



PUBLIC REVIEW DRAFT

June 8, 2009



**Moccasin Bend
National Archeological District**

**Development Concept Plan
Environmental Assessment /
Assessment of Effect**

MOCCASIN BEND NATIONAL ARCHEOLOGICAL DISTRICT

DEVELOPMENT CONCEPT PLAN

ENVIRONMENTAL ASSESSMENT / ASSESSMENT OF EFFECT

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MOCCASIN BEND VIEW FROM LOOKOUT MOUNTAIN

CHAPTER 1:

Purpose
and Need
for the Plan

INTRODUCTION

BRIEF DESCRIPTION OF THE AREA

Moccasin Bend is a peninsula formed by a prominent bend in the Tennessee River, situated to the west and just across the river from downtown Chattanooga, Hamilton County, Tennessee (see figure 1, location map). The area contains nationally significant archeological sites that chronicle approximately 12,000 years of continuous American Indian occupation. The Trail of Tears National Historic Trail passes through portions of Moccasin Bend, commemorating the forced removal in 1838 of Cherokee Indians from their ancestral homelands. Important Civil War-era earthworks and associated resources are also located along Stringers Ridge at the southeastern portion of the Bend.

The 956-acre Moccasin Bend Archeological District National Historic Landmark (NHL), designated in 1986, recognizes the national significance of these cultural resources (see figure 2, boundaries). In 2003, 755 acres on the Bend were added to Chickamauga and Chattanooga National Military Park (NMP) as the Moccasin Bend National Archeological District (unit) of the park. This development concept plan / environmental assessment (DCP/EA) presents a range of alternatives for interpreting the significant resources of Moccasin Bend to the visiting public, including the development of an interpretive and cultural center.

The topography of Moccasin Bend ranges from primarily flat land with low-lying floodplain areas at the western edge, to steeply sloping ridges on the east. Elevations range from about 660 feet above mean sea level at the western edge to approximately 820 feet above mean sea level along the eastern ridge.

Native vegetation on Moccasin Bend has been degraded by previous sand and gravel

dredging and from agricultural and development activities. Portions of the Bend were cultivated for row crops and other areas were used for pastures. By the 1960s, several of these disturbed areas had begun to return to natural conditions. Plant communities are presently in early stages of succession to forests and consist of dense understory with scattered deciduous hardwoods. Vegetation in upland areas consists of a mixed forest canopy of evergreen and deciduous trees. Various stages of old field succession exist in the northern portion of the national archeological district; wooded lands are on Stringers Ridge on the eastern portion, and old fields, woodlots, lawns, and hayfields are on the southern extremity on land occupied by the state-owned Moccasin Bend Mental Health Institute.

The varied land uses on Moccasin Bend include government facilities and residential, recreational, and industrial development. Lands are held by the National Park Service (NPS) (755 acres), the City of Chattanooga and Hamilton County (183 acres), the City of Chattanooga (184 acres), the state of Tennessee (102 acres), and private landowners (22 acres). On the northernmost area of the Bend is a 99-acre tract of NPS land that was previously owned by the Rock-Tenn Company. At that tract's southern boundary is the City of Chattanooga-owned Moccasin Bend Wastewater Treatment Facility. Near the junction of Hamm Road and Moccasin Bend Road are a small residential area, a City of Chattanooga and Hamilton County tract, and an NPS tract referred to as the former Serodino property.

The City of Chattanooga and Hamilton County jointly own the Moccasin Bend Golf Course, the Law Enforcement Firearms Training Range, and the site of a former model airplane facility. The 22 acres under private ownership include the WDEF radio

towers and a private residence. The state mental health hospital occupies 102 acres on the southern portion of the bend. Traversing the bend are two Colonial Pipeline 50-foot petroleum pipeline rights-of-way, and a Chattanooga Electric Power Board 150-foot right-of-way for a high-tension power line. Interspersed among these public and private parcels are NPS tracts, one of which includes the Blue Blazes Trail that crosses between the golf course and the WDEF radio towers. The Park Service also owns shoreline easements bordering the wastewater treatment facility, golf course, mental health hospital, and firearms training range.

PURPOSE AND NEED FOR THE ACTION

The purpose of the proposed National Park Service action is to provide and suitably locate educational and interpretive information about Moccasin Bend's significant resources to the visiting public. As a means to achieve these objectives, various site locations on Moccasin Bend were evaluated for the development of an interpretive/cultural center, as well as possible provision of interpretive and educational functions at existing visitor centers of Chickamauga and Chattanooga National Military Park. As part of the 2003 legislation that established the national archeological district, the secretary of the interior was given the discretionary authority to develop and administer a visitor interpretive center for interpreting the district's historical themes and cultural resources.

The action is needed to ensure that interpretation of Moccasin Bend's resources and stories is carried out in an environmentally responsible and culturally sensitive manner that is compatible with the long-range planning objectives for management and protection of the national archeological district. Based on an evaluation of a range of planning alternatives, the Park Service proposes to select a preferred development option that best addresses the scope of desired facility functions and

activities while also ensuring the protection of sensitive resources. All planning and design considerations for this project have (and will continue to be) undertaken in cooperation with partners, affiliated American Indian tribes, and other stakeholders.

PLANNING/LEGISLATIVE HISTORY AND BACKGROUND

The first documented archeological excavations on Moccasin Bend were conducted in 1914-15. Beginning in the 1920s, various unsuccessful proposals were advanced to provide a public park on the Bend primarily for recreation and to protect the site's scenic beauty (not necessarily its archeological resources) from industrial development. By the 1940s, increasing recognition of the Bend's importance began to galvanize broad public support for site protection. In 1950, with the backing of the secretary of the interior, the U.S. Congress enacted legislation authorizing the addition by donation of 1,400 acres of Moccasin Bend to Chickamauga and Chattanooga National Military Park. At that time, Moccasin Bend was almost entirely open space. Although authorized property was acquired by state, county, and city governments, no lands were transferred to the National Park Service at that time (NPS 1998).

During the 1950s and 1960s, various facility developments and public uses of Moccasin Bend were completed. Among the facilities constructed during the period were a mental health hospital, golf course, sewage treatment plant, radio transmission towers, a model airplane flying facility, and a law enforcement firearm training range. In 1959, the National Park Service declined local overtures to acquire the Bend as an addition to Chickamauga and Chattanooga NMP because of the various nonconforming land uses.

In 1963, construction was undertaken to widen the bank of the Tennessee River to accommodate Interstate 24 on the opposite (south) side of the river from Moccasin Bend. The construction included the dredging of a

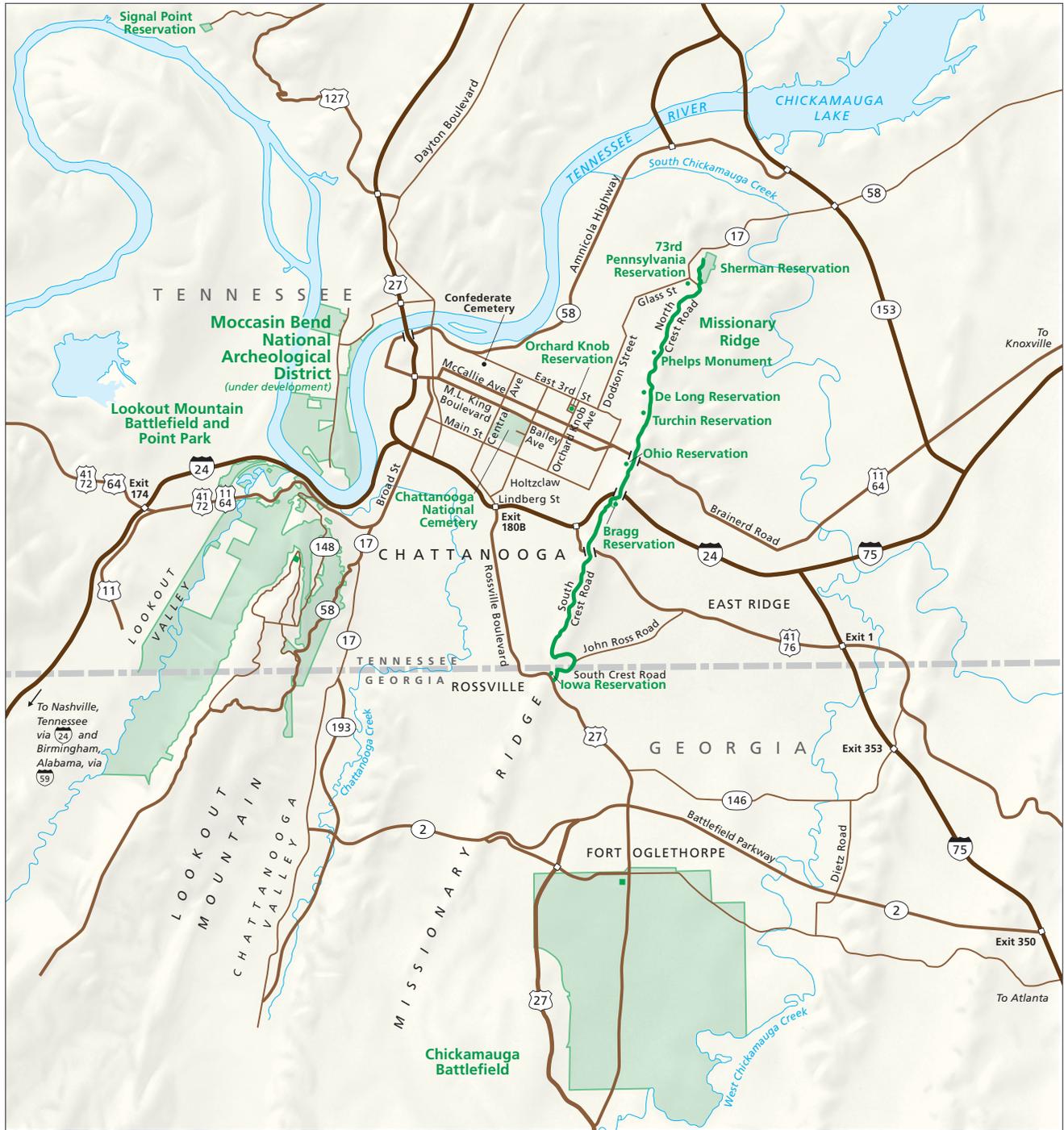


Figure 1
Location
Moccasin Bend National Archeological District
 United States Department of the Interior / National Park Service
 P50 • 2004 • DSC • June 2009



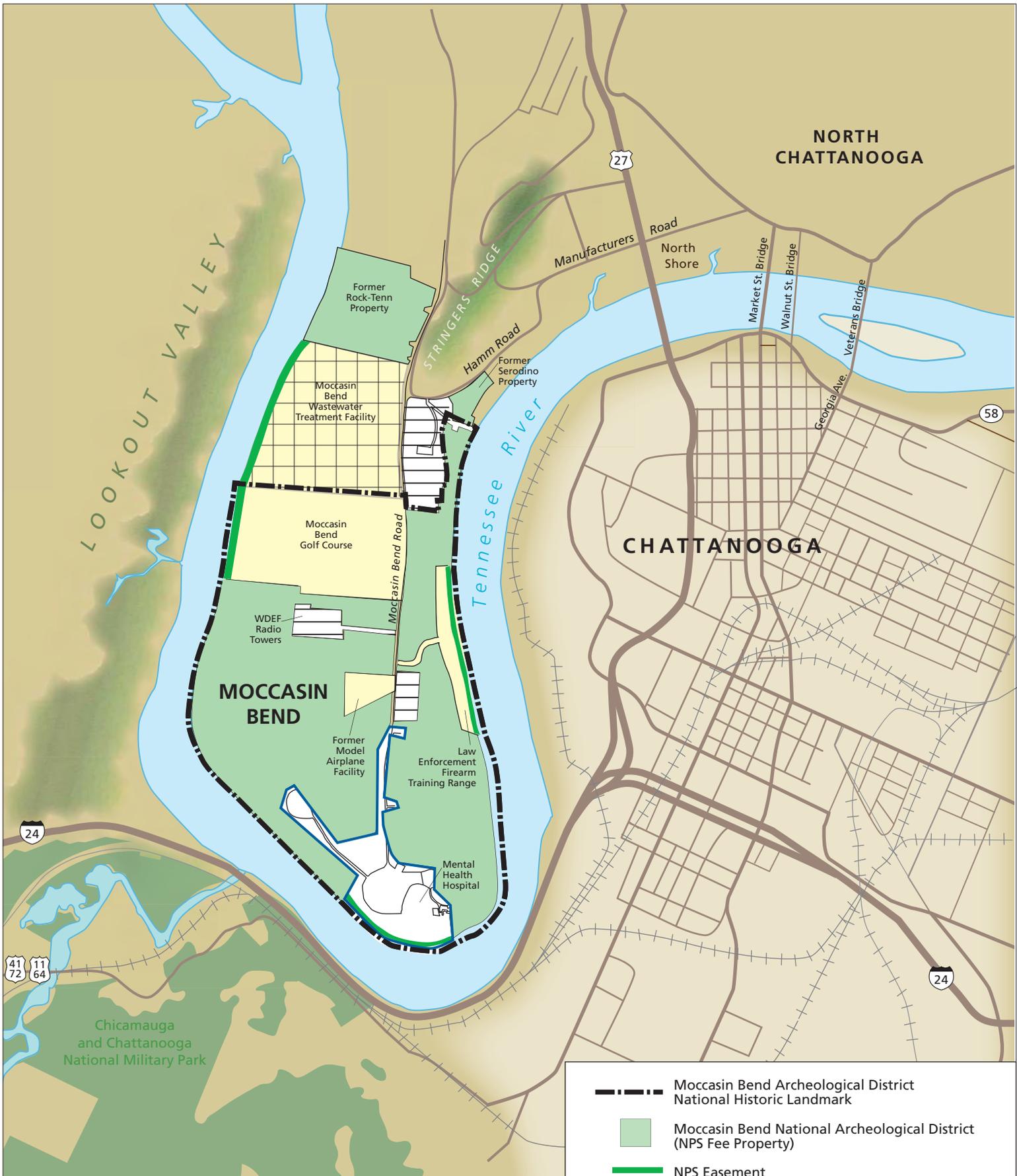


Figure 2

District Boundaries

Moccasin Bend Archeological District National Historic Landmark
 Moccasin Bend National Archeological District

United States Department of the Interior / National Park Service

P50 • 2005 • DSC • June 2009

-  Moccasin Bend Archeological District National Historic Landmark
-  Moccasin Bend National Archeological District (NPS Fee Property)
-  NPS Easement
-  City of Chattanooga and Hamilton County
-  Private Property
-  City of Chattanooga
-  State of Tennessee

strip of riverbank (500 feet long x 125-250 feet wide) from Moccasin Bend's southwestern tip. The dredged material was slurried and pumped onto the first terrace of the Bend. Although archeological resources were disturbed and lost by the dredging operation, archeological salvage investigations carried out in conjunction with the project confirmed that American Indians occupied the location for several thousands of years.

By the early 1980s, an organization known as the Moccasin Bend Task Force was established to explore development options for Moccasin Bend as a tourist destination and to provide economic stimulus for Chattanooga. This prompted further extensive archeological investigations, and in 1984 the archeological resources identified at the southern end of the Bend were listed in the National Register of Historic Places. Further recognition of the national significance of the resources led to designation of the 956-acre "Moccasin Bend Archeological District National Historic Landmark" in 1986.

Growing concern was expressed at this time by Cherokee and other culturally associated tribal members for protection of ancestral burials and recognition of the area's religious importance to American Indians. Widespread looting and grave robbing had impacted the archeological resources and burial sites, particularly following the end of small-scale commercial truck farming on the southern end of the Bend in 1974. The limited level of law enforcement protection and monitoring on the Bend at the time was inadequate to deter the illegal site disturbances.

By the early 1990s, renewed support had emerged for the addition of the national historic landmark district to the national park system. Among the local supporters was the Friends of Moccasin Bend National Park, Inc., a nonprofit organization formed in 1995. A study undertaken by the organization found that positive economic benefits would accrue to the community if the site were developed as

an NPS unit. The Friends of Moccasin Bend proposed that an American Indian interpretive center be developed outside the boundaries of the national historic landmark district. The Park Service and the Friends of Moccasin Bend met in 1997 to begin collaborating on a planning approach for the Bend that would determine the best management, protection, and use strategies for the area (NPS 1998).

In 1998, the National Park Service prepared a draft *Moccasin Bend Cooperative Management Plan / Environmental Assessment (Special Resource Study)* that favorably evaluated the *suitability* of the area as a new national park system unit because of the national importance of the area's archeological and historical resources. However, the study determined that the area failed to meet the NPS *feasibility* criteria of new areas because of the incompatible land uses then in existence that diminished opportunities to effectively carry out comprehensive resource protection and provide for quality visitor experiences. The study concluded that the area could be determined feasible as a new unit of the national park system provided the multiple governmental agencies involved in management of the Bend committed to a binding agreement for phased removal of incompatible land uses and any hazardous wastes. This would allow an opportunity to restore the Bend's cultural landscape to approximate its appearance at the time of the 1950 authorizing legislation.

The cooperative management plan initially assessed seven planning alternatives for site management. Two of the alternatives were ultimately selected for further analysis: 1) continuation of existing conditions, and 2) establishment of a Moccasin Bend National Historical Park. As proposed by the latter alternative, the historical park would become a new national park unit under the administration of the superintendent of Chickamauga and Chattanooga NMP. The alternative placed primary focus on the Bend's significant archeological and historic

resources, with site management involving close collaboration among the Park Service, associated American Indian groups, and other public and private partners committed to Moccasin Bend's preservation and interpretation (NPS 1998).

In October 2001, the U.S. House of Representatives passed H.R. 980, a bill calling for establishment of the "Moccasin Bend National Historic Site" as a unit of the national park system. However, the National Park Service recommended to congressional committees (in June 2001 and in June 2002) that the proposed addition of the historic site be postponed because of the agency's need to address the backlog of deferred maintenance at other existing NPS units. It was noted that the House bill did not adequately address the disposition of incompatible land uses on the Bend or provide a reasonable timetable for transference of lands to the secretary of the interior. The NPS objection to park unit designation also noted that subsurface cultural resources would continue to be at risk as long as portions of the archeological district remained under the jurisdiction of other land-managing entities that did not have resource preservation as a primary goal. However, the NPS statement of June 2002 to the U.S. Senate subcommittee on national parks noted that the addition of the Bend to the park system could yet occur provided that certain commitments and timetables for the land transfers were met along with agreement on operational issues (NPS 2001; NPS 2002).

A subsequent bill was introduced in the U.S. House of Representatives in January 2003 for establishment of the Moccasin Bend National Archeological District. The bill was passed and the archeological district was ultimately established as a unit of Chickamauga and Chattanooga National Military Park on February 20, 2003 (117 Stat. 248; Public Law 108-7). The legislation repealed the prior land acquisition authorities granted under the act of 1950. Among the administrative provisions of the legislation were the establishment of a visitor interpretive center in the archeological

district, and authorization for the secretary of the interior "to consult and enter into cooperative agreements with culturally affiliated federally recognized Indian tribes, governmental entities, and interested persons to provide for the restoration, preservation, development, interpretation, and use of the archeological district."

By the end of 2004, lands acquired by the Park Service for the archeological district included 420 acres from the city of Chattanooga and Hamilton County, 220 acres from the state of Tennessee, and 110 acres of private land. Excluded from the boundaries of the archeological district were the Moccasin Bend Mental Health Institute, the municipal golf course, the WDEF radio towers, the law enforcement firing range and the model airplane facility.

PURPOSE AND SIGNIFICANCE STATEMENTS

Purpose

Purpose statements are derived from the park unit's authorizing legislation and reaffirm the reason for which the area was established as a unit of the national park system. Purpose statements provide the foundation for all decisions regarding the management and use of the park unit.

The Moccasin Bend National Archeological District was established as a unit of Chickamauga and Chattanooga National Military Park by Public Law 108-7 enacted February 20, 2003. In accordance with the legislative intent, the archeological district was established "in order to preserve, protect, and interpret for the benefit of the public the nationally significant archeological and historic resources located on the peninsula known as Moccasin Bend, Tennessee."

Significance

Significance statements describe the distinguishing resources and characteristics that set a park unit apart in a regional,

national, and sometimes international context. These statements assist managers with making decisions that preserve the resources and values necessary to accomplish the purpose of the park unit.

- The Moccasin Bend National Archeological District possesses national and international importance based on approximately 12,000 years of continuous American Indian occupation. The archeological information and research potential of the district's excavated and unexcavated archeological resources are not duplicated within the national park system. These resources span periods of American Indian occupation from transitional Paleo-Archaic, Archaic, Woodland, Mississippian, European contact, and Cherokee removal.
- Moccasin Bend represents the best preserved, most important, and most concentrated archeological assemblage of Southeastern American Indian cultures known to exist in the Tennessee Valley.
- The Trail of Tears (the route followed during the tragic event of 1838 when the U.S. Government forcibly removed Cherokee Indians from their homelands) passes through portions of Moccasin Bend.
- Moccasin Bend retains profound spiritual importance for many contemporary American Indian tribes with ancestral ties to the area.
- Civil War earthworks on Stringers Ridge from the Battles for Chattanooga (1863) are the best preserved constructed remnants of the battles. These Union Army gun emplacements and related features represent the only surviving physical elements associated with the campaign.

Other Important Resources and Values

- Moccasin Bend has scenic values long held in high regard by the region's residents and visitors, particularly as part of the expansive vistas experienced from the top of Lookout Mountain.

PRIMARY INTERPRETIVE THEMES

Primary interpretive themes are based on park purpose and significance; they connect park resources to relevant ideas, meanings, concepts, contexts, beliefs, and values. They serve to increase visitor understanding and appreciation of the park's significant resources.

- Moccasin Bend contains many layers of resources representing approximately 12,000 years of human history and many different cultures that connect with American Indian peoples living today.
- The river and the peninsula, combined with abundant resources throughout the area, provided the peoples of Moccasin Bend with the necessities for sustaining community life.
- Moccasin Bend was a part of a larger network of trade routes, crossroads, and corridors, and was a focal point of multicultural contacts, interactions, and conflicts.
- The Trail of Tears, an event that forced the removal of American Indians from their Southeastern homelands, is part of the story of Moccasin Bend.
- The presence of human burials at Moccasin Bend makes it a sacred site to honor those who have gone before and a place for making spiritual connections.
- Moccasin Bend was an important strategic location for Union forces in Chattanooga, and was used to break the Confederate siege of the town in November 1863.

RELATIONSHIP TO OTHER PROJECTS AND PLANS

The following plans, policies, and actions could affect the alternatives being considered in this plan and environmental assessment. These plans and policies were also considered in the analyses of cumulative impacts.

General Management Plan / Development Concept Plan, Chickamauga and Chattanooga National Military Park (1987).

The existing general management plan is dated and a new plan is presently underway to provide a long-term management framework for the national military park including the Moccasin Bend unit. The 1987 general management plan, however, did consider options for protecting the Civil War resources of Stringers Ridge located on the Bend. The preferred alternative called for the Park Service to encourage existing landowners to protect the historically significant features of Stringers Ridge, but not to seek formal involvement in protection of the site. Other alternatives considered in the plan involved NPS acquisition of fee-simple title to Stringers Ridge and its establishment as a park unit, and the development of cooperative agreements or scenic easements to protect the ridge.

Draft Cooperative Management Plan / Environmental Assessment (Special Resource Study), Moccasin Bend, Tennessee (1998). This plan evaluated the suitability and feasibility of adding Moccasin Bend to the national park system. The plan affirmed the national significance of the site's archeological and historical resources, and recommended that a Moccasin Bend National Historical Park could feasibly be established as a unit of Chickamauga and Chattanooga NMP with the provision that an agreement be reached with government agencies and landowners for phased removal of incompatible land uses and hazardous wastes.

