, the North Wall, Fort San Cristóbal and certain adjacent lands to the NPS.
- On December 31, 1966 the U.S. Army declared all lands under its jurisdiction at Fort Brooke as

excess. This action began the eventual transfer-ence of properties from the Army to the NPS and the Commonwealth of Puerto Rico.

Park features and resources administered by the NPS include:

San Felipe del Morro

Originally named Castillo de San Felipe del Morro in honor of King Philip II of Spain, today this fort is commonly referred to as "El Morro". This fort is the most renowned fortification in the system. Built between 1540 and 1790, it defended the San Juan harbor by preventing seaborne penetration into the San Juan Bay.

The 23-acre grassy area located in front of "El Morro" is called the Esplanade. During the historic period, the openness of the Esplanade helped troops to better protect the fort, in the event of a land invasion. Today these grounds are a popular site for picnicking and kite flying. El Morro is located at the tip of San Juan Islet, in Old San Juan, Puerto Rico.



Fort San Felipe del Morro, NPS photo by Rich Helman

San Juan de la Cruz

Today Puerto Ricans refer to this fort as "El Cañuelo"; however, the original name of this fort is San Juan de la Cruz, or Saint John of the Cross. Constructed 1601 - 1609, this fort is located directly across from El Morro on the Isla de Cabras. It provided cross-fire coverage of the San Juan harbor entrance, in the event of an enemy attack. During the historic period the only way to reach Isla de Cabras was by boat. Today the island is connected to mainland Puerto Rico via a causeway. This part of the park borders on Isla de Cabras National Park, a recreational day-use area administered by the National Park Company of Puerto Rico.

San Cristóbal

After a land attack by the Dutch in 1625, Fort San Cristóbal was constructed on the east side of San Juan islet. This fortification was built on San Cristóbal Hill from 1634 - 1790, upgrades and additions continued through 1897. The main purpose of this fort (the largest built by the Spaniards in the New World) was to defend the City from attacks from the unprotected eastern side of the Islet of San Juan. The fort played an important part in the defense of the City in the British Attack of 1797. This fort controlled the entrance to the City from the landside and, until 1897, everyone who wanted to come to San Juan entered through its "Puerta de Tierra" (Land Door) which was demolished along with the eastern wall, in 1897.

Portions of the walls and bastions

Construction of the fortification's walls began in 1634 and culminated around the 1800's. Walls and bastions, along with El Morro and San Cristóbal, encircled the City of San Juan. Throughout most

of the history of Old San Juan, three main gates located along the city wall provided access by land and sea. Three smaller gates were added later during the 18th and 19th centuries for sanitary and symbolic purposes. The San Juan gate was used as a main entrance to the city from the harbor when it was first constructed. Later, it was used by officials of the church and Spanish Crown only. Over time, portions of the city wall and several gates were demolished to allow for growth. The park protects most of the remaining wall and the San Juan gate. Recently the Paseo del Morro (a paved trail) was built along the waterline from the San Juan gate to the tip of the bay just below the water battery of San Felipe del Morro.

With the exception of San Juan de la Cruz (located on Isla de Cabras), most of the historic fortifications are located in Old San Juan, Puerto Rico, population 7,963. Today, the modern city of San Juan (population 434,374) goes well beyond the boundaries of the original forts and walls and off the islet; it is a busy metropolitan area and the capital of the Commonwealth of Puerto Rico.

Background for Planning

"...any successful plan for this historic site will depend not only on the commitment and resources of the National Park Service, but also on the commitment and resources of many agencies, organizations and individuals who comprise this historic city."
Excerpt from the introduction to the 1985 park General Management Plan.

Current Planning Documents

The park has two major documents that guide its short and long term planning (1) the 1985 San Juan

National Historic Site General Management Plan, and (2) the 2003 - 2007 San Juan National Historic Site Strategic Plan. This Long-Range Interpretive Plan proceeds under the auspices of these documents.

The park has requested funding for a new General Management Plan (GMP). To date, the GMP has not been funded, nor does the park anticipate its funding in the next few years. Usually the development of a Long-Range Interpretive Plan (LRIP) follows the completion of the GMP. Current park managers feel that it is critical to proceed with the development of the Long-Range Interpretive Plan to better protect park resources, communicate their values, and serve visitors. During the interpretive planning workshops, a wide cross-section of park partners assisted the staff in re-defining park purpose and significance statements, and the development of interpretive themes and visitor experience goals. It is the intent of the management staff to utilize the work of the LRIP planning team in the upcoming GMP. Key sections of this document will be incorporated in the GMP as well as other park documents.

A Cooperative Agreement was signed between the US Department of the Interior and the Puerto Rican government on September 29, 1976. This agreement more clearly defined the areas and jurisdictions between the National Park Service and the Commonwealth of Puerto Rico. The agreement established a good neighbor policy whereby the Park Service and the Commonwealth consult with each other to ensure the "smooth management" of the historic site. Currently, the park Superintendent is working with the State Historic Preservation Office and other agencies to

institute new memorandums of agreement to protect and maintain the walls and bastions.

The interpretive program is delivered in a historic scene comprised of historic structures and landscapes that have evolved over the past 500 years. The park's 1991 Historic Structures Report defines five periods of significance at the site:

- Spanish I, 1539 - 1760 (Early Spanish)
- Spanish II, 1760 - 1835 (Main fort era)
- Spanish III 1835 - 1898 (Late Spanish)
- American I, 1898 - 1940 (Pre World War II)
- American II, 1940 - 1961 (World War II and Cold War)

Knowledge of the park's preservation policy is critical for the planning and delivery of future programs, services, media, and facilities. Key passages from the GMP are included to inform the reader. The following excerpts have guided park operations for the past 20 years and grounded this planning endeavor.

Excerpt:

GMP, San Juan NHS Preservation Philosophy

The fortifications of San Juan must be viewed as a historic district that has evolved over time, beginning with the earliest construction of La Fortaleza in 1533, following with the construction of El Morro in 1540, and extending up to the transference of a major portion of the site to the Department of the Interior in 1961. This evolution of all the major components (El Morro, San Cristóbal, El Cañuelo, the walls and bastions, and the San Cristóbal outworks), including the structural modifications that have been undertaken, contributes significantly to the overall story of the fortifications of Old San Juan. Over the centuries of construction and use, the fortifications have

remained one of the finest examples of coastal and land defense systems in the world. As new technology was developed or a need was identified, the fortifications were changed. Each of these changes was a product of its time, and each served a particular need in the overall defense mission. Therefore, the final result of these changes should be preserved so that the whole story can be told to the millions of visitors who come each year. The changes that have taken place are evidence of the history and development of the fortifications and their environment, and they are significant in their own right.

To restore all or portions of San Juan [National Historic Site] to a particular period or periods would be a costly and questionable undertaking. Restoration may impair or destroy the original fabric, and despite research, the replacement of missing fabric or elements must be based on conjecture. Past experience at San Juan and other historic sites has demonstrated that comprehensive or substantial modifications, extensive restoration treatments, or ill advised large-scale reconstruction projects have harmed more resources than they have preserved. In addition, the expense of such actions has been considerable.

Therefore, the National Park Service will preserve the San Juan fortifications in their existing form, retaining as closely as possible their appearance between 1949 and 1961, the period during which the facilities were last used for military purposes. This preservation philosophy is consistent with sound cultural resource management standards, and it fully meets the NPS mandate to perpetuate in an unimpaired condition the cultural resources within the national park system. The adoption of this preservation philosophy has the following implications:

- *Missing historic fabric will not be reconstructed except when it is determined through the preservation maintenance program ... that reconstruction is necessary to ensure the structural stability of the fortifications.*
- *No physical alterations will be undertaken to provide for adaptive use of the casemates or other interior spaces, or to provide for handicapped visitor access or for visitor safety, if it is determined that such actions will impair the significant architectural features or structural system of the fortifications.*
- *Interior spaces will generally not be restored unless it is absolutely necessary to help convey an interpretive theme.*

[Note: Recent advances in lime mortar masonry and other technologies have enabled the park to begin an exterior restoration program and these ongoing efforts need to be included in all interpretive efforts.]

GMP Goals Specific to Interpretation, Education, and Visitor Services

- *Initiate the necessary research to provide for the proper management, interpretation, and protection of cultural resources.*
- *Improve the interpretive program, giving particular emphasis to providing visitors with an overview of almost 500 years of history represented.*
- *Develop a pre-visit information system to enhance the visitors' understanding of the resources represented.*

sented and to inform them of available opportunities.

- *Establish the detached El Cañuelo Unit as a primary visitor experience; institute a ferry shuttle from San Juan harbor across the bay to El Cañuelo; provide interpretation at El Cañuelo; encourage the Bacardi Company to develop a regular land-based shuttle between El Cañuelo and the Bacardi plant.* [Note: this was never implemented.]

Related Plans, Studies, and Areas with Identified Interpretive Planning Needs

Park Business Plan

The park completed a Business Plan in October 2003. The purpose of this plan is to improve the ability of the park to more clearly communicate their financial status with principal stakeholders. A business plan answers such questions as: "What is the business of this park unit? How much money does this park need to operate within appropriate standards? It demonstrates the functional responsibilities, operational standards, and financial picture of the park. The San Juan National Historic Site Business Plan identified an operating budget deficit of 2.5 million. The park is understaffed by 40 positions -- six of these positions are identified in Interpretation.

The Business Plan identifies a future visitor facility on the grounds of El Morro. The park is currently rehabilitating a restroom facility (closed in the 1990's) into an Eastern National bookstore. This project will provide a visitor facility that includes a sales area for interpretive and visitor convenience

items, a much needed public restroom facility, and will generate revenue that will come back into the park.

Transportation Study

A grant provided by the Ford Motor Company through the National Park Foundation has enabled the park to continue its transportation study. A transportation scholar has reviewed the analysis, made recommendations, and identified new solutions to improving public transportation to and from the fortifications. This review looked at shuttle service, parking, road improvements, tour bus access, and alternative designs to existing infrastructure to include mobility impaired visitors. The plan includes long-term and short-term proposals. At this writing, NPS funding is no longer available for transportation studies; the park has been directed to seek funding from the Federal Highway Administration.

The draft-Transportation Study includes two significant recommendations, that if implemented, would have future interpretive impacts/opportunities:

1. The draft-study explores the possibility of extending the "Paseo del Morro" trail to continue on the eastern side of the island following the City Walls to San Cristóbal. The first step would be construction of a walkway. Later, the construction of a light rail shuttle system along this walkway is proposed. The future rail system could bring visitors back and forth between El Morro and San Cristóbal. The City of Old San Juan is interested in this proposal; officials are very interested in reducing the daily traffic.



San Juan de la Cruz, NPS Photo

The proposed trail extension would come through the community of La Perla - where there are several encroachments on park property. There is a 10-meter (33-foot) park right of way along the fortification walls - 27 buildings in La Perla sit on this right-of way. The park is working with neighbors and City officials to begin to deal with these encroachments. However many of these structures block access to the fortification walls which are in serious need of ongoing preservation work - both structural repair as well as removal of vegetation. Removal of vegetation is an issue of concern by many community members also, as the vines growing along the fortification walls become hiding spots for drug transactions - making this area dangerous for residents and visitors alike.

2. The draft-Transportation Study also considers use of water transportation through a water taxi service. (The 1985 GMP discussed pursuing a ferry service with the Bacardi Factory; this was never instituted.) There is a dock outside the San Juan gate and a dock on Isla de Cabras near the San Juan de la Cruz fortification. The institution of a water taxi service would enable future visitors to get to this outlying area of the park. The proposed service may also provide recreational opportunities for residents.

Isla de Cabras

Isla de Cabras is approximately 30 acres. Three acres are managed by the NPS and include the San Juan de la Cruz fortification. The Puerto Rican National Park Company manages most of the remainder of the island as a day-use area for picnicking.

Over half of Isla de Cabras is unavailable to the public. There is a firing range used by all law enforcement jurisdictions, a private gun club, and a fishing club. The Commonwealth is working to remove these facilities and transfer these lands to the Puerto Rican National Park Company for recreational use. Currently the Puerto Rican National Park Company is working on a development plan for Isla de Cabras. This plan includes an administrative complex, and expanded parking and picnic facilities.

San Juan de la Cruz

The San Juan de la Cruz fortification is located on Isla de Cabras. This site by land is a 10-mile drive from San Cristóbal and El Morro. No NPS personnel are stationed on site; consequently, the fort is frequently vandalized. It has been filled in and capped with cement to protect and stabilize the structure. This preservation method is only marginally successful - people still climb the walls and can be seen walking along the capped roof. Unfortunately, when the ancient bricks loosen, picnickers pick them up and use them to prop up grills for cooking, not really realizing they are damaging this surviving fortification. A historic structures report is needed for this site.

San Cristóbal Outworks

The Outworks have impressive views of both the City and the sea. In addition to the Spanish fortifications, the Fort Brooke housing complex was constructed in this area (now demolished).

During an earlier period of NPS administration, the historic Outworks were open to the public; facilities in this area include restrooms, waysides, and directional signs. While the park staff is open

to ideas on how best to interpret this area, they are also very concerned about re-opening this area for unlimited access due to many safety issues.

A Cultural Landscape Report (CLR) for the Outworks is currently underway by the Olmstead Center. The report will document the use of this area over time and provide guidance on future public access.

Cruise Ship Industry and Private Tour Operators

There are many different organizations involved in the delivery of tours for cruise ship visitors. The park staff is still working to identify who are the best people to work with in the Industry to jointly problem-solve shared visitor experience needs and issues. Connecting with the appropriate people in the cruise ship industry is critical to the NPS for the long term success of improving interpretation and visitor services at San Juan NHS. The planning team identified three areas of concern.

Quality of Tour Information

Most tour operators/guides are private businesses that sub-contract to two major organizations that work directly with the cruise ship industry. They provide the transportation and guided tours from the docks through Old San Juan. Some of the guides provide guided tours through the forts. The park staff is very concerned about the quality of the information provided. Just by informal listening and observation of private tour operators conducting tours within the park, the staff overhears many historical inaccuracies being transmitted. Since these guides/tour operators are private businesses operating in the park, park staff has the ability to regulate them through the park permit

system. The NPS will only issue special use permits to those operators who have 1) been certified by the Commonwealth's Department of Tourism and 2) have attended a required park provided training which includes general NPS and San Juan NHS information, rules and regulations regarding the permitting for commercial tour operators at the park, an introduction to interpretation and a tour of Fort San Cristóbal. The park has met with the Commonwealth's Tourism Company, the governmental organization that oversees the training and certification of the guides, regarding this permit system for tour operators. The permit system has been in place since 2004.

Confusion over Tour Fees

The park staff is also concerned about the frequent confusion of cruise ship visitors regarding the park entrance fee. Currently cruise ship personnel/contractors do not inform visitors that they can see the park independently, they only promote their own organized tours. It is a money making venture for them. The cruise ship industry charges a fee for their tours; however, their fee does not include the park entrance fee. Lack of coordination between the park and cruise lines causes unnecessary confusion at the park entrance/fee station.

Future Interpretive Opportunities

Some cruise ships go directly from Old San Juan to the Virgin Islands. A long-term goal to consider is to pursue putting rangers from these national parks on the cruise ships to provide interpretation to visitors while journeying between destinations. In Alaska, many parks have been very successful in putting rangers on cruise ships to provide interpretation and promote interest in site visits. Park

management feels that local tour operators may be opposed to the NPS providing this service here in San Juan. It is believed that some tour operators feel that this will limit rather than promote business. In addition, they have been very vocal against putting a NPS kiosk at the docks and having a ranger there to answer visitor questions.

FOUNDATION FOR PLANNING

Purpose and Significance

The National Park Service mission is to preserve, unimpaired, natural and cultural resources and values of the national park system for the enjoyment, education and inspiration of this and future generations. The Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.

Planning focuses first on why a park was established and what conditions should exist there before delving into details about specific actions. Park purpose statements are based on park legislation and legislative history, other special designations, and National Park Service policies. Purpose statements provide the foundation for park management and use.

Park significance statements capture the essence of the park's importance to the nation's natural and cultural heritage. Significance statements do not inventory park resources; rather they describe the park's distinctiveness and help to place the park within its regional, national, and international contexts. They are the basis for the development of the park's primary interpretive themes and program.

Purpose

The purpose of San Juan National Historic Site is to preserve the Spanish fortifications, buildings, and the related archeological sites and historic objects for the education, benefit, and inspiration of present and future generations worldwide.

Significance

The fortifications of San Juan, Puerto Rico, built and modified by Spain in the Americas (1533-1897) are an important part of a complex system of fortifications built by the Spanish Crown throughout the Caribbean to defend the Spanish Empire and protect and enforce Spanish exclusivity in commerce. Here, many international battles were fought during the era when the Caribbean was the center of European colonial rivalry.

The fortifications in San Juan are the best-preserved element from the Spanish Crown's grand colonial defense system. They are premiere examples of military engineering and architectural design. They are one of the finest examples of coastal and land defense systems in the world. Over the centuries of construction and use (1533-1897 Spain, 1898-1961 the United States), as new technology developed or a need was identified, the fortifications were changed. Each of these changes was a product of its time and served a particular need in the overall defense mission.

Designated in 1983 as a World Heritage Site, the fortifications are symbols of the history and people of Puerto Rico. The surviving structures and their records link many world cultures. This includes Native Caribbean people, Africans, and the Spanish, who brought both military and European traditions, as well as the world powers of the time, England, Netherlands, Portugal, France, and later the United States.

The strategic location of Puerto Rico, at the entrance to the Caribbean Sea, served two world powers: Spain 1509 - 1898, and, later, the United

States 1898-1961. Possession of Puerto Rico allowed control and access to important sea routes.

Interpretive Themes

Primary interpretive themes are those ideas or concepts that every visitor should understand. They are the key ideas through which the park's nationally significant resource meanings and values are conveyed to the public. These themes provide the foundation for interpretive programs and media at the park. The themes do not include everything we may wish to interpret at the park, but rather the ideas that are critical to a visitor's understanding of the park's significance. All interpretive efforts should relate to one or more of the themes and each theme should be addressed in the overall interpretive program. The themes are listed in no priority order but have been numbered for easy reference. Workshop participants expanded on the interpretive themes during the workshops. Summaries of additional stories that may be told are located in Appendix A.

1. Strategic Location

The massive fortifications and their continued use by two world powers across five centuries serve as a powerful reminder of the strategic location of Puerto Rico in the Caribbean. The Spanish constructed and manned the fortifications from 1539 - 1898. Their importance is highlighted by the various major attacks it suffered. Marauding pirates and military conquests from England, France, and Holland prompted the Spanish Crown to turn this key outpost into a stronghold for the defense of its Empire. Following the Spanish-American War, the fortifications became an important United States military site. Renamed "Fort Brooke", the fortifi-

cations were used by the Army through the "Cold War era".

Sub-theme "Gateway to Riches":

Puerto Rico played a vital role in protecting Spanish trade routes in the New World. The fortifications on San Juan Islet and Cabras Island were part of a chain of frontier outposts in Spain's "West Indies" territory in the Caribbean. Puerto Rico helped control access to the Spanish possessions in the New World and the Pacific trade being brought across Mexico to the Caribbean. As a result of the Portuguese conquest to the East, Spain was forced to the West (the Atlantic Ocean) in pursuit of Oriental wealth. Puerto Rico, the easternmost Spanish colony, and the first to be reached from Europe served as Spain's gateway to the Caribbean and the "key to the Indies", protecting their New World and Oriental trade. The fortifications and their inhabitants protected the interests of the Spanish Empire in peacetime and in war for four centuries.

Sub-theme "US Period of Development"

During the first half of the 20th Century the United States Army controlled the fortifications and named the installation Fort Brooke. With new construction the complex grew to include the Headquarters of the Military Department of Puerto Rico; an Army General Hospital, and auxiliary structures and services for the Headquarters of the 65th infantry Regiment (Puerto Rico's own) and its 1st Battalion. Coastal defense batteries, emplacements and lookouts were constructed during the Second World War period and illustrated the versatility of the fortifications.

2. Fort Construction and the Soldier Experience

From medieval fortresses to World War II watch towers, the fortifications at San Juan National Historic Site provide a visual record of the evolution of military engineering of coastal fortifications. They also give insight into the many innovations and challenges faced by those charged with the defense of this stronghold. Fort construction changed as new technology was developed or a military need was identified, while troop composition, military skills and the everyday soldier experiences transformed as well. Each of these changes was a product of its time and served a particular need in the overall defense of this strategic entrance to the Caribbean Sea.

3. Life in a Fortified Town

The construction of the forts established a military outpost that grew with the increase of soldiers, slaves, contractors, religious leaders, government officials and their families including women and children, who together established a city and a way of life dictated by the Spanish military. The city walls were gated and access controlled by a sentry. No one could go out or come in between sunset and sunrise. There was no civil elected governor, instead a military appointee. The wall determined class; those who lived within and those not allowed.

4. Preservation and Stewardship

The history and strength of the fortifications has endured since the 16th century. The National Park Service utilizes preservation methods, often developed on site by the staff, to maintain its historic features and structural integrity. The fortifications

are a place for personal connections providing opportunities to assist with the preservation and shared stewardship of valuable resources.

Visitor Experience Goals

Visitor experience goals describe what physical, intellectual, and emotional experiences should be available to park visitors. These experiences will be available to visitors of all abilities, including those with visual, auditory, mobility, or cognitive impairments.

Visitors to San Juan National Historic Site will be able to:

- Have easy access to information and orientation before and during their visit.
- Contemplate, relax, and enjoy park resources without pressure.
- Have a safe visit.
- Have their comfort needs met.
- Learn about the park themes in ways appropriate to their ages and abilities.
- Interact with the park staff informally and formally.
- Find their way around the park without assistance, and understand the fortification system in relationship to wherever they are in the park.
- Have a multi-sensory and dynamic experience to help them learn about soldiers' daily life in the

fortifications and the lifestyle of residents in the town from the 16 - 20th centuries.

- Will have expanded access to the fortifications. This includes both physical and intellectual access. (Some park areas are closed due to resource conditions such as damaged stairways, staffing levels, or, there is very limited information available where the visitor is located.)
- Find, visit, and discover the purpose of Fort San Juan de la Cruz.
- Experience and understand the practical and functional aspects of the forts' design (tunnels, water cisterns, etc.) through self-exploration and discovery.
- Understand the mission of the National Park Service, support the preservation of park resources, and get involved with the preservation and interpretation of the park.

Learn through exploration of these park-specific topics:

- The scale and scope of the defense system - experiencing the forts not as objects (forts and walls) but as a whole fortification system.
- About military strategies.
- The forts' design and function for the soldiers that lived there.
- Puerto Rico's role in the Spanish Empire during the 16 - 19th Centuries.

- Understand the passage of time (four centuries) in the development of the fortification system.
- What were the riches that the colonial powers were looking for in the Caribbean?
- The impact the forts had on the daily life of the community.
- The relationship between lifestyles in and outside the walled city and the changing military and other uses of the forts from the early Spanish times to the present.
- The construction techniques employed in the construction of the fortifications; and the research and preservation techniques utilized to maintain historic structures and landscapes.
- The difference between preservation, rehabilitation, restoration, and reconstruction.

EXISTING CONDITIONS

Visitor Profiles

This section of the document includes two sources of information: survey results collected from a variety of sources and staff observations.

Survey Results

San Juan National Historic Site has collected some statistics on park use through its entrance fee program. The park received 1,252,894 visitors in 2003 and 1,072,829 in 2004. The park is a day use area. There are two busy seasons during the year: winter (November-March) and summer (May - August).

- November - March: the heaviest visitation is from school groups, international visitors escaping the winter, and cruise ship visitors.
- May - August: the heaviest visitation comes from three groups: Native Puerto Ricans, Puerto Ricans now living in mainland United States that return during the summer months to visit local family and explore their roots, and summer camp groups.

The park partnered with the University of Idaho's Cooperative Park Studies Unit to conduct a one-week survey of park visitors during the peak visitor season. The San Juan National Historic Site Visitor Study describes the results of a study conducted February 21 - 27, 1999. A total of 919 bilingual surveys were distributed; with a 70.8% response rate (75.1 % English) and 52.3% Spanish). The report summary is included in Appendix B. Here are a few survey highlights:

- 78% surveyed were making their first visit to the park
- 79% spent 1 - 2 hours in the park
- 67% surveyed did not realize that San Juan National Historic Site is managed by the National Park Service
- 75% of visitor groups indicated that learning about the fort's history was a primary reason for visiting

Services Most Used:

Restrooms:	70%
Brochure/map:	65%
Park directional signs:	60%

Services Considered Most Important:

Restrooms	90%
Self-guided tour maps	83%
Ranger Assistance	82%
Park Video	82%

In addition to the 1999 Visitor Study, each year the NPS conducts a one-week survey in all national park areas to determine visitor satisfaction. Visitors to San Juan NHS rated their levels of satisfaction (NPS GPRA goal IIa: overall quality of facilities, services and recreational opportunities), and understanding (NPS GPRA goal IIb: understanding and appreciation of park significance). The following table summarizes results for studies conducted 2003 - 2005. It should be noted that for this annual Servicewide visitor survey only 10.5% - 13% of those contacted during the survey period at San Juan NHS returned questionnaires.

Year	Return Rate of Surveys	Visitor Satisfaction IIa1	Visitor Understanding IIb1
2003	11%	86%	60%
2004	13%	92%	47%
2005	10.5%	98%	61%

The Commonwealth of Puerto Rico Tourism Company provides the park with statistics on visitor trends to all of Puerto Rico. The 2001- 2002 Report documents that 657 cruise ships came into the port in Old San Juan. The document indicates that of the 1,826,052 visitors to Puerto Rico that stayed in hotels, 1,206,410 (66%) were non-residents and 619,642 (34%) were residents of Puerto Rico.

Park statistics kept by entrance station staff reflect that visitor use between El Morro and San Cristóbal is very different:

San Cristóbal

80% of visitors are from cruise ships and hotels
20% are local

El Morro

80% are local visitors
20% are from cruise ships and hotels

Staff Observations

During the planning workshops park staff and stakeholders worked to develop the following visitor profile. This profile reflects the observations of the staff that work with visitors to San Juan National NHS on a daily basis. Park visitors are international, as well as local, and have a wide range of interests, background knowledge, physical abilities and expectations. The park is used for a variety of purposes including visitors who come to explore the site's 500 years of history to those who utilize the park's open space for flying kites and walking dogs.

Visitor Expectations

Park visitors expect the full range of personal services to be available throughout their visit; this includes formal guided tours and the opportunity for informal contact with park staff (station interpretation and opportunities to ask questions). Visitors expect public contact personnel and written information to be provided in Spanish and English.

Basic information expected by all park visitors includes: how to get to the forts; that the park is a U. S. Fee Area; hours of operation; information on daily program schedule and alternatives to taking a tour; special events; mobility and special needs access; location of water and restrooms; and site-seeing options after touring forts - or if forts are closed.

Park visitors expect that all facilities (historic struc-

tures and modern amenities such as restrooms, water fountains, trails, the park visitor center, etc.) will be in good condition, clean, and safe. They express disappointment when they are unable to walk through all sections of the forts and outworks due to unsafe conditions such as unstable and deteriorated surfaces.

Park visitors expect to be able to purchase food, cigarettes, and beverages in the park bookstore (operated by Eastern National). The park bookstore sells bottled water only. Other food items are available beyond the park boundary from street vendors and stores in the City of Old San Juan. Park visitors sometimes express frustration with inadequate directional signage between El Morro and San Cristóbal and within the forts.