Moccasin Bend Stream Bank Stabilization Project (2005). The U.S. Army Corps of Engineers (Nashville District), in cooperation with the National Park Service, undertook this project in 2005 to control erosion impacting approximately 6 miles of Moccasin Bend's riverbank. An estimated 10 to 15 feet of riverbank has eroded into the Tennessee River over the past 20 years, and threats from erosion to the Bend's significant archeological resources and American Indian burials prompted the stabilization project. Protection

of cultural resources has led to the decision to employ minimally intrusive stabilization measures incorporating riprap and bioengineering techniques that involve the planting of native plant species. Public meetings and tribal consultations were held in 2005 as part of initial project planning. The first phase of construction is scheduled to begin in the fall of 2009.

Five-Year Chattanooga Greenway and Open Space Plan (April 1, 2005 – March 31, 2010). This plan was undertaken by the Trust for Public Land as part of long-range planning for the Tennessee Riverpark and Chattanooga Area Greenways System. The City of Chattanooga contracted with the Trust for Public Land in 1994 to assist the community with the development of a unified greenway system. The objectives for the Tennessee Riverpark are to provide a 20-mile-long circuit of publically accessible parks, trails, and landmarks that stretch from Chickamauga Dam through downtown Chattanooga to Moccasin Bend, and to connect the riverpark to other greenways in the area.

North Shore Plan (2007). The Chattanooga – Hamilton County Regional Planning Agency undertook this plan to provide long-term vision and design recommendations for Chattanooga's North Shore area. The plan proposed goals to address a wide variety of issues regarding residential and commercial development, transportation, public spaces, natural systems, viewsheds, and other topics. The following recommendations were provided to link the North Shore with Moccasin Bend:

- 1) Provide a greenway connection between Renaissance Park and Moccasin Bend in cooperation with the Trust for Public Land and the National Park Service.
- 2) Explore mass transit opportunities to Moccasin Bend to reduce or mitigate the impact of increased visitation.
- 3) Provide appropriate way-finding signage along access routes.

4) Develop Manufacturers Road as a gateway to Moccasin Bend, and work with property owners to enhance the landscaping and other qualities contributing to the appearance of the gateway approach.

5) Explore a variety of transportation opportunities to connect Moccasin Bend with the North Shore and downtown (e.g., bicycle facilities, sidewalks, shuttles, canoes/kayaks, riverwalk extension, water taxi).

PROJECT-RELATED ISSUES AND CONSIDERATIONS

The planning team conducted both internal scoping with NPS park and regional office personnel and external scoping with the public, culturally affiliated tribes, other agencies, and partners and stakeholders to identify the broad range of issues bearing on the present development concept plan. These issues were considered in the development of planning alternatives.

The following issues and considerations were received from the public at planning meetings and workshops held in Chattanooga in September 2005, March 2006, September 2007, and in response to newsletter questionnaires (September 2005, February 2006, and August 2007):

- Ensure that any proposed development and use of Moccasin Bend fully considers the protection of the site's primary archeological and historical resources.
- A new Moccasin Bend visitor center should be an attractive, state-of-the-art facility that accurately interprets the broad history of the Bend (i.e., American Indian occupation; the Trail of Tears; Civil War sites).
- Visitors should have a "transformative" experience that provides them with strong personal connections to the stories and historical events of Moccasin Bend, and draws them back for repeat visits.
- A world-class interpretive and curatorial center would honor the site's former inhabitants and descendents.
- Moccasin Bend should be returned to natural conditions to preserve green space and wildlife habitat.
- A modest, basic visitor facility is needed rather than an elaborate or high-tech facility that would overshadow the importance of the place and contribute to other incompatible modern development.
- Moccasin Bend is a sacred place where American Indian culture and history should be respected and interpreted.
- Any new facilities should incorporate contextual designs and materials that are sensitive to the Bend's natural surroundings and American Indian heritage.
- Other conflicting land uses on the Bend could diminish the visitor experience.
- Moccasin Bend should be linked with Chattanooga and the city's cultural facilities, and should complement the city's other waterfront development efforts.
- Explore alternative modes of access to and throughout the Bend, such as hiking/biking trails and water taxi transport.
- Ensure that the primary emphasis of a visitor center is on education and research, and limit other recreational activities.
- Development on Moccasin Bend could divert NPS funds from other pressing management needs of Chickamauga and Chattanooga NMP.
- Protect the site from encroaching commercial development, and do not commercialize the visitor experience at the interpretive center.
- Provide an enjoyable educational experience for families and large groups, with adequate parking for tour and school buses.
- Incorporate dynamic, hands-on interpretation methods (e.g., live demonstrations, festivals, reenactments) rather than just static exhibits and displays.

- American Indians should be employed to provide site interpretation and security patrols.

The following issues and considerations were discussed during government-to-government meetings with American Indian tribal representatives held in Chattanooga in September 2005, March 2006, and October 2006. The tribes represented at the meetings were the Absentee Shawnee Tribe of Oklahoma, Alabama-Quassarte Tribal Town, Cherokee Nation, Chickasaw Nation, Coushatta Tribe of Louisiana, Eastern Band of Cherokee Indians, Eastern Shawnee Tribe of Oklahoma, Kialegee Tribal Town, and the Muscogee (Creek) Nation:

- The presence of open graves and disturbed human remains associated with American Indian settlements on Moccasin Bend is a critical concern, and proper filling and on-site reburial of remains is urgent. NPS staff agreed to sensitively fill burial depressions.
- Ancestral burials on Moccasin Bend must be protected by any new construction for visitor facilities and trails, and development proposals must fully consider that the area is sacred ground.
- More information is needed by way of archeological investigations or other means to locate burials and sensitive sites before tribal representatives can offer planning advice.
- It is important to recognize the layering of different cultures at Moccasin Bend over time, inter-tribal interactions and cooperation, and the connections and continuity with present-day American Indian cultures.
- There is concern that visitors could disturb the burials if they are allowed to walk among the village sites such as Hampton Place, and there is general consensus that burial locations should be off-limits to visitors.
- Long-term provision of security measures for the village sites is critical.

- Any artifacts retrieved from outside repositories and considered for exhibit display at Moccasin Bend need to be assessed for possible repatriation with affiliated tribes in conformance with the Native American Graves Protection and Repatriation Act (NAGPRA).
- Tribal members should be involved in efforts to procure artifacts from museums and other repositories, and in assessing the appropriateness of publicly exhibiting selected artifacts at the interpretive center.
- It is important to carefully determine what visitor activities are appropriate in efforts to respect the Bend's sacred status.
- Tribal representatives wish to be involved in all phases of planning for the interpretation of Moccasin Bend.
- Interpretive facility development should occur on federal land to better ensure tribal participation under government-to-government authorities in planning and design decision making.
- Federally owned lands on Moccasin Bend are held in fee-simple ownership, and not as Indian trust lands.
- Members of the Eastern Band of Cherokee Indians participated in NPS archeological surveys carried out in September 2006 of possible facility development sites. Because no significant archeological sites or human remains were identified, the Cherokee tribal representative indicated that any of the proposed development locations would be acceptable, but they and other tribal representatives desired continued input into the functions and interpretive approach for the proposed interpretive center.
- There may be value in negotiating formal agreements among the Park Service, tribes, and other partners (such as the Friends of Moccasin Bend) to address the desired nature and level of participation in the development and management of the interpretive center.
- Interpreting the story of burial site looting on Moccasin Bend may provide an

opportunity to educate the public about the destructive repercussions of these illegal practices, and serve to reinforce site protection objectives at the core of visitor interpretation.

USER CAPACITY

In the process of planning for a park unit, the National Park Service is required to address user capacity management. The Park Service defines user capacity as the type and level of visitor use that can be accommodated while sustaining the quality of park resources and visitor experiences. Managing for visitor use includes establishing desired conditions, monitoring and evaluating these conditions, applying management strategies, and making adjustments to ensure that park values are protected.

Planning for user capacity is most often accomplished at the general management plan level, a broader planning process than that conducted for the present development concept plan for Moccasin Bend. User capacity on the Bend was not considered in the previous general management plan for Chickamauga and Chattanooga National Military Park, but likely would be an important element of future planning for all units of the national military park.

As with all planning efforts, managing for user capacity involves remaining consistent with the purpose and significance of the park unit. Indicators and standards are developed against which park staff can measure and evaluate damage to resources or identify compromised visitor experiences. An indicator is a measurable variable that can be used to monitor and track changes in resource conditions and visitor experiences to determine if desired conditions are being met. A standard is the minimum acceptable condition for an indicator. If a standard is not met, management strategies may be adjusted to minimize impacts. There are presently no surveys or studies to provide supporting data for developing indicators, standards, and a

range of actions for management of visitor use on Moccasin Bend. These would be developed in the course of future general management planning.

PARTNERSHIPS

The National Park Service and the Friends of Moccasin Bend National Park, Inc. (Friends) entered into a memorandum of understanding (MOU) in 2005 for the purpose of coordinating philanthropy, preservation, interpretation, and other activities to benefit the Moccasin Bend National Archeological District. As part of the cooperative agreement, the Friends (a nonprofit, tax-exempt corporation) indicated their willingness to participate as a planning partner with the Park Service to “facilitate the development, management, and operation of a cultural interpretive center.” The agreement was carried out in accordance with NPS management policies and specific provisions of Public Law 108-7 that authorized the establishment of the archeological district. The establishing legislation allowed the secretary of the interior to consult and enter into cooperative agreements with federally recognized tribes, governmental entities, and other interested parties for undertakings related to the preservation, development, interpretation, and use of the district.

Among the fundamental services that the Friends agreed to provide under the MOU was assistance preparing the long-term vision for the visitor interpretive center, with public and private entities collaborating to provide educational and interpretive opportunities for visitors. The Friends also agreed to facilitate public involvement activities, assist with fundraising and philanthropic donation efforts, foster partnerships with other stakeholders, and seek ways to link Moccasin Bend to Chattanooga’s comprehensive economic development objectives.

An economic analysis was prepared for the Friends in 1996 that recommended the addition of the national historic landmark

district as a unit of the national park system, with construction of a cooperatively managed visitor interpretive center as the centerpiece of a second phase of development. Based on marketing and tourism analysis, the study projected that a well-planned, well-constructed, and well-operated project/facility could attract a mid-range estimate of 591,740 visitors annually to the national historic landmark district and interpretive center.

Project development was determined to potentially have far-reaching benefits on the local and regional tourism economies, and contribute to Chattanooga's profile as a tourist destination. Elements deemed key to project success were the close proximity of Moccasin Bend to a major metropolitan area, the unusually long and rich span of American Indian history at the site, the extraordinary setting, the wide scope of interpretation, anticipated national park status, and the Bend's potential to complement the existing tourism economy (Martin 1996).

The partnership approach that was recommended above for the visitor interpretive center is reflected in alternative D of the present development concept plan. The Friends have purchased a land parcel adjoining the NPS-owned former Serodino property selected for the center. Joint proposals for facility development and cooperative interpretive programs could be pursued on these adjoining parcels.

COMMERCIAL VISITOR SERVICES

There are currently no definitive proposals to provide commercial visitor services at Moccasin Bend as part of the proposed development for the NPS interpretive center. However, in conformance with the National Park Service Concessions Management Improvement Act of 1998 (Public Law 105-391) and NPS *Management Policies 2006*, the National Park Service may use commercially provided services to assist the agency in achieving objectives for visitor use and enjoyment. Commercial visitor services must be consistent with a park unit's enabling legislation and general management plan, support the park's purpose and significance, protect fundamental resources and values, and address visitor experience objectives.

Separate planning is carried out to determine whether proposed or existing commercial services are necessary and appropriate. Commercially provided sales of books and educational materials, for example, may be found to be a necessary and appropriate activity for the visitor center. A range of potential management alternatives for these services would be considered and evaluated. Commercial visitor services are typically authorized by contracts, commercial use authorizations, or special use permits. They must be economically feasible and are generally supported by a feasibility study of the planning alternatives.

IMPACT TOPICS

DERIVATION OF IMPACT TOPICS

Impact topics are the resources or subjects of concern that could be affected by actions discussed in the range of alternatives. These impact topics were identified from federal laws and regulations, issues that were brought up by the public, and NPS staff knowledge of limited or easily impacted resources. A brief rationale for the selection of each impact topic is provided below, as well as the rationale for dismissing specific impact topics from further consideration.

IMPACT TOPICS ANALYZED IN THIS DOCUMENT

Visitor Use and Experience

Providing for quality visitor experiences and interpretation are among the fundamental purposes of the National Park Service. The public responses received during scoping for this development concept plan reflect a broad range of desired experiences (e.g., provide a state-of-the-art visitor information center, restrict inappropriate recreational activities, provide visitors with “transformative” experiences). Taking these comments into consideration, the alternatives evaluated in this plan would affect visitor access to the national archeological district and the types and levels of educational and recreational opportunities that would be available. The impacts on visitor use and experience are therefore analyzed in this plan and environmental assessment.

Cultural Resources

The 1966 National Historic Preservation Act (16 USC 470 *et seq.*), the 1916 NPS Organic Act, NPS Director’s Order 28: *Cultural Resource Management Guideline*, and other NPS planning and cultural resource policies and guidelines call for the consideration and protection of historic properties in

development proposals. The evaluation of potential impacts of proposed actions on significant historic properties is required by the National Historic Preservation Act and the National Environmental Policy Act, as is attention to the provisions of the Native American Graves Protection and Repatriation Act for sites where human remains or burials may be present.

Archeological Resources. The nationally significant archeological resources of Moccasin Bend provide a physical record documenting approximately 12,000 years of continuous American Indian settlement and use of the area. These resources, together with archeological evidence of 1863 Union Army artillery emplacements and associated Civil War sites on Stringers Ridge, were designated a national historic landmark district in 1986. In 2006, archeological surveys and testing of proposed locations for the visitor interpretive center were carried out by the NPS Southeast Archeological Center to determine whether currently unidentified archeological resources might be present in these locations that could be adversely impacted by ground-disturbing construction activities. Although no significant archeological resources were found, there is a possibility that archeological resources may yet be identified within the area of potential effect associated with the selected site location. The proximity of the known archeological resources contributing to the national archeological district provide further justification for analyzing the effects of the proposed undertaking on archeological resources in this environmental assessment.

Ethnographic Resources. Ethnographic resources are defined by the National Park Service as any “site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally

associated with it” (DO-28). Although no formal ethnographic investigations have been completed for Moccasin Bend, the overall area retains profound importance for many American Indian tribes. The long history of settlement and the presence of ancestral burials in proximity to the former village sites imbue the Bend with a complex spiritual dimension. In recognition of the Bend as sacred ground, all development and use proposals must be carried out in a manner that respects the former inhabitants. Based in part on the tribal consultations that have occurred to date, no ethnographic resources or traditional uses have been specifically identified in the proposed location of the visitor interpretive center. Ethnographic resources, however, may yet be identified by future investigations in support of long-range cultural resource management of the Bend and more comprehensive general management planning efforts. The impacts of the proposed project alternatives on ethnographic resources are therefore considered in this plan.

Socioeconomic Environment

Increasing visitation to Moccasin Bend has the potential to contribute to the economies of Chattanooga and Hamilton County as the Bend’s interpretive and educational opportunities expand the range of available visitor activities, become linked to other local and regional interpretive sites and facilities, and encourage visitors to spend more time in the area. Actions proposed by the planning alternatives that result in increased visitation may indirectly affect land use and commercial development. Short-term economic impacts are also anticipated from construction of the visitor interpretive center. The impacts of the alternatives on the socioeconomic environment are therefore considered in this plan.

NPS Operations and Facilities

The planning alternatives considered for Moccasin Bend are anticipated to affect NPS operations and facility management. The new interpretive center would entail the initial

capital outlay for site development and construction, and ongoing facility maintenance and operations would contribute to Chickamauga and Chattanooga NMP’s long-term budget requirements. The staffing needs at Moccasin Bend for site interpretation and protection, law enforcement, and facility management would also affect NPS operations. Because the proposed alternatives would have long-term implications for NPS operational management and budgetary allocations, the impacts on NPS operations and facilities are analyzed in this plan.

IMPACT TOPICS DISMISSED FROM FURTHER ANALYSIS

Cultural Resources

Historic Structures/Buildings. The former Serodino property selected for the visitor interpretive center is presently an open agricultural / grazing tract and there are no historic structures or buildings listed in or eligible for listing in the National Register of Historic Places within the area of potential effect on Moccasin Bend.

Under alternative A of this development concept plan, the Park Service would provide primary interpretation of Moccasin Bend at existing park visitor centers (i.e., in the headquarters area at Fort Oglethorpe, Georgia, or at the Lookout Mountain Battlefield and Point Park in Tennessee). Museum objects and exhibits associated with the Bend could be displayed at these locations. The Colonial Revival-style visitor center / administration building in the headquarters area was built in 1936 by the Public Works Administration with labor provided by the Civilian Conservation Corps. Later additions to the national register-listed building were constructed for museum exhibits and interpretive displays, visitor information, and audio/visual presentations. The Lookout Mountain Battlefield visitor center is housed in an altered, non-contributing building. Exhibits could also be placed in the national register-listed Ochs Memorial Museum /

Observatory, a rustic stone structure located on a promontory at Point Park overlooking Moccasin Bend.

Although no substantial modifications to these existing buildings for interpretive purposes are anticipated under alternative A, any project undertakings with the potential to affect their historical integrity would be carried out in conformance with Section 106 of the National Historic Preservation Act. The Park Service would consult with the State Historic Preservation Officer in seeking measures to avoid or minimize potential adverse effects. With appropriate mitigation and in conformance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, no moderate or major adverse impacts to the buildings are anticipated under alternative A. The topic of historic structures and buildings is therefore dismissed from further analysis in this development concept plan and environmental assessment.

Cultural Landscapes. According to the National Park Service's Director's Order 28: *Cultural Resource Management Guideline*, a cultural landscape is

“a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The character of a cultural landscape is defined both by physical materials, such as roads, buildings, walls, and vegetation, and by use reflecting cultural values and traditions.”

Despite the long span of human settlement and use of Moccasin Bend, there are no identified cultural landscape features within the project area that would be affected by project actions. The former Serodino property selected for the visitor interpretive center is presently an open agricultural/grazing tract with no landscape characteristics (e.g.,

topography, spatial organization, land use patterns, circulation systems, vegetation, buildings and structures, views and vistas) associated with the prehistoric and historic occupation of the area that contribute to the significance of the national archeological district.

No archeological or other resources have been identified on the former Serodino property associated with American Indian settlement and use of Moccasin Bend, and the landscape selected for the visitor interpretive center contains no natural and cultural resources that could be considered heritage resources to associated American Indian tribal members or that have significance to their way of life. There are no resources at the proposed development site associated with subsistence, religious, ceremonial, or other traditional activities resulting from historical or contemporary use. For the above reasons, cultural landscapes have been dismissed from analysis in this plan.

Museum Collections. Among the items typically retained in NPS museum collections are prehistoric/historic objects and artifacts, archival documents, natural history specimens, and works of art. Artifacts recovered from Moccasin Bend by previous archeological investigations are held in various state and university repositories, museums, and private collections. Although general discussions have occurred among planners, tribal representatives, and other stakeholders regarding the desirability and sensitivity of exhibiting museum objects at the proposed Moccasin Bend visitor interpretive center, no detailed studies have been completed to determine the proper scope of the collections that should be accessioned or exhibited onsite.

Further collections management studies and exhibit planning are required to guide these efforts at Moccasin Bend. Any facilities proposed for storing or exhibiting museum collections would need to meet NPS curation standards for acquisition, accessioning,

cataloging, preservation, and protection. Prior to the storage or exhibit of American Indian objects, and in accordance with stipulations of the Native American Graves Protection and Repatriation Act (NAGPRA), the National Park Service would consult with tribal representatives with regard to the disposition and possible repatriation of human remains, funerary objects, sacred objects, and objects of cultural patrimony.

Under National Park Service policy and guidelines for floodplain management (DO-77), the location of “irreplaceable records, museums, and storage of archeological artifacts” within 500-year floodplains is considered a Class II action which typically entails the preparation of a statement of findings. Hydrologic and geomorphic processes and hazards are assessed, and measures are proposed to avoid or mitigate potential flood impacts. The Park Service is presently investigating the delineation of the 500-year floodplain of the Tennessee River in proximity to the former Serodino property, and appropriate mitigation measures will be included in the project planning and design requirements if the present project is determined a Class II action.

Because separate studies and planning are required for museum collections at Moccasin Bend, and the decision to store or display museum objects and artifacts on site is presently undetermined, this topic has been dismissed from analysis in this development concept plan.

Indian Trust Resources

Secretarial Order 3175 requires that any anticipated impacts to Indian trust resources from a proposed project or action by department of the interior agencies be explicitly addressed in environmental documents. The federal Indian trust responsibility is a legally enforceable fiduciary obligation on the part of the United States to protect tribal lands, assets, resources, and treaty rights, and it represents a duty to carry

out the mandates of federal law with respect to American Indian and Alaska native tribes. There are no Indian trust resources on Moccasin Bend, and lands on the Bend are not held in trust by the secretary of the interior for the benefit of Indians due to their status as Indians. Therefore, the impact topic of Indian trust resources is dismissed in this plan and environmental assessment.

Natural Resources

Air Quality. Protection of air quality in units of the national park system is required by NPS management policies and the Clean Air Act as amended. The Park Service seeks to perpetuate the best possible air quality in parks to preserve natural resources and systems; protect cultural resources; and sustain visitor enjoyment, human health, and scenic vistas. The Park Service actively promotes and pursues measures to protect air quality-related values from the adverse impacts of air pollution (*NPS Management Policies 2006*, sec. 4.7.1).

Potential localized sources of air pollution on Moccasin Bend are from facilities (e.g., the wastewater treatment plant), industrial development located on the northern part of the Bend, vehicle emissions, and other sources of urban pollution associated with the greater Chattanooga area. Increased vehicle emissions could occur from visitors coming to the interpretive center. However, large numbers of vehicles are not anticipated at any given time except possibly for special events and exhibits. As proposed by the *North Shore Plan* prepared by the Chattanooga – Hamilton County Regional Planning Agency, the provision of alternative modes of visitor transportation to the Bend would serve to reduce or mitigate emission levels.

Short-term adverse air quality impacts could also occur from vehicle emissions and dust resulting from construction of the interpretive center and related site development. Best management practices would be used to control dust during construction and subsequent maintenance activities. Because

the impacts on air quality associated with construction and ongoing operation of the visitor interpretive center are anticipated to be short term and negligibly adverse, and would not appreciably contribute to the impacts of other sources of air pollution in the area, the topic of air quality is dismissed from further analysis in this plan.

Geologic Resources. The National Park Service preserves and protects geologic features and processes. Park Service planning and management actions consider geologic processes in decision making to reduce threats to public and staff safety and to the long-term viability of park infrastructure. Although the Park Service generally allows natural geologic processes to proceed unimpeded, intervention is allowed under certain conditions, including instances when there is no other feasible way to protect natural resources, park facilities, or historic properties (NPS *Management Policies 2006*, sec 4.8.1).

The Moccasin Bend peninsula is located in the Valley and Ridge physiographic province near its junction with the Cumberland Plateau. The area is characterized by northeast to southwest trending ridges formed by uplifting and folding. Underlying layers of predominantly softer limestone and shale have eroded to form valleys, leaving an almost continuous escarpment of erosion-resistant bedded chert that rises almost 1,000 feet above the level of the Tennessee River. Stringers Ridge along the eastern side of Moccasin Bend is representative of these irregular linear escarpments (NPS 1998).

Other than the stabilization project undertaken in cooperation with the U.S. Army Corps of Engineers to control erosion and protect cultural resources along the Tennessee River bank adjacent to Moccasin Bend (see “Relationship to Other Projects and Plans” earlier in this document), the Park Service would not undertake further actions as part of the present planning effort that would impede or alter natural geologic resources or processes. All facility

development would be constructed in previously disturbed areas and would be set back from the riverbank. Structures and parking areas would be designed to minimize interference with natural water runoff processes. Any adverse impacts associated with project actions on geologic resources would be negligible to minor in the short and long term. Therefore, geologic resources are not analyzed further in this plan.

Soils. Soil resources are managed according to NPS *Management Policies 2006* (sec. 4.8.2.4). Most of the soils in the western and southern portions of Moccasin Bend are well drained but are severely limited for road and structural development, particularly in flood-prone areas. In areas protected from flooding, soil limitations on development are generally moderate. A large portion of Moccasin Bend’s central section is overlain with sand and gravel dredged from the south end of the riverbank in 1963 for construction of Interstate 24; later borings indicated the redeposited dredged material was 14 to 17 feet deep in places (NPS 1998). Natural soils in the vicinity of the project area (former Serodino property) consist of Staser loam along the river’s edge—a deep, well-drained flood plain soil with moderate permeability. Bodine cherty silt loam exists west (upslope) of the Staser loam. The deep, strongly acid, and moderately permeable Bodine loam is poorly suited to urban uses such as septic tank absorption fields (SCS 1982).

Core borings were conducted as part of the subsurface archeological testing carried out in September 2006 for the various visitor center locations. The borings of the former Serodino property revealed that fill soils (including construction debris such as brick and concrete) were found at depths ranging between 3.6 and 4.8 meters. Former owner of the tract, Pete Serodino, related to NPS staff that he had brought in fill and distributed it across the site to an approximate depth of 2.4 meters to raise the area above the 100-year flood hazard level. The core testing revealed that not only were the fill soils deeper than

previously estimated, but also the previous topsoil on the tract was likely scraped off prior to the importation of fill material (NPS 2006b).

All proposed construction for this project would be designed to minimize disturbance to naturally occurring soils. Because most of the soils in the project area are imported fill, the impacts on soils from implementation of this plan would be negligible to minor. Soils have therefore been dismissed as an impact topic for this plan.

Prime and Unique Farmlands. The 1981 Farmland Protection Policy Act (PL 97-98) was passed to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. Provisions of the act also ensure that federal programs are administered in a manner that (to the extent practicable) is compatible with the farmland protection programs and policies of state and local governments and private entities. The U.S. Department of Agriculture defines prime farmland as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. Unique farmland is land other than prime farmland that is used for the production of specific high value food and fiber crops (e.g., citrus, tree nuts, olives).

The soils presently on the former Serodino property are imported fill materials containing brick and concrete debris unsuited for use as prime and unique farmlands. Because no identified prime and unique farmlands would be affected by the proposed project, this topic has been dismissed from analysis in this plan.

Water Resources. In accordance with NPS *Management Policies 2006* (sec. 4.6.3), the Clean Water Act, and other applicable laws and regulations, the Park Service strives to avoid, to the extent possible, the pollution of water resources by human activities occurring within and outside the parks. The health and

natural functioning of aquatic and terrestrial ecosystems is dependent on maintaining non-polluted surface and ground waters.

The peninsula of Moccasin Bend is bounded on the east, south, and west by the Tennessee River, the fifth largest river in the United States. The river is navigable for barge traffic and recreational boating. The watershed of the Tennessee River system covers about 41,000 square miles across seven states. Five major tributaries (the Clinch, Holston, French Broad, Little Tennessee, and Hiwassee Rivers) contribute about 86% of the Tennessee River's annual mean discharge of 35,450 cubic feet per second at Chattanooga. The Tennessee Valley Authority (TVA) manages the watershed of the river system with the primary objectives of providing low-cost, reliable power to the nearly eight million people living in the region; stimulating economic growth; and supporting a thriving river system. Although pollution regulations are set by the Environmental Protection Agency and the states within the river valley, the TVA employs a watershed condition index to assess and monitor overall water quality conditions. The index is based on stream and reservoir ecological health, water quality assessments, and the condition of reservoir shoreline vegetation.

There are no surface water features (e.g., streams, springs, ponds, irrigation ditches) on the former Serodino property that could be affected by proposed site development. The depth to groundwater on the property is presently unknown although groundwater is suspected to be relatively close to the surface (below the depth of the imported fill material) because of the site's proximity to the river. On Moccasin Bend but outside of the project area are two freshwater springs north of the state hospital and east of Moccasin Bend Road. A small pond is located about ½ mile north of the hospital west of Moccasin Bend Road, and another is located on the golf course less than 1,000 feet from the riverbank (NPS 1998).

In accordance with all applicable regulations and permit requirements, the Park Service would incorporate best management practices and other mitigation measures into the construction specifications to avoid or minimize possible erosion and run-off resulting from construction or operation of the interpretive/cultural facility from entering the Tennessee River. Measures would also be implemented to avoid contamination of ground water by fuel spills or other construction-related incidents. In consideration of these protection measures, and because no existing water features on the former Serodino property or other water resources on Moccasin Bend would be affected by proposed development, water resources have been dismissed from analysis in this plan.

Wetlands. All wetlands in units of the national park system are protected and managed in accordance with Executive Order 11990, "Protection of Wetlands," NPS Director's Order 77-1 and its accompanying procedural handbook regarding wetlands, and *NPS Management Policies 2006* (sec. 4.6.5). The National Park Service strives to protect and enhance natural wetlands and to avoid adverse impacts or minimize unavoidable adverse impacts to wetlands. NPS Procedural Manual 77-1, "Wetlands Protection," describes NPS policies and procedures for protection of wetlands in park units. It is NPS policy to prepare a "statement of findings" when a proposed action has the potential to adversely affect wetlands.

There are no designated wetlands within the current project area. The U.S. Fish and Wildlife Service has mapped three areas on the Moccasin Bend golf course as palustrine open water wetland systems. Two additional areas south of the golf course and about midway between the east and west riverbanks are also classified as palustrine open water wetlands (NPS 1998). Because no identified wetlands would be impacted by any proposals in this plan, wetlands have been dismissed as an impact topic for this plan.

Floodplains. Floodplains in units of the national park system are protected and managed in accordance with Executive Order 11988, "Floodplain Management," NPS Director's Order 77-2: *Floodplain Management*, and *NPS Management Policies 2006* (sec. 4.6.4). Under this guidance, the Park Service protects, preserves, and restores floodplains; minimizes risk to life or property by design or modification of actions in floodplains; and assesses impacts on floodplains. It is NPS policy to avoid adversely affecting floodplains and to minimize impacts when they are unavoidable.

As determined by the Federal Emergency Management Agency (FEMA), a 100-year floodplain parallels the Tennessee River around Moccasin Bend, varying in width from less than 50 feet from the shoreline near portions of the state hospital on the south end, to approximately 1,600 feet on the golf course. A 500-year floodplain generally parallels the 100-year floodplain, occurring in low-lying areas and south of the golf course on the western portion of the Bend (NPS 1998).

Periodic storms can result in significant flood events in the Chattanooga area and throughout the watershed particularly between December and May. The Tennessee Valley Authority manages the retention and release of water along the Tennessee River with its system of nine dams to control flooding and generate hydroelectric power. As part of this system, the Chickamauga Dam and Reservoir is located approximately seven miles upstream from the downtown area of Chattanooga.

Under National Park Service policy and guidelines for floodplain management (DO-77), the location of "irreplaceable records, museums, and storage of archeological artifacts" within 500-year floodplains is considered a Class II action which typically entails the preparation of a statement of findings. Hydrologic and geomorphic processes and hazards are assessed, and measures are proposed to avoid or mitigate

potential flood impacts. The Park Service is presently investigating the delineation of the 500-year floodplain of the Tennessee River in proximity to the former Serodino property, and appropriate mitigation measures will be included in the project planning and design requirements if the present project is determined a Class II action.

Based on examination of U.S. Army Corps of Engineers floodplain maps, the former Serodino property selected for the visitor interpretive center is situated at an elevation approximately one foot above the level of the 100-year floodplain. Because of the proximity of the proposed development location to the 100-year floodplain level, the Park Service would ensure that appropriate design considerations and mitigation measures are incorporated into the construction of the visitor center. Measures would be taken to minimize potential impacts from natural flood processes and storm events, and construction would be in accordance with state and local building codes with regard to floodplain considerations. With the intent to incorporate appropriate protection measures into facility development, and because proposed development would have localized and negligible adverse impacts on natural floodplain processes, the analysis of floodplains has been dismissed from this plan.

Soundscapes. NPS *Management Policies 2006* (sec. 4.9) and Director's Order 47: *Soundscape Preservation and Noise Management* recognize the importance of natural soundscapes as park resources. The natural soundscape is defined as the natural sounds in a park unit that exist in the absence of any human-produced or associated sounds. The policies and director's order call for the National Park Service to preserve, to the greatest extent possible, the natural soundscapes of parks, to restore degraded soundscapes to natural conditions whenever possible, and to protect natural soundscapes from adverse noise impacts. "Noise" is defined as unwanted sound that interferes with an activity or disturbs the person hearing the sound. All human sound

could be considered "noise" when compared to the natural soundscape. However, this does not imply that all human sounds are inappropriate or unacceptable. The range of acceptable human-caused sounds is variable, and what is acceptable near a visitor center may be unacceptable in a campground or a backcountry area.

The natural soundscape of Moccasin Bend includes all of the naturally occurring sounds such as calling birds, insects, wind, rustling leaves, and the lapping of the river on the shoreline. These naturally occurring sounds are currently affected by the sounds produced by the various facilities on the Bend, including vehicle noise and other human activities that occur there. Boat traffic on the Tennessee River is another contributing sound factor.

Construction activities associated with development of the visitor interpretive center would contribute to short-term noise impacts; more long-term noise impacts would accompany ongoing visitation and operation of the center. The latter impacts would be associated primarily with vehicle traffic to the center and occasional outdoor demonstrations and interpretive activities. These noise impacts would be expected to contribute only negligible to minor adverse impacts to the soundscape in conjunction with the other sources of human-caused sounds on Moccasin Bend. For this reason, further analysis of the soundscape has been dismissed in this plan.

Lightscaapes. In accordance with NPS *Management Policies 2006* (sec. 4.10), national park system units strive to preserve natural ambient lightscaapes, which are natural resources and values that exist in the absence of human-caused light. The Park Service seeks to minimize light that emanates from park facilities, and artificial lighting is restricted to areas and facilities requiring specific safety and security measures. Minimal lighting techniques are employed, and artificial lighting is shielded to prevent or minimize light intrusion affecting ecosystems and the

night sky. There are several sources of artificial light on Moccasin Bend associated primarily with existing non-NPS facilities—the state hospital, radio towers, sewage treatment plant, etc. Negligible impacts on the lightscape of Moccasin Bend are anticipated from the proposed NPS action. For these reasons, and because the Park Service would employ measures to minimize light intrusions emanating from new NPS facilities, the topic of lightscares has been dismissed from further analysis in this plan.

Wilderness. There are no federally designated wilderness areas on Moccasin Bend, and no proposals to manage specific areas on the Bend for the protection of wilderness values. For this reason, wilderness has been dismissed as an impact topic.

Wildlife. Despite Moccasin Bend's current high level of development and disturbed land areas, habitat exists in certain locations to support a variety of wildlife. Mammals include opossum, short-tailed shrew, meadow vole, white-footed mouse, and hispid cotton rat. Small populations of deer also have been known to inhabit the area. Observed bird species include the Carolina wren, tufted titmouse, mockingbird, song sparrow, American robin, cardinal, rufous-sided towhee, red-tailed hawk, and American kestrel. Several waterfowl species that fly and feed along the Tennessee River have nesting sites on Moccasin Bend. Reptiles and amphibians include the black rat snake, fence lizard, and five-lined skinks. Turtles and frogs inhabit the area particularly along the river shore (NPS 1998).

Proposed construction activities (e.g., use of heavy equipment for excavation, grading, and utility trenching, and on-site construction assembly of the visitor center) are unlikely to have greater than negligible short-term or long-term adverse impacts on wildlife populations because construction will primarily occur in the previously disturbed and cleared former Serodino tract. Because the tract is open without established stands of

trees, shrubs or other vegetation, a negligible loss of wildlife habitat is anticipated as a consequence of proposed development. Therefore, the topic of wildlife has been dismissed in this plan.

Threatened and Endangered Species and Species of Special Concern. The Endangered Species Act requires federal agencies to ensure that their activities do not jeopardize the existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat of such species. The Park Service consulted with the U.S. Fish and Wildlife Service (USFWS) and the Tennessee Wildlife Resources Agency to determine if threatened and endangered species and species of special concern were in the project area or could be affected by project actions. The U.S. Fish and Wildlife Service notified the park that no significant adverse impacts to wetlands or federally listed endangered or threatened species are anticipated from the NPS proposal. The Tennessee Wildlife Resources Agency notified the park that no extant populations of state-listed or endangered species are known to exist within the Moccasin Bend National Archeological District.

U.S. Fish and Wildlife Service records available for Hamilton County indicate the following federally listed endangered and threatened species:

[Note: (E) – Endangered; (T) – Threatened; (h) – Historic (pre 1970); (C) – Candidate; (CH) – Critical Habitat]

Snail darter – *Percina tanasi* (T)
 Cumberland monkeyface pearly mussel – *Quadrula intermedia* (E) (h)
 Dromedary pearly mussel – *Dromus dromas* (E) (h)
 Fine-rayed pigtoe – *Fusconaia cuneolus* (E) (h)
 Orangefoot pimpleback – *Plethobasus cooperianus* (E)
 Pink mucket pearly mussel – *Lampsilis abrupta* (E) (= *Lampsilis orbiculata*)

Rough pigtoe – *Pleurobema plenum* (E) (h)
Tubercled-blossom pearly mussel –
Epioblasma torulosa torulosa (E) (h)
Large-flowered skullcap – *Scutellaria montana*
(E)
Small-whorled pogonia – *Isotria medeoloides*
(T)
White fringeless orchid – *Platanthera*
integrilabia (C)
Virginia spirea – *Spiraea virginiana* (T)
Gray Bat – *Myotis grisescens* (E)

Much of the potential habitat on Moccasin Bend has been disturbed by facility development or agricultural use. These disturbed areas, including the former Serodino tract, do not provide suitable habitat for the above threatened, endangered, or special concern species. These species would most likely only occur in these areas as transients or migrants (NPS 1998). For these reasons, the potential impacts of project actions on threatened and endangered species are not further analyzed in this plan.

Vegetation. The vegetation in upland portions of Moccasin Bend consists of a mixed forest canopy of evergreen and deciduous trees. Tree species in riparian forest areas include sweetgum, sycamore, black willow, river birch, cottonwood, box elder, slippery elm, green ash, silver maple, hackberry, and willow oak. Common understory vegetation includes swamp dogwood and sumac. Japanese honeysuckle is the dominant ground cover in open forest areas. Old field vegetation includes crabgrass, horseweed, pokeweed, asters, broom sedge, Queen Anne’s lace, and berry briars. Various stages of old field succession exist in the northern portion of Moccasin Bend, wooded lands on Stringers Ridge on the east, and old fields, woodlots, and lawns/hayfields on the southern toe of the Bend (NPS 1998).

Past agricultural and development activities have disturbed native vegetation on Moccasin Bend. Plant communities are presently in early succession to forests and consist of dense

understory with scattered deciduous hardwoods (NPS 1998). The former Serodino tract has been previously cleared for agricultural/ grazing use and does not have stands of vegetation in areas proposed for facility development. Any impacts on vegetation from project-related development would be negligible. For these reasons, vegetation has been dismissed from further analysis in this plan.

Transportation. Existing city and county roads are anticipated to provide primary access to the former Serodino property on Moccasin Bend selected for the visitor/cultural center. The two principal roads on the Bend that lead to the visitor center site and the archeological district are Manufacturers Road and Moccasin Bend Road. Hamm Road (a secondary road connecting Manufacturers Road and Moccasin Bend Road) provides final access to the development site as it traverses across the property’s northwestern boundary. Recreational visitors share the roads with personnel and service providers of the state hospital, wastewater treatment plant, and other facilities. Truck traffic is occasionally interspersed with passenger vehicles traveling to the various facility and recreational destinations.

At present, traffic volumes are not particularly heavy along these roads in the southern portion of the Bend in comparison with the North Shore area or other portions of the Chattanooga metropolitan area. Traffic studies have not been completed to analyze the projected additional volume of visitor vehicle traffic to the visitor/cultural center, although visitation is anticipated to contribute to daily increases in traffic along these existing roads. Periodically, special events and exhibits would also be expected to draw greater than average visitation and traffic to the site.

The Park Service would work with the appropriate governmental transportation and planning agencies to ensure that issues affecting traffic and safety are adequately

addressed, including any roadway modifications and turnoffs that may be required to provide safe access to the site from Hamm Road. Consistent with NPS *Management Policies 2006* (sec. 9.2), the Park Service would also coordinate planning efforts with the Chattanooga – Hamilton County Regional Planning Agency to improve the connection between the North Shore area and Moccasin Bend (see *Relationship to Other Projects and Plans-North Shore Plan* discussed previously in this document). Alternate modes of transportation, including water transport, could be explored to lessen the impacts of increased visitation. Because the Park Service would undertake further site planning, agency coordination and design development to address traffic and transportation requirements to Moccasin Bend, the topic of transportation has been dismissed from further analysis in this plan.

Environmental Justice. Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities.

The Environmental Protection Agency’s Office of Environmental Justice defines Environmental Justice as follows:

The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of

federal, state, local, and tribal programs and policies.

As stated in this final guidance, the goal of this “fair treatment” is not to shift risks among populations, but to identify potentially disproportionately high and adverse effects and identify alternatives that may mitigate these impacts.

In responding to this executive order, two questions are addressed as the major part of the analysis:

1. Does the potentially affected community include minority or low-income populations?
2. Are the environmental impacts likely to fall disproportionately on minority or low-income members of the community or on tribal resources?

In order to fulfill Executive Order 12898 in the context of the National Environmental Policy Act, the alternatives addressed in this plan were assessed during the planning process. Although there are minority and low-income populations and communities within the county and region, it was determined that none of the planning alternatives would result in disproportionately high direct or indirect adverse effects on these groups. The following information contributed to this conclusion:

- The actions proposed by the alternatives would not result in any identifiable human health effects. Therefore, there would be no direct or indirect adverse effects on human health within any minority or low-income population or community.
- The impacts on the natural and physical environment that would occur due to any of the alternatives would not disproportionately and adversely affect any minority or low-income population or community.
- The alternatives would not result in any identified effects that would be specific to any minority or low-income community.
- The planning team actively solicited public participation as part of the planning

process and gave equal consideration to all input from persons regardless of age, race, income status, or other socioeconomic or demographic factors.

- Impacts on the socioeconomic environment resulting from the action alternatives would be beneficial. The impacts would occur mostly within the one-county region containing Moccasin Bend and would be either short-term or spread out over a number of years, thus mitigating their effects. Additionally, the impacts on the socioeconomic environment would not substantially alter the physical and social structure of nearby communities.

Because of this information and analysis, environmental justice was dismissed as an impact topic for this plan and environmental assessment.



MOCCASIN BEND AND CHATTANOOGA



BATTERY AT LOOKOUT MOUNTAIN OVERLOOK

CHAPTER 2:

Alternatives,
Including the
Preferred Alternative

THE ALTERNATIVES

INTERPRETIVE CENTER SITE SELECTION

The planning team evaluated four possible locations for the development of a visitor interpretive center on Moccasin Bend. These locations consisted of a site bordering the Tennessee River near the northeast corner of the national archeological district (previously owned by Peter Serodino), the law enforcement firing range, a site along the Blue Blazes Trail, and a location referred to as the “central properties” (see figure 3, development site alternatives). At a workshop held in June 2007 in Chattanooga, the planning team used a selection process known as “Choosing by Advantages” (CBA) to determine the preferred site location. The CBA process rated and compared the advantages associated with the following factors: 1) site development considerations, 2) quality of visitor experience, 3) resource protection considerations, and 4) potential for partnership opportunities and provision of other advantages to the National Park Service.

The former Serodino property, consisting of approximately 10 acres recently acquired by the Park Service, ranked considerably higher than the other three sites evaluated. With regard to site development considerations, it offered the highest comparative advantage partly because access to the site is from a flat secondary road that can accommodate anticipated traffic volumes with the least degree of required physical improvements. The building site is relatively flat, utilities are readily available, no known hazardous materials are present, and the site is immediately available.

The quality of the visitor experience ranked highest for the former Serodino property because the site is highly visible from across the river, and views of the river and river

traffic from the site provide interpretive opportunities.

The site offers the greatest opportunity for water access. Also, the entrance to the site avoids the sewage treatment plant; therefore, odors from the plant are less noticeable.

Because of previous site disturbances (e.g., agricultural and grazing uses, importation of fill dirt), the site ranked the highest with regard to resource protection considerations. The site was also found to present the greatest potential advantage for partnership opportunities because adjacent land is held by the Friends of Moccasin Bend, and thereby allows the flexibility for possible future facility expansion.

To varying degrees, the other evaluated locations (the firing range, the Blue Blazes Trail site, and the central properties site) held some of the same advantages as the former Serodino property (e.g., relatively flat development site, no known hazardous materials, some potential for expansion on adjacent lands). These other sites, however, were determined not to have the same high degree of advantages for the factors discussed above.

ALTERNATIVES CONSIDERED

The following alternatives represent a range of suitable options for providing and locating educational and interpretive information about Moccasin Bend’s significant resources to the visiting public. The alternatives reflect possible actions that the National Park Service could pursue either independently (through the “no-action” alternative, and alternatives A and B) or in partnership with outside organizations (through alternatives C and D). The issues expressed by the public, tribal representatives, NPS staff, and other partners

and stakeholders have helped guide the preparation of these alternatives.

No-action Alternative

Under the “no-action” alternative, the National Park Service would continue to protect and manage the Moccasin Bend National Archeological District as it does currently under the administration of Chickamauga and Chattanooga National Military Park. No new NPS facilities would be constructed on Moccasin Bend in support of the archeological district. Although occasional ranger-led interpretive tours to Moccasin Bend could occur, no facility space would be provided at the national military park dedicated specifically to interpretation of the Bend. No museum collection efforts would be undertaken to retrieve, exhibit, or store artifacts associated with the Bend.

Alternative A

Under alternative A (and in common with the “no-action” alternative) no new NPS facilities would be developed on Moccasin Bend. Chickamauga and Chattanooga National Military Park would continue to protect and manage the Moccasin Bend National Archeological District as it does currently. In addition to ranger-led interpretive tours, increased interpretation of the archeological district would be provided at existing visitor center facilities located at the Chickamauga Battlefield and/or at the Point Park and Lookout Mountain Battlefield units of the park. These facilities could be adapted to enhance interpretation efforts, and museum collections strategies could be developed and implemented to retrieve, exhibit, and store artifacts associated with Moccasin Bend.

Alternative B

Under alternative B, the National Park Service would develop an interpretive/cultural facility on Moccasin Bend to provide basic visitor services and space for interpretation. The facility would be constructed with federal funds on NPS lands located near the northeast

corner of the archeological district along the Tennessee River (former Serodino tract). Among the core space and functional requirements for the facility would be a lobby with information desk, site orientation exhibits, a small seating area, and restrooms. An exhibit/museum area would include displays addressing the archeological district’s primary interpretive themes. The potential retrieval, display, and storage of artifacts and other museum objects would be in accordance with NPS museum collections policies and planning objectives. A small sales area would provide books and merchandise determined necessary and appropriate to support site interpretation. Administrative support space would be provided for NPS facility management and staff functions (e.g., office/work room space, supply and equipment storage, and mechanical and security systems).

Exterior space would be provided to accommodate interpretive programs, including covered space for school groups and other group activities. Site development would include an access drive, parking area, landscaping, limited trails, boat dock, and the installation of necessary utilities (e.g., water and waste water lines, electrical service).

Alternative C

Under alternative C, the National Park Service would develop an interpretive/cultural facility on Moccasin Bend providing expanded visitor services and interpretive opportunities. The facility would be constructed on NPS lands located near the northeast corner of the archeological district along the Tennessee River (former Serodino tract). Both federal and partnership (private) funds would be used for the project.