The visitor groups that most frequently utilize the park are:

Cruise ship visitors come to the park throughout the year; the busy season is November - March. For this visitor group, the park is generally not a single destination stop but rather one of many destinations within San Juan and Puerto Rico. This visitor group has a wide range of expectations, interests and abilities. They are all ages. Their itinerary to the park is often part of a pre-paid package tour promoted by the Puerto Rican Tourism Office website, Cruise Magazine or other tourism venues. This group considers the park "a must see". All cruise ships pass two of the fortifications on their way in to the San Juan Bay. Many visitors know about the park before coming, either through their study of history, or from popular movies. Some ships have target audience tour groups such as African American cruises or "sin-

gles" cruises. Most international visitors that come to the park come via the cruise ships. German, Italian, and French visitors expect brochures in their language. However, the park does not provide these brochure translations.

The docks in the San Juan harbor are closer to San Cristóbal. Although San Cristóbal and El Morro are walking distance from the port, most cruise ship visitors either take taxis or pay tour operators to bring them to the forts. The park is provided with a port arrival schedule, however, the sheer volume of visitors can quickly overwhelm the facilities and staff at San Cristóbal. The forts are open from 9 a.m. - 5 p.m. June through November; 9 a.m. - 6 p.m. December through May; and sometimes later for special events. When visitors arrive after the forts are closed, they can walk along the historic walls and along the esplanade leading up to El Morro. However, for those visiting after hours, the lack of access to the forts' interiors is a source of great disappointment.

The major cruise lines are Carnival, Royal Caribbean, Holland, and several smaller lines that come from Europe. Every Thursday and Friday the park receives an updated list from the Puerto Rican Port authority as to what ships are coming in and when. The Commonwealth of Puerto Rico regulates the Puerto Rico Transportation Services (cabs and tourism guides). There are 10 companies that provide transportation and guide services for the cruise ship and hotel industry. Two companies have 90 % of the business in Puerto Rico.

Local visitors are from Old San Juan, greater Puerto Rico, as well as native born Puerto Ricans now living in other parts of the world that return

each year for a portion of time. They come to the park with some knowledge of the area and its history. Most local visitors go to El Morro, and use it recreationally for picnics and kite flying. Some come to pursue research. However, most enjoy recreating in the setting tied so closely to their historical roots. Most workshop participants felt that the park needs to evaluate what interpretive programs and services it is providing to local residents, and commented that sometimes it seems they are treated as "less important" than national or international visitors. The park staff has observed that some local visitors enjoy the grounds of El Morro (the Esplanade) but won't come into the forts because of economics (park entrance fee). And many do not come because of the very restricted parking near El Morro and San Cristóbal. Because local visitors have more time, the park should do more for this audience.

Military Personnel come to the park. When in port, it is a "must-see" for military vessels. There are several U.S. military installations in Puerto Rico. Many retired military personnel, who were once stationed at "Fort Brooke", come for a return visit. The Fort Brooke retirees want to see specific areas of the fort where they once worked and go off the normal tour pattern. In addition, on occasion new high-ranking military officers visiting Puerto Rico and some international military groups come for an official visit. Official visits by military groups expect greater access to the fortifications. They also desire very detailed tours that include a discussion of weapons, tactics, the soldier experience, and detailed information about the architectural and engineering changes made to the fortifications over time.

School Groups come for education and recreation purposes. Although the students range in age from kindergarten through college, the primary groups that visit the park are elementary (3-5th grade) and intermediate school (6-8th grade) students. All groups entering the fort are required to receive a safety and orientation briefing. Groups arriving without a reservation must wait for an available guide or ranger, which often requires a 10-15 minute wait depending on staffing levels. The park has very limited printed information that spans all grade levels. Teachers require pre-visit information on safety, cultural history, and what specific services are available. Returning teachers/students want to see/experience something different and new.

Summer Camp visitors are part of an organized summer camp program provided by the Commonwealth of Puerto Rico or privately operated groups. The "campers" are local children that come to the park grouped in similar age categories; they are primarily elementary and intermediate grade students. The camps come to the park for a two-hour block of time. Campers and counselors/chaperones desire a different experience each time they come. Although the camps use the park primarily for recreational opportunities, they request a fee waiver, (which is denied). Safety is also a concern. Although the staff provides a mandatory orientation talk on safety for all youth groups, the limited time spent with campers may not be enough to enhance a safe and memorable experience.

Special Park Use requests are mainly for filming, special events, and first amendment activities. The park's Special Park Use policy places park opera-

tions and visitor safety first. Filming permits are usually approved after closure hours to avoid interference with the park's operations. Special Events, unless related to the historic themes, are generally denied. First Amendment activities are restricted to an area where there is low impact to park interpretive programs. Park denials are in writing with the rationale for its denial and alternate locations are suggested. As with most historic sites, this can present some public relations problems since many residents feel an emotional attachment to the park. This is especially true for individuals seeking to have a wedding, reception, or special event on-site. Because it's special to them, they see the historic atmosphere as an ideal setting. The park also gets many requests from corporations that have offices in Puerto Rico, or are conducting business conventions in Puerto Rico. These groups would like to be considered VIPs, given special tours, but exempt from entrance fees.

Special Requests are defined as distinguished guests such as members of Congress and their families, official visits facilitated by the Puerto Rican Convention Bureau, and in some instances high-ranking military officers newly appointed to Puerto Rico as a duty station that request an official visit. Most of these guests are very interested in the history of the forts, the island, and the culture. They are interested in the site's designation as a World Heritage Site. They want to see areas not necessarily open to the general public. They sometimes require special security details and almost always request fee waivers.

Who is not coming? The park staff identified three major groups that are not coming to the

park: (1) **visitors with special needs.** Most "known or recognized" special needs visitors that come to the park have an easily observed impairment. They generally visit San Cristóbal. Most are adult visitors, or come in family groups with adults to assist. Currently, the park does not provide any written information on what is available for mobility impaired visitors and visitors with special needs. (2) **Teenagers** do not come into the forts without an adult due to the park requirement that "all children under the age of 18 must be accompanied by an adult". (3) **Senior citizens** - many have the time but their health frequently affects their ability to get out. The information these groups require includes: the proper use of resources, the conditions of access for mobility or sensory impaired users, and general information about hours of operation, services, fees, etc.

Visitor Experience Parkwide

The park is open 362 days a year, 7 days a week. The park entrance fee is \$3.00 to visit one fort, valid for 24 hours, and \$5.00 to visit both forts, valid for one week. There is also an annual pass for \$25.00. Most visitors do not come to the park with a complete understanding of the fortification system. Rather they visit a specific park area and through this experience learn first about the area they are visiting. Then they have an opportunity to learn about its overall relationship to the fortification system. The following description of existing conditions from the visitor experience perspective will first describe visitor experiences that are common parkwide. Then will proceed to discuss by site any specific differences in the facility, programs, media, or experience provided. Specific site descriptions include Fort San Juan de la Cruz,

Fort San Felipe del Morro, Fort San Cristóbal, the San Cristóbal Outworks, the City Walls, and El Paseo del Morro. Each section will include an analysis of what is working well, and what needs improvement.

Pre - Visit

Personal Services:

Visitors receive pre-visit information from a number of sources. The park receives between 25 to 30 telephone calls per day asking for information, and several letters per week. Many of these letters come from school children, asking for information about the park. These are answered by sending handout information or, when necessary, specific written information.

Media Outreach:

The park also receives several e-mail information requests per week. These requests are answered via email and with a follow-up written letter. The park has a fairly extensive website. A more detailed description of this service will be discussed in the "Website" section of this document.

Visitors have opportunities to learn about the park from many other sources. These include the magazine, "Que Pasa" published by the Commonwealth of Puerto Rico's Tourism Company, or from promotional literature on cruise ships, and other commercial tourism entities, travel agents, etc. Photographs of key park features are frequently included on tourism advertisements. On a more academic level, photographs and descriptions of the forts are presented in almost all history books written about Puerto Rico, the Caribbean, or on Spanish Colonial history.

Arrival Experience

Forts San Felipe del Morro and San Cristóbal are the primary visitor destinations. The 1999 Visitor Services Project Survey indicated that 46% of the park's visitors walked to the park; 32% came by private vehicle, 20% took a taxi; 17% came via tour bus; and 10% by some other form of transportation. The Survey also indicated that the average length of stay is one-hour (47%) to two (37%) hours.

Visitors first encounter the fee collection stations. These are the points of entry into the historic fortifications. Both the fee collection staff and the interpretive staff (as back-up) collect fees. The staff works hard to move visitors as quickly as possible through the fee station.

After paying the entrance fee, two publications are given to every visitor: the Harpers Ferry Center produced unigrid brochure and a park produced self-guiding brochure. Both publications are available in Spanish or English. However, because of their costliness, park management is considering charging visitors for any additional copies of the unigrid brochure requested.

Analysis:

Unfortunately the sense of arrival is totally lost during the fee transaction. During the busy season long lines to pay the entrance fee or use the restrooms take up valuable visiting time. Features like fee desks, cash registers, monitors and crowd management barriers disrupt the feel of the ancient fortifications. These 21st century intrusions delay the sense of arrival and diminish the historical experience. Due to current staffing levels it is common that most visitors only have the opportu-

nity to chat with park personnel at the entrance stations when paying their fee or in the park's bookstores and on busy days this time is extremely short.

Many times during the planning workshops, the park staff commented that their perception of the average visitor "length of stay" to experience and learn about the forts is a 20-minute visit. Their perception is contrary to data from the 1999 Visitor Services Project Survey indicating that 79% of visitors spend 1 - 2 hours in the park. A comparison of survey statistics to staff observations seems to suggest that during the peak visitor season most visitors spend a significant portion of their time in line waiting to pay the fee and/or to use the restroom facilities. (Public restroom facilities are very limited in Old San Juan.)

Park guides and ranger/interpreters are trained to do fee collection to relieve the strain during lunches or when the fee collection division is short handed. Fee collectors (visitor use assistants) are trained to dispense basic orientation, information and advise incoming visitors on upcoming programs and closing times, etc. During FY05 the park initiated training fee collectors to provide simple orientation talks to back up the interpretive staff when they are short-handed. This recent change provides critical operational flexibility.

On-Site Experience

Visitors have several options once they've passed through the fee station:

- View the 12-minute orientation film "The Forts of Old San Juan";
- Conduct a self-guided tour, using the brochure provided;

- View an array of exhibits on the 500-year history of the forts;
- Visit the park bookstore operated by Eastern National, the park's cooperating association; and/or
- Attend a staff conducted program.

The park requires all rangers, visitor use assistants, and cooperating association employees to be bilingual. However, front-line park maintenance and custodial positions are exempt from this requirement. All written information is presented in Spanish and English. This includes the park's exhibits, waysides, publications, the orientation film, and bookstore sales items.

Interpretive Program:

The interpretive staff provides four programs daily at San Cristóbal and El Morro. Two advertised programs are offered in the morning -- one in English, the second in Spanish. This is repeated in the afternoon. The programs last from 45 minutes to 1 hour. Attendance averages from 15 - 20 visitors. The park has stopped referring to programs as "tours", because of the expectation this sets for visitors. It would take hours to tour a fort, and the park does not have the staff to support this level of service.

"On the spot" talks are given if visitors indicate an interest and staff are available. The staff also provides education programs and guided tours by appointment. On busy days, while park guides and rangers rove through the major fortifications, helping with orientation and informal talks, law enforcement rangers patrol the park. They also assist with providing orientation and historical information.

The park is experimenting with ranger conducted programs and special events during evening hours. Some special events have been very popular; however, the ranger program offerings have not been well attended.

Analysis:

At this time, the interpretive staff is often strapped to provide the services needed. For instance, towards the end of the school year there are, on occasion, between 15 - 20 school groups, per day, which arrive unannounced. The staff feels that each of these groups needs to receive at least a safety talk and, if possible a general orientation. This is not always possible. The staff also feels that they are not giving a sufficient number of programs - visitors may need to wait 3 hours for a program or may easily miss the last program of the day (2:00 PM depending on language).

Statistics taken over the past year call into question the efficacy of having scheduled park tours or programs. While these seem to work somewhat better at El Morro than at San Cristóbal, some other paradigm needs to be explored, such as having interpreters on hand to give tours/programs as groups come into the fort, rather than on a scheduled basis.

Program Update: As of December 18, 2005, orientation talks are now offered almost every hour on the hour at both forts, in lieu of the four daily programs mentioned above. These twenty minute talks are designed to give visitors the significance of why the forts are in Puerto Rico, provide orientation and safety information quickly. The park is still experimenting with the implementation of longer, interpretive programs led by the interpre-

tive rangers. Among the current offerings is a fortification walk that guides visitors around the walled city, evening programs at San Cristóbal and an out-works walk as well.

Facilities

Fort San Juan de la Cruz

Fort San Juan de la Cruz is a small fort built on the Isla de Cabras. It is located directly across the channel from El Morro. While the site is accessible by automobile, it is a 30 minute drive from San Cristóbal and El Morro along a complex road system. This route is not signed, mostly only locals know that the fort is there or how to find it.

The site provides a good view of El Morro, the Southern Wall and Old San Juan. Only the grounds around Fort San Juan de la Cruz are open for visitation. The fort interior is not open for viewing since it is filled and capped off to protect and stabilize the structure. No personal services are provided. There is one wayside exhibit that addresses the theme of harbor defense.

Visitor use is primarily from residents using the adjacent Isla de Cabras National Park, a picnic area managed by the National Park Company of Puerto Rico. San Juan NHS is exploring partnership opportunities with the National Park Company. The 2004 Transportation Study considers the feasibility of the use of an existing dock to provide water taxi-service to the site.

Analysis:

The site has a complete air of abandonment. The presence of litter and the deterioration of the his-

toric fort façade create this impression. Visitors are removing bricks and stucco from the fort to use for picnic grill props.

- There is no indication that this site is a National Park Service area.
- There should be directional signs from the main road.
- There is poor to nonexistent accessibility.
- The themes of "Fort Construction and the Soldier Experience", "Life in a Fortified Town", and "Preservation and Stewardship" are not addressed.
- The view from this site is a fabulous promotional feature; and, when on site, it provides an opportunity to address the theme of "Life in a Fortified Town". (The cover photo of this plan shows a view from this location.)
- Fort San Juan de la Cruz best relates to visitor experience goal three: "contemplate, relax, and enjoy park resources without pressure".
- The idea of crossfire could be discussed at this site and reinforced through gun props.
- It is important to remember that locals mainly visit this site now. While they may be very aware of local history, there is a critical need for a preservation message!

All members of the planning team agreed that this area requires:

- A critical emphasis on the need for preservation through regulatory signs.
- The introduction of an attractive barrier around the entire fort (fence) to deter visitors from climbing on the fort walls.
- Improved on-site interpretation. There is a need to address the importance of joint stewardship - park staff and visitors working together to protect heritage.

- A concerted effort to change the site appearance through improved NPS identity and facility maintenance practices (litter removal, attractive signs, improved landscaping).
- Expansion of visitor use to national/international visitors by promoting the site as a destination for all visitors through interpretation and wayfinding.
- Including the interpretation of this site at El Morro and San Cristóbal.

Fort San Felipe del Morro

The fort is open from 9:00 a.m. to 5:00 p.m. in the summer and until 6:00 p.m. in winter. Employees collect the entrance fee at the continually staffed entrance station within the fort. Eastern National operates the park bookstore. There is one small theater with up-to-date equipment, a 12-minute orientation video alternating between English and Spanish, and a public address system

San Felipe del Morro was authorized in 1539, construction started in 1540. The Spanish construction era lasted until about 1796. The United States Army modified the fort during World War II. The fort has six levels containing 36 casemates and 6 gun batteries with numerous gun emplacements and embrasures. There are also World War II observation posts and an operational lighthouse. The original battery (the Water Battery and tower) and the original wall in the area of the "horn works" were used to defeat Sir Francis Drake in 1595.

Of the 36 casemates/bunkers or rooms, 16 have some sort of interpretation. While an empty casemate tells its own story, they also leave room for the interpretation of the forts to expand. Supplies currently stored in casemates could be moved to

other less historically significant locations.

There are 28 other features in El Morro, 5 structures have an interpretive label. Most of these structures have the potential of being interpretive in nature if they were needed.

There are 8 cannon on display; however, only one is on a proper carriage, or cureña, while the rest are simply set on concrete pedestals. There are numerous gun emplacements, but only one has some sort of interpretive device. Most modern emplacements have no interpretation and leave the visitor to wonder what they are. There are many outside interpretive displays ranging from modern wayside exhibits to older, worded signs, to identifying plaques on structures.

Exhibits:

Some of the casemates are labeled with their function, while others contain exhibits that range from modern to "temporary" to decrepit. The exhibit area includes a walk through museum with modern displays; these are mostly functional. Older exhibits have objects that have been removed and have missing or unreadable labels.

The latest exhibits installed in 2001 (the "El Morro Museum") are in reasonably good shape. However the exhibits are made of wood that was not termite proof, some of the laminates have not held up to the marine air, some of the electronics have ceased to function, some of the loose parts have been destroyed and some of the displays are difficult to see. Older displays are deteriorating. In general, the tropical marine air is very hard on electronics and other exhibit materials that are not specifically designed for this environment.

Analysis:

Improved interpretation for personal services and interpretive media is required at El Morro:

Arrival Experience:

- During hot/rainy weather conditions, the walk across the historic esplanade to the fort entrance is long and taxing. The length of this walk is an accessibility issue that should be addressed.

Information and Orientation:

- There is inadequate signage from the town to the site.
- Personal services providing basic information and orientation are inadequate. Training is needed. Personal services could be supplemented with hand-held props.

Entrance Station:

- Could the fee collection/entrance station be moved outside or other options considered as a means of avoiding entrance clutter?
- Visitor independence/access to information at the entrance desk operations is nonexistent and inadequate.
- Signs to points of interest within the fort are inadequate.

General:

- The only interpretive theme not addressed is "Life in a Fortified Town"
- All visitor experience goals are addressed, with varying amounts of emphasis.
- Visitor experience goals requiring further attention include:
 - Have easy access to information and orientation before and during their visit.
 - Find their way around the park without

assistance.

- Understand the fortification system in relationship to wherever they are in the park.
- Have a multi-sensory and dynamic experience to help them learn about soldier's daily life in the fortifications and the lifestyle of residents in the town during the 16 -20th centuries.
- More wayside exhibits are needed.
- The audiovisual presentation does not provide enough historical context explaining why the Spanish Empire built the fortifications.
- The bookstore needs improvement. Items should be removed.
- The Paseo should be better connected to El Morro.
- World War II structural elements require interpretation.

San Cristóbal

There are two visitor entrances at San Cristóbal. Both are staffed with at least one visitor use assistant. Often a park guide helps to collect fees and dispense orientation information. The hours of operation are 9:00 a.m. - 5:00 p.m. in summer and until 6:00 p.m. in winter with extended hours for special programs. Eastern National operates two bookstores within the fort. One bookstore is located within the Visitor Center facility; the other store is located on the main plaza.

San Cristóbal "Ramp Entrance"

The historic entrance (frequently referred to as the "ramp entrance" by the park staff) is a very long steep ramp accessed immediately from a city sidewalk on Norzagaray Street. Parking is not available near this entrance, so the ramp is used by pedestrians only. After crossing the threshold of the fort



Fort San Cristobal "Ramp Entrance", NPS Photo by Rich Helman

entrance, the fee/entrance station is set up in the historic "guard house", located on the main plaza level.

Analysis:

- There are not enough signs in the immediate vicinity of San Cristóbal to direct visitors to this entrance.
- The sense of stepping back in the past and following in the footsteps of others could be improved for visitors using this entrance.
- This entrance is not accessible to mobility impaired visitors. The terrain in this section of Old San Juan is very hilly.
- Basic information on the facility - hours of operation, fees, directions to the accessible entrance, etc. should be provided at the foot of the ramp entrance.
- Once inside the fort, having paid the fee, there is a wayside that does little to orient visitors as to their position within the fort.

The Visitor Center Entrance

The other entrance station is through a converted WWII bunker off Muñoz Rivera Street. (The staff commonly refers to this entrance as "Building 213" or the "Central Command Bunker".) The park retrofitted this facility to serve as a park visitor center, provide for visitor parking, and accommodate collection storage needs and park office space. The building opened in 2001. Of the two entrances, this is the busier one since approximately 80% of the visitors to Fort San Cristóbal enter here. This location provides the "accessible" entrance to the fort.

The Visitor Center includes an auditorium, (where visitors view the park orientation video in both

English and Spanish), public restrooms, the main Eastern National sales outlet, and offices. Half, or more, of this structure is devoted to the interpretation/fee collection offices, the Museum Storage Facility, the Cultural Resources Archives, offices, staff lunchroom, and other administrative areas.

From the visitor center there are two routes up to the historic main plaza where visitors can explore the upper levels of the fort:

- a stairway or elevator that connects to a historic (but very dark, long, and unevenly surfaced) tunnel; or,
- a short, steep tunnel.

Seventeen casemates are utilized for a variety of exhibits, a cannon firing video, a restored and historically furnished troop quarters, and another Eastern National sales outlet. Other features include the tunnels (mentioned above), a dungeon, and views of Old San Juan, the fortifications and the harbor. A variety of wayside exhibits are placed throughout the fort.

Among other features, there are 58 casemates, bunkers and other rooms. There are numbers of gun emplacements, 12 cannon (only one on a carriage) including the historic "Ordoñez rifled cannon", garitas and odd structures. Most of these features are not interpreted.

There is also an extensive system of outworks (also called outer defenses) including batteries, dry moats and other fortifications. The San Cristóbal Outworks are described in more detail in the next section.

Analysis:

- The adaptive use of the WWII bunker into a visitor center has greatly improved visitor services and the ability to safely house and preserve the park's manuscript and artifact collections. However, considering the high levels of visitation received, the actual operation of the facility is far from ideal.

Why? This area serves as both an entrance and exit to the fort. In addition, the bookstore, auditorium, restrooms, access to the historic fort, elevators, and the exhibit area are located off a narrow hallway, just beyond the fee station. All of these facilities are so closely positioned that they act as a plug on busy days.

The staff is doing their utmost to alleviate this problem through experimentation. This includes: evaluating how best to effectively greet visitors and move them up to the main plaza of the fort easily; repositioning some facilities within this area; and, experimenting with different traffic patterns and use of personnel. During 2005 the entrance desk was moved closer to the elevator, some exhibits removed, and more information signs added to help improve services.

- There are no street signs directing visitors to this entrance and parking lot. Although the building is identified as part of San Juan NHS, it also needs to be identified as the park's visitor center.
- Access to this entrance is also very steep. There is a small parking lot with 24 parking spaces at Muñoz Rivera Avenue. Although there is an accessible ramp to bring mobility impaired visitors in to the entrance the pitch of the parking

lot is very steep. This is problematic for accessibility.

Overall Analysis at San Cristóbal

Improved interpretation for personal services and interpretive media is required at San Cristóbal.

Information/Orientation:

- Information and orientation is needed at the cruise ship docks to direct people that want to walk to the forts.
- Directional signs and waysides are needed within Old San Juan to help visitors find park facilities. The park should partner with the Puerto Rico Tourism Company and the Institute of Puerto Rican Culture to develop a sign plan.
- Within Fort San Cristóbal directional signing seems to be one of the weakest links in helping the visitors find their way through the fort. The style of directional signs could be harmoniously integrated with interpretive exhibits. For example, when exiting from an exhibit area onto the plaza, visitors are confused about where to go next. There is a sign with the words "second level", but why would anyone want to go there? No enticement or any information is provided as to what might be on the "second level".

Entrances:

- More of an interpretive focus is needed at both fee stations. The staff requires clearer instructions on customer service. Visitors need more orientation.
- Having two entrances causes confusion and should be addressed and resolved.
- At the "ramp entrance" no information is provided regarding the availability of an audiovisual orientation program.

- The Visitor Center entrance is not inviting.
- There is an interpretive problem entering through a World War II exhibit. On the other hand, this could be used as a 'Transition through Time'.

Brainstorming other ways of crowd handling at the Visitor Center entrance:

- Information could be provided at a kiosk at the main entrance near gate, with a staff presence.
- An information desk could be added indoors, separate from the fee collection desk. If fee collection was moved, the current fee collection desk could serve as an information desk.
- Should the bookstore and fee area be moved to a new location? Could there be a future building solution to alleviate congestion? Could the fee station and an information station be moved outside San Cristóbal?
- Could the bookstore be turned into an orientation area with maps, videos, etc?

General comments

- Provide more interpretation on World War I and World War II facilities.
- All themes are addressed at this site.
- The following visitor experience goals need to be addressed further:
 - Find their way around the park without assistance, and understand the fortification system in relationship to wherever they are in the park.
 - Have a safe visit.
 - Find and discover the purpose of Fort San Juan de la Cruz.
 - Understand the NPS mission and opportunities to get involved.

San Cristóbal Outworks

Covering most of the 27-acres of Fort San Cristóbal, the outer defenses or outworks are a series of inter-dependent fortifications, trenches, tunnels, and moats that were built to support the fortifications of (Old) San Juan in the event of a land attack. When viewed, they illustrate a military principle known as "defense in depth", which is a system of various lines of protection whereby the first line protects the next line in succession and all lines ultimately protect the fortifications. The various lines of strategic defense might be masonry structures or simply large terrestrial obstacles which are garrisoned with reinforcement troops that allow for complete coverage of the fortifications. Lines of defense are set up to directly confront attackers. The fortifications of San Juan have three lines of defense. The first line protects the second and third as well as the fortifications and the city of San Juan. Each successive line protects the others farther behind. The ultimate goal for attackers would be to overtake the entire complex or stronghold, which means that they would have to get through the first three lines of defense, take over each one in succession to conquer their target.

Closure of the Outworks to the general public coincided with the introduction of the park entrance fee in the spring of 1998. At the time, there was also an effort underway to limit access to this area due to the high risk of potential visitor injury. Deteriorating pathways and stairs through the structures, holes in the ground covered by vegetation, and the lack of staff to rove through this area are the primary reasons the Outworks closed. Existing visitor support facilities in this area include public restrooms, waysides, and direction-

al signage.

Analysis:

All members of the planning team agree that the closure of this area due to existing safety conditions, although necessary, is most unfortunate. The Outworks are an important part of the fortification system. Repair of resource conditions and public access should be pursued. When the Cultural Landscape Report is completed, a plan providing access should be developed.

City Walls

Stretching between the forts along the coast on the north side of the peninsula and along 2/3 of the southern coast extends a system of walls and bastions which enclosed the city of Old San Juan. Approximately 70% of the original walls still exist. There are 12 bastions or batteries, four of which have some interpretive device. There are other structures, such as the Polverin, unknown structures, guard houses and garitas, none of which are interpreted. There is also the San Juan gate, the only remaining historic entrance gate. There is a wayside exhibit that interprets the San Juan gate.

Analysis:

The planning team agreed that interpretation of the walls and batteries should be included in any new interpretive media developed.

- These walls are an important part of the cityscape of Old San Juan. Many visitors come to them without realizing their relationship to the overall fortification of the town or their historic significance.
- Interpretation of the city walls provides another

opportunity to discuss the themes of "Fort Construction and the Soldier Experience" and "Life in a Fortified Town". Currently interpretation of the city walls is limited to information provided in interpretive programs.

- The walk from San Cristóbal to El Morro is spectacular with sweeping views of the sea. Along some sections, visitors actually walk on top of the fortification walls. However, because the walk from San Cristóbal to El Morro is on a sidewalk paralleling a major road, it is entirely possible for visitors to have no idea that they are walking on top of a key fortification element - the city walls.

El Paseo del Morro Trail

Paseo del Morro is a modern trail that runs alongside the base of the historic fortification walls from the Paseo de la Princesa* to El Morro. This trail is largely scenic and recreational in nature. This park trail has nine wayside exhibit panels explaining various aspects of the defensive system and modern maintenance of the walls and forts.