The core facility and site design elements identified under alternative B would be implemented (e.g., lobby, exhibit/museum area, administrative space, sales area, exterior interpretive space, restrooms, site development elements). The potential retrieval, display, and storage of artifacts and



- ① Former Serodino Property Site
- ② Law Enforcement Firing Range Site
- ③ Central Properties Site
- ④ Blue Blazes Trail Site

Figure 3
Development Site Alternatives
 Moccasin Bend National Archeological District
 United States Department of the Interior / National Park Service
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other museum objects would be in accordance with NPS museum collections policies and planning objectives. The expanded facility would include a theater for films, lectures, and performances related to Moccasin Bend's interpretive themes. In addition, a classroom, expanded lobby, expanded exhibit/museum area, expanded sales area, a multi-purpose space, expanded administrative space, curatorial space, and expanded exterior interpretation space would be constructed.

The National Park Service would prioritize the facility functions and spaces identified above based on the availability and level of funding. If funds are limited, some functions may not be included.

Alternative D

Under alternative D, an expanded interpretive / cultural facility would be developed on Moccasin Bend utilizing a combination of federal and private investments. Facility development either would occur on NPS lands (former Serodino tract) or on a combination of NPS and adjacent lands held by the partnership organization. The National Park Service would only apply federal funds towards selected facility development on NPS lands.

This alternative would implement the core facility and site design elements identified under alternative B (e.g., lobby, exhibit/museum area, administrative space, sales area, exterior interpretive space, restrooms, site development components). The additional elements of alternative C would also be incorporated: theater, classroom, expanded lobby, expanded exhibit/museum area, expanded sales area, a multi-purpose space, expanded administrative space, curatorial space, and expanded exterior interpretation space. The potential retrieval, display, and storage of artifacts and other museum objects would be in accordance with NPS museum collections policies and planning objectives.

The National Park Service would prioritize the facility functions and spaces identified above based on the availability and level of funding. If funds are limited, some functions may not be included.

If any of the above facility functions were accommodated on partner lands, a partnership agreement would be required to define roles and responsibilities of the National Park Service and the partner organization(s). Park visitors would be expected to have a seamless experience between federal and private facilities.

Actions Common to Alternatives B, C, and D

There are no existing buildings or structures on the former Serodino property that could conceivably be adapted for the interpretive center or used in site development. Consequently, new construction would be required for all facility development, including utility systems, parking, and other infrastructure.

The National Park Service would carry out all design and construction activities in accordance with *NPS Management Policies 2006* (sec. 9.1) to ensure that park resources and values are protected and that environmental leadership is demonstrated. Park Service principles for sustainability and asset management would be incorporated into all facility development and operations. Measures would be instituted to ensure that the facility achieves the lowest life-cycle costs consistent with requirements for environmental and energy conservation, energy performance, reliability, quality, safety, and resource protection. In accordance with the Architectural Barriers Act Accessibility Standards (May 2006), all facilities would be designed and constructed to be accessible and usable by persons with disabilities to the greatest extent possible.

It is NPS policy to avoid development in areas where facilities are prone to damage or destruction by natural physical processes.

Although the former Serodino property is located at a slight elevation above the 100-year floodplain of the Tennessee River because of the fill material that has been imported on-site, the Park Service would incorporate design and construction measures that would serve to mitigate or protect against possible flood damage and safety hazards. The Park Service would also continue to coordinate erosion and flood control measures with the U.S. Army Corps of Engineers and the Tennessee Valley Authority to protect the site.

Under National Park Service policy and guidelines for floodplain management (DO-77), the location of “irreplaceable records, museums, and storage of archeological artifacts” within 500-year floodplains is considered a Class II action which typically entails the preparation of a statement of findings. Hydrologic and geomorphic processes and hazards are assessed, and measures are proposed to avoid or mitigate potential flood impacts. The Park Service is presently investigating the delineation of the 500-year floodplain of the Tennessee River in proximity to the former Serodino property, and appropriate mitigation measures will be included in the project planning and design requirements if the present project is determined a Class II action.

If NPS floodplain management investigations determine that proposed on-site exhibit and storage of artifacts and museum collections is appropriate, special facility systems for climate control, fire protection, and other requirements would be installed as necessary in the interpretive center that meet NPS standards for long-term museum curation and storage.

The visitor interpretive center is expected to connect to existing utility lines (gas, electrical, and water) that follow the Hamm Road right-of-way. Wastewater requirements are expected to be addressed by connection to the sewage treatment facility on Moccasin Bend.

In keeping with *NPS Management Policies 2006* (sec. 9.3.1.3), the site selected for the visitor interpretive center is located outside the boundary of the national historic landmark district to minimize visual intrusions and possible impacts on the district’s primary resources and features. In respect for the concerns expressed by tribal representatives and others for protecting the American Indian village sites and other sensitive archeological resources, the Park Service would carefully evaluate (in consultation with concerned tribal members) options for managing visitor use and access near sensitive areas, and the appropriateness of developing trails or wayside exhibits for visitor interpretation.

Some among the general public have expressed the desire to view or participate in archeological investigations. Although the Park Service may consider authorizing future archeological investigations to address specific research questions or to assist, for example, in refining the spatial extent of the national historic landmark district, such investigations would fully take into consideration the cultural sensitivities expressed by tribal representatives. Park Service staff would assess any possible participation or viewing of the investigations by the general public on a case-by-case basis and in consultation with the affiliated tribes.

ALTERNATIVES CONSIDERED BUT DISMISSED

As previously noted in the discussion of site selection, the Park Service evaluated three other sites on Moccasin Bend in addition to the former Serodino property for possible location of the cultural/interpretive center. With varying modifications, the facility and program elements of the alternatives could be accommodated on the different land parcels. However, of the sites considered, the former Serodino property was found to best address the overall site development objectives. Although included within the boundaries of the national archeological district, the former Serodino property was the only one located

outside the boundaries of the national historic landmark district and was therefore in conformance with provisions of NPS *Management Policies 2006* (sec. 9.3.1.3) that visitor centers should not be located in close proximity to primary park resources or features in order to minimize visual intrusions and other impacts. This consideration also best addressed concerns expressed by American Indian tribal representatives that development not intrude on the ancestral village locations.

The former Serodino property was found to have the least development constraints in part because of its location adjacent to an existing secondary access road (Hamm Road), and previous site disturbances have contributed to reduce most concerns for natural and cultural resource protection. The site was found to present the greatest potential for partnership opportunities because adjacent land is held by the Friends of Moccasin Bend, providing the flexibility for possible facility/development expansion. Development of the other land

parcels that were evaluated would have entailed greater costs (e.g., construction of an access road along the river edge to the police firing range site) or presented other site limitations and constraints. For these reasons, the other sites on Moccasin Bend were dismissed from further environmental analysis in this document.

COSTS

Cost estimates for the various alternatives were developed based on preliminary facility modeling, and include projected capital costs for construction of the interpretive facility, associated infrastructure, and program requirements (e.g., exhibits, audio/visual program). Estimated costs are also provided for NPS operations including staffing costs. The costs are not intended to replace more detailed consideration of operational needs and final construction estimates. Cost information is summarized in the table below. See appendix A for additional information.

Table 1: Summary of Comparative Costs (Fiscal Year '09 Dollars)

	No Action	Alternative A	Alternative B	Alternative C	Alternative D
Total Capital Costs	N/A	\$143k – \$185k	\$7.99m – \$9.53m	\$13.85m – \$19.16m	\$13.85m – \$19.16m
Operational Costs (including Staffing)	\$4k – \$6k	\$18k – \$22k	\$348k – \$413k	\$418k – \$512k	\$418k – \$512k

Note 1: Capital costs reflect total project requirements and include the following:

- Net Construction Costs for the Facility, Infrastructure, and Site Amenities
- Design Services, Construction Management, Construction Contingencies
- Exhibit Design, Fabrication, and Installation
- Development of Audio/Visual Program (Alternatives C and D)

Note 2: The range in capital costs for alternatives B, C, and D is based on facility modeling and utilizes varying levels of expected visitation. Prior to beginning facility design, more precise visitation data will be required to finalize square footage requirements.

IDENTIFICATION OF THE PREFERRED ALTERNATIVE

The National Park Service identified alternative D as the agency's preferred alternative. Alternative D offers the Park Service the greatest degree of flexibility with regard to achieving the proposed broad range of basic and expanded facility functions and activities on Moccasin Bend. In consideration of potential future funding uncertainties (from both federal and private sources), the alternative allows the Park Service to prioritize construction of the various facility functions and space requirements, and to adapt the development program to address projected funding levels.

Under alternative D (as under alternative C), a combination of public and private investments are required for implementation. If any of the described functions in alternative D are accommodated on partner lands, a partnership agreement would be required. There is also an opportunity for the partner organization to develop facilities and activities on partner lands beyond those described in this development concept plan. These facilities and activities would be considered private ventures, but could complement the functions and activities described in the alternatives. Under the partnership arrangement envisioned in alternative D, the Park Service would be in a sound position to fulfill its mandate for resource preservation and protection while also providing an opportunity for visitors to receive an enhanced appreciation and understanding of the Moccasin Bend National Archeological District.

Although implementation of alternative B would allow the Park Service to establish a recognizable presence on Moccasin Bend with the development of basic facilities and interpretive activities, it would not take advantage of the potential contributions for expanded services provided by collaboration with the partnership organization. Alternative C would allow the Park Service to expand the functions and activities of the visitor

interpretive center by increased funding contributions. However, it would not include an option for some functions to be accommodated on partner lands. This could potentially diminish opportunities to provide the broad array of visitor services and activities proposed by the partnership organization and perhaps limit their collaborative support. Alternative D allows the Park Service the flexibility to accomplish the program development objectives envisioned by the agency and to sustain the long-term support of the partnership organization.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is defined by the Council on Environmental Quality as the alternative that best meets the following criteria or objectives, as set out in the National Environmental Policy Act (sec. 101):

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

With some differences, the alternatives similarly fulfill the above six criteria by preserving and protecting the nationally significant resources and cultural values associated with the Moccasin Bend National Archeological District. The alternatives also provide for a diverse range of visitor interpretive and educational opportunities in a safe and environmentally responsible and sustainable manner.

No facilities would be constructed on Moccasin Bend under the no-action alternative and alternative A, and consequently these two alternatives would best meet criterion #3 because there would be no associated environmental impacts from construction activities. Although alternatives B, C, and D entail progressively greater levels of new construction for visitor interpretive facilities on Moccasin Bend, construction would be carried out in conformance with all applicable environmental design standards and would incorporate energy conservation measures in construction and operations to reduce the consumption of nonrenewable resources. Among alternatives B, C, and D, however, the basic level of facility construction envisioned for alternative B would likely best meet criterion #6. All

development proposed under these alternatives would occur at sites outside the national historic landmark district and would consequently be expected to equally address criteria #1 and #4 with particular regard to protection and stewardship of the district's sensitive cultural resources.

The greatest diversity of visitor use opportunities would be expected under alternative D, with separate and expanded facilities operated by the Park Service and the partnership organization. Alternative D would therefore best address criterion #2, allowing wide public accessibility to "aesthetically and culturally pleasing surroundings." Because of the wide array of visitor activities and functions proposed under alternative D, it would also best address criterion #4 by protecting historic and cultural resources in a fashion that supports diversity and variety of individual choice.

As evaluated in this document, alternative D is the environmentally preferred alternative. The preferred alternative best meets the six criteria presented in the National Environmental Policy Act (section 101).

MITIGATION MEASURES

Mitigation measures are analyzed as part of the alternatives. These have been developed to lessen the potential adverse impacts of the proposed actions or to present measures the Park Service would follow in the event of unexpected occurrences during the course of construction.

- Should construction unearth previously undiscovered archeological resources, work would be stopped in the area of the discovery, and NPS staff would consult with the state historic preservation officer, affiliated tribes and the Advisory Council on Historic Preservation, as necessary, according to 36 CFR 800.13 (*Post Review Discoveries*). In the unlikely event that human remains are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (1990) would be followed.
- All sensitive cultural resources would be clearly marked for avoidance to protect them from construction disturbance. All workers would be informed of the penalties for illegally collecting artifacts or intentionally damaging cultural resources. Workers would also be informed of the correct procedures to follow in the event previously unknown resources are uncovered during construction.
- The Park Service would continue to consult with affiliated tribes to ensure all development, use and interpretive proposals are carried out in a manner respectful of the site's cultural and spiritual importance.
- Before any construction activity, construction zones would be clearly delineated with stakes or by other means in order to confine activity to the minimum area required for construction. All protection measures would be clearly stated in the construction specifications, and workers would be instructed to avoid conducting activities beyond the construction zone.
- Visitors would be informed in advance of proposed construction and directed away from construction areas to avoid safety hazards and minimize visitor use conflicts.
- Best management practices would be used during construction to minimize impact to air quality from increased dust or other particulates. These practices could include keeping disturbed soils moist to hold down dust.
- Best management practices would be used during construction to minimize soil disturbance and the potential for erosion in the project area. Erosion control methods could include (but not be limited to) filter cloth and silt fencing.
- To avoid introduction of exotic plant species, no hay bales or other organic material would be used in erosion control measures. Standard measures that involve only inorganic materials (e.g. silt fences and/or sand bags) would be used.
- Fueling of all machinery would be conducted only in approved equipment staging areas away from the Tennessee River or other sensitive water bodies. Any spills of hazardous materials, fuel, etc., would be cleaned up immediately to prevent contamination or discharge into ground or surface waters.
- The Park Service would comply with applicable state and local regulations to minimize the impacts on water quality associated with wastewater management. Best available technologies would be used.
- The Park Service would limit the use of artificial outdoor lighting to that which is necessary for basic safety requirements, and would ensure that all sources of artificial light are shielded to the maximum extent practicable.
- Any plant materials used for revegetation efforts would be native to Moccasin Bend.

SUMMARY TABLES

Table 2: Summary of Alternatives

NO ACTION	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
<ul style="list-style-type: none"> No new NPS facilities would be constructed on Moccasin Bend. <p>Occasional ranger-led interpretive tours to Moccasin Bend could occur, but no facility space would be provided at the national military park dedicated specifically to interpretation of the Bend.</p>	<ul style="list-style-type: none"> No new NPS facilities would be constructed on Moccasin Bend. <p>In addition to ranger-led interpretive tours, increased interpretation of the archeological district would be provided at existing visitor center facilities.</p>	<ul style="list-style-type: none"> The National Park Service would develop an interpretive/cultural facility on Moccasin Bend to provide basic visitor services and space for interpretation. 	<ul style="list-style-type: none"> The National Park Service would develop an interpretive/cultural facility on Moccasin Bend providing expanded visitor services and interpretive opportunities. 	<ul style="list-style-type: none"> The National Park Service would develop an expanded interpretive/cultural facility on Moccasin Bend with optional separate facility development and activities operated by a partnership organization.
	<p>The NPS facility would be constructed on the NPS-owned former Serodino tract.</p> <p>Federal funds would be used.</p>	<p>The NPS facility would be constructed on the NPS-owned former Serodino tract.</p> <p>Both federal and partnership (private) funds would be used.</p>	<p>The NPS facility would be constructed on the NPS-owned former Serodino tract.</p> <p>Both federal and partnership (private) funds could be used for development on the former Serodino tract. Only private funds would be used for development on private land.</p>	

NO ACTION	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
	<ul style="list-style-type: none"> The core space and functional requirements for the facility would be a lobby with information desk, site orientation exhibits, a small seating area, and restrooms. An exhibit/museum area would include displays addressing the archeological district's primary interpretive themes. A small sales area would provide books and merchandise determined necessary and appropriate to support site interpretation. Administrative support space would be provided for NPS facility management and staff functions (e.g., office/work room space, supply and equipment storage, and mechanical and security systems) Exterior space would be provided to accommodate interpretive programs. 	<ul style="list-style-type: none"> The core facility and site design elements identified under alternative B would be implemented. Additionally, the expanded facility would include a theater for films, lectures, and performances related to Moccasin Bend's interpretive themes. A classroom, expanded lobby, expanded exhibit/museum area, expanded sales area, a multi-purpose space, expanded administrative space, curatorial space, and expanded exterior interpretation space would be constructed. 	<ul style="list-style-type: none"> The core facility and site design elements identified under alternative B and the additional elements of alternative C would be incorporated. Additional facility space and functions would be funded, developed, and managed by the partnership organization on non-NPS property. 	

NO ACTION	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
<ul style="list-style-type: none"> No efforts would be undertaken to retrieve, exhibit, or store artifacts associated with the Bend. 	<ul style="list-style-type: none"> Museum collections strategies would be developed and implemented to retrieve, exhibit, and store artifacts associated with Moccasin Bend at existing NPS visitor center facilities. 	<p>Site development would include an access drive, parking area, landscaping, limited trails, and the installation of necessary utilities (e.g., water and waste water lines, electrical service).</p> <ul style="list-style-type: none"> The retrieval, display, and storage of artifacts and other museum objects on Moccasin Bend would be in accordance with NPS museum collections policies and planning objectives. 	<ul style="list-style-type: none"> The retrieval, display, and storage of artifacts and other museum objects on Moccasin Bend would be in accordance with NPS museum collections policies and planning objectives. 	<ul style="list-style-type: none"> The retrieval, display, and storage of artifacts and other museum objects on Moccasin Bend would be in accordance with NPS museum collections policies and planning objectives.
<ul style="list-style-type: none"> The National Park Service would continue to protect and manage the Moccasin Bend National Archeological District as it does currently. 	<ul style="list-style-type: none"> The National Park Service would protect and manage the Moccasin Bend National Archeological District with a noticeable presence on the Bend operating from the visitor / interpretive center. 	<ul style="list-style-type: none"> The National Park Service would protect and manage the Moccasin Bend National Archeological District with an expanded presence on the Bend operating from the visitor / interpretive center. 	<ul style="list-style-type: none"> The National Park Service would protect and manage the Moccasin Bend National Archeological District with an expanded presence on the Bend operating from joint visitor / interpretive centers. 	<ul style="list-style-type: none"> The National Park Service, in partnership with the friends organization, would protect and manage the Moccasin Bend National Archeological District with an expanded presence on the Bend operating from joint visitor / interpretive centers.

Table 3: Summary of Key Impacts

TOPIC	NO ACTION	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
<p>Visitor Use and Experience</p>	<ul style="list-style-type: none"> • Long-term minor to moderate adverse impacts from continued limited interpretive opportunities and access restrictions on Moccasin Bend • Beneficial impacts from the continuation of occasional NPS-led interpretive tours • Long-term beneficial and minor adverse cumulative impacts, with a modest contribution of the no-action alternative to cumulative impacts 	<ul style="list-style-type: none"> • Long-term minor to moderate adverse impacts from continued limited interpretive opportunities and access restrictions on Moccasin Bend • Beneficial impacts from the continuation of occasional NPS-led interpretive tours and the provision of interpretation/ exhibits at other park visitor centers • Long-term beneficial and minor adverse cumulative impacts, with a modest contribution of alternative A to cumulative impacts 	<ul style="list-style-type: none"> • Long-term beneficial impacts from construction of basic visitor facilities on Moccasin Bend and implementation of interpretive and educational programs • Minor long-term adverse impacts from access restrictions and site protection measures • Long-term beneficial and minor adverse cumulative impacts, with an appreciable contribution of alternative B to cumulative impacts 	<ul style="list-style-type: none"> • Long-term beneficial impacts from construction of expanded visitor facilities on Moccasin Bend and implementation of interpretive and educational programs • Minor long-term adverse impacts from access restrictions and site protection measures • Long-term beneficial and minor adverse cumulative impacts, with a substantial contribution of alternative C to cumulative impacts 	<ul style="list-style-type: none"> • Long-term beneficial impacts from construction of expanded NPS and partnership visitor facilities on Moccasin Bend and implementation of joint interpretive and educational programs • Minor long-term adverse impacts from access restrictions and site protection measures • Long-term beneficial and minor adverse cumulative impacts, with a substantial contribution of alternative D to cumulative impacts

TOPIC	NO ACTION	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
Archeological Resources	<ul style="list-style-type: none"> No facility development or ground-disturbance would occur that could adversely affect archeological resources 	<ul style="list-style-type: none"> No facility development or ground-disturbance would occur on Moccasin Bend that could adversely affect archeological resources 	<ul style="list-style-type: none"> No archeological resources have been identified at the location selected for proposed NPS visitor center on Moccasin Bend 	<ul style="list-style-type: none"> No archeological resources have been identified at the location selected for proposed NPS visitor interpretive center on Moccasin Bend 	<ul style="list-style-type: none"> No archeological resources have been identified at the location selected for proposed NPS visitor interpretive center on Moccasin Bend
	<ul style="list-style-type: none"> Any adverse impacts from NPS management actions would be long term and negligible to minor in intensity 	<ul style="list-style-type: none"> Any adverse impacts from NPS management actions would be long term or permanent and minor to moderate in intensity 	<ul style="list-style-type: none"> Additional archeological surveys and/or monitoring may be required 	<ul style="list-style-type: none"> Additional archeological surveys and/or monitoring may be required 	<ul style="list-style-type: none"> Additional archeological surveys and/or monitoring may be required, including surveys for the adjoining site selected by the partnership organization for additional visitor use facilities
	<ul style="list-style-type: none"> Long-term beneficial impacts would result from increased visitor interpretation and education at existing visitor centers 	<ul style="list-style-type: none"> Long-term beneficial impacts would result from increased onsite interpretation and education 	<ul style="list-style-type: none"> Long-term beneficial impacts would result from increased onsite interpretation and education 	<ul style="list-style-type: none"> Long-term beneficial impacts would result from increased onsite interpretation and education 	<ul style="list-style-type: none"> Long-term beneficial impacts would result from increased onsite interpretation and education

		ALTERNATIVE D			
		ALTERNATIVE C		ALTERNATIVE B	
		ALTERNATIVE A		NO ACTION	
TOPIC		ALTERNATIVE A		NO ACTION	
Archeological Resources (continued)	<ul style="list-style-type: none"> Minor to major adverse and beneficial cumulative impacts 	<ul style="list-style-type: none"> Minor to major adverse and beneficial cumulative impacts 	<ul style="list-style-type: none"> Minor to major adverse and beneficial cumulative impacts 	<ul style="list-style-type: none"> Minor to major adverse and beneficial cumulative impacts 	<ul style="list-style-type: none"> Minor to major adverse and beneficial cumulative impacts
	<ul style="list-style-type: none"> Section 106 finding of <i>no adverse effect</i> to archeological resources No impairment of the archeological district's archeological resources and values 	<ul style="list-style-type: none"> Section 106 finding of <i>no adverse effect</i> to archeological resources No impairment of the archeological district's archeological resources and values 	<ul style="list-style-type: none"> Section 106 finding of <i>no adverse effect</i> to archeological resources No impairment of the archeological district's archeological resources and values 	<ul style="list-style-type: none"> Section 106 finding of <i>no adverse effect</i> to archeological resources No impairment of the archeological district's archeological resources and values 	<ul style="list-style-type: none"> Section 106 finding of <i>no adverse effect</i> to archeological resources No impairment of the archeological district's archeological resources and values
Ethnographic Resources	<ul style="list-style-type: none"> No facility development or ground-disturbance would occur that could adversely affect ethnographic resources 	<ul style="list-style-type: none"> No facility development or ground-disturbance would occur that could adversely affect ethnographic resources 	<ul style="list-style-type: none"> No facility development or ground-disturbance would occur that could adversely affect ethnographic resources 	<ul style="list-style-type: none"> No facility development or ground-disturbance would occur that could adversely affect ethnographic resources 	<ul style="list-style-type: none"> No facility development or ground-disturbance would occur that could adversely affect ethnographic resources
	<ul style="list-style-type: none"> Any adverse impacts from NPS management actions would be long term and negligible to minor in intensity 	<ul style="list-style-type: none"> Any adverse impacts from NPS management actions would be long term and negligible to minor in intensity 	<ul style="list-style-type: none"> Any adverse impacts from NPS management actions would be long term and negligible to minor in intensity 	<ul style="list-style-type: none"> Any adverse impacts from NPS management actions would be long term and negligible to minor in intensity 	<ul style="list-style-type: none"> Any adverse impacts from NPS management actions would be long term and negligible to minor in intensity