* The Paseo de la Princesa is a designated city walking tour along the streets in Old San Juan. The route provides views of the modern docks where cruise ships anchor and vistas across the sea to Fort San Juan de la Cruz. The walking tour passes by La Forteleza, (the first fort constructed, now the Governor's Mansion), the historic San Juan Gate, and many residences, shops, and plazas in Old San Juan.

The 2004 Transportation Study explores the possibility of extending this trail along the north shore to connect El Morro to San Cristóbal for pedestri-



View of the San Juan Gate from Paseo del Morro, NPS Photo

ans. Another concept under consideration is the addition of a light-rail to the trail. The light rail would parallel the pedestrian trail. This would reduce traffic congestion in the City of Old San Juan and facilitate accessibility between the two forts for those unable to walk the distance.

Analysis:

At present, there is no outlet from Paseo del Morro at the west-end. Visitors using it must retrace their steps to their starting point. There is no way to get from the trail through the fort walls up to El Morro. In addition, there is no marked route to assist visitors in finding their way from the Paseo up to the fort. This facility is not promoted in the park brochure or website. Primarily local residents use this trail. Finding this trail is a happy coincidence for regional, national, and international visitors. Other observations:

- Accessibility is good along the trail (grade).
- Orientation to the rest of the fortifications needs

to be added.

- Regulatory signage needs improvement.
- Directional signs are nonexistent and needed.
- Waysides require updating. Their interpretive messages should be changed. These waysides should interpret all park themes through specific views and features seen along the trail.
- More information is needed on construction and architecture.
- The walls should be interpreted to show where you are in relation to the fortification system.
- Humidity has adversely affected the exhibits; they need to be replaced.

Summary:

The fortifications are exposed to tropical marine air. This is very hard on most materials. The nearly constant onshore breeze ensures that there is a lot of salt and humidity in the air at all times and the heat (lowest recorded temperature is 68 degrees, Fahrenheit) only exacerbates the problem. The



El Paseo del Morro, NPS photo by Rich Helman

area is also prone to termites and anything that they find edible must be protected. These conditions have not always been appreciated in the past.

- All themes should be covered at each site through core exhibits. Then other stories and themes unique to each fort could be addressed in site specific exhibits.
- In general, adequate storage areas are needed at all sites. Construction material should be moved from public view, unless it is restoration oriented materials with appropriate interpretive signing.
- Roving Interpreters are needed.

Appendix G: Includes an "Itemized Listing of Potential Interpretive Facilities and Existing Interpretive Media" developed for the interpretive planning workshops.

Interpretive Media

Audiovisual Programs

The tropical marine environment tends to be very hard on electronics, thus limiting the extent to which audiovisual (AV) media can be used at the site. Audiovisual elements are currently limited to El Morro and San Cristóbal, and those that are exposed to the elements have not held up well. Audiovisuals are neither available nor recommended at Fort San Juan de la Cruz and the Paseo del Morro. New AV elements should be concentrated in climate-controlled spaces such as theaters or enclosed exhibit areas. AV equipment and ancillary devices (switches, pushbuttons, speakers, cabling, etc.) installed in non-conditioned spaces

should be of marine-grade construction.

Most (but not all) of the existing AV elements at San Juan NHS are available in both English and Spanish. All future media should be produced in both languages. Exhibit-type AV installations should be outfitted with devices that allow users to select a language option. Theater installations can accommodate multiple languages in various ways, including:

- **Alternate scheduling** of English and Spanish versions. The park currently uses this method at its El Morro and San Cristóbal theaters, though visitors on tight schedules (such as cruise ship passengers) often don't have time to wait for the desired version.
- **Subtitles** in English or Spanish can be provided. The park would select a "default" language for the soundtrack (perhaps English at San Cristóbal and Spanish at El Morro) and provide the second language via subtitles.
- **Infrared devices** can transmit multiple language tracks (as well as assistive listening and audio description tracks for persons with disabilities) via headphones.

The existing AV products at San Juan NHS are not in compliance with Section 508 accessibility standards. None of the videos are captioned or audio-described, and none of the traditional exhibits are audio-described. This situation must be remedied as new media products are developed and installed. If new media cannot be developed in the near future, the park should retrofit the two theaters with open captioning for the hearing impaired. During 2005, Harpers Ferry Center AV staff identified some low-cost, short-term solutions; implementation of these recommendations

is now underway.

El Morro

Theater video: The park currently shows the same 12-minute video ("The Forts of Old San Juan") that is shown at San Cristóbal. The video runs every 15 minutes on an automated timer, alternating between English and Spanish versions. The theater space is adequately designed, with a sloped floor, staggered seating and reasonably good acoustics. The video equipment (industrial-grade Pioneer DVD player and flat-panel plasma screen monitor) is fairly new, though the video monitor is way too small for the room. A single speaker hangs on the wall next to the monitor. Captions and audio descriptions are not provided. **Program update:** Captions and assistive listening devices are now available in both theaters.

The audiovisual program is mediocre at best: the treatment and script are unimaginative, and the production values are fairly low given the significance of the site. The show is informative rather than interpretive; it makes little attempt to place the forts in historical context or forge an emotional connection with the viewer. The show also contains some historical inaccuracies and fails to address the park's four major interpretive themes.

Electronic Map: A large map labeled "The Explorers" (identical to the one at San Cristóbal) is on display in one of the casemates off the main plaza. The map illustrates various routes used by de Soto, Ponce de Leon, Pizarro and Cortés. Four pushbuttons are provided, each one corresponding to a different route. When a visitor pushes a button, one of the color-coded routes lights up. The switches fail on a regular basis and are difficult to

repair. (Only one of the four buttons was operational at the time of the planning team evaluation.) If this map is to remain in use, the switches and pushbuttons should be replaced with industrial strength, marine-grade hardware. Ideally, this exhibit should be replaced with an interactive electronic map of the entire fortification system.

San Cristóbal

Theater Video: The park currently shows the same 12-minute video ("The Forts of Old San Juan") that is shown at El Morro. The video runs every 15 minutes on an automated timer, alternating between English and Spanish versions. The theater itself is well-designed and equipped, with a sloped floor, staggered seating, good acoustics and relatively new video playback and projection equipment. The theater is equipped with surround-sound speakers (three in front and two in back), though the current show is in mono and the rear speakers are not being used. The speakers emit a steady stream of pops and static noises. (These noises seemed to be worse on the English than on the Spanish version.) The projection screen is in good condition and appears to be 16x9 (widescreen) compatible, but has been masked off on the sides to accommodate the 4x3 aspect ratio of the current show. On-screen captions for the hearing-impaired are not provided, and the theater is not equipped with a caption board or audio-description hardware.

"Voices of Fort Brooke" Video: This video runs continuously on a monitor in the elevator hall of the visitor center. It consists primarily of oral history interviews with people who worked and lived at the Fort Brooke military installation. The interviews are in Spanish with English subtitles.

Production values are modest. While the program addresses an important period in the park's history, the video is quite lengthy, and the setting is not conducive to extended viewing. (Visitors must stand in front of the monitor and wear headphones.) Viewers are unable to stop and start the show or select specific interviews or language options. If this video is to remain in service, it should be reconfigured as an interactive multimedia exhibit. **Update:** In order to relieve visitor congestion and overcrowding, this program was removed and placed in storage in 2005; it can be incorporated in future exhibits.

Cannon-Firing Demonstration: This short exhibit video runs on demand. The video, available in Spanish only, shows a group of reenactors loading and firing a cannon similar to one on display nearby. The video is reasonably well-produced and could remain in service for the foreseeable future, though English-language subtitles should be provided. **Update:** both English and Spanish sub-titles have been available since January 2006.

Electronic Map: A large map labeled "The Explorers" (identical to the one at El Morro) is on display in one of the casemates near the main entrance. One of the four buttons was not working at the time of the site evaluation; the switches apparently fail on a regular basis and are difficult to repair. If this map is to remain in use, the switches and pushbuttons should be replaced with industrial strength, marine-grade hardware. Ideally, this exhibit should be replaced with an interactive electronic map of the entire fortification system.

"Puerto Rican Militia" Exhibit: This audio exhibit plays various military calls (Reveille, Retreat, church calls, etc.) at the push of a button. The exhibit is OK from an interpretive standpoint and was functioning properly at the time of our visit, though the volume was too loud for the casemate's lively acoustical environment. Perhaps unintentionally, the sound leaks out onto the plaza and adds a nice ambiance, providing a hint of what could be accomplished with a full-scale soundscape.

Exhibits

Overview

The NPS uses the term "cultural resources" as a broad category designation to reflect the variety of historically related sites under its care. The term cultural resources includes: archeological areas, cultural landscapes, ethnographic resources, historic and prehistoric structures, and museum collections. San Juan National NHS has a professional trained curatorial staff to care for the collection while on display in interpretive exhibits or when in storage; and an historic preservation specialist to oversee the preservation of historic structures.

Interpretation at historic sites has many facets. It is delivered within a historic scene such as the fortifications; and may include a variety of exhibits drawn from a collection associated with a specific event or period in history. The interpretive program at San Juan NHS reflects this diversity. The public can view the historic forts on ranger-led programs or self-guided tours. Their visit also includes an opportunity to view park collections through an extensive exhibit program.

The collection at San Juan NHS is an important element in the delivery of the park story - visitors come to national parks to see the real thing. San Juan NHS has an extensive exhibit program drawing from a diverse manuscript and artifact collection. Overall the park exhibits reflect a mixture of exhibit types professionally developed or in-house "temporary" exhibits. This section of the plan will first address conservation concerns when using the collection for interpretation. Then, it will assess how effectively the exhibits communicate interpretive themes. The "Media Assets" summary will evaluate how accessible the collections are for interpretive use.

Analysis Exhibit Conservation Concerns:

Interpretation and preservation are central to the park's mission. The very act of using historic collections, however, can set in motion the rapid deterioration of these unique materials. Cultural resources used within fort exhibits and interpretive programs are much more vulnerable to damage and deterioration than those housed in the park's storage facilities. Every effort should be made to reduce unnecessary loss and damage to these collections that are in service to the park visitor while on display in exhibits.

The museum collections can and should be used to aid interpretation. One of the greatest challenges for parks with vulnerable historical collections such as San Juan is striking a balance between the need to preserve their cultural resources with the need to share them with the visiting public. In fact, at the center of this challenge is the specific mandate of NPS sites to serve as stewards of the nation's resources. The staff is actively searching for strategies that balance the

needs of the resource and visitors with the limited means available for protecting the forts as part of the island's legacy. This challenge will be on-going as the most effective preservation strategies are dynamic and continually reconsider the key factors involved, namely:

- the specific preservation needs of the cultural resource (control over the mechanisms of deterioration)
- the general needs of the visiting public and staff (concerns for effective interpretation)
- the practical needs/limitations of park circumstances (abilities/ resources of personnel and budget)

Numerous preservation specialists have visited the park over the years and consulted with park staff on specific aspects of resource preservation and management. Environmental recommendations made address a variety of park resources including the casemates, the historic mural graffiti, the cannons, and the archives. Some recommendations overlooked other aspects important to the park, or were insensitive to the impact these decisions might have on other concerns, such as park budget, staffing and even other historic resources. It is particularly important that the park develop an overarching program for preserving and protecting its moveable (historic objects and artifacts) and immovable cultural resources (structures and building features) - not one that is compartmentalized.

To this end, professional preservation organizations adopted the New Orleans Charter in the early 1990s. (See Appendix D) The charter states that *preservation of furnishings and moveable collections within historic structures should not*

be at the expense of the structure. Preservation must be an integrated effort between the two cultural resources. An integrated and practical approach to setting environmental guidelines and specification for the park is strongly recommended. Outlined below are the findings of the curatorial assessment of existing park exhibits.

Use of Outdoor Exhibits

Interpretation of historical fortifications generally relies on outdoor exhibits. Clearly, the visitor's experience is enriched by seeing artillery in position. The park has located a considerable number of artillery pieces in original positions. The result is that these aged collections are exposed to the one of the most aggressive environments found in any of the NPS units. The conditions of the cannon tubes and artillery in general are poor and unstable. Deterioration is not only ongoing but accelerating as moisture can now get under the exterior crust of the metal. The iron is highly corroded as many of the materials were pulled from the sea.

The park staff needs to find the right balance between interpreting and preserving their outdoor exhibits (collections). Central to this issue are three questions: How important are these exhibits to the interpretive program? How long does the park want these particular objects to last? What are the acceptable preservation and interpretive measures?

Use of a controlled collection spaces

The park's vulnerable historic collections require the creation of controlled spaces for their use. The regional climate conditions create an aggressive and collection unfriendly environment. It is nec-

essary for the park to create two zones with artificial environments (one public and one non-public). The non-public or storage/research zone has been well developed in San Cristóbal's Building 213. The interpretive program or exhibit zone, however, is inadequate.

Use of micro-environmental cabinetry

The curatorial storage facilities at the park are well-designed and provide adequate and protective cabinetry; unfortunately the same is not true for the interpretive exhibits. The park's cultural resources merit "conservation-grade" display cases and a preservation-responsible exhibit.

Providing a microclimate in a well-sealed case is a low-cost alternative to controlling the entire exhibit space. Sealed cases are a particularly good choice when exhibit objects are sensitive to humidity and contaminated air is a problem. (See Appendices E: 1-4 for conservation guidelines.)

El Morro Museum:

The museum within El Morro falls short of what is needed for adequate protection of the cultural resources on display, although the concept is correct. The approach was to isolate an exhibition and interpretation space especially for use of collections. The unfortunate reality is that both the space and exhibit cabinetry have many shortcomings. The museum is:

- in an isolated location, at a great distance from the front entry desk;
- great distance from administrative and curatorial headquarters and has been robbed several times;
- relatively un-protected by park personnel. Individuals can hide undiscovered within the museum;

- very difficult to provide sufficient climate control (primarily RH and contaminates); the air-conditioning does not include humidity control as it is based on temperature;
- deteriorating at a rapid rate. The exhibits and cases have been seriously damaged by the extreme moisture conditions and they no longer perform and protect their object contents.
- too large a space to maintain for its current interpretive role.

Analysis Interpretive Component of Exhibits:

El Morro Exhibits

The entryway to El Morro needs major rethinking. The exhibit design overwhelms the message and competes with the historic scene. The panels mounted on the sides of this imposing structure were overlooked by visitors. Placement of this exhibit so close to the entrance and before the fee station precludes its usefulness to visitors. There is an opportunity to make an appropriate yet sensitive statement here, but not to this scale.

The attendant desk within the fort entryway, though necessary, does not make for a pleasing first impression when entering this distinguished structure.

At closing time the attendant swung the large gates closed. Remaining visitors exit through the smaller pedestrian door. Something interpretive could be developed in the opening and closing procedures of this facility through use of the public address system and staff/interpretive exchanges with the public.

Arrival onto the brightly painted main plaza was a

most stimulating experience. The park uni-grid brochure has a two-page spread depicting this area with troops assembled along with other related activity, guards atop walls etc. This gives a good indication of how this area could come alive with, for instance through the use of durable troop cutouts done in their colorful uniforms. There is an opportunity to consider porcelain cut-outs (just flat images) to create the sense of a "live" plaza. (Harpers Ferry Center developed this type of porcelain cut-outs for Desoto National Historical Park.)

The exhibit rooms in the spaces on the opposite side of the plaza at present show the evolution of many years of effort to convey the periods of history to which this fort has been a part. These exhibits are only partially successful. Some of the exhibits are quite old, while others seem to be more recent.

San Cristóbal Exhibits

Once inside the fort having paid the fee there is a wayside that does little to orient visitors to their position within the fort. The visitor is left to decide what to do, with little or no guidance. It is entirely within the realm of possibility that a quick decision to visit the highest point of the fort (without looking into the rooms along the plaza en-route) means that exhibits might be completely missed.

Other observations:

- Some park exhibits are truly a "book on the wall". Too much text and far too small a type size to read comfortably.

- Laid out on the plaza are various gun barrels with absolutely no interpretation. A wonderful interpretive opportunity missed.
- The electric map is confusing. The exhibit print size is too small.
- The flag exhibit requires more depth.
- At the narrow end of the plaza there begins a slope down to a lower plaza. There is a gate and a great view of the city, but no interpretation.
- "Forts of the Caribbean" map exhibit communicates the idea well.
- "Defense Plan for the Caribbean" is an informative exhibit.
- The exhibit with the gun firing video is confusing, and has omissions and errors. The rope rigging attached to the gun carriage (to restrain it when firing) is missing. This is true both in the film as well as on the actual gun sitting there.
- In the troop quarters building, one room contains an exhibit of a historically furnished "troops quarters" showing where the soldiers slept. Multiple uniforms and gear are on exhibit there as well as their very uncomfortable looking bunks. This is an excellent example of how one can get concepts across without lengthy elaboration of words. People relate to other people's lives even though they may have lived hundreds of years ago.
- Many exhibit cases are overbearing:
 - The character and size of the exhibit case overwhelms the Spanish Artillery officer mannequin. The figure has no relationship to the photograph in the background.
 - The "Soldier of the Fixed Regiment" exhibit would be more successful if it was not for the over worked exhibit case. This exhibit would be more successful if the uniformed figure were placed in a believable location as if "on duty" in a minimal, but fully protective case.
 - The large-scale fort walls and turrets mocked up inside one room with exhibit labels and cases cut into its sides is not really successful with the real thing so apparent right outside the door.

Media Assets

Media assets include other park resources available to interpretation that support the design of personal services programs or interpretive media.

Artifact Collection

The park considers the historic period that defines/guides future collection acquisition as 1539-1961. This period has been identified in the Scope of Collection of the San Juan NHS. The park collection is housed according to current NPS museum standards. Part of the collection, mostly archeological remains, is stored at the National Park Service's Southeast Regional Archeology Center (SEAC).

The park artifact collection includes different artillery samples (cannon, mortars, etc.), religious

paraphernalia, flags, weaponry (swords, guns, armor, etc), paintings, sculptures, coins, and archeology, among other things. Most of the collection is site associated or original to the site. Some objects, like two models of the fortifications, are reproductions but due to their uniqueness and significance, they are catalogued as part of the park's collection. Most of the collection fits into the "historic period" of the park.

Archives

The park archival collection includes documents that are original to the site and other records obtained from repositories around the world. The collection includes:

- Documents from the Archivo de Indias, Seville, Spain
- Documents from the Archivo Militar at Segovia, Spain
- Documents from the Archivo General de la Nación, Mexico
- Documents from the Archivo General de la Nación, Cuba
- Documents from the Archivo Histórico Nacional, Madrid, Spain
- Documents from the Public Records Office, London, United Kingdom
- Documents from the National Library of Malta, Malta
- Documents from the Museo Naval de Madrid, Spain
- Documents from the Library of Congress
- Documents from the British Museum
- Documents from the Biblioteca Patrimonio Nacional, Spain
- Documents from the National Archives, New York Branch

The park houses about 10,000 plans, 16,000 photographs, more than 300 rare books, and 310 linear feet of documents among other types of media. All the finding aids for these collections are available through the park's server (available to park staff only). Most of the documentation relates to the construction and the development of the "Plaza de San Juan", the military term used by the Spaniards when referring to the fortification system of San Juan. Since construction of the fortifications began in the 16th Century and ended in 1897, there is still much to be investigated.

Currently the park is working with some local agencies to establish partnerships that will enable it to continue acquiring documentation but at lesser costs.

Park Library

The park library is well-rounded. It includes reference materials that deal with European, Spanish, Caribbean, Latin-American and Puerto-Rican History along with that of the City of San Juan proper. There is also a great quantity of books on architecture and military history. The library also includes:

- copies of books written that are site specific
- a collection of clippings about issues affecting the historic site
- audiovisual media of park activities
- a collection of magazines and other periodicals

There is also a small, working, library in the interpretive offices with volumes on interpretation, local and specific history, and other related topics.

Analysis of Media Assets:

Use of preservation specialists

The park staff has in recent years increased the systematic use of preservation consultants. Since the completion of the 2004 Collection Management Plan, a methodical approach to preserving the park's moveable cultural resources has been adopted. For example, the "collections move" to the new state-of-the-art storage facilities was conducted with NPS storage specialists. Architectural conservators from the University of Pennsylvania are directing work on the fort's historic graffiti; archival conservators are conducting staff workshops and collection surveys; University of Texas conservators are consulting on the re-treatment of the fort's cannons; and a conservator was included in this interpretive planning activity.

Interpretive research utilizing historic collections

As new interpretive programs are initiated at the park there will be growing reliance on the historic collections located in storage. The archives and objects located in building 213 are actually part of reserve or "study collections" that should be available to the interpretive staff. One of the reasons for moving the collections into the new storage facility was to organize, inventory and make these cultural resources accessible to park staff and researchers. Currently, interpreters feel these materials are inaccessible.

Identification/prioritization of cultural/interpretive materials

There is relatively little curatorial information available on the park's collections; for instance some of the objects are reproductions of older pieces, some modern gifts from Spain. The quality of the information on the accession and catalogue records is critical to the development of high-quality

interpretation and exhibits. Familiarity of the staff with the archives and objects is useful but there is no substitute for having the information in writing and accessible. As future exhibits and programs are planned, supporting materials will be required.

Publications

Free Publications:

The site has a very modest free publications program. When visitors arrive they receive:

- the Harpers Ferry Center produced unigrid brochure. This publication is available in both English and Spanish. It interprets the parkwide history.
- a park produced self-guiding brochure/site bulletin. The park designed and produced separate self-guiding-bilingual brochures for Forts San Cristóbal and El Morro.

During 2005 the staff began the development of a teacher's guide that can be used either as an on-site or a pre-visit educational tool.

The park has a digital duplicator which facilitates the development of site bulletins in an economic and timely fashion.

Update: The park can't keep up with the demand for color brochures. A charge will be implemented soon for the unigrid brochure. The self-guiding brochure and other park produced orientation handouts will be free of charge.

Analysis:

The greatest failure of the unigrid brochure is that as it is currently designed, it is used mostly as a

take home souvenir. Its size and length do not facilitate in-park use. The park has developed the companion site bulletins/self guiding brochures for Forts San Cristóbal and El Morro to address this deficiency. Although the self-guiding brochures meet an important visitor need, the provision of two free publications per site is not a cost-effective approach.

- The unigrid brochure: is attractive and well designed, however, it is too lengthy for the on-site visit. It does an excellent job interpreting themes one and two. It provides needed historical context for the Spanish Empire's involvement in the Caribbean, the strategic significance of the forts, and the life of a soldier, and the history of fort construction. However, the story of the transfer of the forts to the United States following the 1898 Spanish American War is somewhat lost in the current design. The current brochure does not address "Life in a Fortified Town" (theme 3), or the park's ongoing preservation/stewardship story (theme 4). The brochure alludes to town-life through the inclusion of the map and guide for "other points of interest" in Old San Juan.
- The self-guiding site bulletin: The 1999 Visitor Service Project study verifies the importance of the self-guiding brochure -- eight-three percent of visitors surveyed used this publication. However, use of this publication is not always easy. The site bulletin includes a line-art map/drawing of the forts. Numbers on the map correspond to brief interpretive text. When using the site bulletin, a visitor does not necessarily know where they are situated within the fort, in relationship to the map. Numbered

markers placed throughout the fort, corresponding to those on the folder would ease the confusion. Infusing more fort history would be helpful too.

Sales Publications:

Eastern National, the park's cooperating association, operates three bookstores for San Juan National Historic Site. There is a good cross-section of interpretive and commemorative sales items. There is something for everyone: the scholar, children, the generalist whose interest has piqued, and the tourist coming to explore and enjoy the sites of Puerto Rico.

Analysis:

- It would be useful to review and amend the park's "Scope of Sales" document, in order to include new sales items to address interpretive themes three and four. (The "Scope of Sales" document is used as a guide by the sales agent to select new sales items.)
- "The Forts of Old San Juan, Handbook Number 151", available in English and Spanish is part of the detailed Handbook Series produced by Harpers Ferry Center. This Handbook is a beautifully illustrated publication that provides detailed information about themes one and two. Through use of maps, the publication very effectively:
 - Sets the historical context of Spain in the New World,
 - Explains the evolution of the forts - both how they were constructed and the military strategy behind the fortifications' design.
 - Describes the major battles and attacks on the forts by other world powers.

It does not address the two new themes developed during this planning effort: "Life In a Fortified Town" (theme 3) and Preservation and Stewardship (theme 4).

Wayside Exhibits

Wayside exhibits fall generally into two categories of content type - orientation and interpretive. This section of the plan first describes the wayside exhibits in place at San Juan NHS; it provides some background information regarding what is the best use and strength of waysides; then analyzes what is working well and what is not.

Existing Wayside Exhibits:

San Juan NHS has a wide range of existing wayside exhibits and related signs, which were developed at various times. The existing waysides consist of three major series of exhibits, and a scattering of miscellaneous exhibits. Only one panel follows current NPS design standards. Other panels follow various older NPS design systems.

- The oldest "waysides" are a series of cast aluminum markers mounted on features throughout the park. The date of their installation is not known, but they have held up well through the years. They generally provide identification of a feature, which is quite useful, but they offer little information about the feature.
- The second major series is a system of 37 fiberglass-embedded, screen-printed interpretive panels and signs produced by Harpers Ferry Center around 1990. Many of these need replacement panels and base repair. Some are poorly located, and many could use improved interpretation to be more site-specific.

- The third series consists of nine digitally imaged panels placed along the Paseo del Morro. These panels were installed several years ago, and many of them are now badly weathered. Most of these panels should be replaced, and their interpretation should be upgraded to be more site-specific.

The existing exhibit panels and the exhibit bases are of varying materials and design. Panel materials include cast aluminum, etched-and-anodized aluminum, fiberglass-embedded screen prints, and laminated digital prints. Some exhibits use standard National Park Service (NPS) "traditional" hardware and bases, others do not.

Analysis:

Addressing Park Themes

Wayside exhibits can address elements of park themes, but it must be remembered that the strength of wayside exhibits is their ability to interpret specific visible features. They are rarely successful addressing broad "macro" stories. By the very nature of the visible features at San Juan NHS, waysides will address parts of the themes, but the temptation often is to tell the broad stories on wayside exhibits. This temptation should be resisted.

One major way in which wayside exhibits can contribute significantly to the interpretation of the park's themes is by providing interpretation for those visitors who have a very short time to visit the park. Many have just 20 or 30 minutes. Since a primary visitor experience goal is to experience the resource first-hand, the 20-30 minute time-frame leaves little or no time to join an interpretive talk or view the audiovisual program.

If new waysides were developed to assist time-pressed visitors, the waysides could be placed at the top level of forts San Cristóbal and El Morro. From this vantage point, where visitors can best experience the resource and its surroundings, a few key wayside exhibits can succinctly address the park's major themes. Wayside exhibits can be positioned to face key features that closely relate to each of the major themes. A visitor with very limited time would gain a good sense of the resource and be exposed to each of the themes.

The interpretive content of the exhibits is quite varied. Some are fairly effective, others are not. The greatest weakness is that many are not adequately specific to their location. For example:

- The exhibit located on the San Cristóbal plaza, interpreting the water catchment system, does not specifically identify the two wells at that site as being part of the system.
- One of the two exhibits that interpret the 1897 removal of a large portion of the city wall is located at El Morro, far from the site of the wall removal, and it faces the sea.
- A wayside exhibit on the lawn at El Morro faces a large monument. The wayside interprets the Dutch attack. However, it says nothing about the large monument, leaving the visitor to wonder what, if anything, the monument has to do with the attack.

Orientation Wayside Exhibits

The park has no true orientation wayside exhibits. There are two situations where they might be useful. They could provide orientation at fort entrance areas and at sites in Old San Juan outside of park boundaries.