TOPIC	NO ACTION	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
Ethnographic Resources (continued)	<ul style="list-style-type: none"> • Minor to major adverse and beneficial cumulative impacts • No impairment of the archeological district's ethnographic resources and values 	<ul style="list-style-type: none"> • Long-term beneficial impacts from increased visitor interpretation and education at existing visitor centers • Minor to major adverse and beneficial cumulative impacts • Section 106 finding of <i>no adverse effect</i> to ethnographic resources • No impairment of the archeological district's ethnographic resources and values 	<ul style="list-style-type: none"> • Long-term beneficial impacts from visitor interpretation and education provided at the NPS visitor interpretive facility • Minor to major adverse and beneficial cumulative impacts • Section 106 finding of <i>no adverse effect</i> to ethnographic resources • No impairment of the archeological district's ethnographic resources and values 	<ul style="list-style-type: none"> • Long-term beneficial impacts from visitor interpretation and education provided at the NPS visitor interpretive facility • Minor to major adverse and beneficial cumulative impacts • Section 106 finding of <i>no adverse effect</i> to ethnographic resources • No impairment of the archeological district's ethnographic resources and values 	<ul style="list-style-type: none"> • Long-term beneficial impacts from visitor interpretation and education provided at the NPS and partnership visitor interpretive facilities • Minor to major adverse and beneficial cumulative impacts • Section 106 finding of <i>no adverse effect</i> to ethnographic resources • No impairment of the archeological district's ethnographic resources and values
Socioeconomic Environment	<ul style="list-style-type: none"> • Negligible to minor beneficial impacts to local and regional economies from current modest levels of visitation to the archeological district and sites on the Bend associated with the Trail of Tears NHT 	<ul style="list-style-type: none"> • Negligible to minor beneficial impacts to local and regional economies from modest levels of visitation to the archeological district, and sites on the Bend associated with the Trail of Tears NHT 	<ul style="list-style-type: none"> • Minor to moderate beneficial impacts to the local and regional economies from increased visitation to the archeological district and sites on the Bend associated with the Trail of Tears NHT following construction of basic NPS visitor interpretation facilities 	<ul style="list-style-type: none"> • Minor to moderate beneficial impacts to the local and regional economies from increased visitation to the archeological district and sites on the Bend associated with the Trail of Tears NHT following construction of expanded NPS visitor interpretation facilities 	<ul style="list-style-type: none"> • Moderate beneficial impacts to the local and regional economies from increased visitation to the archeological district and sites on the Bend associated with the Trail of Tears NHT following construction of expanded NPS visitor interpretation facilities and the additional facilities proposed by the partnership

TOPIC		NO ACTION	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D
Socioeconomic Environment (continued)		<ul style="list-style-type: none"> Long-term minor beneficial cumulative impacts 	<ul style="list-style-type: none"> Long-term minor beneficial cumulative impacts 	<ul style="list-style-type: none"> Long-term minor to moderate beneficial cumulative impacts 	<ul style="list-style-type: none"> Long-term minor to moderate beneficial cumulative impacts 	<ul style="list-style-type: none"> Long-term moderate beneficial cumulative impacts
	NPS Operations and Facilities	<ul style="list-style-type: none"> Long-term minor to moderate adverse impacts on NPS operations without on-site dedicated facilities and staff 	<ul style="list-style-type: none"> Long-term minor to moderate adverse impacts on NPS operations from adapting existing visitor center facilities without dedicated facilities and staff on Moccasin Bend 	<ul style="list-style-type: none"> Long-term moderate to major beneficial impacts on NPS operations from a basic visitor interpretive facility on Moccasin Bend with adequate staffing 	<ul style="list-style-type: none"> Long-term moderate to major beneficial impacts on NPS operations from an expanded visitor interpretive facility on Moccasin Bend with adequate staffing 	<ul style="list-style-type: none"> Long-term moderate to major beneficial impacts to NPS operations from joint NPS and partnership visitor interpretive facilities on Moccasin Bend with adequate staffing
		<ul style="list-style-type: none"> Long-term minor adverse and beneficial cumulative impacts 	<ul style="list-style-type: none"> Long-term moderate adverse impacts on NPS operations and budgetary allocations associated with construction and operation/maintenance of the basic NPS interpretive facility 	<ul style="list-style-type: none"> Long-term moderate adverse impacts on NPS operations and budgetary allocations from expenses associated with construction and operation/maintenance of the expanded NPS interpretive facility 	<ul style="list-style-type: none"> Long-term moderate adverse impacts on NPS operations and budgetary allocations from expenses associated with construction and operation/maintenance of the expanded NPS interpretive facility 	<ul style="list-style-type: none"> Long-term moderate adverse impacts on NPS operations and budgetary allocations from expenses associated with construction and operation/maintenance of the expanded NPS interpretive facility
		<ul style="list-style-type: none"> Long-term minor adverse and beneficial cumulative impacts 	<ul style="list-style-type: none"> Long-term moderate adverse and beneficial cumulative impacts 	<ul style="list-style-type: none"> Long-term moderate and adverse beneficial cumulative impacts 	<ul style="list-style-type: none"> Long-term moderate and adverse beneficial cumulative impacts 	<ul style="list-style-type: none"> Long-term moderate and adverse beneficial cumulative impacts



MOCCASIN BEND , SOUTH BANK



MOCCASIN BEND, EAST BANK

CHAPTER 3:

Affected Environment

INTRODUCTION

The following discussion highlights resources and other management considerations for Moccasin Bend that could be affected by implementation of the development concept plan alternatives. It is not intended to provide a complete description of Moccasin Bend's resources, but rather an overview of the relevant resource conditions, values, uses, and characteristics that might be affected.

As identified in Chapter 1 of this document, the impact topics that are analyzed include visitor use and experience; cultural resources (archeological and ethnographic resources); the socioeconomic environment; and NPS operations and facilities.

VISITOR USE AND EXPERIENCE

Information regarding visitor use of Moccasin Bend is limited, and Chickamauga and Chattanooga National Military Park does not currently have statistics or other visitor use studies to document the numbers of visitors that go to the Bend or the range of customary visitor activities that occur there. The NPS Public Use Statistics Office reported 991,645 recreational visitors at the national military park in 2007, the highest number since 1998 when 1,019,503 visitors were reported. It may be assumed that with the addition of Moccasin Bend to the national military park in 2003, some visitors have expanded their stay at the park to explore the new NPS unit although no formal NPS facilities or regular interpretive programs are yet provided there. Overall park visitor statistics do not show a marked increase since 2003 that might correspond to an influx of visitors to the Moccasin Bend unit. Staff of the national military park currently conduct limited interpretive tours of the national archeological district.

The diverse range of historical/interpretive themes represented on Moccasin Bend may draw different visitors and groups, although it is also likely to appeal to those seeking a broad interpretive perspective of regional cultural history and particular historical events. Visitors whose interests are more narrowly focused on the Civil War and the 1863 Battles for Chattanooga would likely be drawn to the Stringers Ridge portion of the national archeological district where Union Army earthworks and gun emplacements exist as the best-preserved remnants of the battles. The forest succession of deciduous trees along Stringers Ridge, however, tends to obscure sight lines to other locations, namely Lookout Mountain, that were critical vantage points during the battles.

Other visitors may be more interested in the American Indian archeological sites and

village locations that have been documented as part of the archeological district. Physical evidence of the sites is subtle, and interpretation is important to assist in explaining the spatial arrangement of the villages and the configuration of specific features. Visitor expectations to view and experience the archeological sites would likely be one of the more challenging issues facing NPS site managers. During the tribal consultations held for this plan, several tribal representatives expressed concern that Moccasin Bend (and particularly the village locations with associated human burials) be treated with respect as sacred ground. The extensive past disturbance and looting of the burial sites have heightened sensitivities regarding the treatment and protection of these areas.

NPS management strategies regarding the nature of visitor use and interpretation in proximity to the village sites are beyond the scope of this development concept plan. Separate program planning will also be undertaken to guide specific interpretive, exhibit, and other visitor use elements envisioned for the Moccasin Bend visitor interpretive center. The National Park Service will develop a preferred approach for visitor use and interpretive activities on Moccasin Bend as part of current general management planning and comprehensive interpretive planning efforts for the national military park. Consistent with NPS *Management Policies* (sec. 8.1.1), the Park Service will evaluate and authorize proposed visitor use activities that are appropriate to the purposes for which the park and the Moccasin Bend unit were established, and can be sustained without causing unacceptable impacts. Input received from ongoing consultation with affiliated tribal members and others concerning visitor use issues will be factored into the NPS decision-making process.

Another historic resource drawing visitors to Moccasin Bend is the Trail of Tears National Historic Trail (NHT). Specific locations on Moccasin Bend associated with the Trail are not presently marked, and physical remnants (which followed the old Federal Road through this area) are not readily discernable. Therefore, interpretation is vitally important to convey the events and stories associated with the Trail of Tears and the forced removal of Cherokee Indians in 1838 from their homelands for resettlement in the West. The broader story of removal of other eastern tribes (e.g., Choctaw, Muscogee Creek, Seminole, and Chickasaw) is incorporated into interpretation of the Trail of Tears NHT. The Trail of Tears Association (a national organization dedicated to the preservation of the Trail of Tears) and other concerned partners assist the Park Service in interpreting and raising public awareness of the Trail of Tears and other regionally associated sites.

Recreational activities on Moccasin Bend outside of the national archeological district and Park Service jurisdiction include the

public 18-hole Moccasin Bend Golf Course. The golf course falls within the boundaries of the Moccasin Bend Archeological District National Historic Landmark (NHL). The lease for the golf course was renewed in November 2005, and stipulations were included in the lease agreement regarding protection of archeological resources in cooperation and partnership with the National Park Service. The Blue Blazes Trail, a public nature trail used for hiking and wildlife watching, is adjacent to the southern boundary of the golf course.

Recreational visitors share the two-lane secondary roads on the Bend (e.g., Manufacturers Road, Hamm Road, Moccasin Bend Road) with personnel and service providers of the mental health hospital, wastewater treatment plant, and other facilities. Truck traffic is occasionally interspersed with passenger vehicles traveling to the various facility and recreational destinations. Public parking is available at the golf course and at the access point to the Blue Blazes Trail.

ARCHEOLOGICAL RESOURCES

The Moccasin Bend Archeological District National Historic Landmark (NHL) was designated in 1986. The district was previously listed in the National Register of Historic Places in 1984 as a multiple resource area based on the results of field investigations carried out the previous year (1983) by the Chattanooga Regional Anthropological Association. Cultural material and records collected and generated by these investigations are curated by the Tennessee Division of Archaeology in Nashville.

Located in the southern half of Moccasin Bend, the 956-acre district contains 18 component sites in an area that witnessed approximately 12,000 years of continuous American Indian use and occupation as well as strategic military positions associated with the 1863 Battles for Chattanooga. Although Paleo-Indian cultural material was identified during construction of the state hospital at the southern toe of the Bend, evidence for these earliest aboriginal inhabitants (ca. 12,000 B.C. – 8000 B.C.) is not presently reflected among the artifact assemblages of the district's component sites.

The district's broad array of archeological resources hold the potential for refining understanding of local and regional chronologies, particularly for the prehistoric Archaic period (ca. 8000 B.C. – 1000 B.C.) and Woodland period (ca. 1000 B.C. – A.D. 1000). Analysis of the material cultural assemblages associated with these sites can advance far-ranging research objectives and understanding regarding various Southeastern prehistoric and protohistoric populations. Research can address questions concerning cultural and technological change, communication, population distribution, structural and architectural features, etc. The archeological resources provide unparalleled evidence of Moccasin Bend's fundamental importance throughout prehistory and history

as a strategic center of trade, communication, and economic and political importance. These factors have been dramatically influenced by the Bend's favorable geographic setting by the Tennessee River. The following component sites have been identified.

AMERICAN INDIAN SITES

Hampton Place

This is a large protohistoric Mississippian (Mouse Creeks phase) village site occupied in the 16th century. Earlier Archaic and Woodland period components are also present. The primary component consists of two contiguous habitation areas each with archeological evidence of community buildings, plaza, and small dwellings. Palisade fortifications surrounded each area. Archeological testing has revealed a large number of gravesites and burned dwellings with intact floors. Spanish-manufactured artifacts uncovered at the site support contact or trade with 16th century Spanish explorers.

The site contains unparalleled archeological data reflecting the initial influence of European (Spanish) cultural contact on indigenous Southeastern Indian cultures. The site appears to represent a major center of aboriginal economic and political power, which may have provided the impetus for Spanish interest in the location (e.g., the expeditions led by Hernando De Soto in 1540, Tristan de Luna in 1560, and Juan Pardo in 1566 – 1568). The extensive burning of the village and subsequent alluvial deposition had the effect of sealing the site as it existed during the 16th century, with little subsequent aboriginal alteration. The site is extremely well preserved despite the extensive looting and disturbance of gravesites that primarily occurred between 1974 and 1982. It retains exceptional opportunities for further research on far-ranging questions regarding the initial

impact of European cultures on indigenous Southeastern peoples (McCollough et al. 1985).

Vulcan Site

This site is a Late Archaic period campsite with stratified midden deposits, hearth features, and a subterranean house (ca. 1335 B.C.) considered one of the earliest formally built dwellings in the Southeast. Pottery sherds indicating a later Middle/Late Woodland period village are also present. The site's archeological information includes subsistence data associated with faunal, floral, and midden deposits; architectural data (e.g., structure floors, pit houses, and hearths); and chronological data such as charcoal associated with site features and ceramics that mark cultural episodes (McCollough et al. 1985).

Mallards Dozen Site

This a large, deeply stratified site with Early/Middle Archaic period occupation deposits and a concentrated Middle Woodland period component. Archeological testing revealed a Middle Woodland period structure dated at A.D. 405. Archeological information is associated with subsistence-related food refuse, architectural features, floral and faunal remains, and ceramic and lithic artifacts (McCollough et al. 1985).

Mound Complex

Eight conical prehistoric mounds are located at the southern toe of Moccasin Bend on the state hospital grounds. The mounds are associated with burial and ceremonial activities during the Late Woodland period (A.D. 600 - A.D. 1000). Partially excavated by archeological investigations in 1915, the mounds are expected to contain information regarding construction techniques, mortuary practices, and the socio-political organization associated with the Late Woodland period. These mounds represent the most substantial mortuary center from the period in this portion of the Tennessee River Valley. Historic coffins (possibly of Union Army

casualties) are present in one of the mounds (McCollough et al. 1985).

CIVIL WAR SITES

Civil War features on Stringers Ridge (cannon emplacements, rifle pits, bivouac pads, etc.) are considered the best preserved of all physical remains from the Battles for Chattanooga, and the only surviving features from that engagement associated with Union Army activities. The Stringers Ridge features reflect Union positions during both the early stages of the battles—August to September 1863 when Chattanooga was occupied by Confederate forces—and later engagements—September to November 1863, following the Battle of Chickamauga when federal forces were under Confederate siege in Chattanooga.

Eight sites have been identified that are associated with various Union artillery and rifle positions. These include a possible signal tower base; earthworks of two cannon emplacements with line of fire directed at Chattanooga; a linear (20-meter-long) triple cannon emplacement; a west facing double cannon emplacement (two meters high) with four embrasures surrounded by rifle pits and leveled bivouac pad areas; two C-shaped cannon emplacements (one with an embrasure), rifle pits, and bivouac pads; a complex on the southernmost ridge crest consisting of a right-angled rifle pit (35 meters long), two west facing C-shaped cannon emplacements with rifle pits, a possible sally port, and an L-shaped cannon emplacement with two embrasures and flanking rifle pit (30 meters long); a complex of bivouac pads on a level occupation area at a ridge gap; and another complex of bivouac pads on slopes surrounding a spring (McCollough et al. 1985).

The Stringers Ridge position was vital for the Union Army's efforts to command the critical supply link across the Tennessee River at Brown's Ferry, and enabled Union artillery to counter Confederate fire from across the river at Lookout Mountain. It served as part of the

advance Union positions for the battles of Lookout Mountain and Missionary Ridge, which ultimately resulted in Confederate forces being driven south into Georgia.

CURRENT PROJECT INVESTIGATIONS

In September 2006, the NPS Southeast Archeological Center (SEAC) conducted Phase I archeological survey and testing of the locations considered for the proposed visitor interpretive center on Moccasin Bend. Representatives of the Eastern Band of Cherokee Indians assisted SEAC archeologists with the survey. The survey was carried out for the former Serodino property, the Blue Blazes Trail area, and the law enforcement firing range. Testing consisted of traditional shovel testing, soil core sampling, and metal detection.

Sixty-nine soil core borings were collected at the former Serodino property. The core samples confirmed that imported fill soils were deeper than originally anticipated, with the fill containing brick and concrete debris and sandy clay extending to depths between 3.6 and 4.8 meters. Natural soils were encountered in some of the borings at depths greater than 7 meters. The test borings supported the observation that top soils had been previously scraped from the site prior to the importation of fill material, as evidenced by an abrupt transition between the overlying fill and culturally sterile clay subsoil. Although partially degraded limestone flakes were observed in a couple of the borings that were originally thought to be prehistoric lithic material, the flakes were later determined to

have resulted from the impacts of the boring equipment (NPS 2006b).

Shovel testing along the Blue Blazes Trail encountered culturally sterile clay subsoil about 35-50 centimeters (on average) below the surface. Although prehistoric lithic flakes were identified in some of the shovel tests, no artifact concentrations or distinct sites were identified (NPS 2006b).

Metal detection equipment was used by the SEAC archeologists to systematically survey the firing range area located along the east flank of Stringers Ridge. Members of the Chattanooga Area Relic Hunters Association (CARHA) assisted with the investigations. Civil War-related artifacts were identified including lead fragments, Minie balls, a spout fragment from a brass canteen, a lead pistol ball, and a brass lamp wick holder. No significant sites or earthworks were identified in the area, and it was determined that prehistoric or historic occupation sites were unlikely to exist in the area because of the steep topographical relief of Stringers Ridge (NPS 2006b).

As a result of the testing, SEAC staff recommended that construction could proceed at either the former Serodino or firing range properties without further archeological testing because of the lack of significant sites or artifacts uncovered, and the low probability for sites to exist in these locations. Further testing was recommended for the Blue Blazes Trail location, however, although initial testing of the area did not identify significant resources.

ETHNOGRAPHIC RESOURCES

Ethnographic resources are defined by the National Park Service as any “site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it” (DO-28). No formal ethnographic investigations have been completed for Moccasin Bend, and no ethnographic resources or traditional uses have been specifically identified in the various locations proposed for the visitor interpretive center.

However, as expressed by tribal representatives during project consultations, Moccasin Bend retains profound importance for many American Indian tribes although locations on the Bend are not presently occupied by tribal groups. The long history of settlement and the presence of ancestral burials in proximity to the former village sites imbue the Bend with a complex spiritual dimension. As noted in the national historic landmark nomination for the archeological district, “All of the aboriginal sites known within the Moccasin Bend Archeological District, and especially Hampton Place, have important ethnic significance to living groups and are considered of state and national significance, individually and collectively, by the Tennessee Indian Commission” (McCollough et al. 1985).

In accordance with NPS *Management Policies 2006*, the American Indian Religious Freedom Act (1996), and other laws and policies, the Park Service permits tribal access to park areas for traditional religious, ceremonial, and other customary activities at places historically used for such purposes. In consultation with the culturally affiliated tribes and consistent with tribal goals, the Park Service would protect known sacred sites and other ethnographic resources should these be identified. The Park Service would not disclose the location and

character of sites and resources to the public if disclosure would result in significant invasion of tribal member privacy, risk harm to historic resources, or impede traditional religious use and access by tribal members.

As previously noted in the “Visitor Use and Experience” section, tribal concern for the protection of sensitive site locations such as Hampton Place (or portions thereof) could entail restricting or limiting visitor access in efforts to respect the ancestral inhabitants and burial sites. Several tribal members expressed personal uneasiness in visiting these areas because of the adverse spiritual consequences associated with disturbance of burial locations. Therefore, it may be more important for some tribal members that measures are instituted to avoid or minimize further site disturbances (by restricting visitor access or other means) rather than providing access to these locations to conduct ceremonial or religious activities.

Although located outside of the archeological district NHL and the current project area, the Trail of Tears National Historic Trail crosses Moccasin Bend. The national historic trail is managed by the NPS Historic Trails System Office, and encompasses about 2,200 miles of land and water routes that traverse portions of nine states (Alabama, Arkansas, Georgia, Illinois, Kentucky, Missouri, North Carolina, Oklahoma, and Tennessee). The historic route generally followed the old Federal Road through the vicinity of Moccasin Bend. Ross’s Landing at Chattanooga and Brown’s Ferry, on the western side of Moccasin Bend, served as regional points of departure and transit across the Tennessee River. Ethnographic resources associated with the tragic removal of Cherokee Indians from the area in 1838 may be identified through further research. Tribal histories and stories related to the Trail of Tears would expand understanding of Moccasin Bend’s role during the initial stages

of the forced departure. The broad history of the Trail of Tears is among the primary interpretive themes that would be presented at the proposed visitor interpretive center.

Ethnographic resources may be identified by future investigations in support of long-range cultural resource management of the Bend and more comprehensive general management planning efforts. In consultation

with concerned tribal members, NPS staff would identify and evaluate potential ethnographic resources by conducting appropriate research and investigations (i.e., ethnographic overviews and assessments, traditional use studies, ethnographic landscape studies, oral histories, etc.) that inform NPS management and decision making.

SOCIOECONOMIC ENVIRONMENT

Moccasin Bend is located in Hamilton County, Tennessee, one of six counties in the Chattanooga Metropolitan Statistical Area (MSA). The MSA covers 2,091 square miles with Hamilton, Marion, and Sequatchie counties in Tennessee, and Catoosa, Dade, and Walker counties in Georgia. According to U.S. Census Bureau statistics, Chattanooga's population in 2007 was 168,294, and that of Hamilton County was 330,168. Chattanooga's per capita income was \$23,104, compared to \$25,523 for Hamilton County and \$32,305 for the state of Tennessee. In 2006, the unemployment rate for both Chattanooga and Hamilton County was 4.4%, slightly less than that for the state of Tennessee (5.2%) and the U.S. average of 4.6%. Reflecting the current national economic downturn, the unemployment rate for the Chattanooga MSA (as of March 2009) stood at 9.1%.

Within the MSA, nearly 20,000 businesses employ over 200,000 people and generate nearly \$35 billion in annual sales. The finance, insurance, and real estate industries account for the largest business sector, followed by manufacturing, services, transportation and public utilities, retail and wholesale trade, construction, and agriculture (including forestry and fishing). Chattanooga's strategic location by the Tennessee River has long served to strengthen its position as a major manufacturing and distribution center for the region. Historically, Chattanooga's iron and steel foundries served as a reliable cornerstone of the city's economic prosperity from the 19th century until the industry began to decline in the 1970s.

Chattanooga experienced a deep economic downturn during the 1980s, like many other cities across the country with economies heavily reliant on manufacturing. The number of Chattanoogans employed in manufacturing industries declined 28% during the decade, a factor reflected in corresponding city and

county population declines. A recent report by the Brookings Institution attributes Chattanooga's successful recovery from the economic difficulties of the 1980s to the city's far-sighted civic leadership, and their adoption of a process known as the "Chattanooga way" that incorporated urban planning, citizen engagement, public-private partnerships, and investments in transformative projects (Eichenthal and Windeknecht, 2008).

The Moccasin Bend Task Force was appointed in the early 1980s to explore options for economic redevelopment. The task force's 1985 report provided recommendations not only for Moccasin Bend across from downtown Chattanooga, but also recommended that the community concentrate its revitalization efforts on the city's riverfront. A primary recommendation was the creation of the Tennessee Riverpark along a 22 mile-long stretch of the Tennessee River. The river park was envisioned as a means to reconnect the city with the river and, by providing a variety of amenities and attractions, draw tourists and business investments to the area. Also established in the early 1980s, the Urban Design Studio (associated with the University of Tennessee's School of Architecture) entered into a partnership with the City of Chattanooga and undertook coordinated planning focused on revitalizing the downtown area.