Fort Entrance Areas

The fort entrances and access points would benefit from some better form of orientation. The park already has various signs at the park entrances that offer a variety of information. In at least one case, the park has attached an unsightly sign to the base of a wayside exhibit. The attachment provides safety and resource management information. Clearly there is a need for orientation and information. Well-designed, upright orientation exhibits accompanied by a matching bulletin case should be considered. These would orient visitors to the fort experience and enable the park staff to provide changeable information in a presentable format.

Sites in Old San Juan

A very large percentage of the park's visitors are cruise ship passengers, but there is very little orientation or information for these visitors when they disembark from their ships. It might be possible, working with city partners, to provide orientation wayside exhibits at or near the cruise ship docks. These exhibits could provide basic information about the San Juan fortifications, and directions to the forts. It might also be beneficial to provide similar orientation exhibits at other sites in Old San Juan.

Interpretive Wayside Exhibits

Due to the nature of park visitation (many visitors guide themselves through the park), the park's limited staff, and the wealth of visible park features, wayside exhibits have an immensely valuable role to play at San Juan National NHS. Judging by the number of wayside exhibits presently in place, this role has clearly been recognized in the past. At San Juan NHS, the challenge is to update the wayside

exhibit interpretation to bring it up to standard and address current park interpretive themes.

The primary problems with the existing wayside exhibits are that 1) they are from a wide range of time periods and do not have a consistent appearance, 2) many contain interpretation that is not sufficiently specific to the scene that is being viewed, and 3) they do not necessarily adequately address the park's new themes and visitor experience goals.

Fort San Juan de la Cruz

Fort San Juan de la Cruz has one wayside exhibit. It provides site specific interpretation, but does not adequately address the story of the fort. Also, the park reports resource management problems on site, with visitors approaching and climbing onto the structure. Recent graffiti appears on the walls.

City Walls and Paseo del Morro

There are many opportunities for site-specific interpretation along the wall. A beautiful modern trail called the Paseo del Morro runs approximately one mile along the southern wall. This trail contains a series of nine wayside exhibits that are badly weathered. The replacement of these exhibits, both in terms of their physical condition and revising their interpretation to be more site-specific, should be part of the park's wayside exhibit development.

Outworks at San Cristóbal

The park must determine how they want to handle visitor access to the outworks. If they reopen the outer defenses to general visitation, wayside exhibits should be considered as a possible way to interpret the features there. The appropriateness

of wayside exhibits in the outworks will depend on how the park decides to manage the area.

Certainly wayside exhibits can effectively address the many visible features there, but if, for instance, the area is open by guided tours only, wayside exhibits would be unnecessary. Interpretation in the outworks might also be handled with a self-guided tour booklet.

Portable Wayside Exhibits

The park presently has several portable wayside exhibits located on the San Cristóbal plaza. These exhibits are mounted in bases that can be moved when necessary. This enables the staff to move them out of the way for special events. Generally these exhibits work well and their use should continue. The negative side is that they can easily be improperly positioned. Several of these exhibits were either in the wrong location or were oriented in the wrong direction. If portable wayside exhibits are going to be used, then park staff must be trained to know precisely where they are to be located and in which direction they should face. Someone should be assigned responsibility for assuring that they are properly placed.

Interpretive Wayside Exhibits Outside of Park Boundaries

There might be some situations where a few interpretive wayside exhibits could be developed through partnerships and placed at sites outside of park boundaries. The primary possible location would be along the walkway near the cruise ship docks. One or two exhibits interpreting the harbor and strategic location of San Juan could provide some interpretation about the park for visitors who might not actually visit the park, and could be a good will effort with city partners. Such exhibits

would also serve as a bit of advertisement for the park.

Wayside Exhibit Maintenance

Many of the park's existing wayside exhibits require maintenance. Panels should be replaced and bases should be repaired. Maintaining wayside exhibits should be a high priority. Many existing waysides can be upgraded fairly easily and inexpensively. Maintenance funds should be programmed for systematic, periodic wayside exhibit upkeep. For example, fiberglass panels typically should be replaced about every two years, and funds should be programmed accordingly through a cyclic maintenance program.

Website

The park has an extensive website; information is provided in both English and Spanish. The website provides information on park programs, policies, and explains how to register for guided programs and fee waivers. The website provides access to reports, research documents, and links to related organizations for trip planning.

Analysis:

The bilingual information provided is wonderful; this acknowledges both the heritage of the site and its culturally diverse users. However, the structure of the information provided in the translated Spanish-website does not parallel the English version completely. The current information provided is a translation of what is provided in the "Info-Zone" portion of the website only.

The detailed analysis that follows looked only at the English version of the San Juan "In-Depth" pages. The San Juan "In-Depth" pages provide

good, solid information in a user-friendly format. The vertical navigation links on the left hand side of the page are intuitive and allow for easy "surfing." The pages load quickly and do not require third party plug-ins. The design and navigation is simple and easy to understand, but should incorporate NPS graphic identity standards.

- The "Just For Kids" section contains very little content that would be of interest to children. For example, the "R.A.D. Program" page is geared toward parents and/or educators. The "Park Significance" page is written at an adult level. The "Ask the Historian" form could potentially be used by school children, but is not designed with kids in mind.
- The arrowhead graphic should be replaced by the most recent version. Check <http://www.graphics.nps.gov/arrowheads/default.htm> to download the new version.
- Dead links should be removed if content is not readily available. A list of current dead links includes:
 - Accessibility to the Forts (page under construction; note that the word "accessibility" is misspelled on the navigational button and page heading)
 - Special Events
 - Virtual Post Cards
 - Visitor Service (link is not dead, but forms are unavailable)
 - Fund Raising (navigational button is dead; note that "fundraising" should be one word)
 - Just For Kids/Wonders of the World
 - Just For Kids/Patrimonitos

Personal Services

While all staff at San Juan NHS work together to deliver a positive park visitor experience, it is the Interpretive Division that has the primary responsibility for providing the range of personal services to meet visitor interests and needs.

Servicewide Interpretive Program Standards

Effective interpretation is based on knowledge of the resource, the visitor, and use of appropriate techniques. When services are well-planned and executed this provides the greatest opportunity to connect with park visitors, communicate park values and through a positive visitor experience develop support for the park. Interpretive services and media provide for the following:

1. Visitors have a safe and enjoyable experience.
2. Visitors are given basic information and orientation; they are able to plan their park experience based on their desired length of stay.
3. Visitors discover why the park area is special and merits inclusion in the National Park Service.
4. Visitors have in-depth opportunities to learn about the natural, cultural, and resource-based recreational features of the park area. And
5. The interpretive program serves as a forum to explain/discuss current park issues (civic engagement).

Background

Due to the nature of park operations effective

communication with park visitors is intertwined in daily operations. Although the staff may see a differentiation of duties defined by operational responsibilities and position descriptions, the public does not. This is especially true at San Juan NHS where the first contact the public makes with park staff is at the entrance station when visitors pay their entrance fee to enter Forts San Cristóbal and El Morro. The current method of service delivery results in an experience where the visitor may not encounter a trained interpreter (park guide or park ranger) until they enter the historic plaza areas - 20 - 30 minutes into their park experience.

Fee Collection is managed as a separate operation by the park's Fee Program Manager. The Fee Program is staffed by the GS-II Manager, 2 GS -5 lead visitor use assistants, and 7 GS-4 visitor use assistants. Visitor Use Assistants collect park fees and as time permits, provide basic information and orientation; they are not trained in interpretation, or the history of the forts. Currently, there is at least one visitor use assistant at each entrance to dispense information to visitors as well as collect fees. The drive to collect fees and move visitors into the historic area directly impacts and limits current information and orientation services provided.

The park bookstore is positioned very close to the entrance station. The next staff member a visitor usually meets is a Cooperating Association employee. In addition to their sales responsibility, this employee may be asked detailed questions about the park, programs, or other key destination sites in Old San Juan.

Park maintenance staff and park rangers with law enforcement responsibilities also assist park visitors. The most basic of interpretive services provided in any park involves the provision of basic information and orientation - "where are the rest-rooms", "how old are the forts?", or "how do I get to...." This service frequently occurs while these staff members are performing their primary job responsibilities on the grounds or within the fortifications.

The Cultural Resources Division assists the interpretive staff in the development of new programs through assistance with research of the park's primary and secondary sources. In addition, if the Cultural Resource staff member's interest or expertise parallels a program need, they have sometimes taken the leadership role in program development, then trained the Interpretive staff. This occurred with the development of the very popular children's "Patrimonitos Program." The Cultural Resources Management Division is currently staffed by 1 GS-9 Cultural Resources Specialist, 1 GS-5 Archive Technician, 1 GS-5 Museum Technician, 4 GS-3 Museum Aides. This staff also plans and offers seminar series on a variety of topics that support the park's primary interpretive themes. These in-depth educational opportunities extend the park's interpretive program to a variety of museum professionals, partners, and interested community members.

The Interpretive Program and Staff

The Interpretive Division is comprised of year round: a GS -12 Chief of Interpretation 3 GS - 9 interpretive rangers, and 4 GS-5 park guides. Three GS-5 seasonal interpretive ranger positions are added to the staff during the busy

winter season. The Interpretive staff provides informal talks, scheduled programs, education programs for school groups, and guided tours by appointment. Program history: until 2005, park guides delivered eight programs daily. Two programs were offered in the morning at Forts San Cristóbal and El Morro - one in Spanish and English; the same tour schedule was repeated in the afternoon.

In 2005, the interpretive staff initiated a new program emphasis to expand park program offerings. During the past two years the staff has:

- experimented with offering evening programs to reach out to the local community;
- reached out to the local community to develop a Volunteer in Parks program; and
- initiated the first phase of the development of curriculum-based education programs (funded through the Eastern National donations account).

Analysis:

As the current program is structured, the park successfully delivers only one of the five Servicewide interpretive program standards (page 49): "visitors have a safe and enjoyable experience". Significant program re-design needs to occur in order to meet all five Servicewide interpretive program standards discussed earlier. At this writing, the interpretive staff is often strapped to provide programs and services needed, maintain skills, and perform collateral duties. The following analysis documents program deficiencies:

- Comments from the 1999 Visitor Study clearly indicate that although visitors are satisfied with their park visit - it is both safe and enjoyable,

they desire a more informative interpretive experience. Survey comments verified staff beliefs that they were not giving a sufficient number of programs daily. Hence, the change in the tour schedule in 2005. The 1999 Visitor Survey documented the need to provide more programs daily:

"What I least like about this visit was the sense that there was so much more to be learned that I wasn't getting."

"No-one giving a talk about the fort."

"Need walking tours. Guided tours with information about life".

"I think guided tours should run more often. Every hour. I wouldn't mind paying more admission charges."

"It seemed to be a waste in that after paying the reasonable fee, we were not aware of the significance of the areas we visited. I'm sure the history is very interesting. How would we know what is there unless a guide tells you? Also, nobody suggested us seeing a film, or where it was to see. Such a waste of history".

"Ask people when they come through the entrance if they would like a guided tour "ie. 15-min. or whatever you are offering. Because there was more to see than we were aware of."

"The fort was awesome - such historic value and a step back in time. We had no contact with fort personnel (other than to pay admission)."

- Maintaining a relaxed and friendly visitor environment is extremely difficult when the staff is pressed to make ticket sales and move people from the park entrance into the fort as quickly as possible. Informational or interpretive conversations are frequently limited to the most basic of answers due to the volume of traffic and the need to transact the entrance fee.

The 1999 Park Survey visitor comments mirror this dynamic: *"There was a lack of employees, and those that were there were rude."* Contrasted with: *"I was extremely pleased at how courteous the staff was and how well kept the fort is. I will recommend friends see it if they are in San Juan."*

- Due to current staffing and visitation, the Chief of Interpretation frequently spends more than 50% of a work week performing critical tasks at lower grade levels to keep the interpretive program running.
 1. GS-9 interpretive rangers are in the field doing very routine interpretive tasks, instead of coordinating park program areas and developing new products (programs, site bulletins, temporary exhibits, rack cards). Because the Chief is unable to delegate many assignments, the Chief spends a considerable amount of time planning and implementing new products and programs.
 2. While a significant portion of the Chief's time is spent training/supervising the front line staff, the time available is insufficient in relationship to the basic competency training required.
 3. During heavy site visitation, the Chief works in the field providing talks and basic front-line

visitor services.

These operational factors affect the entire program and severely limit long range planning and management, the ability to coordinate and develop new programs and projects, the ability to perform critical supervisory mentoring, higher level skills training, and staff development. For the Chief of Interpretation, the pressure to work over time is unrelenting. This is unhealthy and needs to be addressed.

- When personal services are reduced, the interpretive staff relies heavily on park interpretive media to tell the park story. In-house media projects remain undone due to existing staffing levels:
 - The park-produced self-guiding brochures need revision.
 - There are temporary exhibits that were produced in-house requiring new labels.
 - The interpretive staff assists the Cultural Resource staff in the exterior cleaning of exhibit cases - this occurs only sporadically.
 - Portable wayside exhibits are moved out of position (inadvertently) however, the interpretive staff is not in the plaza to relocate. This causes tremendous visitor confusion.
- This LRIP documents a tremendous need to upgrade interpretive media. While, funding is available to pay for the production of these materials, the requisite staff-time to support this endeavor is not. Current staffing levels will affect the initiation of key projects and their timely completion.
- Staff time to research and plan new programs is limited.
- Covering park operations and allowing for unplanned illnesses, covering staff lieu days and scheduled vacations, and staff attendance at mandatory training also results in the reduction of interpretive programming services.
- It is very difficult for the GS-9 Volunteer-in-Parks Coordinator to spend time off-site to recruit for much needed volunteers, when they are so tied to the daily delivery of the interpretive program.
- Sometimes the need to provide basic interpretive services competes with the need to deliver more in-depth educational programming for local schools groups, summer camps, and guided tours by appointment. On some days, if the park staff schedules a guided tour by appointment, the uniformed administrative staff is asked to back up the operation by providing roving interpretation. This in turn impacts the performance of administrative functions. Or, if administrative staff members are not available, then public contact occurs only at the entrance station when visitors pay the entrance fee or visit the bookstore.
- Towards the end of the school year there are, on occasion, as many as thirty schools, per day, which arrive unannounced. The staff feels that each of these groups needs to receive at least a safety talk and, if possible a general orientation. This is not always possible.
- The park has received funding from Eastern National to begin developing curriculum based education programs. The staff has been unable to carve out the time from daily operations to connect with the appropriate educational school

officials, to initiate this exciting opportunity.

- At present, the interpretive staff lacks sufficient personnel to explore summer programming possibilities for local children; and, lacks the time to consult with the Commonwealth's National Park Company regarding how they deal with similar program challenges.

Partnerships

Background

Partnerships at San Juan NHS have grown over the last three years, now that the tension between the Federal Government and the Commonwealth has eased over the transfer of the island of Vieques, previously a US bombing range. Prior to this situation, the strongest partnerships were with the City of San Juan. Recently, more Commonwealth offices, institutions, and private companies have demonstrated a willingness to work with the park on mutually beneficial projects such as: (1) public performances at the fortifications, (2) National Park Service preservation training for Commonwealth employees and university students, and (3) class projects (both in the class room and at the park) with the students from the University of Puerto Rico and the Polytechnic University of Puerto Rico. While these types of partnerships do not directly provide increased visitor services they extend the education and preservation mission of the Park. And, in the long run, these activities may foster an interest in Volunteer in Parks program participation or future employment in the park.

The park participates in several other noteworthy

partnership projects:

- The University of Pennsylvania has a longstanding partnership with the park through a variety of projects. The most recent endeavor with the University also involves the San Juan, Puerto Rico Archdiocese. The park is providing restoration advice at San Jose Church through on site preservation training.
- A recent increase in feral cat populations along the Paseo del Morro started a working relationship with the US Department of Agriculture and a private animal rights group called Save a Gato. Instead of contracting direct reductions with USDA, the park enlisted Save a Gato to control the feral cat populations using a Capture, Spay, and Release program. The goal has been to reduce the animal population along the trail in order to make visiting the trail a more rewarding experience.
- Each summer 10-12 Youth Conservation Corps enrollees support the park through a variety of day labor projects. While the role remains primarily preservation maintenance, the park staff teams up to provide environmental and preservation messages. It is no coincidence that youth from the surrounding neighborhoods are enrolled and then sent to remove the graffiti their friends put on the historic walls. The hope is that the graffiti will decline as an appreciation for these fortifications is gained.

Volunteer-in-Parks Program

Recently a group of amateur historians from the US mainland formed a reenactment group of Spanish soldiers. They have provided some short

programs but their main goal this past year has been recruitment and training in order to expand their numbers. To date about 16 volunteers have participated in weekend activities at the forts. The park is trying to help this group develop, so that one day, weekend reenactments will help bring to life the daily Spanish soldier experience.

Volunteerism continues to be at an unacceptable level. As previously mentioned, political tensions between the Federal Government and the citizens of Puerto Rico had prevented growth. But recently park sponsored events such as Beach Clean Ups, Kite Festivals, Arts and Crafts Festivals, and the National Public Lands Day events have brought together many organized groups to support the park. Annually a small Elder Hostel group commits one week of volunteer work. So while group volunteering is rising, individual volunteerism remains almost non-existent. A few individual volunteers have contributed time for education curriculum writing, museum preservation work, and archive work, but day to day support for visitor services does not exist but remains a park goal.

Eastern National

The park's cooperating association is Eastern National, a not-for-profit association that operates the park bookstores. They sell theme related educational materials at a reasonable cost to visitors. A portion of the Association's revenue is donated back to the park each year to support the interpretive program. Eastern National also supports the park with the production of publications, special programs, and events that go beyond the limits of NPS funding.

RECOMMENDATIONS

Recommendations

Interpretive planning analyzes all needs and recommends a wide array of interpretive services, facilities, programs, and opportunities for partnerships to communicate in the most efficient and effective way the park's purpose, significance, and values.

The following description of programs and media proposals is designed to realize the visions, objectives, themes, and visitor experiences previously described for San Juan National Historic Site (NHS), and address noted program deficiencies. The discussion of each program or media proposal identifies its purpose, special considerations, and sometimes the suggested themes or methods of presentation. These recommendations will guide future development of personal services and interpretive media design over the next decade.

During the development of the Long-Range Interpretive Plan seven major areas were consistently identified as the areas that required the most significant emphasis to interpret park themes and achieve park management goals for interpretation and visitor services. All recommendations reflect and support this program emphasis. These areas include:

1. Integrate wayfinding and safety messages in all interpretive services and media. An emphasis on visitor safety during initial visitor contacts is a critical planning need considering that the park receives many tort claims.

2. Continue to provide bilingual (English and Spanish) interpretive services and media. For ease of visitor assistance across the printed media, a color designation will indicate the language; and use of English will precede the use of Spanish in the presentation of park messages. (Reprint orders of the NPS produced unigrid brochure indicate by visitor choice, that visitor use of the English brochure outnumbers the use of the Spanish brochure.)
3. Provide an increased amount of in-depth interpretive educational opportunities through an appropriate mix of personal services and interpretive media, in addition to basic information and orientation services; and, seek opportunities to provide expanded interpretation through new theme specific fee programs, products, and activities.
4. Develop the same level of programming excellence for local year-round-residents that is given to national and international visitors.
5. Expand visitor understanding that fort structures and features (San Cristóbal, El Morro, San Juan de la Cruz, and the city walls) are individual components of a major fortification system.
6. Reinforce the importance of Fort San Juan de la Cruz through park management policies and interpretation. This includes implementing interpretation and preservation needs on-site, and, the inclusion of the story of this fort in the design of all interpretive programming at Forts San Cristóbal and El Morro.

7. Recognize and support the development of key partnerships to support the delivery of the interpretive program and the park's stewardship responsibilities.

Common-to-All Interpretation Principles

The following principles will apply to all interpretation at San Juan NHS:

- All interpretation will address physical and programmatic accessibility.
- Where possible, interpretation will use objects and documented personal examples to bring the story alive for visitors.
- Where possible, the park will partner with neighboring institutions to develop programs, media, share research, etc.
- The park will implement recommendations coming from the National Park Service Identity Project as signage and interpretive media are upgraded.
- Interpretation will include the most current research and incorporate examples and perspectives from diverse points of view.
- Where possible, "virtual visitors" will have opportunities to view key park vistas and access to new research, studies, management plans, and historical information.
- Exhibition of furnishings and moveable collections will not be at the expense of the forts.

Preservation will be an integrated effort between the two cultural resources. An integrated and practical approach with park/collection specific environmental guidelines will be adhered to at all times. The park curator/cultural resource management specialist will be included in all aspects of exhibit planning and implementation.

Achievement of all program goals is funding contingent. This Long Range Interpretive Plan recommends an increase in staffing to deliver the basic interpretive services expected by the public; and, to support the level of improved interpretive services and interpretive media projects worthy of this national park area and World Heritage Site. This "Recommendations" section is organized into five major areas: Pre-visit, Arrival Experience, Personal Services, Interpretive Media, and Partnerships.

Pre-Visit

- Continue to provide information about San Juan NHS by telephone, mail, and the Internet; incorporate information on facility and program accessibility.
- Work with community leaders to collectively market the park as a key area attraction, and improve signs outside the park boundary to assist out-of town visitors in finding the park from a variety of approaches.

Website

- Check website frequently and update when appropriate. Post any new interpretive/educational materials developed. Use the same format and information on the English/Spanish pages. Incorporate information on facility and program

accessibility.

- Utilize park website to promote advanced reservations for guided tours by appointment. Put recommended reservation form on website (See section "Guided tours by Appointment").
- Link park website to the Commonwealth of Puerto Rico's Tourism Company, the National Park Company of Puerto Rico, the U. S. Forest Service "El Yunque" Caribbean National Forest, and other park partner affiliated organizations in order to assist visitors with future trip planning.
- Work with Eastern National to make park specific items available for purchase on line.
- Develop a bibliography link for researchers. The database will include park documents, and any park archival material that is in the park curatorial or library collection.

Arrival Experience

To ease congestion at the Entrance Stations:

Short-term:

- Establish one park entrance fee. This will reinforce the concept of a fortification system, and simplify explanation of park fees at the entrance.
- When lines become unusually long at park entrances, use the PA system or other electronic media to deliver bilingual pre-taped messages played at timed intervals. These messages will provide basic information about fee program and other pertinent information.

- Continue to experiment with facility placement and use of personnel to ease congestion.
- Post accessibility information and options for experiencing the facilities and programs.

Long-term:

- Pursue the development of a park wayside proposal/plan. Wayside planning needs include:
 - The construction of information panels and bulletin boards (waysides) outside park entrances in order to pull basic information, orientation, and trip planning information ("what to do based on visiting time available") outside the facility. Although some information is currently posted, it is impossible to view when the facility is crowded. This information needs to be posted in the facility and repeated outside the entrance on orientation panels. Outdoor bulletin boards will help visitors waiting to enter the forts decide how to plan their stay; and, will provide information and other site-seeing options for visitors that arrive when the forts are closed.
- Consult with the Commonwealth, Municipal Government of Old San Juan, and other entities in order to include information, orientation, and interpretive panels outside the park boundary to assist visitors finding the park.
- Evaluate if the recommended numbered locator signs (see publications recommendations section) that will correspond to the park produced self-guiding fort tour brochures should mirror the style and design of new waysides. And, if the upcoming revision of the fort self-

guiding brochures coincides with the way-side/sign planning and production, then incorporate the numbered locator signs in the planning/production of the sign projects.

- During the upcoming General Management Planning process, explore the feasibility of constructing or acquiring buildings near the entrance of San Cristóbal and El Morro in order to move basic visitor services out of the forts where they serve to bottleneck the entrance. (This includes restrooms, bookstore, ticket purchasing, and basic orientation services - such as the AV orientation program). This will alleviate long lines, enable better accommodation for visitors with special needs, and facilitate a more interpretive experience at the forts.

Personal Services

General

- Develop a pro-active personal services response to fix broken or removed media program elements by:
 1. Creating an "opening procedures checklist" that indicates what staff members need to check before opening the site daily. This list should include the positioning of the portable wayside exhibits and identify specific items to check (audiovisual exhibit elements, security, and environmental controls etc.), to be sure that all are functioning properly. Use checklist as a training tool.
 2. When media program elements are removed or

broken, immediately create a temporary, computer-generated sign apologizing for the disrepair or removal of the object. Then make arrangements to repair or remove the problem. This action helps to establish with the public an environment of "care"; it sets the stage for future staff/visitor conversations about other visitor experiences to enjoy; and it can also facilitate discussions regarding upcoming projects (new exhibits), or future needs (backlog of funding).

Park Guide and Visitor Use Assistant (VUA) Management

- Integrate the training, delivery and supervision of the interpretive and fee programs under the Chief of Interpretation. The Chief of Interpretation will supervise the Fee Program Manager; together they will work to provide improved customer service and meet the operational requirements of each program.
- Redesign the Entrance Station Program and Interpretive Program at El Morro and San Cristóbal, in order to improve basic orientation and interpretive services by:
 - (1) increasing the number of scheduled interpretive talks daily; and
 - (2) providing Visitor Use Assistants (VUAs) more extensive interpretive training to facilitate their expanded role in the delivery of the interpretive program.

This recommended approach targets the consistently stated visitor request (in the 1999 Visitor Survey) for more contact with the park staff to learn basic park history and discover what they can do within their site-seeing time constraints; 89% surveyed indicated they had time for a 5 - 15 minute talk.

- Explore the idea of providing continuous station interpretation throughout the day. Utilize three stations in the fortifications to deliver park themes and messages. Have a "Tool Box" of props and other helpful items for each station. Rotate staff between stations and the entrance station. Appendix F outlines one possible station interpretation program approach.
- Institutionalize the practice piloted in 2005 where VUAs were trained to give short orientation talks. Expand VUA duties to include providing more formal, but brief, interpretive talks/station interpretation as part of their primary duties. (Prior to 2005, while park guides were trained to completely back-up the fee program, the VUAs were trained only to collect fees and provide basic information and orientation.)

Fee collection areas are co-located in the main visitor use areas of the forts where interpretive and visitor services are offered. Because of this geographic proximity, VUAs, guides and interpreters work together very closely and need to be able to work more interchangeably. This recommendation seeks to have the fee program more completely back-up the interpretive program. Hence, all staff (VUAs and park guides) would receive training in fee collection, resource knowledge, interpretive skills (that incorporate and encourage Interpretive Development Program (IDP) principles) and continuous customer service training, refreshers and follow up. Following the receipt of subject matter and IDP training, the VUAs would be able to work more interchangeably with the interpretive staff. Consistency in service to the public would be maintained during employee break times, when

training or leave is taken, or during unexpected staff shortages.

Interpretive Program Scope and Services

- The Chief of Interpretation and Superintendent will work with Regional classification specialists to successfully design and implement a staffing plan to support the delivery of the interpretive program; and, seek the requisite monies to fund these positions. Considering seasonal visitor use patterns, it is reasonable to experiment with use of term positions. This will give the park operational flexibility to experiment with the program over a four-year period, while at the same time, provide benefits to long-term employees implementing the new program.
- Park guides will provide more in-depth interpretive opportunities for the general visitor including guided programs of a pre-determined length.
- Park guides will deliver curriculum based education programs for school groups, special interest groups requesting guided tours by appointment, and assist with the delivery of special events.
- Park rangers will back up the general interpretive program by delivering basic programs when needed. Rangers will research, plan, and conduct higher level guided programs and talks that address more complex topics and issues.
- Full performance GS-9 park rangers will take program management responsibility for park programs, serving as the designated park coordinator. Park programs include but are not limited

to: the planning and development of the curriculum-based education program, the volunteer program and related partner programs, media projects, special events, and programmatic accessibility.

Training

- Develop a "core" training program for visitor use assistants, park guides, and park rangers to address fee and interpretive program standards, customer service, IDP modules, and site specific training elements.
- If a station interpretation program is initiated, conduct training and develop a handout/training guide for the three stations where recommended interpretive talks could be provided. The training guide should outline key information to be provided by staff. (See Appendix F.)
- Provide customer service and basic interpretive training (IDP module 101) for all public contact positions. Anyone on the park staff identified with public contact responsibilities should receive this training. Identify for each work group (Eastern National, volunteers, interns, park maintenance and administrative staff members) site-specific subject matter and customer service training needs, and the length of training time required. Basic subjects should include: fort history, most asked questions, emergency procedures, and identify who is the responsible staff person to handle topics beyond the scope of the trainee's job responsibility, so that the public is provided with consistent, courteous and informed service.
- Provide training sessions or seminars led by mili-

tary historians to build knowledge and expertise of permanent interpretive staff on military tactics and major battles fought at the forts, in order to improve the guided tours requested by military groups.

Park staff could plan future training seminars and have them sponsored by the cooperating association. These future seminars could facilitate several park objectives including: (1) providing in-depth staff training courses; (2) offering site-specific in-depth interpretation/education program opportunities for the general public or with staff members from other institutions; and (3) the creation of a cooperating association fundraising activity that could channel funds back in to the overall interpretive program.

Operations

Accessibility

- Reach out to visitors with special needs and advertise what they can do at the park. Provide this information in printed media, signage and on the website.
- Identify a staff member to serve as the "program accessibility coordinator".
- During the development of the wayside exhibit proposal/plan, explore the technical possibility of adding to the park orientation panels a direct connect telephone line to the entrance desk so that visitors with special needs can request assistance. (Similar to what one sees in large airports, where a visitor can pick up a phone and connect directly to the hotel where they're staying to

make final transportation arrangements.). The proposed panels could be placed at sidewalk approaches to the facilities before the grade gets really steep. Out-of-sight golf carts could then be dispatched from a nearby location.

- Develop a "special needs" advisory group to assist with developing alternatives to meet accessibility requirements. Include a maintenance supervisor in this work group. There may be several accessibility improvements to the forts that could be pursued once appropriate planning and receipt of funding occurred.

Cruise Ship Visitors

- Improve orientation services provided to cruise ship visitors. They need to know how to get to the forts from the pier and what that distance is. The planning team identified several ways to address this:
 1. The Commonwealth of Puerto Rico's Tourism Company provides brochures in Spanish, English, French, and German. Perhaps there is something that could be worked out collaboratively in the future. The Tourism Company has the Welcome to Puerto Rico Program. They employ part-time students who welcome all cruise passengers at the piers, give general information, brochures and directions.
 2. Seek funding to expand the park hours of operation during the busy seasons.
 3. Consider hiring through contracted services extra guides on the days it is known when ships will arrive in port.
 4. Work with the cruise ship industry and the tour bus industry to develop a method to distribute tours between El Morro and San

Cristóbal to limit overcrowding.

5. Provide park-sponsored training for local park permitted tour guides, in order to improve the quality and accuracy of information given by non-NPS guides.
6. Provide an informational kiosk and interpretive waysides at the docks to assist pedestrian visitors in finding the forts; and/or provide interpretation about the forts for visitors unable to visit the forts due to tight travel itineraries.
7. Work with the Commonwealth and area museum partners to develop a wayfinding plan for key tourism destinations in Old San Juan.
8. Pursue putting rangers on cruise ships traveling between San Juan National Historic Site and Virgin Islands National Park in order to provide a more in depth interpretive experience for visitors traveling between these park destinations.

Sporadic,unscheduled, heavy visitation

- Work to distribute groups between both forts and/or re-distribute park personnel when necessary.
- Develop a tour reservation program by Internet, with a requirement for advance group tour notification.
- Train park guides to deliver special tours.
- Direct unscheduled groups to open spaces within the park.
- Consider all hiring options: seasonal, temporary, term, permanent; and explore use of contracts to

tap in to support from other local tour companies when more help is needed.

- Reschedule staff tour of duty and extend fort hours until 6 p.m. Ask for budget increase to keep the forts open later in the day during peak periods.
- Provide outdoor orientation/wayfinding and trip planning options on wayside bulletin boards at the fort entrances. Outdoor bulletin boards will help visitors waiting to enter the forts decide how to plan their stay; and will provide information/other site-seeing options for visitors that arrive when the forts are closed.
- Network with Casa Blanca and other area museums to problem solve overcrowding.

Guided Tours by Appointment

- Identify a specific staff member to handle all guided tours by appointment.
- Develop a worksheet that identifies all park information needs for use during the initial reservation contact. Include verbal prompts/any park information that the group should be aware of ahead of time (rules, fees, etc). Send a duplicate copy of reservation form to the group making the reservation. This follow-up will verify what was recorded during the request, and documents the tour/services/in-park support that will be provided (special assistance for mobility impaired visitors, security details, etc.).
- Utilize park website to promote advanced reservations for guided tours by appointment. Put recommended reservation form on website.

- For groups with security requirements work with identified management staff and/or law enforcement staff.

Education Program

- Develop a Kindergarten - 12th grade curriculum-based education program for school groups.
- Identify a GS-9 ranger position that will serve as the "education program coordinator" to undertake program planning and implementation.
- Develop an education plan that outlines a strategy for implementation over a 5-year period. The plan must compliment this LRIP, and be developed in light of all park-provided programs, services, and staffing levels. The future education program should identify/deliver the same information and program experience for target grade levels. The on-site experience would change to mirror developmental and curriculum changes as student's progress through school. Pre-visit material should be developed and sent to the schools before any visit and should also be posted on the park's website. Teachers, park staff and/or volunteers could lead future planned educational experiences.
 1. Update, and modify the education plan annually based on achievements, staffing, and other parkwide initiatives.
 2. Start with elementary and intermediate students which are the age groups coming most frequently to the park.
- Utilize the Education Program to provide opportunities for advanced thematic programs. Work with Cultural Resources Management Division and area Universities to develop topical scholar's

roundtables, forums, and seminar series in support of new interpretive themes. If the Cooperating Association cosponsors these programs, it may also be a source of potential fundraising. This type of program can also serve the dual role of providing staff training opportunities and in-depth public programming.

Outreach to the Local Community

- Develop a publication that addresses nearby alternate locations for weddings and provide this information on the park website under a section called "most asked questions".
- Recruit for park Volunteer-In-Parks Program (See partnerships section.).
- Expand evening programs and special events to attract local residents to the park.
- Provide special interpretive activities that appeal to local audiences on fee-free days.
- Develop a changing special events program such as a concert series.
- Develop a media outreach program for news and radio bites. The park has a tremendous resource asset with the "military archives". Link the community of today with their heritage through genealogy - the placement of Spanish troop units all over the island during the Spanish Empire period.
 1. Get involved with the Commonwealth's cable channel.
 2. Work to develop exposure on TV about the "good things" being done in a neutral, non-political manner.

Explore hiring a professional in the media to conduct park public affairs work, which is what the Forest Service does at El Yunque. (The USFS pays a fee for services delivered, a contracted service). Or, establish a public affairs officer position. The planning team acknowledged that locally, things have changed since the September 11, 2001 twin towers tragedy in New York City. People are looking for community activities and interconnectedness. The park has the opportunity to build on this sentiment.

- Use the positive image of the NPS ranger to the park advantage.
- Teach / instruct / and work with higher level educational institutions. Whenever staff works with university students promote career opportunities.
- Collaborate with other tourism professionals.
- Coordinate with municipalities. Provide park/resource related job training that corresponds with other jobs and resources within the community.

Outreach to Local Youth

- Currently the park has a Youth Conservation Corps Program (a work/education program) that specifically targets teenagers. Explore the possibility of program expansion, or develop new target programs for teenagers through the Volunteer In Parks Program, or general interpretive program. Many college bound students seek recommendations or extra curricula activities for entrance to the school of their choice.
- Research and discuss the program history of cur-

rent park policy: that "all children under the age of 18 must be accompanied by an adult". This is not a requirement at other parks.

- Work with the Commonwealth of Puerto Rico's National Park Company to jointly problem-solve how to handle summer camp program requests that drop in without a reservation. They are having the same type of issues at Cavernas del Rio Camuy Park. Use the teacher seminar workshop approach with recreation camp providers.

Facilities

This section of the document will address site specific recommendations in the following order for: Fort San Juan de la Cruz, the San Cristóbal Outworks, the City Walls, and the Paseo del Morro. Recommendations for Forts El Morro and San Cristóbal are outlined in the next section of the document titled "Interpretive Media".

San Juan de la Cruz

- Seek funding for a Historic Structures Report and Cultural Landscape Report
- Develop and install directional signs to the site. An entrance sign will help to establish park identity - that Fort San Juan de la Cruz is a unit of San Juan NHS.
- Develop new waysides that address interpretive themes.
- Construct an attractive fence (barrier) around the fortification (behind the waysides) to reinforce preservation message.

- Include a discussion of the role of San Juan de la Cruz in the fortification system in all programs and media developed at San Cristóbal, El Morro, and along the city walls where San Juan de la Cruz is visible.
- Partner with the Commonwealth's National Park Company to protect this area and include them in the wayside planning process. Discuss expansion of waysides to interpret other historic features tied to the fortifications' history (leprosy colony, etc.) on Commonwealth land.
- Develop and advertise an experimental "by reservation only" interpretive program to build NPS identity, promote resource values, and connect with visitors at this site. Try a variety of programs with different target audiences in mind - children, families, etc.
- If water taxi-service develops at nearby docks, evaluate sign and visitor service needs during planning process.

San Cristóbal Outworks

If the area remains closed to public access:

- Develop a site specific wayside to interpret this area from a location at the top of Fort San Cristóbal where you can view the Outworks.
- Include a discussion of the role of the Outworks in the fortification system in all programs and media developed.
- Provide a model with interpretation of the defense-in-depth system within the proposed new exhibits for San Cristóbal.

- Develop a virtual tour to be included on the park website and in an informational kiosk placed in a climate controlled environment in San Cristóbal.
- Develop and advertise a guided tour by appointment.

If the area is re-opened:

- Develop a site plan for visitor use that incorporates recommendations from the Cultural Landscape Report. Identify visitor use and supporting personal services, interpretive media and facilities required. Options may include, but are not limited to:
 1. personal services: guided and self-guided walks, and cultural events
 2. props (artillery cut-outs or replicas)
 3. a site specific wayside proposal/plan
 4. a self-guiding brochure with numbered items corresponding to stations in the Outworks
 5. visitor support facilities such as benches and water fountains.
 6. a designated pathway to keep visitors on a specific trail to avoid dangerous areas
- Accessibility could be improved through grade improvements, new trails, and binoculars.
- It was noted by the planning team that there is potential for visitor access to the "Paseo Norte" from this location.

Other alternatives:

- The San Carlos Battery is the closest Outworks structure to Fort San Cristóbal. Pursue funding and partnerships to open the San Carlos Battery. This battery could serve as the focal point to view the outworks. San Carlos provides a view

of resources, i.e. the dry moat and La Princesa. San Carlos could serve as an introduction to the outworks as a whole; and, perhaps a first step in a preservation/public access plan to re-open the Outworks.

City Walls

- Create a map and guide that identifies individual features and ties them into the whole fortification system. Post map and guide on the park website, then develop a corresponding virtual tour.
- Include this area in the development of the Wayside Exhibit Proposal. Waysides between the two forts will provide an opportunity to address the construction of the walls which is not interpreted on site in any detail. Other wayside topics that should be addressed from this vantage point (looking out towards the ocean from the walls) include: where is Spain (east/west how many ocean miles), and where are other key Spanish Empire strongholds located?
- Identify in new programs and media developed where the other gates were located.
- Place sighting tubes at El Morro and San Cristóbal to view walls and bastions.

Paseo del Morro

Short-term:

- Promote this trail as a visitor opportunity in all park produced interpretive media.
- Contact "Que Pasa Magazine" and request inclusion of the trail in their promotion of the walking

tour of Old San Juan.

- Improve regulatory signs.

Long-term:

- Develop and install directional signs, they are nonexistent and needed. And, sign how to get from the Paseo to El Morro
- Humidity has adversely affected the wayside exhibits; replace panels.
- During Wayside Exhibit Proposal phase, incorporate the following needs:
 - New panels will address the interpretive themes through the specific views and features observed from the trail.
 - More information is needed on wall construction and architecture.
 - The walls should be interpreted to show where you are in relation to the fortification system.
 - Provide orientation to the rest of the fortifications.
 - Promote the Paseo del Morro as a visitor opportunity in all orientation/wayfinding panels to be developed.

Proposed Paseo del Morro Trail Extension

If an extension to the trail is developed from El Morro to San Cristóbal:

- Develop a sign plan for directional and regulatory signs.
- Request a Wayside Proposal for the trail extension.
- Include in the proposal for the future transit sys-

tem, an alternative that includes interpretation while in transit - delivered either through personal services or an audio tour program.

Interpretive Media

Audiovisual

Short-term:

- Retrofit the 12-minute AV film with open captioning for the hearing impaired.
- Place a computer-produced "out of order" sign (to maintain a professional appearance) on the electronic map, when features aren't working. Apologize for the inconvenience and indicate repair of media is underway.
- Repair all electronic connections on the electronic map "The Explorers" with marine grade equipment.
- Update all PMIS audiovisual requests.

Long-term:

Audio Tour

- Develop a well-produced audio tour. Several factors-including the size of the park, the dual-language requirements and the scarcity of audiovisual exhibits within the forts-present interpretive challenges that could be overcome with the help of an audio tour. Such a product could provide practical/logistical information, dramatic reenactments, oral history interviews, music, sound effects and more. Similar tours have proven very popular elsewhere in the National Park system,

most notably at Alcatraz Island. Ideally, the audio tour should be produced in conjunction with the new exhibits being created for the site, in order to assure seamless integration between the various media, consistent messaging and complementary storyline development. The future tour should also be available as a take-home sales item/souvenir available at the park bookstore.

During 2004, the superintendent initiated discussions with the Puerto Rican Tourism Company to add information about the park to their existing audio tour. If this proposed product is created and successful, it might later serve as a preliminary first step toward developing a larger, more comprehensive product later on.

During the developmental phase of a park specific audio tour program project, the park should analyze its international visitation figures to determine if other language translations should be developed. And explore partnering opportunities with the Commonwealth's Tourism Company and the cruise lines that originate in Europe.

New Interpretive Video

- Develop a new interpretive video. The park has submitted a PMIS request to replace the existing visitor orientation video with a new interpretive video to be shown at both forts. This should be a high priority. A well-done interpretive video can effectively illustrate the grand sweep of history at San Juan and help visitors form emotional connections to the site. New technologies such as high-definition video, 3D computer animation and multi-channel surround sound have led to new interpretive possibilities and ever more

immersive theater experiences. Interpretive videos are also popular with visitors, ranking third (behind tours and park brochures) in a recent NPS Social Science survey of interpretive media. And while good interpretive videos are not inexpensive, they provide a consistent message to large numbers of visitors with little or no staffing required. For the cost estimate, factor in:

1. the cruise ship promotional video, and
2. the re-purposing of this shorter video for use on the park website. (See "Cruise Ship/Hotel Promotional Video" description below in order to determine the full cost-estimate requirement.)

If it is determined (at a later time) that in addition to the interpretive orientation film, a more comprehensive and lengthy educational film is needed for other educational programming needs, it will be important to update the overall video project cost estimate. It is critical that the broadest filming requirements (project scope) are identified before the project is funded to insure that the park receives all desired interpretive media products outlined above. (During LRIP workshop discussions, the planning team agreed that at a future date, when the park's Education Program is launched, a more comprehensive educational film may be needed to support educational program goals and a more in-depth experience.)

Cruise Ship/Hotel Promotional Video

- Develop a short promotional video geared toward cruise ship passengers and local hotel guests. This should boost visitation at the forts and increase awareness of the park and its history. The promotional video could be made relatively cheaply from footage acquired for the interpretive video. The emphasis, though, would

be informative rather than interpretive (i.e. how to get there, what to see and do, how much time to allocate for your visit, etc.). This video could also be posted as a streaming element on the park's website.

Theater Upgrades

- Upgrade the AV equipment in both theatres when the new interpretive video is produced. While some existing equipment might be integrated into the new setup, the park should purchase high-definition playback and projection equipment with multichannel surround-sound. By the time a new movie is completed (approximately two years from inception), the park will likely need to replace some of its AV equipment anyway. High definition players and projectors will be more common and less expensive by then. The theaters will also need to be outfitted with Section 508-compliant accessibility equipment, including caption boards and audio description devices. Multiple language options should also be addressed. HFC can provide a cost estimate for equipment and installation.

Audiovisual: Exhibit Elements

Interactive Map

- Create an interactive exhibit with a computer-generated map that shows the entire fortification system and demonstrates how it evolved over time. Using GIS data and 3D graphics software, a computer animator could recreate the fortification system one layer at a time, from 16th century to the present. Visitors would access this information via an interactive kiosk that would allow them to view the different layers and zoom in to various locations on the map. A large-screen

monitor installed above the kiosk would allow everyone in the room to share the experience. This setup could be installed at El Morro and San Cristóbal, and the graphic elements re-purposed for use in the interpretive video and/or website. This item can be a stand-alone project or incorporated in to a new exhibit plan.

"Voices of Fort Brooke" Multimedia Conversion

- Convert the "Voices of Fort Brooke" video into an interactive format. The interviews are interesting and historically valuable, but the video is too long for casual viewing, and the linear format is inappropriate for an exhibit-type setting. This presentation should be converted to an interactive format, where the viewer can select specific clips by subject matter or other criteria. The viewer could also select alternate languages, subtitles or captions. The revised presentation could be installed in an exhibit kiosk and also made available as a CD-ROM or DVD. (Note: during 2005, this exhibit element was removed from the San Cristóbal Visitor Center in order to create more space and reduce visitor crowding and congestion. The "Voices of Fort Brooke" addresses an important aspect of park history (Themes 1 - 3) and could easily be upgraded and utilized in any new exhibits developed.)

Cannon-firing Demonstration

- Provide English sub-titles to the cannon firing demonstration video. This exhibit video at San Cristóbal is currently available only in Spanish. If the park intends to continue using this video, English-language subtitles should be provided. Subtitles would also satisfy the Section 508 captioning requirements. Update: project complet-

ed, captions in English and Spanish provided in January 2006.

Soundscapes

- Add soundscapes at El Morro and San Cristóbal. This technique could help transport visitors to another place and time. Military calls, church bell chimes, marching footsteps and other sound effects played at appropriate times of day could create a subtle ambience in plazas and open areas. Other site-specific sounds could be used effectively in areas such as barracks, dungeons and tunnels.

Exhibits

Short-term:

- Create temporary signs, including: "out of order" signs for problem exhibits, and "object removal signs" for missing artifact exhibit elements. Create "historical update" exhibit signs when needed. For example: if the exhibit is in relatively good condition, but new information changes interpretation, explain this on an attractive sign placed in or near the exhibit.
- Replace park-produced temporary signs when they begin to show visible signs of wear. And, replace any unreadable exhibit labels. For ease of readability, make sure lettering is uniform within an exhibit.
- Remove worn exhibits if they are past their useful life.

Long-term:

- Update the PMIS exhibit replacement project request. Request funding for an exhibit propos-

al, an exhibit plan, and an exhibit production package sequenced over the next 10 years. Use for cost estimating purposes the total square footage of the current number of casemates in use at El Morro and San Cristóbal, (18 casemates at El Morro and seventeen at San Cristóbal). The estimate should also include the square footage in use for exhibits in the Visitor Center (building 213). **Note: the cost-estimate must be updated yearly to keep up with escalating supplies and materials costs. Call HFC for interpretive media estimates.**

- The planning team does not recommend expansion of the exhibits into more casements. More is not better. What is produced should be high quality, low maintenance, and within the park budget to produce and maintain.
- The team recommends retaining the soldier quarters' exhibit - this exhibit supports theme 2. Although the exhibit may have to be relocated to keep the sequence of exhibits in historical order to assist visitors in their understanding of the park story. The proposal should consider other locations where everyday life interpretation through exhibits might occur on the plaza level. The exhibit plan must meet the following identified park planning and design needs:

Planning Needs:

- Integrate in to the exhibit planning the development of an audio tour. Depending on funding received, the audio tour may be developed concurrently; or, planned, but funded and implemented at a later date.
- Develop a parkwide exhibit plan that is designed

to meet the site specific needs of Forts El Morro and San Cristóbal. Each site plan for exhibits should: (1) incorporate the four primary interpretive themes; (2) include basic interpretive information for first time visitors to build visitor understanding and appreciation for the 500 years of history interpreted; (3) address the interests of the differing visitor clientele that comes to each fort; and at the same time (4) provide a unique fort specific exhibit experience.

- Identify how to guide visitors to experience the exhibits within the richness of the historic setting that includes many other interpretive experiences.
- If the historic collections are used in exhibits, address National Park Service conservation standards in their design, installation and continued maintenance by the park staff.
- Outline the logical sequencing of exhibit replacement: specifically, what should be done, where and when? The plan should indicate what exhibits should be removed immediately? What new exhibits will be developed overall? Then determine the sequence of new exhibits - when they will be installed and how this dictates the subsequent removal of existing exhibits.
- And, within the scope of the new exhibit design, determine how park produced temporary exhibits will fit into the overall exhibit plan. Develop a complementary design type to guide the interpretive and curatorial staff. Consider artifact use as part of the identified space for a "changing exhibits program" in the exhibit plan.
- Include a discussion of the role of San Juan de la Cruz, the San Cristóbal Outworks, and the walls in the fortification system.

Exhibit Design:

- Use conservation grade exhibit display cases.
- Incorporate accessibility standards in all aspects of planning and design.
- Recommend dedicated spaces for each of the major historic periods. In these spaces exhibits would supplement other more successful linear and emotional media such as audio or audio/visual. This would capitalize on what exhibits do best--- show actual things in relationship to stories and events from which they originate.
- Future exhibit structures (cases/enclosures, with artifacts, replicas, photographs, art work, type, etc.) should be of such an elemental nature that the contents would feel quite intimate to the viewer. With this level of emphasis it is possible to isolate the environment needed for those precious things that are in enclosures and those sensitive technological mechanisms (also in enclosures), while maintaining a separate level of comfort for the visitor.
- Other media that might supplement the exhibits would be site bulletins actually available at the perimeter of exhibits in a tasteful way so as to suggest that there is much more available about that particular exhibit subject should a visitor be interested. This could be developed as an exhibit component, or, as a sales item offered in the park bookstore. The publication should include rec-

ommended books, follow-up experiences within the park and at partner institutions in Old San Juan.

- Incorporate the use of "hands-on" three dimensional exhibit models for the exhibits at San Cristóbal and El Morro (for each visitor destination). These models will help meet universal accessibility requirements. Consider strategic placement of models on each level - this will help visitors understand the complexity of this structure. Models would have to be made of something durable like concrete with pigment added to the mix for long life. These models would be oriented to the same compass position as the actual fort.
- At San Cristóbal, provide a model with interpretation of the defense-in-depth system. If this Outworks remain closed, a virtual tour, placed in an informational kiosk in a climate controlled environment would be another way to provide visitor access. If developed, the virtual tour should also be added to the park website.
- Incorporate additional simple exhibit type props such as sighting tubes. These props placed nearby would serve to emphasize points such as strategic proximity to certain potential targets, range of fire, and effective firing range. These props would be aids to get simple concepts across.
- When modern features or changes to the historic scene interfere with the historic view interpreted, it would be very helpful if changes could be conveyed with a viewpoint perspective drawing as you look across the buildings of Old San Juan

from either fort.

- There are many paths through the forts. As an addition to the directions "up, down and over" there is a wonderful opportunity to incorporate the "historic period" into direction indicators. For instance: "Down to Santa Barbara Battery, original 1540 tower", or "up to Austria Half Bastion". This extra exhibit like ingredient adds some excitement and interest to an otherwise impersonal indicator. A drawing or photo (or diagram of fort) could add even more interest as the visitor utilizes their valuable time. Other supplements to directional signs could be the reward offered if you make the extra effort to trek up some ramp such as "UP- to highest level of El Morro, see across the harbor to Cabras Island/San Juan de la Cruz fortification".
- There exists in the HFC produced handbook, art showing cisterns and bulwarks of the fort. These could easily be utilized into exhibits pointing out their location and physical make-up. This artwork can be viewed through HFC's website, www.hfc.nps.gov, and should be tapped for future media projects.

Exhibit Conservation Considerations

Use of controlled collection spaces

Short-term:

- Address and resolve the conservation and security concerns discussed in the "Existing Conditions" section regarding the El Morro Museum. Update: situation addressed in April 2006. This area is no longer a museum; it is an open exhibit area.

Long-term:

- During exhibit planning, include the park's collection curator/cultural resource specialist as part of the planning team. The technology is available to display historic collections in the forts successfully; however careful planning will be required. Collections require environmentally controlled zones to limit deterioration. And, consult with conservation experts at Harpers Ferry Center (HFC) during the exhibit planning process.
- Discuss "what is the requisite curatorial support and care for the exhibit following its installation"; and determine if proposed exhibits meet expected staffing levels. Do not over-plan exhibit care requirements. The exhibit must match the capacity of the Cultural Resources staff to care for it daily. The curatorial staff must have direct and easy access to the display collections for inspection, maintenance and rotation purposes. If there are any support requirements for the interpretive or maintenance staff to assist with exhibit care, they should be identified in writing, tied to performance elements of an identified staff member, and mirrored in written standard operating procedures.
- Rotate vulnerable historical resources. Consider artifact use as part of an identified space for a "changing exhibits program" in the exhibit plan.
- If the park desires to create a new exhibit space and utilize the collection to assist with interpretation, consider the site of the current "Soldier's Quarters Exhibit" as a potential location. This area appears to be a site where collections could be more safely interpreted in a more "con-

trolled" museum-type setting. The area has a vestibule entry and appropriate sized rooms off both wings (making three to five distinct interpretive spaces).

Use of micro-environmental cabinetry

- Utilize the latest well-sealed metal case designs which limit the rate of air exchange between the display chamber and the ambient environment. The climate inside a sealed exhibit can be engineered to:
 1. Buffer changes in temperature and relative humidity;
 2. Maintain a specific relative humidity;
 3. Provide a dust-free, insect-excluding display environment; and
 4. Prevent chemical pollutants from deteriorating display objects.
- Design well-sealed cases with tight joints and with gaskets around all removable panels and entry doors.
- Choose construction materials that limit air exchange and, for climate-controlled case designs, are not moisture-permeable. Well-sealed cases should allow no more than one complete air exchange every 72 hours.
- Use conservation-appropriate sealants. Minimize leaks with adequate gaskets and caulk. Always choose materials that do not outgas.

Use of Outdoor Exhibits

- Seek funding for conservation treatment of all the cannon tubes and artillery in general. This is an expensive proposition as some of them may require transport to the mainland. The first step

will be to have them surveyed (with treatment options and costs outlined) which the park is in the process of arranging. HFC can assist by reviewing the proposal and consult with park staff. Essentially the items on exhibit outdoors need cleaning, desalination, consolidation of fragile flaking iron, and coated with an industrial protective coating. This would be the time to reproduce carriages for the tubes since they will require removal from their cement embedment.

- Carefully consider which cannons will go back out on open display, if any. Options include keeping some of the most unique materials under cover, procuring well-made, commercial reproductions or casting facsimiles from those in the park collection.
- Review and discuss interpretive alternatives with conservation specialists regarding the welded pile of cannon mortar bombs and the large display of the projectiles in the El Morro Powder Magazine.