The successful implementation of Chattanooga's revitalization plans helped spur renewed private investment in downtown development projects, including new housing units and other business ventures. The downtown area witnessed a reversal of its 25% population decline of the 1980s as the downtown population grew by more than 7 % during the 1990s. Although manufacturing has continued to struggle (an estimated 10,900 manufacturing jobs were lost in the

Chattanooga MSA between 2000 and 2008), growth in other economic sectors such as tourism, hotels and restaurants, education, and insurance industries has helped to offset manufacturing declines.

Over 3 million people annually visit Chattanooga's broad array of tourism sites and facilities for recreational and cultural experiences. Tourism generates revenues of approximately \$688 million in Chattanooga and Hamilton County. Chattanooga's riverfront redevelopment projects have served as a catalyst for the city's economic resurgence, and the downtown area along the riverfront has become an attractive place for residents and visitors with its many shops, restaurants, and music venues. Several museums are also located in Chattanooga with exhibits devoted to regional and Civil War history, decorative arts, railroading, and a wide variety of other themes. The Tennessee Aquarium, opened in 1992 in Ross's Landing Park and Plaza, is among the world's largest freshwater aquariums. With its IMAX 3D theater, the aquarium draws about one million visitors each year. Electric-powered free shuttle buses and other improvements to the public transportation system have enhanced accessibility throughout the downtown area.

The North Shore area has also undergone a transformation from a primarily industrial and warehouse district into a tourist-friendly destination with mixed-use neighborhoods of residences, shops, restaurants, cultural facilities (e.g., galleries, theaters), pedestrian paths, and other amenities. The historic Walnut Street Bridge across the Tennessee River (at one time slated for demolition) was reopened in 1993 as a pedestrian-only bridge. It links the North Shore to the Bluff View section of downtown Chattanooga.

Among the local and regional tourist attractions are the Lookout Mountain Incline Railway; Point Park and Lookout Mountain Battlefield (units of Chickamauga and Chattanooga National Military Park) with panoramic views down to Moccasin Bend;

Rock City Gardens atop Lookout Mountain; Ruby Falls (cave with waterfall); Coolidge Park in the North Shore area with its celebrated antique carousel and fountains; the Chattanooga Choo Choo (30-acre vacation playground with theme restaurants, trolley rides, gardens, etc.); and the Southern Belle, a riverboat with onboard restaurant that takes passengers for excursions on the Tennessee River. The Riverbend Festival, a popular summer musical event, contributes about \$21 million annually to the Chattanooga economy and draws an estimated 650,000 visitors during nine nights of entertainment.

In 2004, the Tennessee Department of Tourist Development listed the top tourist attractions within the state based on visitation numbers. Six of Chattanooga's attractions were listed among the top twenty at that time: the Tennessee Aquarium (ranked #5 with 856,000 visitors); the Chattanooga Choo Choo (ranked #10 with 592,360 visitors); the IMAX 3D theater at the aquarium (ranked #13 with 506,000 visitors); Lookout Mountain Incline Railway (ranked #17 with 434,119 visitors); Rock City Gardens (ranked #18 with 405,246 visitors); and Ruby Falls (ranked #20 with 391,039 visitors).

A substantial boost to the local and regional economies is expected to come from German auto maker Volkswagen's recent decision to construct its new United States production plant at the Enterprise South Industrial Park, located 12 miles northeast of downtown Chattanooga. Despite the trouble currently affecting the overall automotive industry, Volkswagen remains on target to invest a projected \$1 billion in the plant that will directly employ about 2,000 workers. Many more jobs will be created in support / supply industries and businesses. Production is scheduled to begin in 2011. The plant is anticipated to play a major role in reviving Chattanooga's struggling manufacturing sector, and is seen by many as another positive outcome achieved through collaborative public-private partnerships and investments.

NPS OPERATIONS AND FACILITIES

The Moccasin Bend National Archeological District is administered by Chickamauga and Chattanooga National Military Park with headquarters at Fort Oglethorpe, Georgia. Moccasin Bend is located approximately 13 miles by road from park headquarters. The Point Park and the Lookout Mountain Battlefield units of the national military park are both located across the Tennessee River, approximately 11 miles by road south of Moccasin Bend. There are presently no NPS facilities at Moccasin Bend and protection and interpretive activities are undertaken by staff assigned to primary duty stations at other park locations.

The NPS Budget Office reported that the national military park's budget in 2006 was approximately \$2.5 million, having steadily grown over the preceding ten years from \$1.3 million in 1996. The park's full time equivalent (FTE) ceiling was 36 full-time employees in 2006, a number that has remained relatively constant over the last ten years. However, the actual numbers of employees at the park has generally fallen short of the FTE ceiling; in 2008 the park employed approximately 25 permanent full-time staff, 5 permanent part-time staff, and 20 temporary staff (including many seasonal workers whose numbers do not substantially affect the FTE ceiling).

The park is assisted in its activities by members of the Volunteers-in-Parks (VIP) program, and by the fundraising and community liaison assistance provided by its nonprofit friends organizations: The Friends of the Park (Chickamauga and Chattanooga NMP) and The Friends of Moccasin Bend.

Although the exact numbers of additional NPS employees projected for the new Moccasin Bend unit has not been determined, it is assumed that additional staff would be required to operate and maintain the visitor interpretive center and to protect the archeological district. Staff would likely be required for resource and visitor protection, interpretation and educational programs, administration, maintenance, and possibly museum collections management.

There are no existing buildings or other structures on the former Serodino property that could conceivably be adapted for the interpretive center under alternatives B, C, and D. Connections to existing utility lines along the Hamm Road right-of-way (water, gas, electrical lines) are anticipated for site development at the former Serodino property. Wastewater requirements are expected to be addressed by connection to the sewage treatment facility on Moccasin Bend. The property is located at a slight elevation (one foot) above the 100-year floodplain of the Tennessee River because of the fill material that has been imported to the site.



Photo provided by *Friends of Moccasin Bend National Park*



RIVERFRONT

CHAPTER 4:

Environmental Consequences

METHODOLOGY FOR ASSESSING IMPACTS

INTRODUCTION

Potential impacts (direct, indirect, and cumulative effects) are described in terms of type (are the effects beneficial or adverse?), context (are the effects site-specific, local, or regional?), duration (are the effects short-term, i.e. occurring during the period of construction or lasting less than one year; long-term, i.e. lasting longer than one year; or permanent?) and intensity (is the degree or severity of effects negligible, minor, moderate, or major?). Because definitions of intensity (negligible, minor, moderate, or major) vary by impact topic, intensity definitions are provided separately for each impact topic analyzed in this assessment.

CUMULATIVE IMPACTS

The Council on Environmental Quality's regulations, which implement the National Environmental Policy Act of 1969 (42 USC 4321 *et seq.*), require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as

the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions (40 CFR 1508.7).

Cumulative impacts are considered for all alternatives, including the no-action alternative.

Cumulative impacts were determined by combining the impacts of each alternative with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects on or near Moccasin Bend and, if applicable, the

surrounding region. These projects include the following:

- Erosion control measures have been developed by the U.S. Army Corps of Engineers in cooperation with the National Park Service to control erosion that has impacted approximately 6 miles of Moccasin Bend's riverbank. Minimally intrusive stabilization measures will be utilized incorporating riprap and bioengineering techniques that involve the planting of native plant species.
- The North Shore Plan developed by the Chattanooga – Hamilton County Regional Planning Agency is intended to provide long-term vision and design recommendations for Chattanooga's North Shore area. Recommendations provided in the plan to effectively link the North Shore with Moccasin Bend include the following:
 - 1) provide a greenway connection between Renaissance Park and Moccasin Bend in cooperation with the Trust for Public Land and the National Park Service
 - 2) explore mass transit opportunities to Moccasin Bend to reduce the impact of increased visitation
 - 3) provide appropriate way-finding signs along access routes
 - 4) develop Manufacturers Road as a gateway to Moccasin Bend, and work with property owners to enhance the landscaping and other qualities contributing to the appearance of the gateway approach
 - 5) explore a variety of transportation opportunities to connect Moccasin Bend with the North Shore and downtown (e.g., bicycle facilities, sidewalks, shuttles, canoes/kayaks, riverwalk extension, water taxi)

IMPAIRMENT OF RESOURCES AND VALUES

In accordance with the NPS Organic Act and the General Authorities Act, it is the policy of the National Park Service to avoid the impairment of park resources and values unless directly and specifically provided for by legislation or the proclamation establishing the park. An impact could constitute an impairment if, in the professional judgment of the responsible NPS manager, the severity of the impact would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. Factors bearing on whether an impairment could occur include the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts (NPS *Management Policies 2006*, sec. 1.4.5).

An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, or
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or
- identified in the park's general management plan or other relevant NPS planning documents as being of significance.

For this planning document, an assessment of impairment is provided in the environmental consequences section for archeological and ethnographic resources.

VISITOR USE AND EXPERIENCE

NPS *Management Policies 2006* state that the enjoyment of park resources and values is part of the fundamental purpose of all parks. The Park Service is committed to providing appropriate, high-quality opportunities for visitor enjoyment and education in a fashion that protects fundamental resources and leaves them unimpaired for future generations. Although current NPS visitor use information is limited for Moccasin Bend, an estimate of the nature and intensity of the impacts on visitor use and experience associated with the various alternatives is provided based on the projected range of visitor uses and facility functions.

DEFINITIONS

Intensity Levels

Negligible: The impact would be at or below the lower levels of detection and would not have an appreciable effect on visitors.

Minor: The impact would be slight but detectable, would not occur in primary resource areas, or would affect few visitors.

Moderate: The impact would be readily apparent, would occur in primary resource areas, or would affect many visitors. The impact would be clearly detectable by visitors and could have an appreciable effect on visitor experiences.

Major: The impact would be severely adverse or exceptionally beneficial, would occur in primary resource areas, or would affect the majority of visitors.

Duration of Impact

Short-term impacts would be less than one year, and long-term impacts would extend beyond one year and have a permanent effect on visitor use and experience.

NO-ACTION ALTERNATIVE

Analysis

Under the no action alternative, no NPS interpretive facilities would be constructed at Moccasin Bend although visitors could access the archeological district and receive educational information by participating in occasional NPS-led interpretive tours of the site. Those electing to visit the archeological district on their own would likely have a mostly unstructured experience but could expect to encounter NPS resource and visitor protection rangers and possibly face access restrictions to sensitive site locations. Without a well-defined NPS presence or facility destination on Moccasin Bend, visitors may experience some uncertainty regarding access routes, designated parking areas, and the boundaries of the archeological district and neighboring properties. This could result in potential use conflicts.

Because above-ground evidence of the archeological sites is not readily discernible without interpretive assistance, visitors without prior knowledge or orientation to the area and its resources could experience difficulties linking the multiple episodes of Moccasin Bend's cultural history to specific locations. Those wishing to view museum objects collected from previous archeological investigations would have to visit off-site repositories where Moccasin Bend objects are presently curated. With respect for tribal concerns regarding the protection and honoring of the former village and burial locations, NPS managers may determine (through the general management planning process) that it is necessary and appropriate to implement site protection measures that restrict or limit visitor access to sensitive site areas. The visitor uncertainties and limitations reflected by the above factors would continue to have long-term minor to moderate adverse impacts on visitor use and experience.

However, ongoing provision for occasional NPS-led tours of the site would continue to have long-term beneficial impacts on visitor experience.

Cumulative Impacts

The wide variety of museums, historic sites (e.g., other units of Chickamauga and Chattanooga National Military Park), and other cultural events and activities in Chattanooga and the surrounding region provide visitors with opportunities to further their understanding of local cultural history including that of Moccasin Bend. Activities to mark and interpret the Trail of Tears National Historic Trail on Moccasin Bend and at other regional locations could also proceed independently under the administration of the NPS Historic Trails System Office with assistance of the Trail of Tears Association. These opportunities would provide long-term benefits to the visitor experience that would compensate to some degree for the lack of on-site facility development on Moccasin Bend.

Proposed city and county measures to link Moccasin Bend with Chattanooga's North Shore and improve the gateway experience for visitors traveling to the Bend would be expected to proceed. Although a destination interpretive center on the Bend would not be constructed under this alternative, visitors would be expected to receive improved initial orientation to the Bend from Chattanooga and have a more enjoyable experience because of way-finding signs, opportunities to take alternative modes of transportation, landscaping, and other proposed enhancements to the gateway approach. These improvements would have long-term beneficial impacts on visitor use and experience.

Consequently, the beneficial impacts of the opportunities and actions described above, in combination with the adverse and beneficial impacts of the no-action alternative, would result in long-term beneficial and minor adverse cumulative impacts on visitor use and experience. The no-action alternative's

contribution to these cumulative impacts would be modest.

Conclusion

Under the no-action alternative, long-term minor to moderate adverse impacts on visitor use and experience would occur from limited visitor interpretive and orientation opportunities on Moccasin Bend. Beneficial impacts would occur, however, from the continuation of occasional NPS-led interpretive tours. Long-term beneficial and long-term minor adverse cumulative impacts would be expected, with a modest contribution of the no-action alternative to these cumulative impacts.

ALTERNATIVE A

Analysis

Under alternative A (as under the no-action alternative), no NPS interpretive facilities would be constructed at Moccasin Bend. Existing visitor center facilities at Chickamauga and Chattanooga National Military Park would be used or modified to support the interpretation of Moccasin Bend and to potentially store and exhibit artifacts collected from the site. Visitors could continue to access the archeological district and receive educational information by participating in occasional NPS-led interpretive tours.

Those electing to visit the archeological district on their own would likely have a mostly unstructured experience but could expect to encounter NPS resource and visitor protection rangers and possibly face access restrictions to sensitive site locations. Without a well-defined NPS presence or facility destination on Moccasin Bend, visitors may experience some uncertainty regarding access routes, designated parking areas, and the boundaries of the archeological district and neighboring properties. This could result in potential use conflicts.

Because above-ground evidence of the archeological sites is not readily discernible without interpretive assistance, visitors without prior knowledge or orientation to the area and its resources could experience difficulties linking the multiple episodes of Moccasin Bend's cultural history to specific locations. However, interpretive exhibits and other visitor education opportunities at existing park visitor centers would enhance visitor understanding of Moccasin Bend's cultural history, and could serve to provide initial orientation to the Bend prior to on-site visits.

Those wishing to view selected museum objects collected from previous archeological investigations would have opportunities to do so at the park visitor centers or at off-site repositories. With respect for tribal concerns regarding the protection and honoring of the former village and burial locations, NPS managers may determine (through the general management planning process) that it is necessary and appropriate to implement site protection measures that restrict or limit visitor access to sensitive site locations. The visitor uncertainties and limitations reflected by the above factors would have long-term minor to moderate adverse impacts on visitor use and experience. However, the provision of occasional NPS-led tours of the site and interpretation/exhibits at the Chickamauga Battlefield and the Point Park and Lookout Mountain Battlefield units of the park would have long-term beneficial impacts on visitor experience.

Cumulative Impacts

The wide variety of museums, historic sites (e.g., other units of Chickamauga and Chattanooga National Military Park), and other cultural events and activities in Chattanooga and the surrounding region provide visitors with opportunities to further their understanding of local cultural history including that of Moccasin Bend. Activities to mark and/or interpret the Trail of Tears National Historic Trail on Moccasin Bend and at other regional locations could also proceed

independently under the administration of the NPS Historic Trails System Office with assistance of the Trail of Tears Association. These opportunities would provide long-term benefits to the visitor experience that would compensate to some degree for the lack of on-site facility development on Moccasin Bend.

Proposed city and county measures to link Moccasin Bend with Chattanooga's North Shore and improve the gateway experience for visitors traveling to the Bend would be expected to proceed. Although a destination interpretive center on the Bend would not be constructed under this alternative, visitors would be expected to receive improved initial orientation to the Bend from Chattanooga, and have a more enjoyable experience as a result of way-finding signs, opportunities to take alternative modes of transportation, landscaping, and other proposed enhancements to the gateway approach. These improvements would have long-term beneficial impacts on visitor use and experience.

Consequently, the beneficial impacts of the opportunities and actions described above, in combination with the adverse and beneficial impacts of alternative A, would result in long-term beneficial and minor adverse cumulative impacts on visitor use and experience. Alternative A's contribution to these cumulative impacts would be modest.

Conclusion

Under alternative A, long-term minor to moderate adverse impacts on visitor use and experience would occur from limited visitor interpretive and orientation opportunities on Moccasin Bend. Beneficial impacts would occur, however, from the continuation of occasional NPS-led interpretive tours and the provision of interpretation/exhibits at existing park visitor centers. Long-term beneficial and minor adverse cumulative impacts would be expected, with a modest contribution of alternative A to these cumulative impacts.

ALTERNATIVE B

Analysis

Under alternative B, the Park Service would construct interpretive facilities at Moccasin Bend that provide basic visitor services (e.g., exhibit/museum area, sales area, exterior space for interpretive programs). NPS-led interpretive tours could also occur on-site to supplement information provided at the interpretive center. These facilities and programs would enhance visitor understanding of Moccasin Bend's fundamental resources and provide opportunities to link interpretation of the Bend's cultural history to identified site locations.

Those visiting the archeological district and visitor center would likely have a more structured experience than under the no-action alternative and alternative A. They would continue to encounter NPS resource and visitor protection rangers and possibly face access restrictions to sensitive site locations. The existence of a well-defined and visible NPS presence operating from the visitor center on Moccasin Bend would serve to lessen the degree of uncertainty some visitors may otherwise experience regarding basic site orientation and information (e.g., access routes, designated parking areas, boundaries of the archeological district and neighboring properties) which could reduce potential use conflicts.

Long-term NPS management strategies for visitor use and interpretation at Moccasin Bend will be developed as part of the park's general management and comprehensive interpretive plans. Selected museum objects collected from previous archeological investigations could be displayed at the visitor center, and other objects would continue to be curated and displayed at outside repositories. Construction of the visitor interpretive facility and implementation of the programs and activities that would occur there would have long-term beneficial impacts on visitor use and experience. With respect

for tribal concerns regarding the protection and honoring of the former village and burial locations, NPS managers may determine (through the general management planning process) that it is necessary and appropriate to implement site protection measures that restrict or limit visitor access to sensitive site locations. This would have minor long-term adverse impacts on visitor use and experience.

Visitors to Moccasin Bend could experience short-term minor adverse impacts associated with construction of the visitor interpretive center resulting from dust, noise, vehicle emissions, etc. However, these impacts would last only as long as the period of construction, and visitors would be directed away from construction areas to ensure their safety.

Cumulative Impacts

The wide variety of museums, historic sites (e.g., other units of Chickamauga and Chattanooga National Military Park) and other cultural events and activities in Chattanooga and the surrounding region provide visitors with opportunities to further their understanding of local cultural history including that of Moccasin Bend. Activities to mark and/or interpret the Trail of Tears National Historic Trail on Moccasin Bend and at other regional locations could also proceed independently under the administration of the NPS Historic Trails System Office with assistance of the Trail of Tears Association. The Trail of Tears would be a primary theme interpreted at the Moccasin Bend visitor interpretive center. These opportunities would provide long-term benefits to visitor use and experience.

Proposed city and county measures to link Moccasin Bend with Chattanooga's North Shore and improve the gateway experience for visitors traveling to the Bend and the visitor interpretive center would be expected to proceed. Visitors would receive improved initial orientation to the Bend from Chattanooga and have a more enjoyable experience because of way-finding signs, opportunities to take alternative modes of

transportation, landscaping, and other proposed enhancements to the gateway approach. These improvements would have long-term beneficial impacts on visitor use and experience.

Consequently, the beneficial impacts of the opportunities and actions described above, in combination with the adverse and beneficial impacts of alternative B, would result in long-term beneficial and minor adverse cumulative impacts on visitor use and experience. Alternative B would have an appreciable contribution to these cumulative impacts, markedly greater than the no-action alternative and alternative A.

Conclusion

Under alternative B, long-term beneficial impacts would occur to visitor use and experience from construction of the visitor interpretive center and implementation of the interpretive and educational programs envisioned for the facility. Minor long-term adverse impacts on visitor use and experience would occur from site protection measures that would possibly limit or restrict visitor access to sensitive locations. Long-term beneficial and minor adverse cumulative impacts would be expected, with alternative B having an appreciable contribution to the overall cumulative impacts.

ALTERNATIVE C

Analysis

Under alternative C, the Park Service would construct visitor interpretive facilities at Moccasin Bend that provide both the basic facility and visitor service elements identified for alternative B as well as additional and expanded facilities (e.g., theater, classroom, expanded exhibit/museum area, sales area, and exterior space for interpretive programs). NPS-led interpretive tours could also occur on-site to supplement information provided at the interpretive center. To a greater extent than the basic capabilities envisioned for alternative B, these facilities and programs

would enhance visitor understanding of Moccasin Bend's fundamental resources and provide opportunities to more directly link interpretation of the Bend's cultural history to identified site locations. The expanded facilities envisioned by this alternative would also likely draw greater numbers of visitors to Moccasin Bend.

Those visiting the archeological district and visitor center would likely have a more structured experience than under the no-action alternative and alternative A. They would continue to encounter NPS resource and visitor protection rangers and possibly face access restrictions to sensitive site locations. The existence of a more well-defined and visible NPS presence operating from the visitor center on Moccasin Bend would serve to lessen the degree of uncertainty some visitors may otherwise experience regarding basic site orientation and information (e.g., access routes, designated parking areas, boundaries of the archeological district and neighboring properties) which could reduce potential use conflicts.

Long-term NPS management strategies for visitor use and interpretation at Moccasin Bend will be developed as part of the park's general management and comprehensive interpretive plans. Selected museum objects collected from previous archeological investigations could be displayed at the visitor center, and other objects would continue to be curated and displayed at outside repositories. Construction of the visitor interpretive facility and implementation of the programs and activities that would occur there would have long-term beneficial impacts on visitor use and experience. With respect for tribal concerns regarding the protection and honoring of the former village and burial locations, NPS managers may determine (through the general management planning process) that it is necessary and appropriate to implement site protection measures that restrict or limit visitor access to sensitive site

locations. This would have minor long-term adverse impacts on visitor use and experience.

Visitors to Moccasin Bend could experience short-term minor adverse impacts associated with construction of the visitor interpretive center resulting from dust, noise, vehicle emissions, etc. However, these impacts would last only as long as the period of construction, and visitors would be directed away from construction areas to ensure their safety.

Cumulative Impacts

The wide variety of museums, historic sites (e.g., other units of Chickamauga and Chattanooga National Military Park) and other cultural events and activities in Chattanooga and the surrounding region provide visitors with opportunities to further their understanding of local cultural history, including that of Moccasin Bend. Activities to mark and/or interpret the Trail of Tears National Historic Trail on Moccasin Bend and at other regional locations could also proceed independently under the administration of the NPS Historic Trails System Office with assistance of the Trail of Tears Association. The Trail of Tears would be a primary theme interpreted at the Moccasin Bend visitor interpretive center. These opportunities would provide long-term benefits to visitor use and experience.

Proposed city and county measures to link Moccasin Bend with Chattanooga's North Shore and improve the gateway experience for visitors traveling to the Bend and the visitor interpretive center would be expected to proceed. Visitors would receive improved initial orientation to the Bend from Chattanooga and have a more enjoyable experience because of way-finding signs, opportunities to take alternative modes of transportation, landscaping, and other proposed enhancements to the gateway approach. These improvements would have long-term beneficial impacts on visitor use and experience.

Consequently, the beneficial impacts of the opportunities and actions described above, in combination with the adverse and beneficial impacts of alternative C, would result in long-term beneficial and minor adverse cumulative impacts on visitor use and experience. Alternative C's contribution to these cumulative impacts would be substantial.