Interpretive Media Assets

The San Juan NHS historical collections constitute an extraordinary interpretive resource, consult with conservators regarding future exhibitions or any questions pertaining to the dual obligation to both "preserve" and "use" these unique cultural resources.

- Address interpretive theme 4 by demonstrating appropriate preservation philosophy and techniques throughout the fortifications- in the use of both moveable (artifacts) and immovable cultural resources (historic structures and features). Integrate this approach into future inter-

pretive media planning.

Use of Preservation Specialists

- Include a conservator at the beginning of the planning process for the new interpretive exhibits. Conservation concerns should influence decisions during exhibit design and fabrication.
- Develop a long-range conservation program to integrate the current and future needs of the collections. Funding for the ongoing activities and the involvement of the highest caliber specialists should be anticipated; and work should continue to be coordinated closely with the NPS Southeast Region curatorial staff.

Interpretive Research Utilizing Collections

- Initiate a campaign to introduce interpretive staff to what is available and how it can be accessed. Identify the support staff, research request process, study/work areas and cost recovery features.
- Create a photographic area within building 213 where staff and exhibit planners can take images of objects for interpretive projects (films, videos, power point presentations, and interpretive exhibits).
- Continue the effort to separate the library facility from that of archival storage.

Identification/Prioritization of Cultural/Interpretive materials

- Improve collections documentation, once the San Juan NHS collections are accounted for and properly housed. Provide detailed information

on catalogue records so that it is more available for future interpretation. The curatorial staff can begin to improve these records. Explore contracting with a team of specialists to help identify, prioritize, and document key collection resources.

- Work to provide detailed information on object/artifact history on the park's computerized collections catalogue system. Build in to the project to update the catalogue records "how to make this more accessible for future interpretation". A good beginning would be to provide interpretive access to some levels of information in the park's electronic catalogue system.
- Develop a clear identification of historic and non-historic collections materials to help determine what level of preservation and protection is required when used in interpretive programs and exhibits. Consider developing five categories of objects and archives: a.) historical association with forts; b.) possible historical association with forts; c.) association with time period and period technology; d.) valuable reproduction or facsimile; e.) low value reproduction prop.

Existing Artwork

- Utilize existing artwork in new interpretive media developed. Through the years a great amount of artwork has been created for interpretive use at San Juan NHS. Much of this artwork is stored in the Harpers Ferry Center (HFC) Commissioned Artwork Collection, and is available for use. It can be viewed through the HFC website www.hfc.nps.gov, and should be tapped for future media projects.

Media Inventory Database System (MIDS)

- Convert the "San Juan NHS Itemized List of Interpretive Facilities" into the Media Inventory Database System (see Appendix G for the itemized List). HFC maintains an inventory of interpretive media called the Media Inventory Database System, or MIDS. It is used to assist with the upkeep of interpretive media in all national parks and documents Servicewide media replacements needs. The information in the system is entered by park staff, and is useful in helping a park maintain their media.

Publications

Short-term:

- Consult with HFC publications staff during the re-design of the park-produced, self-guiding tour site bulletin. The Center has samples of how best to incorporate new NPS identity standards in the design.
- Add numbered "temporary" posts in the forts to assist with use of the self-guiding brochure.
- Add the Paseo del Morro as a visitor opportunity in the HFC uni-grid brochure and the park-produced site bulletin.
- Create a map and guide for the fortification walls. Maps should identify features and tie them in to the overall fortification system.
- Consult with the "Que Pasa" Magazine staff to include a description of the Paseo del Morro as an extension of the Old San Juan self-guiding tour.

Long-term:

- Request a review of the bilingual HFC produced unigrid brochure to determine if the publication can be re-designed to incorporate self-guiding tours of both fortifications and address all park interpretive themes. If this is technically possible, the cost of the publications would be reduced.
- Seek funding and partnering with the Cooperating Association to upgrade the bilingual "Forts of Old San Juan" handbook to include interpretive theme three: "life in a fortified town", and theme four: "preservation and stewardship. Work with Harpers Ferry Center for a cost-estimate when ready to proceed.

Waysides**Short-term:**

- Maintain visual quality of existing waysides. Production of new waysides from the wayside exhibit proposal stage through installation generally takes two years. In the meantime care for existing waysides, in some instances panels will need to be replaced.
 1. Replace the 9 electronically produced panels along the Paseo del Morro.
 2. Evaluate existing fiberglass waysides panels for repair and replacement needs. If visual quality is poor but quality of information accurate, replace panels. Contact HFC to access the wayside exhibit minor rehab program. (Information about this program is available on the HFC website.) In areas consistently hit with vandalism that have fiber-

glass embedded panels; order two panels, so there is always one on hand for emergencies.

3. Touch-up waysides exhibit frames. Matching paint can be ordered from the manufacturer or HFC; or, replace damaged frames.
- Hold staff accountable for the appearance of waysides. Care of wayside exhibits is a shared staff function:
 1. Identify an interpretive staff member to evaluate existing wayside exhibits for effectiveness. The interpretive staff is responsible for assuring that information presented on panels is accurate and up-to-date. Exhibits that don't work well should be corrected or removed, and the maintenance staff should be notified.
 2. Identify a specific maintenance employee to care for exhibits from installation until removal. Maintenance time for care of waysides and frames should be programmed. Exhibits that are effective should be replaced with panel replacement copies; then maintained.
 - Program maintenance funds for systematic, periodic wayside exhibit upkeep. For example, fiberglass panels typically should be replaced about every two years, and funds should be programmed accordingly through a cyclic maintenance program.
 - Train staff to know precisely where portable waysides are located and in which direction they

should face - develop an opening procedures checklist Assign responsibility for assuring that they are properly placed daily to eliminate visitor confusion. (See related recommendations in Personal Services section, page 58).

Long-term:

- Seek funding for a parkwide wayside exhibit proposal to identify all desired wayside exhibits and related signs, as well as factors such as panel materials, base designs, site development, and installation concerns. Using the approved proposal, cost estimates can then be developed for exhibit planning, design, fabrication, and installation. With cost estimates in hand, the park can then earmark funds to plan, design, fabricate, and install parkwide wayside exhibits.

The recommended materials for wayside exhibit panels can be determined during the preparation of the Wayside Exhibit Proposal. Preliminary recommendations: use porcelain panels in the fort interiors and use fiberglass embedded panels (either screen print or inkjet) outside. This is based on anticipated longevity in this harsh marine environment and the probability of vandalism. Inside the forts vandalism is virtually nonexistent, so porcelain panels should survive indefinitely. Outside the forts, vandalism is likely, so fiberglass panels should be used for ease of replacement.

Website

- Modify website to meet Servicewide standards. Graphic elements should conform to NPS graphic identity standards and include the updated arrowhead, the black banner and NPS-approved typefaces. For more information on

the graphic identity program, consult <http://www.graphics.nps.gov/default.htm>. The website provided for Spanish-speaking visitors should follow this program design standard.

- Eliminate navigational headings that lead to dead links and material that is not updated regularly. Consider reducing the number of navigational items by combining similar items.
- Revamp the "Just For Kids" section with age-appropriate text, design and features such as interactive elements and games.
- Keep in mind if any virtual tours are developed for the exhibits, during the project proposal phase, request that a website compatible version be produced at the same time. Virtual tours of the San Cristobal Outworks and the City Walls are recommended as potential exhibit components.
- Also see comments in the Pre-Visit section of the recommendations, pages 56-57.

Partnerships

"...any successful plan for this historic site will depend not only on the commitment and resources of the National Park Service, but also on the commitment and resources of many agencies, organizations and individuals who comprise this historic city."

Excerpt from the introduction to the 1985 park General Management Plan.

- Promote and work to establish a seamless and positive visitor experience in Old San Juan by:

1. Working with community leaders to collectively market the park as a key area attraction, and improve signs outside the park boundary to assist out-of town visitors in finding the park from a variety of approaches.
2. Improving orientation services provided to cruise ship visitors. They need to know how to get to the forts from the pier and what that distance is. The planning team identified several ways to address this:
 - a. The Commonwealth of Puerto Rico's Tourism Company provides brochures in Spanish, English, French, and German. Perhaps there is something that could be worked out collaboratively in the future. The Tourism Company has the Welcome to Puerto Rico Program. They employ part-time students who welcome all cruise passengers at the piers, give general information, brochures and directions.
 - b. Seek funding to expand the park hours of operation during the busy seasons.
 - c. Consider hiring through contracted services extra guides on the days it is known when ships will arrive in port.
 - d. Work with the cruise ship industry and the tour bus industry to develop a method to distribute tours between El Morro and San Cristóbal to limit overcrowding.
 - e. Provide park-sponsored training for local park permitted tour guides, in order to improve the quality and accuracy of information given by non-NPS guides.
 - f. Network with Casa Blanca and other area museums to prevent overcrowding.
 - g. Contact "Que Pasa Magazine" and ask if park can work with them to revise all associated publications that interpret or provide information on the forts.
 - h. Collaborate with other tourism professionals.
 - i. Provide an informational kiosk and/or interpretive waysides at the docks to assist pedestrian visitors in finding the forts; and/or provide interpretation about the forts for visitors unable to visit the forts due to tight travel itineraries.
 - j. Work with the Commonwealth and area museum partners to develop a wayfinding plan for key tourism destinations in Old San Juan.
 - k. Pursue putting rangers on cruise ships traveling between San Juan National Historic Site and Virgin Islands National Park in order to provide a more in depth interpretive experience for visitors traveling between these park destinations.
3. Develop a media outreach program for news and radio bites.
 - a. Get involved with the Commonwealth's cable channel.

- b. Work to develop exposure on TV about the "good things" being done at the park in a neutral, non-political manner.
4. Link park website to the Commonwealth of Puerto Rico's Tourism Company, the National Park Company of Puerto Rico, the U. S. Forest Service "El Yunque" Caribbean National Forest and other park partner affiliated organizations, in order to assist visitors with future trip planning.
5. Explore applicability of how the Commonwealth of Puerto Rico's National Park Company deals with corporate requests. They provide "special tours" for corporate groups, but charge them a special use fee. This is a good fund-raising source for them.
- Build awareness of NPS Agency Mission by inviting visitors, residents, and future corporate and governmental/agency partners to join in stewardship activities:
 1. Explain agency mission in all interpretive talks and other media.
 2. Start first with what people know. Concentrate on describing San Juan NHS; then develop its connection to the National Park system. This is so valuable - and it recognizes the individual, their interests and connections.
 3. Capture the park identity on the park pass. Most people don't know it is a National Park.
4. Place the park's mission statement everywhere - press releases, any official park document, park correspondence, and include in all talks.
- Establish a park advisory board to build a network of support for the park. This group would serve as a sounding board for the park management team to utilize as a forum to discuss topics regarding tourism, historic preservation, and other topics of mutual concern in the local community.
- Develop a subject-specific/dedicated advisory group to assist the park with developing alternatives to meet universal accessibility requirements. Utilize and consult with a variety of specialists in the community. Include a maintenance supervisor in this work group. There may be several accessibility improvements (programmatic and/or facility related) that could be pursued once appropriate planning and receipt of funding occurs.
- Seek event co-sponsors for theme related programs and special events in order to expand program offerings to local residents and international visitors.
- During the developmental phase of a park specific audio tour program project, determine if other language translations should be developed; and explore partnering opportunities with the Commonwealth's Tourism Company and the cruise lines that originate in Europe.
- Teach / instruct / and work with higher level educational institutions. Promote career oppor-

tunities.

- Coordinate with municipalities. Provide park/resource related job training that corresponds with community jobs and resources.
- Pursue funding and partnerships to open the San Carlos Battery. The San Carlos Battery could serve as the focal point to view the San Cristóbal outworks. San Carlos provides a view of resources, i.e. the dry moat and la Princesa. San Carlos could serve as an introduction to the outworks as a whole; and, perhaps a first step in a preservation/public access plan to re-open the Outworks.
- Continue with community planning efforts directed towards expanding ease of park access (such as water taxis and light rail proposal), particularly efforts directed to support visitor experiences related to themes and park resources. Incorporate in future alternative transportation proposals the need for interpretation.

Eastern National

- Review "Scope of Sales" to address new interpretive themes and expand sales potential.
- Make park specific items available for purchase on line.
- Cosponsor educational seminars with the cooperating association. These future seminars could facilitate several park objectives including: (1) providing in-depth staff training courses; (2) offering site-specific in-depth interpretation/education program opportunities for the general public or with staff members

from other institutions; and (3) the creation of a cooperating association fundraising activity that could channel funds back into the overall interpretive program.

- Seek funding and partnering with the Cooperating Association to upgrade the bilingual "Forts of Old San Juan" to include interpretive theme three: "life in a fortified town", and theme four: "preservation and stewardship. Work with Harpers Ferry Center for a cost-estimate when ready to proceed.

National Park Company, Commonwealth of Puerto Rico

- Partner with the Commonwealth's National Park Company to better protect Fort San Juan de la Cruz. During wayside exhibit planning include them in the process. Discuss expansion of waysides to interpret other historic features tied to the fortifications' history (leprosy colony, etc.) on Commonwealth land. Collaborate during any future planning for Fort San de la Cruz and Isla de Cabras.
- Consult with the Commonwealth of Puerto Rico's National Park Company to jointly problem-solve how to handle summer camp program requests that drop in without a reservation. They are having the same type of issues at Cavernas del Rio Camuy Park. Use the teacher seminar workshop approach with recreation camp providers. Provide a planned educational/recreational park experience with a different focus from the park's curriculum based education program.
- Explore the practice established by

Commonwealth of Puerto Rico's National Parks Company to deal with corporate requests. They provide "special tours" for corporate groups, but charge them a special use fee. This is a good fund-raising source for them.

Volunteer-in-Parks Program

- Write position descriptions for the types of volunteer positions the park staff would like volunteers to fill. Describe skills, qualifications needed, time commitment required, and training the park will provide.
- Increase park employee involvement in the VIP program. Although the VIP Coordinator may be a ranger, have all divisions involved in program. Have the appropriate division staff member; supervise the volunteer if they are volunteering in their work unit.
- Increase publicity about volunteer opportunities through the park website, TV, newspaper, and radio.
- Recruit: visit areas with a potential volunteer pool (universities and schools, community centers, retirement communities, civic groups, unemployment agencies).
 1. Set realistic guidelines for volunteers and establish a minimum time commitment so it is beneficial to the staff time given to support volunteer training and development.
 2. Discuss mutual benefits during recruitment interviews and advertised needs or vacancies.
 3. Recruit groups to volunteer for special activities or events.
- Provide incentives and awards for volunteers. For example: tours not normally given, t-shirts, mugs, and/or pay their travel expenses when volunteering in the park.
- Expand internship opportunities by:
 1. developing internships with universities where students get credit.
 2. including the Student Conservation Association (SCA) Program.
- Link volunteer recruitment efforts to the park's goal of providing living history programs.
- Acknowledge the good work of volunteers. If VIP accomplishments are promoted, their work will attract others.
- Explore the possibility of expanding the Youth Conservation Corps Program (work/education program) to reach more teenagers. Or, develop new target programs for teenagers through the Volunteer In Parks Program, or general interpretive program. Many college bound students seek recommendations or extra curricula activities for entrance to the school of their choice.

Appendix A: Interpretive Themes and Related Stories

Workshop participants expanded on the themes during the workshops. Summaries of additional stories that may be told are in the italicized area below the theme statement.

1. Strategic Location

The massive fortifications and their continued use by two world powers across five centuries serve as a powerful reminder of the strategic location of Puerto Rico in the Caribbean. The Spanish constructed and manned the fortifications from 1539 - 1898. Their importance is highlighted by the various major attacks it suffered. Marauding pirates and military conquests from England, France, and Holland prompted the Spanish Crown to turn this key outpost into a stronghold for the defense of its Empire. Following the Spanish-American War, the fortifications became an important United States military site. Renamed "Fort Brooke", the fortifications were used by the Army through the "Cold War era".

It is important to convey that in spite of technology changes the location of the fortifications remained a strategic location.

It is also important for people to understand how the forts looked during the various attacks that occurred.

Today it is hard for many to understand that Old San Juan is on an island - the city development hides this completely with the highway bridge system its hard to see and feel - we are now so built up.

We need to help people consider the absence of things - there was no "Miramar", or "Puerta de Tierra". The large forests are gone; how do we help people see this?

Sub-theme "Gateway to Riches":

Puerto Rico played a vital role in protecting Spanish trade routes in the New World. The fortifications on San Juan Islet and Cabras Island were part of a chain of frontier outposts in Spain's "West Indies" territory in the Caribbean. Puerto Rico helped control access to the Spanish possessions in the New World and the Pacific trade being brought across Mexico to the Caribbean. As a result of the Portuguese conquest to the East, Spain was forced to the West (the Atlantic Ocean) in pursuit of Oriental wealth. Puerto Rico, the easternmost Spanish colony, and the first to be reached from Europe served as Spain's gateway to the Caribbean and the "key to the Indies", protecting their New World and Oriental trade. The fortifications and their inhabitants protected the interests of the Spanish Empire in peacetime and in war for four centuries.

We need to discuss the other countries back then - what were the global politics.

The British attack in 1797. This makes a tremendous impact on this region. The NPS did a study on how world politics affected San Juan during the Napoleonic Wars.

Don't forget, the first concern was to protect Spanish soldiers and settlers from the Carib Indians, then later to defend the interests of the Spanish Crown. It's important that we include the story of the Taino Indians - and tie their story to the conquest and con-

quering of the island - the physical domination of others. Remember there is a dynamic between the Tainos and the Caribs even before the Spanish came.

Sub-theme "US Period of Development"

During the first half of the 20th Century the United States Army controlled the fortifications and named the installation Fort Brooke. With new construction the complex grew to include the Headquarters of the Military Department of Puerto Rico; an Army General Hospital, and auxiliary structures and services for the Headquarters of the 65th infantry Regiment (Puerto Rico's own) and its 1st Battalion. Coastal defense batteries, emplacements and lookouts were constructed during the Second World War period and illustrated the versatility of the fortifications.

The forts represent Spanish dominion and later the United States as a World power.

Consider that the forts were, for most, out of reach - because it was a military reservation. For decades, the military buildings were isolated from most in Puerto Rico.

2. Fort Construction and the Soldier Experience

From medieval fortresses to World War II watch towers, the fortifications at San Juan National Historic Site provide a visual record of the evolution of military engineering of coastal fortifications. They also give insight into the many innovations and challenges faced by those charged with the defense of this stronghold. Fort construction changed as new technology was developed or a military need was identified, while troop composition, military skills and the everyday soldier experience

transformed as well. Each of these changes was a product of its time and served a particular need in the overall defense of this strategic entrance to the Caribbean Sea.

Construction:

It is very important that people understand that there are not three separate forts but a fortification system.

One concept that is lost today on visitors and residents is the fact that the forts were designed to protect when the wind powered ships. Remember we have to address technology. Armor piercing shells are developed when iron hulls are put on battleships.

It's important to convey the quality in building construction. Here is a listing of key features: cistern, ramps, tunnels, walls, sentry boxes, embrasures, loop holes, pediments, bunkers, staircases, moats, arches, vaults, the powder magazines, and vigias.

Remember -- El Cañuelo and El Polvorín de Santa Elena.

The fusion of architecture and engineering make it hard to classify the fort into any one period - it evolved.

We need to talk about military technology and how war was waged from the forts.

Changes in military tactics require changes in architecture. For example: the architecture of the sentry boxes change. Gun mounts and armaments evolved and require new construction. All design is planned with a purpose and function for military effectiveness. The forts allow you to see the development of

military engineering throughout the years. WWII bunkers were added to both forts. How are we addressing the use of Isla de Cabras during WWII?

We should discuss the tunnels - their purpose and legends.

We need to discuss the use of topography: San Felipe del Morro and San Juan de la Cruz (El Cañuelo) for harbor protection (to defend from a sea approach), and San Cristóbal for a land attack.

We need to address La Fortaleza as an example of medieval defenses, and discuss the modern fortifications developed at San Felipe Del Morro and San Cristóbal.

Remember the lighthouse at El Morro is part of a planned system of lighthouses. There is actually a dissertation that was done on this subject that should be part of the park archives.

It is also important for people to understand how the forts looked during the various attacks that occurred.

There are other Spanish batteries outside the park boundary that need to be marked, interpreted, and included on maps.

Soldier Experience:

Stress that people served here continuously from 1533 onward.

We need to identify what percentage of the troops was actually born on the Island, and what percentage was from Spain.

What about the life of the soldier and the geo-politics of the time - Puerto Rico's passage into democracy?

What were the actual living conditions versus the legends out there?

What about the fun stuff to talk about... did they have bars, brothels, where did they eat, was it smelly here?

We should include a discussion of the revolt of the artillery soldiers.

3. Life in a Fortified Town

The construction of the forts established a military outpost that grew with the increase of soldiers, slaves, contractors, religious leaders, government officials and their families including women and children, who together established a city and a way of life dictated by the Spanish military. The city walls were gated and access controlled by a sentry. No one could go out or come in between sunset and sunrise. There was no civil elected governor, instead a military appointee. The wall determined class; those who lived within and those not allowed.

You can not divorce the fort from the town. The fort is the skin of the City.

Remember townspeople supported the enlisted soldiers, while officers came well supplied.

One of the major themes taught in the Puerto Rican schools while I grew up here is the emphasis on our roots; we evolved from the Indian, African, and Spanish cultures.

The gates - we should address the functionality of the gates. A discussion of the activities in the plazas leads you into a conversation about the economics of the day. We need to set the stage to both describe what was happening, and what was not allowed - what were the restrictions?

We have the opportunity to explore the walls, why were portions of it taken down? At the end of the 19th century the walls became oppressive, they were no longer used for security. The walls can symbolize the evolution of the city -- as a symbol of security, oppression, and transference to pride - pride in Puerto Rico. Remember the City had a party when a portion of the wall was knocked down. Symbolism is important not only did shells pierce the walls, but there was also a cultural piercing of the walls.

Remember the military life here affected civilian life. Spanish engineering technology goes beyond the forts' walls. Building heights were restricted so as not to impact artillery firing from the fort. Because of limited space for the most part private residences don't have gardens. The patios are on the top floor, and flowers and edible plants cultivated there. Kite flying was prohibited from patio roof tops as a recreational activity during the fort era.

We could also discuss references to the cobblestone streets of the city, this is an outstanding feature. This improvement not only gave the city much needed infrastructure but it also facilitated communications between the fortifications and could have also been used to suppress revolts in any part of the colonial city. Also this improvement was done with prisoner work, another area that we might want to explore.

We should also be discussing the tremendous influence by the Catholic Religion - and the connection between church and state - there was no separation during the Spanish colonial era. For example many of the fort features are named after Catholic saints; there are Latin phrases over each fort entrance, and chapels at both forts.

4. Preservation and Stewardship

The history and strength of the fortifications has endured since the 16th century. The National Park Service utilizes preservation methods that maintain its historic features and structural integrity. The fortifications are a place for personal connections providing opportunities to assist with the preservation and shared stewardship of valuable resources.

It's important to convey the quality in building construction.

These buildings transcend time and continue to influence architecture today, the Robert Clemente Coliseum for example.

Prior to the NPS, we need to acknowledge the Military's interest in preserving the fort for history's sake.

Also address economics - today it's hard and expensive to preserve, but back then very cheap to build.

We need to address the history of the NPS and its involvement with the forts.

Appendix: B

Visitor Services Project

San Juan National Historic Site (NHS)

Report Summary

This report describes the results of a visitor study at San Juan National Historic Site (NHS) during February 21-27, 1999. A total of 922 questionnaires (752 English and 170 Spanish) were distributed to visitors. Visitors returned 651 questionnaires (563 English and 88 Spanish) for a 70.6% response rate (74.9% English and 51.7% Spanish).

This report profiles San Juan National Historic Site (NHS) visitors. A separate appendix contains visitors' comments about their visit. This report and the appendix include summaries of those comments.

Fifty percent of the visitor groups were family groups; 21% were in groups of friends. Forty-three percent of visitor groups were groups of two. Forty-five percent of visitors were aged 36-55. The most common languages visitors spoke included English (68%) and Spanish (16%). One-third (33%) of the visitors were part of a tour group. About one-third (31%) arrived at Puerto Rico in a cruise ship.

United States visitors were from Puerto Rico (12%), New York (10%), California (5%), and 42 other states. International visitors comprised 11% of San Juan NHS visitors, with most of those from Canada (34%), England (27%), and Spain (6%).

Over three-fourths of visitors (78%) were making their first visit to San Juan NHS. Seventy-nine percent spent one or two hours at the national his-

toric site.

About two-thirds of the groups (67%) were not aware that the site is managed by the National Park Service. Visitors relied on travel guides/tour books (31%), friends and relatives (21%) and previous visits (19%) as a source of information about the park.

Seventy-five percent of visitor groups indicated that learning about the forts' history was a primary reason for visiting. Another 21% reported that showing the forts to friend/relatives was a primary reason for the visit.

The most commonly visited sites in San Juan NHS were El Morro (78%), San Cristóbal (60%), the City Wall (59%) and the Esplanade (52%). Almost one-half of the visitors (46%) walked to reach San Juan NHS, while 32% took a private vehicle and 20% took a taxi.

In regard to the use, importance and quality of services and facilities, it is important to note the number of visitor groups that responded to each question. The services and facilities that were most used by the 556 groups that answered the question were the restrooms (70%), brochure/map (65%) and park directional signs (60%). According to visitors, the most important services were restrooms (90% of 359 respondents), self-guided tour maps (83% of 174 respondents), assistance from ranger staff (82% of 177), and video programs (82% of 93). The highest quality services were assistance from ranger staff (86% of 164 respondents) and the restrooms (81% of 352 respondents). It should be noted that ranger-led talks and tours were not rated by enough people to provide reliable data.

Most visitors felt the current entrance fees charged for children (under age 12-free, ages 13-17-\$1); adults (\$2); adults 62 or older (\$1) are "about right."

The subjects visitors would prefer to learn about on a future visit included soldier's life in the forts (79%), architecture/construction (73%), and the forts' role in Puerto Rican history. Over one-half of the visitors (62%) would prefer to learn about San Juan NHS through a ranger-led walking tour.

Eighty-two percent of visitor groups rated the overall quality of visitor services at San Juan National Historic Site (NHS) as "very good" or "good." Visitors made many additional comments about their visits.

For more information about the Visitor Services Project, please contact the University of Idaho Cooperative Park Studies Unit; phone (208) 885-7129 or 885-7863.

Appendix C: Accessibility

Every attempt will be made to promote full access to interpretive media and programs to ensure that people with physical and mental disabilities have access to the same information necessary for safe and meaningful visits to national parks. This is in compliance with the National Park Service policy:

" ...To provide the highest level of accessibility possible and feasible for persons with visual, hearing, mobility, and mental impairments, consistent with the obligation to conserve park resources and preserve the qualities of the park experience for everyone."

NPS Special Directive 83-3, Accessibility for Disabled Persons

All interpretation will follow general standards for accessibility as described in the Harpers Ferry Center Programmatic Accessibility Guidelines for Interpretive Media.