Conclusion

Under alternative C, long-term beneficial impacts would occur to visitor use and experience from construction of the visitor interpretive center and implementation of the expanded interpretive and educational spaces and programs envisioned for the facility. Minor long-term adverse impacts on visitor use and experience would occur from site protection measures that would possibly limit or restrict visitor access to sensitive locations. Long-term beneficial and minor adverse cumulative impacts would be expected, with alternative C having a substantial contribution to these cumulative impacts.

ALTERNATIVE D

Analysis

Under alternative D, the Park Service would construct visitor interpretive facilities at Moccasin Bend that provide both the basic facility and visitor service elements identified for alternative B as well as the additional and expanded facilities identified for alternative C (e.g., theater, classroom expanded exhibit/museum area, sales area, and exterior space for interpretive programs). NPS-led interpretive tours could also occur on-site to supplement information provided at the interpretive center. These facilities and programs would substantially enhance visitor understanding of Moccasin Bend's fundamental resources and provide opportunities to link interpretation of the Bend's cultural history to identified site locations.

In addition to the above NPS facilities and programs, separate visitor facilities could be

developed and managed by the partnership organization on adjoining non-NPS property. These non-NPS facilities and programs would be expected to complement those of the Park Service and substantially contribute to visitor understanding and appreciation of Moccasin Bend's cultural history. The expanded NPS and partnership facilities envisioned by this alternative would also likely draw greater numbers of visitors to Moccasin Bend.

Those visiting the archeological district, NPS facilities, and privately operated facilities would likely have a more structured experience than under the no-action alternative and alternative A. They would continue to encounter NPS resource and visitor protection rangers and possibly face access restrictions to sensitive site locations. The existence of a more well-defined and visible NPS and partnership presence operating from the joint visitor centers on Moccasin Bend would serve to lessen the degree of uncertainty some visitors may otherwise experience regarding basic site orientation and information (e.g., access routes, designated parking areas, boundaries of the archeological district and neighboring properties) which could reduce potential use conflicts.

Long-term NPS management strategies for visitor use and interpretation at Moccasin Bend will be developed as part of the park's general management and comprehensive interpretive plans. Selected museum objects collected from previous archeological investigations could be displayed at the visitor center, and other objects would continue to be curated and displayed at outside repositories. Construction of the visitor interpretive facility and implementation of the programs and activities that would occur there would have long-term beneficial impacts on visitor use and experience. With respect for tribal concerns regarding the protection and honoring of the former village and burial locations, NPS managers may determine (through the general management planning process) that it is necessary and appropriate to

implement site protection measures that restrict or limit visitor access to sensitive site locations. This would have minor long-term adverse impacts on visitor use and experience.

Visitors to Moccasin Bend could experience short-term minor adverse impacts associated with construction of the visitor interpretive centers resulting from dust, noise, vehicle emissions, etc. However, these impacts would last only as long as the period of construction, and visitors would be directed away from construction areas to ensure their safety.

Cumulative Impacts

The wide variety of museums, historic sites (e.g., other units of Chickamauga and Chattanooga National Military Park) and other cultural events and activities in Chattanooga and the surrounding region provide visitors with opportunities to further their understanding of local cultural history including that of Moccasin Bend. Activities to mark or interpret the Trail of Tears National Historic Trail on Moccasin Bend and at other regional locations could also proceed independently under the administration of the NPS Historic Trails System Office with assistance of the Trail of Tears Association. The Trail of Tears would be a primary theme interpreted at the Moccasin Bend visitor interpretive centers. These opportunities would provide long-term benefits to visitor use and experience.

Proposed city and county measures to link Moccasin Bend with Chattanooga's North Shore and improve the gateway experience for visitors traveling to the Bend and the visitor interpretive centers would be expected to proceed. Visitors would receive improved initial orientation to the Bend from Chattanooga and have a more enjoyable experience because of way-finding signage, opportunities to take alternative modes of transportation, landscaping, and other proposed enhancements to the gateway approach. These improvements would have long-term beneficial impacts on visitor use and experience.

Consequently, the beneficial impacts of the opportunities and actions described above, in combination with the adverse and beneficial impacts of alternative D, would result in long-term beneficial and minor adverse cumulative impacts on visitor use and experience. Alternative D's contribution to these cumulative impacts would be substantial.

Conclusion

Under alternative D, long-term beneficial impacts would occur to visitor use and experience from construction of the NPS and partnership visitor interpretive centers and implementation of the expanded interpretive and educational programs envisioned for these facilities.

Minor long-term adverse impacts on visitor use and experience would occur from site protection measures that would possibly limit or restrict visitor access to sensitive locations. Long-term beneficial and minor adverse cumulative impacts would be expected, with alternative D having a substantial contribution to these cumulative impacts.

CULTURAL RESOURCES AND THE NATIONAL HISTORIC PRESERVATION ACT

In this environmental assessment, impacts on cultural resources are described in terms of type, context, duration, and intensity, which is consistent with the regulations of the Council on Environmental Quality (CEQ) that implement the National Environmental Policy Act (NEPA). These impact analyses are intended to comply with the requirements of both NEPA and Section 106 of the National Historic Preservation Act (NHPA). In accordance with the Advisory Council on Historic Preservation's regulations implementing Section 106 of the National Historic Preservation Act (36 CFR Part 800, *Protection of Historic Properties*), impacts to cultural resources were also identified and evaluated by (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that are either listed in or eligible to be listed in the National Register of Historic Places; (3) applying the criteria of adverse effect to affected cultural resources that are listed in or eligible for listing in the national register; and (4) considering ways to avoid, minimize, or mitigate adverse effects.

Also, under the Advisory Council's regulations, a determination of either *adverse effect* or *no adverse effect* must be made for affected national register-listed or national register-eligible cultural resources. An *adverse effect* occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualifies it for inclusion in the national register, e.g. diminishing the integrity (or the extent to which a resource retains its historic appearance) of its location, design, setting, materials, workmanship, feeling, or association. Adverse effects also include reasonably foreseeable effects caused by the alternatives that would occur later in time, be farther removed in distance, or be cumulative (36 CFR 800.5, *Assessment of*

Adverse Effects). A determination of *no adverse effect* means there may be an effect, but the effect would not diminish the characteristics that qualify the cultural resource for inclusion in the national register.

CEQ regulations and the NPS Director's Order 12: *Conservation Planning, Environmental Impact Analysis and Decision Making* also call for a discussion of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact, e.g. reducing the intensity of an impact from major to moderate or minor. Any resultant reduction in intensity of impact due to mitigation, however, is an estimate of the effectiveness of mitigation under the National Environmental Policy Act only. It does not suggest that the level of effect as defined by Section 106 is similarly reduced. Cultural resources are non-renewable resources and adverse effects generally consume, diminish, or destroy the original historic materials or form, resulting in a loss of resource integrity that can never be recovered. Therefore, although actions determined to have an adverse effect under Section 106 may be mitigated, the effect remains adverse.

Section 106 summaries are included in the impact analyses for archeological and ethnographic resources (alternatives A through D). The Section 106 summary is an assessment of the effect of the undertaking (implementation of the alternative) on national register-eligible or national register-listed cultural resources only, based upon the criterion of effect and criteria of adverse effect found in the Advisory Council's regulations.

ARCHEOLOGICAL RESOURCES

DEFINITIONS

Intensity Levels

Negligible: Impact is at the lowest levels of detection with neither adverse nor beneficial consequences. The determination of effect for Section 106 would be *no adverse effect*.

Minor: Adverse impact – disturbance of a site(s) results in little, if any, loss of integrity. The determination of effect for Section 106 would be *no adverse effect*.

Moderate: Adverse impact – disturbance of a site(s) results in loss of integrity. The determination of effect for Section 106 would be *adverse effect*. A memorandum of agreement is executed among the National Park Service and applicable state or tribal historic preservation officer and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). Measures identified in the MOA to minimize or mitigate adverse impacts reduce the intensity of impact under NEPA from major to moderate.

Major: Adverse impact – disturbance of a site(s) results in loss of integrity. The determination of effect for Section 106 would be *adverse effect*. Measures to minimize or mitigate adverse impacts cannot be agreed upon and the National Park Service and applicable state or tribal historic preservation officer and/or Advisory Council are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b).

Duration of Impact

All impacts that diminish the potential of archeological resources to yield information important in prehistory or history would be irreversible and of long-term and possibly permanent duration.

NO-ACTION ALTERNATIVE

Analysis

Under the no-action alternative, no NPS visitor interpretive facilities would be constructed at Moccasin Bend and consequently there would be no potential for disturbance of in-situ archeological resources by construction activities. Occasional NPS-led interpretive tours of the archeological district would occur. Tour visitors as well as those exploring the district independently may be subject to access restrictions in sensitive areas. The Park Service would carefully monitor visitor use to ensure archeological resources are not adversely or inadvertently affected by the development of social trails, erosion, or other factors. The Park Service would also continue to carry out routine resource and visitor protection patrols of the archeological district to deter site looting and disturbances, and to monitor resource conditions. These factors would have long-term negligible to minor adverse impacts on archeological resources.

Cumulative Impacts

Moccasin Bend's nationally significant American Indian village sites and associated burials have been disturbed by previous looting. Despite the widespread impacts of these disturbances, notably at Hampton Place, the archeological resources are still considered to retain good integrity (McCollough et al. 1985).

Other ground-disturbing activities have adversely affected or have the potential to adversely affect archeological resources on Moccasin Bend. These activities have included governmental and private facility development, agricultural use, placement of pipelines and utilities, and the dredging of the toe of Moccasin Bend as part of the construction of I-24 in the 1960s. Other threats to archeological resources are soil

erosion and the possibility for high winds to overturn trees and dislodge potential resources near the roots. The above actions have had long-term and permanent, minor to major adverse impacts on archeological resources. The streambank stabilization project being undertaken by the U.S. Army Corps of Engineers is anticipated to have long-term beneficial impacts on archeological resources by abating the steady erosion of Moccasin Bend's shoreline by the Tennessee River and protecting near-shore resources from erosion damage.

As described above, implementation of the no action alternative would result in long-term negligible to minor adverse impacts to archeological resources. The adverse impacts of this alternative, in combination with the predominantly adverse impacts of other past, present, and reasonably foreseeable future actions, would result in a long-term minor to major adverse cumulative impact. The adverse effects of the no action alternative, however, would be a very small component of the adverse cumulative impact.

Conclusion

No facility development or ground-disturbance would occur under the no-action alternative that could adversely affect archeological resources. The Park Service would continue to monitor and protect the national archeological district and possibly restrict visitor access to sensitive site locations. Any adverse impacts on archeological resources would be long-term and negligible to minor in intensity. The no-action alternative would have minor to major adverse and beneficial cumulative impacts.

Because there would be only negligible to minor adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the Moccasin Bend National Archeological District, (2) key to the natural or cultural integrity of the archeological district or to opportunities for enjoyment of the district, or (3) identified as a goal in the

general management plan of Chickamauga and Chattanooga National Military Park or other relevant NPS planning documents, there would be no impairment of the archeological district's resources and values.

ALTERNATIVE A

Analysis

Under alternative A (as under the no-action alternative), no NPS visitor interpretive facilities would be constructed at Moccasin Bend and consequently there would be no potential for disturbance of in-situ archeological resources by construction activities. Occasional NPS-led interpretive tours of the archeological district would occur. Tour visitors and those exploring the district independently may be subject to access restrictions in sensitive locations. The Park Service would carefully monitor visitor use to ensure archeological resources are not adversely or inadvertently affected by the development of social trails, erosion, or other factors. The Park Service would also continue to carry out routine resource and visitor protection patrols of the archeological district to deter site looting and disturbances, and to monitor resource conditions. These factors would have long-term negligible to minor adverse impacts on archeological resources.

Increased interpretation of the archeological district would be provided at existing park visitor centers. This would serve to orient visitors to the Moccasin Bend district and educate them about the importance of protecting the district's significant archeological resources. Long-term beneficial impacts would occur to archeological resources from these interpretive and educational measures. Any modifications to existing visitor centers that entail ground disturbance would be assessed by NPS staff to ensure potential archeological resources (if found in proposed construction areas) are avoided, protected, and/or mitigated in consultation with the state historic preservation officer.

Cumulative Impacts

Moccasin Bend's nationally significant American Indian village sites and associated burials have been disturbed by previous looting. Despite the widespread impacts of these disturbances, notably at Hampton Place, the archeological resources are still considered to retain good integrity (McCollough et al. 1985).

Other ground-disturbing activities have adversely affected or have the potential to adversely affect archeological resources on Moccasin Bend. These activities have included governmental and private facility development, agricultural use, placement of pipelines and utilities, and the dredging of the toe of Moccasin Bend as part of the construction of I-24 in the 1960s. Other threats to archeological resources from natural processes are soil erosion and the possibility for high winds to overturn trees and dislodge potential resources near the roots. The above actions have had long-term and permanent, minor to major adverse impacts on archeological resources. The streambank stabilization project being undertaken by the U.S. Army Corps of Engineers for the National Park Service is anticipated to have long-term beneficial impacts on archeological resources by abating the steady erosion of Moccasin Bend's shoreline by the Tennessee River and protecting near-shore resources from erosion damage.

As described above, implementation of alternative A would result in both long-term negligible to minor adverse impacts and long-term beneficial impacts to archeological resources. The adverse and beneficial impacts of this alternative, in combination with the predominantly adverse impacts of other past, present, and reasonably foreseeable future actions, would result in a long-term minor to major adverse cumulative impact. The adverse effects of alternative A, however, would be a very small component of the adverse cumulative impact.

Conclusion

No facility development or ground disturbance would occur on Moccasin Bend under alternative A that could adversely affect archeological resources. The Park Service would continue to monitor and protect the national archeological district and possibly restrict visitor access to sensitive site locations. Any adverse impacts on archeological resources would be long-term and negligible to minor in intensity. Long-term beneficial impacts would result from increased visitor interpretation and education measures at existing visitor centers. Alternative A would have minor to major adverse and beneficial cumulative impacts.

Because there would be only negligible to minor adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the Moccasin Bend National Archeological District, (2) key to the natural or cultural integrity of the archeological district or to opportunities for enjoyment of the district, or (3) identified as a goal in the general management plan of Chickamauga and Chattanooga National Military Park or other relevant NPS planning documents, there would be no impairment of the archeological district's resources and values.

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effect (36 CFR Part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementing alternative A would result in *no adverse effect* on archeological resources.

ALTERNATIVE B

Analysis

Under alternative B, the Park Service would construct basic visitor interpretive facilities on Moccasin Bend. As a result of the Phase I archeological investigations completed for the current project by the NPS Southeast Archeological Center (SEAC), no national register-eligible archeological resources were identified within the area of potential effect at the former Serodino property, the location selected for construction of the visitor interpretive center. Soil core borings of the former Serodino property supported the likelihood that top soils had been removed from the site prior to the importation of fill material. Archeological resources were determined unlikely to be present within underlying clay subsoils.

Additional archeological surveys and/or monitoring may be necessary for any ancillary construction such as access roads and possible trenching required for the placement of underground utility lines to the interpretive facility. In the unlikely event that national register-eligible or national register-listed archeological resources were identified that could not be avoided, an appropriate mitigation strategy would be developed in consultation with the state historic preservation officer and affiliated tribal representatives. Any adverse impacts on archeological resources would be long-term or permanent and minor to moderate in intensity.

NPS-led interpretive tours of the archeological district would occur. Tour visitors and those exploring the district independently may be subject to NPS access restrictions in sensitive locations. The Park Service would carefully monitor visitor use to ensure archeological resources are not adversely or inadvertently affected by the development of social trails, erosion, or other factors. The Park Service would also continue to carry out routine resource and visitor protection patrols of the archeological district

to deter site looting and disturbances, and to monitor resource conditions. These factors would have long-term negligible to minor adverse impacts on archeological resources.

The interpretation of the archeological district provided at the proposed interpretive facility on Moccasin Bend would serve to orient visitors to the district and educate them about the importance of protecting the district's significant archeological resources. Long-term beneficial impacts would occur for the protection of archeological resources from these interpretive and educational measures.

Cumulative Impacts

Moccasin Bend's nationally significant American Indian village sites and associated burials have been disturbed by previous looting. Despite the widespread impacts of these disturbances, notably at Hampton Place, the archeological resources are still considered to retain good integrity (McCollough et al. 1985).

Other ground-disturbing activities have adversely affected or have the potential to adversely affect archeological resources on Moccasin Bend. These activities have included governmental and private facility development, agricultural use, placement of pipelines and utilities, and the dredging of the toe of Moccasin Bend as part of the construction of I-24 in the 1960s. Other threats to archeological resources are soil erosion and the possibility for high winds to overturn trees and dislodge potential resources near the roots. The above actions have had long-term and permanent, minor to major adverse impacts on archeological resources. The streambank stabilization project being undertaken by the U.S. Army Corps of Engineers for the National Park Service is anticipated to have long-term beneficial impacts on archeological resources by abating the steady erosion of Moccasin Bend's shoreline by the Tennessee River and protecting near-shore resources from erosion damage.

As described above, implementation of alternative B could result in both long-term or permanent negligible to moderate adverse impacts and long-term beneficial impacts to archeological resources. The adverse and beneficial impacts of this alternative, in combination with the predominantly adverse impacts of other past, present, and reasonably foreseeable future actions, would result in a long-term minor to major adverse cumulative impact. The adverse effects of alternative B, however, would be a small component of the adverse cumulative impact.

Conclusion

No archeological resources were identified at the location selected for construction of a proposed visitor interpretive center on Moccasin Bend, and there is little likelihood for resources to be present at the location because of the prior removal of top soil. Additional archeological surveys and/or monitoring may be required for off-site construction (e.g., access roads, utility trenching). In the unlikely event that national register-eligible or national register-listed archeological resources were identified that could not be avoided, an appropriate mitigation strategy would be developed in consultation with the state historic preservation officer and affiliated tribal representatives. Any adverse impacts on archeological resources would be long term or permanent and minor to moderate in intensity.

The Park Service would continue to monitor and protect the national archeological district and possibly restrict visitor access to sensitive site locations. Any associated adverse impacts on archeological resources would be long-term and negligible to minor in intensity. Long-term beneficial impacts would result from increased visitor interpretation and education measures provided at the visitor interpretive facility. Alternative B would have minor to major adverse and beneficial cumulative impacts.

Because there would be only negligible to moderate adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the Moccasin Bend National Archeological District, (2) key to the natural or cultural integrity of the archeological district or to opportunities for enjoyment of the district, or (3) identified as a goal in the general management plan of Chickamauga and Chattanooga National Military Park or other relevant NPS planning documents, there would be no impairment of the archeological district's resources and values.

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effect (36 CFR Part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementing alternative B would result in *no adverse effect* on archeological resources.

ALTERNATIVE C

Analysis

Under alternative C, the Park Service would construct expanded visitor interpretive facilities on Moccasin Bend. As a result of the Phase I archeological investigations completed for the current project by the NPS Southeast Archeological Center (SEAC), no national register-eligible archeological resources were identified within the area of potential effect at the former Serodino property, the location selected for construction of the visitor interpretive center. Soil core borings of the former Serodino property supported the likelihood that top soils had been removed from the site prior to the importation of fill material. Archeological resources were determined unlikely to be present within underlying clay subsoils.

Additional archeological surveys and/or monitoring may be necessary for any ancillary construction such as access roads and possible

trenching required for the placement of underground utility lines to the interpretive facility. In the unlikely event that national register-eligible or national register-listed archeological resources were identified that could not be avoided, an appropriate mitigation strategy would be developed in consultation with the state historic preservation officer and affiliated tribal representatives. Any adverse impacts on archeological resources would be long term or permanent and minor to moderate in intensity.

NPS-led interpretive tours of the archeological district would occur. Tour visitors and those exploring the district independently may be subject to access restrictions in sensitive locations. The Park Service would carefully monitor visitor use to ensure archeological resources are not adversely or inadvertently affected by the development of social trails, erosion, or other factors. The Park Service would also continue to carry out routine resource and visitor protection patrols of the archeological district to deter site looting and disturbances, and to monitor resource conditions. These factors would have long-term negligible to minor adverse impacts on archeological resources.

The interpretation of the archeological district provided at the proposed interpretive facility would serve to orient visitors to the district and educate them about the importance of protecting the district's significant archeological resources. Long-term beneficial impacts to the protection of archeological resources would occur from these interpretive and educational measures.

Cumulative Impacts

Moccasin Bend's nationally significant American Indian village sites and associated burials have been disturbed by previous looting. Despite the widespread impacts of these disturbances, notably at Hampton Place, the archeological resources are still considered to retain good integrity (McCollough et al. 1985).

Other ground-disturbing activities have adversely affected or have the potential to adversely affect archeological resources on Moccasin Bend. These activities have included governmental and private facility development, agricultural use, placement of pipelines and utilities, and the dredging of the toe of Moccasin Bend as part of the construction of I-24 in the 1960s. Other threats to archeological resources from natural processes are soil erosion and the possibility for high winds to overturn trees and dislodge potential resources near the roots. The above actions have had long-term and permanent, minor to major adverse impacts on archeological resources. The streambank stabilization project being undertaken by the U.S. Army Corps of Engineers for the National Park Service is anticipated to have long-term beneficial impacts on archeological resources by abating the steady erosion of Moccasin Bend's shoreline by the Tennessee River and protecting near-shore resources from erosion damage.

As described above, implementation of alternative C could result in both long-term or permanent negligible to moderate adverse impacts and long-term beneficial impacts to archeological resources. The adverse and beneficial impacts of this alternative, in combination with the predominantly adverse impacts of other past, present, and reasonably foreseeable future actions, would result in a long-term minor to major adverse cumulative impact. The adverse effects of alternative C, however, would be a small component of the adverse cumulative impact.

Conclusion

No archeological resources were identified at the location selected for construction of a proposed visitor interpretive center on Moccasin Bend, and there is little likelihood for resources to be present at the location because of the prior removal of top soil. Additional archeological surveys and/or monitoring may be required for off-site construction (e.g., access roads, utility

trenching). In the unlikely event that national register-eligible or national register-listed archeological resources were identified that could not be avoided, an appropriate mitigation strategy would be developed in consultation with the state historic preservation officer and affiliated tribal representatives. Any adverse impacts on archeological resources would be long-term or permanent and minor to moderate in intensity.

The Park Service would continue to monitor and protect the national archeological district and possibly restrict visitor access to sensitive site locations. Any associated adverse impacts on archeological resources would be long-term and negligible to minor in intensity. Long-term beneficial impacts would result from increased visitor interpretation and education measures provided at the visitor interpretive facility. Alternative C would have minor to major adverse and beneficial cumulative impacts.

Because there would be only negligible to moderate adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the Moccasin Bend National Archeological District, (2) key to the natural or cultural integrity of the archeological district or to opportunities for enjoyment of the district, or (3) identified as a goal in the general management plan of Chickamauga and Chattanooga National Military Park or other relevant NPS planning documents, there would be no impairment of the archeological district's resources and values.

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effect (36 CFR Part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementing alternative C would result in *no adverse effect* on archeological resources.

ALTERNATIVE D

Analysis

Under alternative D, the Park Service would construct expanded visitor interpretive facilities on Moccasin Bend. Additional visitor use facilities could be constructed and managed on adjoining property owned by the partnership organization. As a result of the Phase I archeological investigations completed for the current project by the NPS Southeast Archeological Center (SEAC), no national register-eligible archeological resources were identified within the area of potential effect at the former Serodino property, the location selected for construction of the NPS visitor interpretive center. Soil core borings of the former Serodino property supported the likelihood that top soils had been removed from the site prior to the importation of fill material. Archeological resources were determined unlikely to be present within underlying clay subsoils.

Archeological surveys and/or monitoring may be necessary for any ancillary construction such as access roads and possible trenching required for the placement of underground utility lines to the interpretive facility. It is also anticipated that archeological surveys and assessments would be carried out for the adjoining site selected by the partnership organization for additional visitor use facilities prior to construction-related ground disturbance. In the unlikely event that national register-eligible or national register-listed archeological resources were identified in these locations that could not be avoided, an appropriate mitigation strategy would be developed in consultation with the state historic preservation officer and affiliated tribal representatives. Any adverse impacts on archeological resources would be long-term or permanent and minor to moderate in intensity.