Appendix D: New Orleans Charter

New Orleans Charter for the Joint Preservation of Historic Structures and Artifacts

ARISING FROM A CONCERN FOR THE COEXISTENCE OF HISTORIC STRUCTURES AND THE ARTIFACTS WITHIN THEM;

- 1) Recognizing our responsibility as stewards to provide the highest levels of care for structures and other artifacts placed in our care;
- 2) Recognizing that many significant structures are used to house, display, and interpret artifacts;
- 3) Recognizing that historic structures and the contents placed within them deserve equal consideration in planning for their care;
- 4) Recognizing that technologies and approaches will continue to change, and
- 5) Recognizing that those involved in preservation are part of a continuum and are neither the first nor the last to affect the preservation of historic structures and artifacts:

We, therefore, adopt these principles as governing the preservation of historic structures and the artifacts housed in them:

- Institutions' statements of mission should recognize the need to preserve the unique character of both the historic structure and artifacts.
- The preservation needs of the historic structure and of the artifacts should be defined only after study adequate to serve as the foundation for the preservation of both.
- Requisite levels of care should be established through the interdisciplinary collaboration of all qualified professionals with potential to contribute.
- Appropriate preservation must reflect application of recognized preservation practices, including assessment of risk before and after intervention, and the expectation of future intervention.
- Measures which promote the preservation of either historic structure or the artifacts at the expense of the other should not be considered.
- Regarding public use, the right of future generations to access and enjoyment must outweigh immediate needs.
- Appropriate preservation strategies should be guided by the specific needs and characteristics of the historic structure & artifacts.
- Appropriate documentation of all project stages is essential, and should be readily accessible and preserved for the future.
- The most appropriate action in a particular case is one which attains the desired goal with the least intervention to the historic structure and the artifacts.
- Proposed preservation strategies should be appropriate to the ability of the institution to implement and maintain them.

The New Orleans Charter is the product resulting from two symposia on "Museums in Historic Buildings" held in Montreal, Quebec (1990) and New Orleans, Louisiana (1991), cosponsored by the American Institute for the Conservation of Historic And Artistic Works (AIC) and The Association for Preservation Technology International (APTI). This Charter has been officially adopted by the Boards of Directors of both AIC and APTI. The New Orleans Charter was subsequently adopted by the National Council of State Historic Preservation Officers (NCSHPO) at its Annual Meeting in Washington, D.C. in March, 1992; the American Institute of Architects (AIA) Committee on Historic Resources at its Spring meeting in April, 1993; and the Board of Directors of the American Association of Museums (AAM) in December, 1993.

Appendix E-1: Conservation Guidelines for San Juan National Historic Site

KEY THREATS TO THE COLLECTION

The challenging environmental conditions resulting from the park's geographical location and the park's aged collections has resulted in higher risks and higher losses than in most NPS units. Deficiencies in environmental control have caused slow but ongoing deterioration of the collections on display at the park. The rate of deterioration is gradual and yet could be dramatically slowed with the mitigating steps identified in this report.

What constitutes the major challenges to preserving San Juan National Historic Site (SAJU) collections?

Prioritizing the threats for the diverse collections at the park is not a simple task but an overview may prove helpful:

1) Water

- Water damage is a major threat because of the size of the archival collection, the quantity of organic objects and the amount of corroded metal.
- Water leakage from the ceilings of the forts and Building 213 has proven to be a problem. The historic walls are permeable and many earth covered roofs are not water resistant.
- Many of the iron cannons are exhibited out-of-doors and are exposed to both rain and early ocean dew; water runs into the tubes and puddles in some of the bases.

2) Atmospheric Moisture Excessive humidity is the other big problem and is a continual threat for the both the artifact and archival collections. Because

of where the park is located, excessive moisture will remain enemy number one. and

- facilitates micro-organism germination and pest development within collections;
- allows contaminants such as salt to move freely in collection materials causing damage upon drying;
- destabilizes many metallic materials resulting in corrosion;
- causes internal stresses in organic materials as a result of dimensional change.

The ideal Relative Humidity (RH) for the SAJU collection is actually a range and thus requires some discussion. Choosing the appropriate level of RH exposure is not a simple process. Consider the following as a general guide:

55 - 75% RH: Considered an acceptable upper level for many mixed collections in tropical climates, however, this is too high to ensure stability of metals and chloride-containing materials.

45 - 55% RH: Considered an acceptable compromise for mixed collections and possibly the best level for textiles and paper.

35 - 45% RH: Considered ideal for metals-only collections, particularly when corrosion is present.

3) Pest Activity

The conditions at the park subject the collections to a high risk of biological attack. Mold has, over time, been less of a problem for collections than would be suspected because of the presence of salt in the air and on collection surfaces. The continual threat, however, comes from the local species of

termite. The termites have irreversibly damaged furniture in the collection and archival materials. The aggressive insects have riddled the wooden exhibit cases within the first year after installation. The newest interpretive exhibit on flags at San Cristóbal has the wooden frames infested and the tunnels inching their way towards the flags.

- Adopt a non-chemical approach to pest control; implement an Integrated Pest Management (IPM) Program to protect the historic site collections.
- Bring in a pest control specialist that can provide a survey of needs and produce an action plan.
- Review all fort exhibits to assess vulnerable objects; ensure displayed objects are reasonably protected or remove them from exhibit; collect a history of the procedures and chemicals used around collections.
- Develop a practical monitoring program that can be run by collections staff: assign a single staff member to pest control and provide the required training.

The collections staff will require the support of other department personnel in controlling pests and should therefore consider arranging IPM training for a broader audience, including the appropriate maintenance and interpretive staff. An IPM program for the park should include a monitoring system and a pest recording system. Harpers Ferry Center uses a very practical electronic database for this purpose and can share the program with park staff. Please contact the Conservator for Organic Materials at Harpers Ferry Center.

AppendixE-2: Exhibit Case Performance Criteria - Conservation San Juan National Historic Site

REQUIREMENTS FOR FUTURE EXHIBIT CASES

The design of future exhibit cases should be developed with the enclosures being carefully engineered to provide maximum protection for the museum collections. The display enclosures should provide a high level of protection from all nine of the major forces of deterioration.

SPECIFIC REQUIREMENTS

1. Direct Physical Forces

The objects shall be protected from damaging physical forces: including shock, vibration and gravity.

- Cases should be bolted to the floor or adjacent walls;
- Case assembly should eliminate vibration and movement.

2. Thieves and Vandals

The objects should be protected from unauthorized access and violent acts: including intentional theft and vandalism or unintentional damage.

- Case assembly should be resistance to attack (15 minute response time);
- Electronic detection system should be considered.

3. Fire

The objects should be protected from fire; including exposure to excessive heat, smoke and deposits.

- Case assembly should be resistance to fire (15 minutes response time);
- Electronic detection system should be considered;
- Objects should be easily accessible for emergency (removal time less than 5 minutes).

4. Water

The objects should be protected from water; including flooding and accidental building system failure.

- Case assembly should be resistant to water.

5. Pests

The objects should be protected from contact with potentially damaging pests; including vermin, birds and other animals.

- Case assembly should eliminate all museum pest entry.

6. Contaminants

The objects should be protected from contact with any potential contaminants: including outdoor or indoor generated gases and particulate matter.

- Case assembly should support a static level of interior pollutants;
- Consider including HEPA air filtration for particulates: activated charcoal for chemical pollution.

7. Light Radiation

The objects should be protected from damaging radiation resulting from exhibit lighting; including ultraviolet, infrared and excessive visible light. The limits are as follows:

- UV: 10mwpl (microwatts per lumen)
- IR: 0
- Visible light: 0-2Fc. during non-visitor periods;

3-10 foot candles during visitor periods

8. Incorrect Temperature

The objects should be protected from exposure to excessively high or low temperatures; including the uncontrolled fluctuation of temperature. The limits are as follows:

- Temperature target: 68F
- Temperature range: 68F +5F
- Maximum daily fluctuation rate: 5F

9. Incorrect Relative Humidity

The objects should be protected from exposure to excessively high or low relative humidity; including the uncontrolled fluctuation of relative humidity.

The limits are as follows:

- Relative Humidity: 60%
- Relative Humidity Range: 40% +65%

Appendix E-3: Recommended Exhibit Conservation Activities & Input San Juan NHS

I. EXHIBIT DEFINITION PHASE

- a) Establish overall strategy/restrictions for using collections in new exhibit
- b) Complete an environmental risk assessment
- c) Establish minimal climate control for exhibit collections
- d) Clarify power/HVAC/plumbing requirements for museum area
- e) Examine proposed exhibit objects for condition and treatment needs
- f) Set technical conservation criteria for exhibit for individual objects
- g) Identify problematic objects as to security/rotation/reproduction mounting

2. EXHIBIT DESIGN DEVELOPMENT PHASE

- a) Review plans and drawings
- b) Provide conservation specs for case design and microclimate requirements
- c) Oversee use of conservation-grade design for collections
- d) Oversee construction materials for emissions/stability; test as necessary
- e) Review of exhibit lighting design for appropriateness
- f) Oversee design construction of object mounts and supports
- g) Propose object treatment for collections in need

3. EXHIBIT PRODUCTION PHASE

- a) Inspect /test exhibit case construction during fabrication
- b) Inspect exhibit mount fabrication
- c) Evaluation of prototypes if designs are unconventional
- d) Perform conservation treatment

4. EXHIBIT INSTALLATION PHASE

- a) Oversee installation and handling of exhibit objects
- b) Purchase and installation of microclimate equipment (as required)
- c) Adjustment of exhibit microclimatic environments
- d) Installation of monitoring equipment
- e) Testing of exhibit case performance
- f) Adjustment of exhibit lighting
- g) Development of exhibit maintenance manual for exhibit object care
- h) Instruction of staff in exhibit maintenance

APPENDIX E-4: GUIDELINES FOR MICRO ENVIRONMENTALLY CONTROLLED EXHIBIT CASES

BY TOBY RAPHAEL, CONSERVATOR, HFC, NPS

Most successful exhibitions employ both macro and micro preservation strategies, letting practicality and financial requirements guide design. Micro-environmentally controlled cases are generally considered both very efficient and cost effective.

Description of Well-Sealed Exhibit Cases

Key Recommendations for Sealed Exhibit Cases

1. Use sealed display cases when appropriate. Determine which objects, if any, require protective micro-environments, and design cases accordingly.
2. Design well-sealed cases with tight joints and with gaskets around all removable panels and entry doors. Choose construction materials that limit air exchange and, for climate-controlled case designs, are not moisture-permeable. Well-sealed cases should allow no more than one complete air exchange every 72 hours.
3. Use conservation-appropriate sealants. Minimize leaks with adequate gaskets and caulk. Always choose materials that do not outgas.
4. Test case performance. When possible, use leak detection equipment to identify air leaks and determine air exchange rates. Modify the case design or add caulk and gaskets to reduce leakage.

Applications for Sealed Cases

Providing a microclimate in a well-sealed case is a low-cost alternative to controlling the entire exhibit space. Sealed cases are a particularly good choice when only a few exhibit objects are sensitive to humidity or when one or more objects require a different relative humidity.

A well-sealed exhibit case limits the rate of air exchange between the display chamber and the ambient environment. The climate inside a sealed exhibit can be engineered to:

- buffer changes in temperature and relative humidity;
- maintain a specific relative humidity;
- provide a dust-free, insect-excluding display environment; and
- prevent chemical pollutants from deteriorating display objects.

Construction of Sealed Cases

The degree of seal is measured in the number of air exchanges per hour. Most sealed museum cases provide a minimal to moderate rather than a hermetic seal. An unsealed exhibit case may undergo several exchanges of air per hour, while the exchange rate in a well-sealed case is as little as one complete air exchange every 72 hours or longer.

Higher degrees of seal reduce air exchange rates and improve the efficiency of the climate-control system within the case. To maximize performance of a well-sealed case, the design must incorporate these features:

- moisture-impermeable construction materials
- precise fitting of construction joints and seams
- conservation-safe caulk sealant along problematic construction joints and seams

- conservation-appropriate gaskets on removable panels and doors

Natural convection forces air into and out of small gaps or holes in the exterior of the case. Where case components meet, limit air movement through the use of tight joint construction and by sealing gaps with gaskets or caulk sealant.

Select gaskets that are appropriate for exhibit case applications. Among foam and extruded elastomer gaskets, there are many options; however, silicon should be used for valuable museum objects. The foam must be of the proper density and thickness for successful compression by vitrine tops and doors. When possible, set foam gaskets into a channel or trough that measures 60% of the gasket's depth.

Curatorial or maintenance access doors require special engineering. Door hinges must allow clearance for the gasket dimensions. The density of the gasket material is important, as are its location, continuity, and dimensions. To prevent air leakage, it is critical that access doors and removable panels meet these requirements:

- attached with enough fasteners that compress the gasket material
- do not bow or deform under the pressure of the fasteners
- seated evenly against a uniform gasket surface
- fitted with a continuous gasket with no gaps between sections
- do not bind against the gasket along the hinged side

Small door openings decrease the potential for case leakage. Some case designs have successfully

used prefabricated, commercially available airtight hatches. Acrylic maritime yacht portals, for example, can be used as small access doors into maintenance chambers. Larger access doors require fastening devices every 18 to 24 inches and the use of crank-down or cam fasteners.

A well-sealed exhibit case should be tested for air leakage using an ultrasonic leak detector. If leaks are identified, modifications can be made, including adjustments to fasteners or gaskets or the addition of caulking sealants to improve the case seal.

Moisture Permeation

Even though air gaps are closed, a case which employs permeable materials such as unsealed wood products will allow moisture to migrate through the walls, floor, or ceiling. The rate of migration depends on the permeability of the material and the differential between interior and exterior relative humidity. Glazing materials such as acrylic and glass have low diffusion rates that are suitable for well-sealed cases. Although moisture diffusion occurs slowly through plywood, particleboard, or drywall, these materials alone will not seal a case. Their permeability can be reduced by:

- adding a vapor barrier, such as a laminate of melamine and resin-based sheet materials, or metal foil such as Marvelseal 360; or
- painting with a moisture barrier coating, paying strict attention to coating thickness requirements and film uniformity.

Consequences of Sealing Cases

As one consequence of sealing an exhibit case, emissions or outgassing from construction or finishing materials can become concentrated within

the case. It is critical that only non-hazardous, non-emitting materials are used in the display and maintenance chambers or that a physical barrier is used to isolate potentially outgassing materials from the display chamber.

Sealed cases are also particularly susceptible to overheating due to improper lighting design or locating them next to a heating source. The lighting plan and ventilation design must prevent overheating. Similarly, placing a sealed case near heating or air-conditioning ducts or return vents or near a window can have an adverse impact on the microclimate inside the case.

Humidity Control Principles

Key Recommendations: Humidity-Control Principles

1. Provide a well-sealed case that will support humidity control. Minimize the air exchange between the case and the room to no more than one air exchange per 72 hours. Use moisture impermeable construction materials.
2. Ensure adequate air circulation within the case. Use a perforated deck or a floating deck with a perimeter gap to avoid impeding the air from circulating throughout the display and maintenance chambers.
3. Provide separate access to the environmental maintenance chamber. Access panels to the environmental controlling equipment should be as small as feasible and tightly sealed with gasket materials. Large cases may require numerous points of access.
4. Test the case before enclosing objects. Ensure that the humidity inside the case meets the conservation criteria.

5. Monitor the interior relative humidity for the duration of the exhibit. If identical cases are used, systematic sampling may be adequate.

Stabilization vs. Control

Depending on the conservation criteria, a well-sealed case can either stabilize or control the interior relative humidity. Stabilization evens out fluctuations in the relative humidity, reducing the rate and degree of change that may occur in an uncontrolled exhibit space. Alternatively, the RH control approach maintains a specific constant level of humidity.

The ambient environment affects relative humidity within an enclosure because of air diffusion, primarily through gaps in the case and secondarily through permeable exhibit case materials. These factors must be understood before designing a case that will stabilize or control relative humidity.

Moisture exchange between hygroscopic components inside a case is an additional factor affecting internal humidity levels. Organic material, including display objects, wooden case elements, and paper or fabric liners, will release or absorb moisture in response to changes in the relative humidity or temperature within the case. This interplay can have a stabilizing effect on the relative humidity inside a case made of a significant quantity of hygroscopic materials. For this reason, cases can be loaded with cellulosic products and paper-based products.

Designing a Case for Humidity Control

A small volume of air is easier to control than a larger one. Therefore, a climate-controlled case should have the smallest possible ratio of air to

objects. The following additional features are required in a humidity-controlled case:

- a minimum air exchange between the case display chamber and the ambient environment
- a means of stabilizing or controlling humidity inside the display chamber-either an active (mechanical) system using humidifying/dehumidifying equipment or a passive system using silica gel, hygroscopic materials, or saturated salts
- adequate air mixing both within the display chamber and between it and the environmental maintenance chamber or climate-control equipment
- equipment to monitor internal relative humidity
- a means of reaching the mechanical or passive system for routine maintenance.

If the airflow within the case is restricted or pockets of still air exist, localized differences in relative humidity can develop. Air must circulate adequately between the display and maintenance chambers (or the environmental control equipment).

Adequate air mixture can be accomplished by:

- using a perforated material (at least 40% open) to construct the display deck and covering it with fabric to form a platform on which objects can be arranged or mounted; or
- using a floating deck design that has a perimeter gap (generally 5/8 to 1 inch wide) to allow air circulation along all four sides.

The case design must provide for access to the maintenance chamber but limit the escape of conditioned air when the access panel is opened.

Testing and Monitoring

A humidity- or climate-controlled case should be tested before objects are enclosed in it. After testing, the relative humidity must be monitored continuously to alert museum staff to equipment malfunctions or the need for maintenance. A reliable, inexpensive monitoring device is a small thermohygrometer; hardwired monitors or data loggers offer the possibility of remote sensing.

Key Recommendations: Active and Passive Humidity-Control Systems

1. Establish whether the goal is stabilization or control. Stabilizing the humidity inside a case is usually sufficient unless objects require a highly restrictive or specific RH range.
2. Select an appropriate method. Use mechanical systems cautiously, and choose specific equipment carefully. When using a passive system, design the case to include a holding area for the moisture-absorber medium with easy access for maintenance.
3. Provide safeguards for mechanical systems. Locate equipment in a maintenance area that does not transfer heat or vibration to the objects. Provide a constant power supply (including emergency generators), a monitoring alarm to alert staff to equipment malfunction, adequate water supply, and drain lines.
4. Include appropriate and sufficient moisture-absorber medium for passive control. Carefully calculate the type and quantity of silica gel or cellulosic materials to be used. The better the case seal, the less absorber required; the more

surface area of absorber, the faster its responsiveness.

5. Test and monitor the case. Evaluate the initial performance of active or passive systems before enclosing objects. Monitor the relative humidity for the duration of the exhibit to alert staff when maintenance is required.

Active (Mechanical) Systems

Several commercial companies sell equipment to create and maintain a specific environment within exhibit cases. These machines, in effect miniature HVAC systems, slowly feed conditioned air into the exhibit case and then either force the case air into the room or recirculate it. Commonly referred to as microclimate generators, such machines can provide a wide range of humidity levels more effectively than a building HVAC system and offer the possibility of refined relative humidity adjustment beyond that of a passive system.

Mechanical systems have been used with varying degrees of success. Most are expensive and not capable of compensating for the temperature swings that occur in an exhibit space. A water source and drain are required for humidification and dehumidification; water purity is an important issue as unfiltered water supplied to humidifiers can cause mechanical failure. The systems require considerable maintenance and introduce the risk of an electrical failure or equipment malfunction. Standby emergency generators are recommended to prevent damage from severe environmental swings during a power failure or mechanical downtime. The generators, in turn, create budget and storage issues. In addition, the relative humidity and temperature inside the case needs to be

monitored continuously, and the monitoring system should be connected to an alarm that alerts staff of an equipment malfunction. These systems require considerable staff time.

Despite their drawbacks, mechanical systems are very useful in certain situations—for example, when the passive system will not meet the conservation criteria. A mechanical system can also be installed as a backup emergency system for a passive system. It would function when the ambient environment is too extreme for the passive system to accommodate or when the passive system fails. If a mechanical system is desired, the conservator, designer, and facilities manager for the museum should be involved in researching and choosing a unit.

Passive Systems

In a passive environmental control system, a sealed case is designed to incorporate reactive materials that absorb and release moisture. The objective is either to stabilize (buffer) the enclosure against RH change or control (adjust) the interior RH to a specific level. Although these materials can both absorb and release moisture, they are known as moisture absorbers, and may be natural (such as cotton or cellulose fiber) or manmade (such as silica gel).

Experience has shown that passive humidity control is very effective and can be incorporated into museum cases without major expense. Low maintenance and low initial expense makes passive designs especially attractive for museums with restricted exhibit budgets or for exhibits with many cases or cases in diverse locations.

A passive system to stabilize or control the relative

humidity inside a case requires:

- a well-sealed exhibit case—one with an air exchange rate of no more than one per 72 hours is recommended; an moderate-seal of one per 36 hours is less effective and requires much more absorber;
- a sufficient quantity of a moisture absorber;
- adequate air circulation over the absorber and between the display and maintenance chambers;
- a practical method of installing the absorber and periodically adjusting or replacing it; and
- a system to monitor the relative humidity inside the display chamber.

Three types of reactive materials are used in humidity-stabilized or humidity-controlled cases: silica gel, cellulosic materials and saturated salts. Use of these materials is discussed in more detail later in this section.

Stabilizing (Buffering) Humidity

Cases that buffer humidity are not engineered to provide a fixed or controlled relative humidity but to stabilize the interior environment from the more rapid changes occurring outside of the enclosure. In particular, a buffered case will even out daily cycles in interior relative humidity. This approach is practical for achieving a moderate relative humidity when humidity-sensitive objects can tolerate some degree of relative humidity fluctuation.

Reducing the effect of daily changes in relative humidity is an important conservation premise. Annual recording at a variety of museum sites has shown that in most exhibit spaces the daily fluctuations in relative humidity are too great for the safe display of humidity-sensitive materials. However, even in museums with no humidity control the

average relative humidity in any given year is usually within the acceptable range of 40 to 60% RH (outside of extremely arid or humid regions). The humidity levels in a buffered case are, by design, self-regulating between seasons. They will tend to reflect the yearly average of the whole exhibit space.

Humidity-stabilized cases, if designed correctly, require little maintenance. These cases are practical in most situations. They require less staff maintenance than controlled cases, and they reduce the need for frequent entry. Enough of the moisture-reactive substance, can be included in a case to buffer the internal environment throughout a three- to four-month season. Even in exhibits with an RH differential of 30%, humidity-stabilized cases can be maintained for up to four months with only a 5 to 10% RH drift. Under the most extreme conditions, such as prolonged periods in which the room and case environments differ by more than 30% RH, it may be necessary to add a small amount of moist or dry absorber to boost the stabilizing absorber back to the acceptable range.

Controlling (Adjusting) Humidity

In contrast to humidity-stabilized cases, humidity-adjusted cases aim to maintain an exact relative humidity for the duration of an exhibit. This type of case has been the subject of considerable experimentation by museums.

Traditionally, a moisture absorber such as silica gel is conditioned to a specific RH and enclosed in a tightly sealed case. The gel requires reconditioning when it can no longer maintain the case atmosphere at the intended relative humidity level.

Reconditioning and handling of the silica gel requires considerable staff time and training (few automated systems are commercially available for conditioning the gel in place). A particular challenge of these case designs is the environmental fluctuation to which the objects are exposed when a case is opened to recondition the gel. When possible, the case design should be elaborate enough to allow the gel to be reconditioned without opening the main case door and producing a total air exchange.

Moisture Absorbers Used in Cases

Silica gel is very effective at regulating relative humidity because of its large surface area, which allows large quantities of moisture to be absorbed or adsorbed. Silica gel beads or pellets can be placed in containment trays or held in bags made of synthetic fiber fabrics (such as quilted nylon mesh bags that weigh one pound or more).

Cassettes, panels, and tiles of silica gel are also available (or can be fabricated by museum staff), as are papers and foams impregnated with hybrid gels. Hybrid gels developed during the last decade, however, are better at maintaining an RH of between 40 and 60%. Traditional silica gel works well as a desiccant and can maintain a relative humidity of between 30 and 40%.

Silica gel function is improved by spreading the gel out over a large area which serves to increase the exposed surface area of the gel. Loose silica gel beads should be held in shallow beds, 1 to 2 inches deep so that air can easily penetrate the gel. Tiles filled with gel should stand on end when possible to encourage air-to-gel contact.

The quantity of moisture absorber required in a specific case depends on these factors:

- the type of absorber (e.g. silica gel)
- the volume of the display chamber and the permeability of its materials
- the degree of seal in the display and maintenance chambers
- the moisture-reactive qualities of the case and its contents
- the projected differential between the desired interior humidity and exterior environment
- the temperature fluctuation within the case
- the length of time the case is to perform without maintenance
- degree of air circulation between the display and maintenance chambers

Some degree of experimentation will be necessary to determine the quantity of silica gel. The quantities of absorber required must be related to the type of cases designed and the degree of seal achieved. A rule of thumb for a well-sealed case is $\frac{1}{4}$ pound of hybrid silica gel to buffer 1 cubic foot of air- a moderately-sealed case requires at least twice the quantity of gel. An unsealed case cannot provide any climate control even when a tremendous amount of gel is included.

Using Cellulosic Materials and Saturated Salts

Cellulosic materials placed inside a case can provide a practical, low-cost means of stabilizing relative humidity. Any hygroscopic cellulosic material, including cotton, wood, or paper (sheet, paperboard, or honeycomb panels), will absorb or release moisture in response to changes in relative humidity. A case loaded with such materials will experience a more stable relative humidity than that of the ambient exhibit environment. However,

these materials are often not as efficient at controlling atmospheric moisture in the case and may introduce subsequent problems and contaminants such as acidity and mold infestation. Large quantities of these natural buffers are required, making them less efficient than silica gel for use in cases having large air volumes.

Saturated salts, although they have been used effectively in the past, have been largely superseded by easier-to-use silica gel. There are logistical complications in case design and maintenance when using saturated salts. In addition, salts require special handling, and they tend to seep over the edges of conventional containers. This can result in contamination of display objects. Salts can be useful, however, in conditioning silica gel outside cases.

Appendix F: One Approach for Station Interpretation at San Juan NHS

Explore the idea of providing station interpretation beginning at the entrance area. Utilize three stations in the fortifications to deliver park themes and messages. Have a "Tool Box" of props and other helpful items for each station. Rotate between stations and the entrance station.

- Station 1: Initiate a 5 minute orientation talk "What to Do While Visiting San Juan National Historic Site (NHS)", or "Welcome to San Juan, NHS". Deliver this talk continuously throughout the day. Theme 1: should be intertwined in this presentation - the strategic location for two empires. Staff should explain how visitors can learn about this history through media and personal services provided, and convey important safety messages. Purpose of talk: information and orientation.
- Station 2: Some where on the plaza level, station the 2nd staff member to deliver a 3 - 5 minute talk interpreting theme 2, which deals with the history of fort construction and the soldier experience. This staff member will also provide basic information and orientation services.
- Station 3: At the top level the 3rd staff member delivers a 3 - 5 minute talk interpreting theme 3 -- life in a fortified town. This is where town elements are easily viewed. This staff member will also provide basic information and orientation services.

The NPS preservation mandate addressed in theme four should be included at every location.

At station one, on-going repair and restoration should be attached to a message about care while visiting and safety considerations. While in other locations, interpretation of visible projects completed or obvious preservation needs viewed from that location can be addressed.

Appendix G: An itemized list of interpretive facilities.

Definitions

Bastion - A projecting part of a fortification.

Battery - An emplacement for artillery. This is a somewhat generalized term covering emplacements not otherwise distinguished, i.e. a bastion.

Casemate - multi-purpose rooms in the fort; common uses included storage, firing artillery or troops quarters.

Cureña - ornate, four wheeled carriage for a cannon in the 17th and 18th centuries.

Embrasure - a flared opening in a wall or parapet for a cannon.

Emplacement - A prepared position, as a platform for mounting, for a gun.

Esplanade - A flat, open, stretch of pavement or grass.

Loop hole - A protected hole in a wall allowing a view of the base of the wall.

Parapet - a section of wall used to protect infantry from enemy fire.

Paseo - A passage or trail.

Pintle - An upright pin or bolt used as a pivot, as in a gun emplacement.

Polvorín - a place where gun powder was stored often referred to as a powder magazine or powder house.

Race - The track where the outer wheels of a pivoted gun roll.

Sentry Box/Garita - Outpost or guard station built on top of a wall which extends outward so as to allow a view of the base of the wall.

Terreplein - A horizontal platform behind a parapet where heavy guns are mounted.

San Cristóbal

San Cristobal "Ramp Entrance"

Main Gate San Cristóbal

Guard House

- Brochures are available on the fort, the park, and the area, in general. There is at least a visitor use assistant available for information.

There are 3 orientation exhibits:

"Welcome to San Cristóbal"

"San Juan-Safe Harbor"

"For Your Safety"

There is also a display of muskets, the case of which is coming apart. (Removed 2005.)

On the outside there is a brass plaque saying "Guard House"

There is a PA system for general announcements. There is one closed room for storage to support visitor services.

Upper Parking Lot (Norzagaray Entrance)

Waysides:

"San Juan's Defenses"

Sign "Hours of Operations", (removed in 2005)

Visitor Center Entrance (Also called "Building 213; this is a converted World War II bunker.)

Entrance Hall

Fee Station

Sign with hours of operation, tour schedule and other information.

Eastern National bookstore and offices

Central Hall

Decontamination Chamber #1

Exhibits: "Joint Operations Center/Decontamination Chamber"

Decontamination Chamber #2

Exhibit: "Blueprints of Decontamination Chamber"

Auditorium with video on the history of the forts

Brochure dispensers: San Juan NHS, Puerto Rican attractions.

Exhibits:

"The San Juan National Historic Site" dark

"The Fortifications Since The Spanish-American War"

Restrooms

Behind locked glass door, interpretation

and cultural resources offices, conference and lunchroom,

Exhibits: "Fortifications in the Caribbean" 33 panels closed to public.

Elevator Hall

Exhibits:

"San Cristóbal Castle as a military Reservation" 3 panels.

"Preservation at the Forts"

8 "Photographs of San Juan NHS"

San Cristóbal Northern Casemates, Officers' Quarters

Casemates are numbered going from West to East, starting at the Norzagaray St. Overlook.

Casemate #1

Empty

Casemate # 2

Water fountain

Casemate #3

Secured. Unused display parts, concrete bathtub in embrasure. This could be used to interpret officers' life or other.

Casemate #4

Eastern National Bookstore

Casemate #5

Cannon 8 pound "Proconsul" with tools. Video of cannon firing drill, on demand, in Spanish only

4 Exhibits:

"The Battle of 1797"

"8 pounder - Proconsul"
 "Gunners Tools"
 "The English Attack on San Juan"
 Display: 'Spanish Artillery Officer'

Casemate #6
 2 stacks of barrels and 2 benches
 Display: 'Model of the Santa Maria' sails
 need cleaning
 'Spanish Conquistador 16th
 Century'

Casemate #7
 Empty.

Casemate #8
 1 bench
 4 exhibits:
 "U. S. Campaign Map of Puerto
 Rico"
 "Since 1900"
 "A New Mission - World Heritage
 Site"
 "War of 1898"

Display: 'Spanish Artillery Officer'

Casemate #9
 Secured Storage

Casemate #10
 Secured Storage

Casemate # 11
 Second level over magazine
 Empty

Casemate # 12

Second level over magazine
 Empty

Second Level - Ordoñez Battery

Wayside: "The Bombardment of San Juan"
 Old Wayside: "War Begins"
 Ordoñez Rifle in poor shape.
 Other gun emplacements.

East Wall/ San Cristóbal Troops Quarters First Floor, North to South.

Troop Quarters - exhibit 18th century troop quarters.

5 Exhibits:

"The Puerto Rican Militia"
 "The Treasure Fleets"
 "Spanish Forts of the Caribbean"
 "A Master Plan"
 "The Caribbean - Pirate Haven"
 "San Juan"

4 Displays:

'Builders of Forts' tools, too dark to see!
 'Treasure of the Americas' Too dark.
 Model of San Cristóbal 1835, including the outworks and the 'Puerta de Tierra'. Model in good shape but the display panel is worn out and flip panels have been destroyed.
 'Soldier of the Fixed Regiment"

Entrance to Troop Quarters

2 secured storage rooms

2 benches

2 Exhibits:

"Field Marshal Alexander O'Reilly"

"Arms of Charles III"

Stairway to second level.

Area is very dark.

New exhibit: "San Juan: The City That Outgrew Its Walls"

Second Floor

Stairway landing

2 old displays:

'El Año Terrible de 1887'

'San Juan National Historic Site - Maintenance Division'. Old cases, dilapidated contents: scheduled for removal.

Plaza

Cannon Displays - 9 recovered pieces that were badly weathered when found. Resting on the ground.

Old Waysides:

"A Hidden Defense" on the tunnels.

"Troop Quarters"

"Santa Barbara Chapel"

"Visiting Castillo San Cristóbal"

"A Crew on Command"

New Waysides (2002):

"Rehabilitation of the Troop Quarters"

"Cisterns of San Cristóbal"

Brass Plaques:

"World Heritage Site"

"Guard House"

El Caballero (Third Level)

2 Cannon, on concrete pedestals

3 flags flying (US, PR, Cross of St Andrew-Old Spanish Military Flag)

Old Wayside: "A walled City"

New Wayside: "15 cm Ordoñez Rifle"

2 Brass Plaques:

"Circular Staircase"

"Fire Control Station"

Gun Emplacements.

Observation post, 2nd World War, appears to be base end station, secured and used for storage.

Plaza

West Wall

Officers' Quarters

Map "Spanish Empire"

Exhibits:

"For God, Gold and Glory"
"The Explorers" With push buttons
for routes on map.
"Ponce de Leon"

Exhibit: "History of Uniforms"

Old relief map of Puerto Rico (removed
2004)
Old Display "Parts of the Spanish Uniform,
18th century - Infantry" Base full of ter-
mites.

Exhibit: "Flags of the Forts"
Secured Storage room.

Main Firing Battery, 2nd Level

Displays:

Brass Cannon on concrete pedestal.
2 piles of cannon mortar "bombs"

Old Wayside:

"Main Firing Battery"
"Howitzer"

Brass Plaque: "Observation Post"
Observation post, 2nd World War, secured
and used for storage.
False wall with modern (US) gun emplace-
ments.

Outworks

Access provided by guided tour only.
Various Bastions with Wayside Exhibits.
Mining Tunnels.
Evidently, there were a number of defensive struc-
tures that are now absent or covered over.

Fort El Abanico

Complex system of outer and inner bastions sepa-
rated by dry moats and connected on two sides to
the wall.

Interesting casemate with lateral tunnels. Secured
storage.

Unused restroom of later vintage.

La Princesa Battery

1897 Bomb Proof bunkers used as magazines,
north of Abanico battery and connected with
masonry protected passages. Various interconnect-
ing passages/rooms. Some secured and used for
storage. Remains of older gun emplacement with
15MM gun emplacement over it. Newer maga-
zine/troop quarters dating from the late 1800s.
Open and empty

One old wayside

Santa Teresa Battery

Walls and two gun emplacements, two open rooms
with 1897 protected passageways. Three troop
quarters/magazines, open and empty

One old wayside.

Old Wayside on "Outer Defenses".

San Carlos Ravelin

Three connected casemates, one with new floor, pumps and generator. Defensive embrasures with musket/rifle platforms. South side embrasures filled in leaving protected walkway outside and 3 newer gun emplacements. One Garita.

La Trinidad Counterguard

Three gated casemates on street level, storage. Three open casemates on lower level, empty. Upper level - terreplein with embrasures/ rifle platform

El Espigón Fort (Devil's Sentry Box). Old brass sign in parking lot. Closed to public.

Wall and bastions

Bastion de la Derecha de San Justo y Pastor

Brass explanatory Plaque
Fountain/bust of Columbus

Bastion of the Palms of Saint Joseph

Newer explanatory wayside.
Gated/secured garita
Bust of Francisco de Miranda
NPS explanatory plaque. English and Spanish
Brass explanatory plaque. Spanish and English

Capilla del Santo Cristo de la Salud

Aluminum explanatory plaque

Parque de las Palomas

Explanatory sign. Spanish and English

San Juan Gate

One wayside.

La Rogativa

Statue with brass explanatory plaque in Spanish.
1 garita.

La Rogativa to San Agustín Bastion

Various embrasures and one garita. No interpretation

San Agustín Bastion

Various embrasures and musketeer platforms.
Brass identifying plaque.

Polvorín

Maintenance - not open to public.
One wayside "El Morro"

Santa Elena Bastion

New gun emplacement. Several embrasures, primarily musketeer platform to take advantage of Dead Zone. Santa Elena Guard House used by Maintenance. No interpretive devices.

Battery just South of El Morro

Four newer gun turrets. No interpretive devices.

North wall

San Marcos Bastion (below Norzagaray parking lot)

Embrasures with Musket platforms
No interpretive devices.

San Sebastian Bastion

Two Garitas
Embrasures with Musket platforms
One drainage tunnel
No interpretive devices.

Santo Tomas Bastion (2nd Bastion West of San Cristóbal)

One Garita - gated
Embrasures with musket platforms
One cannon ramp and platform
No interpretive devices

Las Animas Bastion

Some embrasures with musket platforms
Garita - gated
Brass plaque
Appears to be partially filled in.

Santa Rosa Bastion (Neuro-Biology Zig)

One garita
Not open to public

Santa Rosa Bastion (Cemetery Bastion)

Garita
Embrasures with musket platforms
Identifying plaque

San Antonio Bastion

Odd structure in walls (magazine?)
Guard House
No interpretive devices.

San Felipe Del Morro

Water Battery

Not open to public.
Interpretive wayside at 4th level WWII anti aircraft base.

Tower

Three cannon embrasures
1898 shell in wall- No interpretive devices.
Wayside "El Morro's Tower"

3rd level

One casemate under 4th level. No interpretive devices.
Five connected casemates which had cannon pivots and troops quarters. No interpretive devices.
Circular staircase, bottom, labeled.
Three connected casemates. No interpretive devices.
One casemate leading to outside. Closed storeroom with several chambers. No interpretive devices.
Four casemates under ramp.
 Latrine - not labeled
 Kitchen with wayside
 Forge - labeled.
 Storeroom. No interpretive devices.

4th Level Santa Barbara Battery

Triangular staircase, bottom. Labeled and warning sign.
Eight semicircular cannon turrets with brick raceways. No interpretive devices.
9th covered by WW II anti aircraft gun base. 2 waysides
 "WWII defenses" refers to base end station on 6th level.
 "Harbor Defenses" refers to Water Battery and El Cañuelo.

Circular staircase, top. Labeled
Two garitas. No interpretive devices.
Six Cannon on concrete mounts. No interpretive devices.
Loophole. Free standing sign.
Numerous embrasures. No interpretive devices.
Latrine. Labeled.
Two casemates under ramp. No interpretive devices.
Guard tower. Probably U.S. vintage. No interpre-

tive devices.

5th Level, Main Plaza

Central Plaza

Magazine

Sign.

Partly closed containing shells of various vintages. Limestone block on pedestal.

No interpretive devices.

Storeroom. Plaque.

Kitchen. Named.

Casemate - maintenance storage

Two casemates - restrooms.

Casemate - cannon display

Connected to casemate w/ 2 brass plaques

"1887-1918 dedication.

"World Heritage Site"

Entrance to jail - now auditorium.

Casemate - Chapel.

Painting of Santa Barbara, altar, benches,

Holy Water font.

Casemate. EN outlet.

Wayside "Main Artillery Ramp".

Well to cistern. No interpretive devices.

Casemate. Empty.

Casemate. Divided, Empty.

Sign about casemates.

Casemate. Empty.

Casemate. Since 1898. New exhibits. War of 1898.

Casemate. Half closed. Rear- storage. Front - scooter parking

Casemate. Temporary theater. Some old exhibits on the Spanish empire and on San Cristóbal.

Casemate. Troupe quarters. Storage. Temporarily closed.

Casemate. Storage - closed to public.

Designated Exhibit Space (Museum exhibit removed in April 2006)

Casemate. Spanish empire. New. Electronics don't work. War in the Caribbean, Suit of armor - removed from exhibit in 2005.

Casemate. New Exhibits. San Juan - Fortified City.

Relief map of San Juan. Flip cards destroyed.

Wall design with dark displays-

hard to read- generally not enough light.

Casemate. Old exhibits on preservation.

Deteriorating.

Double Casemate. Old exhibits with missing display items. Battery model coming apart. Period

exhibits dark and hard to read.

Carmen Battery

Two semicircular gun mounts. No interpretive devices.

One cannon on concrete base. No interpretive devices.

Closed stairway leading to Magdalena Battery.

Triangular staircase. Sign.

Magdalena Battery

Carmen Battery

One cannon emplacement and embrasure.

No interpretation.

Sally Port

Guard House. Administrative. Closed to public.

New general information exhibit - free standing.

Two old metal orientation plaques.

Movable wayside "Castillo Del Morro"

Guard shelter - probably US. No interpretive devices.

6th Level

South Ramp

Casemate. No interpretive devices.
Stairway: labeled "Closed".

Austria Bastion

Two plaques.
Various embrasures and musketeer platforms - no interpretive devices.
Garita. No interpretive devices.
Mortar and bomb pile. No interpretive devices.

Curtain Wall

Free standing interpretive sign
Lighthouse with wayside exhibit. Operational - closed to public.

Ochoa or Tejeda bastion (North Bastion)

Two semicircular gun emplacements with iron races. No interpretive devices.
Wayside "A Walled City"
Observation Station- interpreted on 4th level wayside.

West Wall

Two semicircular gun emplacements. No interpretive devices.
WWII bunkers. No interpretive devices.

Dry Moat No interpretive devices.

Radio Bunker Administrative - closed to public.
No interpretive devices.

Esplanade Dutch Attack wayside, Dutch Monument (partially destroyed, top missing) with three stone plaques attached

North Side Trail

Not open to public; no interpretive devices

El Paseo del Morro

Waysides:

Stucco and Maintenance
San Juan Gate
San Augustine Bastion
Sentry Box
Key to the Indies
Fort San Felipe Del Morro
San Fernando Bastión
Harbor Defense
El Cañuelo

El Cañuelo

One wayside

Appendix H: References

Benchmark Position Description #1A Park Ranger GS-025-5, #1B Park Ranger GS-025-7; and #1C Park Ranger GS-025-9

Intermountain Region Comprehensive Interpretive Planning Guide

OPM Qualification Standards for General Schedule Positions GS-025 Park Ranger Series

Planning for Interpretation and Visitor Experience, Harpers Ferry Center

Position Classification Guide for the Evaluation of Professional Positions Engaged in Interpretive Work (GS 05 - 13), Office of Personnel Management, TS-43 December 1962

Position Classification Series for Guide Series GS-0090, TS-39, December 1961, (GG 04 - 06)

San Juan National Historic Site Business Plan, October 2003

San Juan National Historic Site Establishment Order, 1949

San Juan National Historic Site General Management Plan, 1985

San Juan National Historic Site Strategic Plan, 2003 - 2007

San Juan National Historic Site Visitor Study, Winter 1999 and Appendices, Report 110, Visitor Services Project, Park Studies Unit, University of Idaho

Selected Statistics of the Tourism Industry in Puerto Rico, 2001-2002 Edition, Division of Research and Statistics of the Puerto Rico Tourism Company

Sourcebook for Director's Orders on Park Planning

Visitor Use and Evaluation of Interpretive Media, September 2003, The National Park Service Visitor Services Project and Harpers Ferry Center

Appendix I: The Planning Team

San Juan National Historic Site

Walter J. Chavez, Superintendent
Bob Dodson, Deputy Superintendent (transferred to Fort Sumter National Monument)
Joanie Budzileni, Chief of Interpretation
César Carreras, Fee Program Manager
Doris Andino, Park Ranger-Interpretation
Russell Brown, Park Ranger-Interpretation (retired)
Freddie Aledo, Law Enforcement Ranger (retired)
Andrés Matos, Law Enforcement Ranger
Félix J. López, Acting Chief, Cultural Resource Management
Edwin Cólón, Facilities Manager
Angel Diaz, Facilities Manager (retired)
Magda Gonzalez, Administrative Officer
Karen Spohn, Budget Analyst
Maritza Acevedo, Archives Technician
José Flores, Mason Supervisor
Leonor Pérez, Administrative Support Assistant

Other National Park Service Staff

Mary Mallen, Park Ranger - Interpretive Planner, Harpers Ferry Center
Rich Helman, Wayside Exhibit Planner, Harpers Ferry Center
Dave McLean, Visual Information Specialist, Harpers Ferry Center
Toby Raphael, Conservator, Harpers Ferry Center
Amy Maslak, Administrative Assistant, Harpers Ferry Center
Mark Southern, Visual Information Specialist, Harpers Ferry Center
Lori Simmons, Cartographer, Harpers Ferry Center

Park Partners

Angie Alicea, Eastern National Site Manager
Marimar Benítez, Director, School of Plastic Arts
César de Jesús, Director of Planning, Puerto Rico National Park Company
Santiago Gala, State Historic Preservation Office
Charles González, Institute of Puerto Rican Culture, Director of Heritage Buildings Program
Kirsten González, Director of Historic District, Municipality of San Juan
Dr. Luis González Vales, Official Historian of the Commonwealth of Puerto Rico
César Guerrero, Puerto Rico National Park Company

Zuleika Hernández, Staff Architect, State Historic Preservation Office
José López, Park Friend
José Marull, Historian, State Historic Preservation Office
Lourdes Morales, Assistant Administrator, Puerto Rico Tourism Company
Ramón Nieves, Executive Director, Puerto Rico National Park Company
Lourdes Ranero, Museum Association of Puerto Rico
Adlín Ríos, Universidad del Sagrado Corazon
Marilyn Rivera Pérez, University of Puerto Rico, Carolina
John Ross, Travel Services of Puerto Rico
Blanca Ruiz, USDA Forest Service, Caribbean National Forest
Luis Sosa, Vice President, Tour Co-op
Bernice Vélez, Eastern National Caribbean Regional Manager (retired)

Consultants

Jane Anderson, Deputy Fee Program Manager, National Park Service
Todd Bolton, Supervisory Park Ranger, Harpers Ferry National Historical Park
Corky Mayo, Chief of Interpretation, Washington Office, National Park Service
Walter McDowney, Site Manager, Great Falls Park Virginia
Karen Michaud, Chief of Interpretation, Shenandoah National Park
Cherry Payne, Chief of Interpretation, Everglades National Park
Tony Sciantarelli, Audiovisual Department, Harpers Ferry Center, transferred
Sam Vaughn, Associate Manager, Interpretive Planning, Harpers Ferry Center
Don Wollenhaupt, Chief of Interpretation, Southeast Regional Office

Appendix J: Implementation Plan/Matrix Planning Tool

Ten-year program at a glance: this matrix corresponds to the Long-Range Interpretive Plan (LRIP). The information presented in this matrix reflects park direction in 2004 - it highlights major planning needs at San Juan NHS and will serve as a guide for future implementation of media and personal services. The matrix takes into account known factors identified by staff that will affect park operations and indicates major interpretive media and staffing increases required in order to achieve LRIP recommended projects and programs. Each year, when the interpretive staff develops their Annual Implementation Plan, the matrix can be used as a tool to make yearly adjustments necessitated by any changes in staffing, budget, special project money, new research, and any other unplanned opportunities or emergencies.

Program Update:

Following the conclusion of the May 2004 workshop, the park staff began to immediately address many of the problems and deficiencies identified during the planning process. Actions included:

- Superintendent Walter Chavez approved the draft-Long-Range Interpretive Plan in August 2004. In addition, he asked the planner to defer editing the document and focus energies to assist the park with obtaining Class C estimates from HFC to initiate Servicewide funding requests needed for the LRIP recommended media projects.
- The Chief of Interpretation implemented a training program for park rangers, park guides, and visitor use assistants in 2005. Topics addressed customer service and several Interpretive Development Program modules. The staff also initiated training for park-permitted local tour operators providing fort tours.
- During 2005, minor modifications were made to the interior of the Visitor Center (through the movement of some exhibits and fee collection facilities) to ease overcrowding and improve visitor flow.
- More cruise ship and local visitors now have access to park programs and facilities. The park expanded the operating hours of Forts San Cristóbal and El Morro for six months of the year and offer several new special programs and events.
- Media projects: during 2005 several media projects were funded - the development of a Parkwide Wayside Exhibit Proposal/Plan and Wayfinding Assessment/Plan and the captioning of two park films for programmatic accessibility. Recently, during 2006, funding was secured to begin the early stages for a parkwide Exhibit Proposal and related visitor assessment.

This matrix captures park direction in 2004. During upcoming annual implementation planning discussions, this document will be updated by park staff to more accurately reflect existing conditions and anticipated park planned actions and activities.

	05	06	07	08	09	10	11	12	13	14
Personal Services:	Research Fee Program Changes Identify new staff requirements to support: 1) fee/interp Program for general public 2) Media projects Submit OFS requests Develop opening procedures checklist	Implement Fee Interpretive Program Hire: new position to support future media projects. Consider: Either GS11 Media Interpretive Specialist or GS 9 Park Ranger w/ interpretive writing focus	Submit OFS request for new GS 9 ranger position VIP, outreach, and special events program	Hire ranger to pilot year-round special events program for local visitors and target recruit for VIPs	Conduct /institutionalize special events and VIP program. Maintain as an ongoing program.	Identify staff requirements to support Curriculum based education Programs. Consider: either GS 9 Park Ranger w/ educational programming responsibilities; or GS11 Education Specialist Submit OFS Request	Hire new personnel to support education program development. Make community contacts Develop education plan with phased implementation Identify staff and supply needs: seek funds	Pilot Phase I: Elementary Grade Program Seek funds ongoing staff and program support for education program	Implement: Phase I Elementary Grade Program Initiate Planning Phase II for Middle School Pilot Program Seek funds ongoing staff and program support for education program	...continue program development and implementation
Audiovisual Programs:	Retrofit AV film with captioning Provide English subtitles to Cannon-firing Demonstration video Update all PMIS entries: costs and project description	Integrate into exhibit concept plan: 1) interactive map showing fort changes over centuries; 2) audio tour; 3) Soundscapes	Maintain	If retained in new exhibit plan: 1) Convert Fort Brooke Video into interactive format.	Maintain	Initiate AV project: new park video; promo-film for cruise ships/hotels with web application, and feature length film	Complete filming and production for orientation, promo and web film	Complete feature-length film	Maintain	Maintain

	05	06	07	08	09	10	11	12	13	14
Audiovisual Equipment:	Repair all electronics “Explorers Exhibit” with marine grade equipment Install caption boards in both theatres (note: on-screen captions can be provided as an alternative). Write PMIS for high definition equipment upgrades	Maintain equipment	Maintain equipment	Maintain equipment Note: will require new equipment and seating if Fort Brooke exhibit is adapted to new exhibit design	Maintain equipment	Maintain equipment	Install new equipment for theatre upgrades	Maintain equipment	Maintain equipment	Maintain equipment
Exhibits:	Remove outdated exhibits Replace worn exhibit signs Install out-of-order signs for broken or missing exhibit elements, then repair Submit PMIS request for exhibit project to begin in FY06	Phase I: Initiate parkwide exhibit concept plan. Plan must address AV elements, conservation requirements, phased design and construction, and follow-up maintenance training. Update PMIS requesting phased design and construction money over fiscal years	Phased exhibit design and fabrication Update PMIS request for phased design and construction money over fiscal years	Phased exhibit design and fabrication Update PMIS request for phased design and construction money over fiscal years	Phased exhibit design and fabrication Update PMIS request for phased design and construction money over fiscal years	Phased exhibit design and fabrication Update PMIS request for phased design and construction money over fiscal years	...continue until completed			

	05	06	07	08	09	10	11	12	13	14
Publications: Park Produced	Update and print fort brochures Work w/ Que Pasa Staff to improve inclusion of park features: Paseo del Morro and El Canuelo	Ongoing...						Discontinue printing of brochure if HFC brochure includes self-guiding tour		
Publications: HFC Produced	Complete semi-annual inventory Minor updates when necessary	Complete semi-annual inventory Minor updates when necessary	Ongoing..	Ongoing..	And.. Request review of HFC brochure to assess if it can replace park-produced self-guiding brochure in FY10 (usually a 2-year backlog)	Complete semi-annual inventory	Review planning needs for HFC brochure revision	Complete redesign of HFC brochure Request update to HFC produced handbook. Seek partner financial support to Expand handbook to include new interpretive themes and research	Update Handbook	Complete project: Handbook Update
Training:	Develop guides and hands-on demonstration items for station interpretation Conduct seasonal and refresher interpretive training	Launch station interpretation/ fee program Conduct seasonal and refresher interpretive training	Conduct seasonal and refresher interpretive training Plan in-depth interp. course on military history and tactics for specialized audiences	Conduct seasonal and refresher interpretive training Conduct: in-depth interp. Course on military history and tactics for specialized audiences. Survey needs for future theme related training.	Conduct seasonal and refresher interpretive training Conduct one in-depth theme related staff seminar	Conduct seasonal and refresher interpretive training Conduct one in-depth theme related staff seminar	Ongoing...			

	05	06	07	08	09	10	11	12	13	14
Signs: Within Park	Install signs within forts to assist with self-guiding brochures. Sign out-of-order exhibit Components indicating repair underway; then fix.	Integrate NPS Identity sign standards when replacing Maintain for visual quality and visitor assistance needs	Integrate NPS Identity sign standards when replacing Maintain for visual quality and visitor assistance needs	Ongoing...						
Signs: Outside Park Boundary	Consult with neighbors to improve directional signing to park	Consult with neighbors to improve directional signing to park	Consult with neighbors to improve directional signing to park	..ongoing..						
Waysides:	Maintain Existing Waysides Submit PMIS request for wayfinding and wayside exhibit project to begin in FY09	Maintain Existing Waysides	Maintain Existing Waysides	Maintain Existing Waysides	Initiate Wayfinding and Wayside Exhibit Proposal and Plan, and update PMIS funding request for Wayfinding and Wayside Exhibit Plan, fabrication, and installation.	Complete Wayfinding and Wayside Exhibit Plan Update PMIS entry for wayfinding and wayside exhibit fabrication and installation.	Fabricate and install new waysides and signs Update PMIS entry for wayside exhibit fabrication and installation.	Fabricate and install new waysides and signs	Maintain Waysides	Maintain Waysides
Partnerships:	Review Scope of Sales Document to address new themes And have related link to on-line sales	Explore partner- ship/park opportunities	Ongoing...	Explore partner opportunities to achieve mutual in-depth training needs	Ongoing...	Seek partners for the park Handbook project	Foster partnership opportunities			

	05	06	07	08	09	10	11	12	13	14
Website:	Maintain website: address Short-term improvements needed to current site Link park website to key affiliated visitor trip planning sites	Develop new template in NPS graphic identity standards Incorporate changes in Spanish version extension	Maintain site with current information and check links	Ongoing maintenance	Ongoing maintenance	Ongoing maintenance	Ongoing maintenance	Integrate education program Upgrades in to the website and “Just for Kids” pages	Ongoing maintenance	Ongoing maintenance
Conservation:	Address Conservation and security concerns at El Morro	Include curator-cultural resource manager through-out exhibit planning process Conduct training to make collection accessible to interp staff Broaden opportunities for scholarly access	Include curator-cultural resource manager through-out exhibit planning process Conduct training to make collection accessible to interp staff Broaden opportunities for scholar access	On-going						