NPS-led interpretive tours of the archeological district would occur. Tour visitors and those exploring the district

independently may be subject to access restrictions in sensitive locations. The Park Service would carefully monitor visitor use to ensure archeological resources are not adversely or inadvertently affected by the development of social trails, erosion, or other factors. The Park Service would also continue to carry out routine resource and visitor protection patrols of the archeological district to deter site looting and disturbances, and to monitor resource conditions. These factors would have long-term negligible to minor adverse impacts on archeological resources.

The interpretation of the archeological district provided at the proposed interpretive facility on Moccasin Bend would serve to orient visitors to the district and educate them about the importance of protecting the district's significant archeological resources. Long-term beneficial impacts would occur for the protection of archeological resources from these interpretive and educational measures.

Cumulative Impacts

Moccasin Bend's nationally significant American Indian village sites and associated burials have been disturbed by previous looting. Despite the widespread impacts of these disturbances, notably at Hampton Place, the archeological resources are still considered to retain good integrity (McCollough et al. 1985).

Other ground-disturbing activities have adversely affected or have the potential to adversely affect archeological resources on Moccasin Bend. These activities have included governmental and private facility development, agricultural use, placement of pipelines and utilities, and the dredging of the toe of Moccasin Bend as part of the construction of I-24 in the 1960s. Other threats to archeological resources are soil erosion and the possibility for high winds to overturn trees and dislodge potential resources near the roots. The above actions have had long-term and permanent, minor to major adverse impacts on archeological resources. The streambank stabilization

project being undertaken by the U.S. Army Corps of Engineers for the National Park Service is anticipated to have long-term beneficial impacts on archeological resources by abating the steady erosion of Moccasin Bend's shoreline by the Tennessee River and protecting near-shore resources from erosion damage.

As described above, implementation of alternative D could result in both long-term or permanent negligible to moderate adverse impacts and long-term beneficial impacts to archeological resources. The adverse and beneficial impacts of this alternative, in combination with the predominantly adverse impacts of other past, present, and reasonably foreseeable future actions, would result in a long-term minor to major adverse cumulative impact. The adverse effects of alternative D, however, would be a small component of the adverse cumulative impact.

Conclusion

No archeological resources were identified at the location selected for construction of a proposed visitor interpretive center on Moccasin Bend, and there is little likelihood for resources to be present at the location because of the prior removal of top soil. Additional archeological surveys and/or monitoring may be required for off-site construction (e.g., access roads, utility trenching). Archeological surveys and assessments would be carried out as necessary for the adjoining site selected by the partnership organization for additional visitor use facilities. In the unlikely event that national register-eligible or national register-listed archeological resources were identified that could not be avoided, an appropriate mitigation strategy would be developed in consultation with the state historic preservation officer and affiliated tribal representatives. Any adverse impacts on archeological resources would be long-term or permanent and minor to moderate in intensity.

The Park Service would continue to monitor and protect the national archeological district and possibly restrict visitor access to sensitive site locations. Any associated adverse impacts on archeological resources would be long-term and negligible to minor in intensity. Longterm beneficial impacts would result from increased visitor interpretation and education measures provided at the visitor interpretive facility. Alternative D would have minor to major adverse and beneficial cumulative impacts.

Because there would be only negligible to moderate adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the Moccasin Bend National Archeological District, (2) key to the

natural or cultural integrity of the archeological district or to opportunities for enjoyment of the district, or (3) identified as a goal in the general management plan of Chickamauga and Chattanooga National Military Park or other relevant NPS planning documents, there would be no impairment of the archeological district's resources and values.

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effect (36 CFR Part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementing alternative D would result in *no adverse effect* on archeological resources.

ETHNOGRAPHIC RESOURCES

In this plan and environmental assessment, potential impacts to ethnographic resources are described in terms of context (are the effects site-specific, local, or regional?), duration (are the effects short-term: lasting less than a year; long-term: lasting more than a year; or permanent?) and intensity (is the degree or severity of effects negligible, minor, moderate, or major?).

DEFINITIONS

Negligible: Impact(s) would be barely perceptible and would alter neither resource conditions, such as traditional access or site preservation, nor the relationship between the resource and the affiliated group's body of practices and beliefs.

Minor: Adverse impact – impact(s) would be slight but noticeable but would appreciably alter neither resource conditions, such as traditional access or site preservation, nor the relationship between the resource and the affiliated group's body of practices and beliefs.

Moderate: Adverse impact – impact(s) would be apparent and would alter resource conditions. Something would interfere with traditional access, site preservation, or the relationship between the resource and the affiliated group's practices and beliefs, even though the group's practices and beliefs would survive.

Major: Adverse impact – impact(s) would alter resource conditions. Something would block or greatly affect traditional access, site preservation, or the relationship between the resource and the affiliated group's body of practices and beliefs, to the extent that the survival of a group's practices or beliefs would be jeopardized.

NO-ACTION ALTERNATIVE

Analysis

Under the no-action alternative, no NPS visitor interpretive facilities would be constructed at Moccasin Bend and consequently there would be no potential for disturbance of potential ethnographic resources by construction activities. No formal ethnographic investigations have been completed for Moccasin Bend. However, Moccasin Bend in general, and the American Indian village sites with ancestral burials in particular, retain profound spiritual importance for culturally affiliated tribes.

Occasional NPS-led interpretive tours of the national archeological district and sites associated with the Trail of Tears would occur. Tour visitors and those exploring the district independently may be subject to access restrictions in sensitive areas. The Park Service would carefully monitor visitor use to ensure potential ethnographic resources are not adversely or inadvertently affected by the development of social trails, erosion, or other visitor use activities. The Park Service would also continue to carry out routine resource and visitor protection patrols of the archeological district to deter site looting and disturbances, and to monitor resource conditions. These factors would have long-term negligible to minor adverse impacts on ethnographic resources.

Cumulative Impacts

Moccasin Bend's nationally significant American Indian village sites and associated burials have been disturbed by previous looting. These disturbances have heightened the sensitivities expressed by tribal members and others, and highlight the need for adequate site protection measures and potential access restrictions to sensitive locations.

Other ground-disturbing activities have adversely affected or have the potential to adversely affect ethnographic resources on Moccasin Bend. These activities include governmental and private facility development, agricultural use, placement of pipelines and utilities, and the dredging of the toe of Moccasin Bend as part of the construction of I-24 in the 1960s. Other threats to ethnographic resources are soil erosion and the possibility for high winds to overturn trees and dislodge potential resources near the roots. The above actions have had long-term and permanent, minor to major adverse impacts on potential ethnographic resources.

The streambank stabilization project being undertaken by the U.S. Army Corps of Engineers for the National Park Service is anticipated to have long-term beneficial impacts on ethnographic resources by abating the steady erosion of Moccasin Bend's shoreline by the Tennessee River and protecting near-shore resources from erosion damage. Ethnographic resources may be identified and/or be more clearly defined by future NPS investigations and studies conducted to support long-range cultural resource management of Moccasin Bend. In continuing consultation with culturally affiliated tribes and consistent with tribal goals, the Park Service would strive to protect and respect identified sacred sites and other ethnographic resources. Implementation of these measures would have long-term beneficial impacts on ethnographic resources.

As described above, implementation of the no-action alternative could result in both long-term negligible to minor adverse impacts and long-term beneficial impacts to ethnographic resources. The adverse and beneficial impacts of this alternative, in combination with the predominantly adverse impacts of other past, present, and reasonably foreseeable future actions, would result in a long-term minor to major adverse cumulative impact. The adverse effects of the no-action

alternative, however, would be a very small component of the adverse cumulative impact.

Conclusion

No facility development or ground disturbance would occur under the no-action alternative that could adversely affect ethnographic resources. The Park Service would continue to monitor and protect the national archeological district and sites associated with the Trail of Tears. Possible restrictions would be placed on general public access to sensitive site locations. Any adverse impacts on ethnographic resources would be long-term and negligible to minor in intensity. The no-action alternative would have minor to major adverse and beneficial cumulative impacts.

Because there would be only negligible to minor adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the Moccasin Bend National Archeological District, (2) key to the natural or cultural integrity of the archeological district or to opportunities for enjoyment of the district, or (3) identified as a goal in the general management plan of Chickamauga and Chattanooga National Military Park or other relevant NPS planning documents, there would be no impairment of the archeological district's resources and values.

ALTERNATIVE A

Analysis

Under alternative A (as under the no-action alternative), no NPS visitor interpretive facilities would be constructed at Moccasin Bend and consequently there would be no potential for disturbance of ethnographic resources by construction activities. No formal ethnographic investigations have been completed for Moccasin Bend. However, Moccasin Bend in general, and the American Indian village sites with ancestral burials in particular, retain profound spiritual importance for culturally affiliated tribes.

Occasional NPS-led interpretive tours of the national archeological district and sites associated with the Trail of Tears would occur. Tour visitors and those exploring the district independently may be subject to NPS access restrictions in sensitive locations. The Park Service would carefully monitor visitor use to ensure that potential ethnographic resources are not adversely or inadvertently affected by the development of social trails, erosion, or other visitor use activities. The Park Service would also continue to carry out routine resource and visitor protection patrols of the archeological district to deter site looting and disturbances, and to monitor resource conditions. These factors would have long-term negligible to minor adverse impacts on ethnographic resources.

Increased interpretation of the archeological district would be provided at existing park visitor centers. This would serve to orient visitors to the district and educate them about the importance of protecting the district's potential ethnographic resources, and respecting the sensitivities of culturally affiliated tribes. Long-term beneficial impacts would occur to ethnographic resources from these interpretive and educational measures.

Cumulative Impacts

Moccasin Bend's nationally significant American Indian village sites and associated burials have been disturbed by previous looting. These disturbances have heightened the sensitivities expressed by tribal members and others, and highlight the need for adequate site protection measures and potential access restrictions to sensitive locations.

Other ground-disturbing activities have adversely affected or have the potential to adversely affect ethnographic resources on Moccasin Bend. These activities include governmental and private facility development, agricultural use, placement of pipelines and utilities, and the dredging of the toe of Moccasin Bend as part of the construction of I-24 in the 1960s. Other

threats to ethnographic resources are soil erosion and the possibility for high winds to overturn trees and dislodge potential resources near the roots. The above actions have had long-term and permanent, minor to major adverse impacts on potential ethnographic resources.

The streambank stabilization project being undertaken by the U.S. Army Corps of Engineers for the National Park Service is anticipated to have long-term beneficial impacts on ethnographic resources by abating the steady erosion of Moccasin Bend's shoreline by the Tennessee River and protecting near-shore resources from erosion damage. Ethnographic resources may be identified or be more clearly defined by future NPS investigations and studies conducted to support long-range cultural resource management of Moccasin Bend. In continuing consultation with culturally affiliated tribes and consistent with tribal goals, the Park Service would strive to protect and respect identified sacred sites and other ethnographic resources. Implementation of these measures would have long-term beneficial impacts on ethnographic resources.

As described above, implementation of alternative A could result in both long-term negligible to minor adverse impacts and long-term beneficial impacts to ethnographic resources. The adverse and beneficial impacts of this alternative, in combination with the predominantly adverse impacts of other past, present, and reasonably foreseeable future actions, would result in a long-term minor to major adverse cumulative impact. The adverse effects of alternative A, however, would be a very small component of the adverse cumulative impact.

Conclusion

No facility development or ground disturbance would occur under alternative A that could adversely affect ethnographic resources. The Park Service would continue to monitor and protect the national archeological district and sites associated with

the Trail of Tears. Possible restrictions would be placed on general public access to sensitive site locations. Any adverse impacts on ethnographic resources would be long-term and negligible to minor in intensity. Long-term beneficial impacts to ethnographic resources would result from increased visitor interpretation and education measures at existing park visitor centers. Alternative A would have minor to major adverse and beneficial cumulative impacts.

Because there would be only negligible to minor adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the Moccasin Bend National Archeological District, (2) key to the natural or cultural integrity of the archeological district or to opportunities for enjoyment of the district, or (3) identified as a goal in the general management plan of Chickamauga and Chattanooga National Military Park or other relevant NPS planning documents, there would be no impairment of the archeological district's resources and values.

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effect (36 CFR Part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementing alternative A would result in *no adverse effect* on ethnographic resources.

ALTERNATIVE B

Analysis

Under alternative B, the Park Service would construct basic visitor interpretive facilities on Moccasin Bend. No formal ethnographic investigations have been completed for Moccasin Bend and no ethnographic resources or traditional uses have been specifically identified at the former Serodino property selected for the visitor interpretive center. However, Moccasin Bend in general, and the American Indian village sites with

ancestral burials in particular, retain profound spiritual importance for culturally affiliated tribes.

NPS-led interpretive tours of the archeological district would occur. Tour visitors and those exploring the district independently may be subject to NPS access restrictions in sensitive locations. The Park Service would carefully monitor visitor use to ensure potential ethnographic resources are not adversely or inadvertently affected by the development of social trails, erosion, or other visitor use activities. The Park Service would also continue to carry out routine resource and visitor protection patrols of the archeological district to deter site looting and disturbances, and to monitor resource conditions. These factors would have long-term negligible to minor adverse impacts on ethnographic resources.

The interpretation of the archeological district provided at the proposed visitor interpretive facility would serve to orient visitors to the district and educate them about the importance of protecting the district's potential ethnographic resources. Long-term beneficial impacts would occur to ethnographic resources from implementation of these interpretive and educational measures.

Cumulative Impacts

Moccasin Bend's nationally significant American Indian village sites and associated burials have been disturbed by previous looting. These disturbances have heightened the sensitivities expressed by tribal members and others, and highlight the need for adequate site protection measures and potential access restrictions to sensitive locations.

Other ground-disturbing activities have adversely affected or have the potential to adversely affect ethnographic resources on Moccasin Bend. These activities include governmental and private facility development, agricultural use, placement of pipelines and utilities, and the dredging of the

toe of Moccasin Bend as part of the construction of I-24 in the 1960s. Other threats to ethnographic resources are soil erosion and the possibility for high winds to overturn trees and dislodge potential resources near the roots. The above actions have had long-term and permanent, minor to major adverse impacts on potential ethnographic resources.

The streambank stabilization project being undertaken by the U.S. Army Corps of Engineers for the National Park Service is anticipated to have long-term beneficial impacts on ethnographic resources by abating the steady erosion of Moccasin Bend's shoreline by the Tennessee River and protecting near-shore resources from erosion damage. Ethnographic resources may be identified or be more clearly defined by future NPS investigations and studies conducted to support long-range cultural resource management of Moccasin Bend. In continuing consultation with culturally affiliated tribes and consistent with tribal goals, the Park Service would strive to protect and respect identified sacred sites and other ethnographic resources. Implementation of these measures would have long-term beneficial impacts on ethnographic resources.

As described above, implementation of alternative B could result in both long-term negligible to minor adverse impacts and long-term beneficial impacts to ethnographic resources. The adverse and beneficial impacts of this alternative, in combination with the predominantly adverse impacts of other past, present, and reasonably foreseeable future actions, would result in a long-term minor to major adverse cumulative impact. The adverse effects of alternative B, however, would be a very small component of the adverse cumulative impact.

Conclusion

No identified ethnographic resources would be directly impacted by construction of proposed visitor interpretive facilities on Moccasin Bend, although the Bend is known

to retain profound spiritual importance for culturally affiliated tribes. The Park Service would continue to monitor and protect the national archeological district and sites associated with the Trail of Tears. Possible restrictions would be placed on general public access to sensitive site locations. Any adverse impacts on potential ethnographic resources would be long-term and negligible to minor in intensity. Long-term beneficial impacts to ethnographic resources would result from the visitor interpretation and education measures provided at the proposed visitor interpretive facility. Alternative B would have minor to major adverse and beneficial cumulative impacts.

Because there would be only negligible to minor adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the Moccasin Bend National Archeological District, (2) key to the natural or cultural integrity of the archeological district or to opportunities for enjoyment of the district, or (3) identified as a goal in the general management plan of Chickamauga and Chattanooga National Military Park or other relevant NPS planning documents, there would be no impairment of the archeological district's resources and values.

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effect (36 CFR Part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementing alternative B would result in *no adverse effect* on ethnographic resources.

ALTERNATIVE C

Analysis

Under alternative C, the Park Service would construct expanded visitor interpretive facilities on Moccasin Bend. No formal ethnographic investigations have been

completed for Moccasin Bend and no ethnographic resources or traditional uses have been specifically identified at the former Serodino property selected for the visitor interpretive center. However, Moccasin Bend in general, and the American Indian village sites with ancestral burials in particular, retain profound spiritual importance for culturally affiliated tribes.

NPS-led interpretive tours of the archeological district would occur. Tour visitors and those exploring the district independently may be subject to NPS access restrictions in sensitive locations. The Park Service would carefully monitor visitor use to ensure potential ethnographic resources are not adversely or inadvertently affected by the development of social trails, erosion, or other visitor use activities. The Park Service would also continue to carry out routine resource and visitor protection patrols of the archeological district to deter site looting and disturbances, and to monitor resource conditions. These factors would have long-term negligible to minor adverse impacts on ethnographic resources.

The interpretation of the archeological district provided at the proposed visitor interpretive facility would serve to orient visitors to the district and educate them about the importance of protecting the district's potential ethnographic resources. Long-term beneficial impacts would occur to ethnographic resources from implementation of these interpretive and educational measures.

Cumulative Impacts

Moccasin Bend's nationally significant American Indian village sites and associated burials have been disturbed by previous looting. These disturbances have heightened the sensitivities expressed by tribal members and others, and highlight the need for adequate site protection measures and potential access restrictions to sensitive locations.

Other ground-disturbing activities have adversely affected or have the potential to adversely affect ethnographic resources on Moccasin Bend. These activities include governmental and private facility development, agricultural use, placement of pipelines and utilities, and the dredging of the toe of Moccasin Bend as part of the construction of I-24 in the 1960s. Other threats to ethnographic resources are soil erosion and the possibility for high winds to overturn trees and dislodge potential resources near the roots. The above actions have had long-term and permanent, minor to major adverse impacts on potential ethnographic resources.

The streambank stabilization project being undertaken by the U.S. Army Corps of Engineers for the National Park Service is anticipated to have long-term beneficial impacts on ethnographic resources by abating the steady erosion of Moccasin Bend's shoreline by the Tennessee River and protecting near-shore resources from erosion damage. Ethnographic resources may be identified or be more clearly defined by future NPS investigations and studies conducted to support long-range cultural resource management of Moccasin Bend. In continuing consultation with culturally affiliated tribes and consistent with tribal goals, the Park Service would strive to protect and respect identified sacred sites and other ethnographic resources. Implementation of these measures would have long-term beneficial impacts on ethnographic resources.

As described above, implementation of alternative C could result in both long-term negligible to minor adverse impacts and long-term beneficial impacts to ethnographic resources. The adverse and beneficial impacts of this alternative, in combination with the predominantly adverse impacts of other past, present, and reasonably foreseeable future actions, would result in a long-term minor to major adverse cumulative impact. The adverse effects of alternative C, however, would be a

very small component of the adverse cumulative impact.

Conclusion

No identified ethnographic resources would be directly impacted by construction of proposed visitor interpretive facilities on Moccasin Bend, although the Bend is known to retain profound spiritual importance for culturally affiliated tribes. The Park Service would continue to monitor and protect the national archeological district and sites associated with the Trail of Tears. Possible restrictions would be placed on general public access to sensitive site locations. Any adverse impacts on potential ethnographic resources would be long-term and negligible to minor in intensity. Long-term beneficial impacts to ethnographic resources would result from the visitor interpretation and education measures provided at the proposed visitor interpretive facility. Alternative C would have minor to major adverse and beneficial cumulative impacts.

Because there would be only negligible to minor adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the Moccasin Bend National Archeological District, (2) key to the natural or cultural integrity of the archeological district or to opportunities for enjoyment of the district, or (3) identified as a goal in the general management plan of Chickamauga and Chattanooga National Military Park or other relevant NPS planning documents, there would be no impairment of the archeological district's resources and values.

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effect (36 CFR Part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementing alternative C would result in *no adverse effect* on ethnographic resources.

ALTERNATIVE D

Analysis

Under alternative D, the Park Service would construct expanded visitor interpretive facilities on Moccasin Bend. Additional visitor use facilities could be constructed and managed on adjoining property owned by the partnership organization. No formal ethnographic investigations have been completed for Moccasin Bend and no ethnographic resources or traditional uses have been specifically identified at the former Serodino property selected for the NPS visitor interpretive center. However, Moccasin Bend in general, and the American Indian village sites with ancestral burials in particular, retain profound spiritual importance for culturally affiliated tribes.

NPS-led interpretive tours of the archeological district would occur. Tour visitors and those exploring the district independently may be subject to NPS access restrictions in sensitive locations. The Park Service would carefully monitor visitor use to ensure that potential ethnographic resources are not adversely or inadvertently affected by the development of social trails, erosion, or other visitor use activities. The Park Service would also continue to carry out routine resource and visitor protection patrols of the archeological district to deter site looting and disturbances, and to monitor resource conditions. These factors would have long-term negligible to minor adverse impacts on ethnographic resources.

The interpretation of the archeological district provided at the proposed visitor interpretive facility would serve to orient visitors to the district and educate them about the importance of protecting the district's potential ethnographic resources. Long-term beneficial impacts would occur to ethnographic resources from implementation of these interpretive and educational measures.

Cumulative Impacts

Moccasin Bend's nationally significant American Indian village sites and associated burials have been disturbed by previous looting. These disturbances have heightened the sensitivities expressed by tribal members and others, and highlight the need for adequate site protection measures and potential access restrictions to sensitive locations.

Other ground-disturbing activities have adversely affected or have the potential to adversely affect ethnographic resources on Moccasin Bend. These activities include governmental and private facility development, agricultural use, placement of pipelines and utilities, and the dredging of the toe of Moccasin Bend as part of the construction of I-24 in the 1960s. Other threats to ethnographic resources are soil erosion and the possibility for high winds to overturn trees and dislodge potential resources near the roots. The above actions have had long-term and permanent, minor to major adverse impacts on potential ethnographic resources.

The streambank stabilization project being undertaken by the U.S. Army Corps of Engineers for the National Park Service is anticipated to have long-term beneficial impacts on ethnographic resources by abating the steady erosion of Moccasin Bend's shoreline by the Tennessee River and protecting near-shore resources from erosion damage. Ethnographic resources may be identified and/or be more clearly defined by future NPS investigations and studies conducted to support long-range cultural resource management of Moccasin Bend. In continuing consultation with culturally affiliated tribes and consistent with tribal goals, the Park Service would strive to protect and respect identified sacred sites and other ethnographic resources. Implementation of these measures would have long-term beneficial impacts on ethnographic resources.

As described above, implementation of alternative D could result in both long-term negligible to minor adverse impacts and long-term beneficial impacts to ethnographic resources. The adverse and beneficial impacts of this alternative, in combination with the predominantly adverse impacts of other past, present, and reasonably foreseeable future actions, would result in a long-term minor to major adverse cumulative impact. The adverse effects of alternative D, however, would be a very small component of the adverse cumulative impact.

Conclusion

No identified ethnographic resources would be directly impacted by construction of proposed visitor interpretive facilities on Moccasin Bend, although the Bend is known to retain profound spiritual importance for culturally affiliated tribes. The Park Service would continue to monitor and protect the national archeological district and sites associated with the Trail of Tears. Possible restrictions would be placed on general public access to sensitive site locations. Any adverse impacts on potential ethnographic resources would be long term and negligible to minor in intensity. Long-term beneficial impacts to ethnographic resources would result from the visitor interpretation and education measures provided at the proposed NPS and partnership visitor interpretive facilities. Alternative D would have minor to major adverse and beneficial cumulative impacts.

Because there would be only negligible to minor adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the Moccasin Bend National Archeological District, (2) key to the natural or cultural integrity of the archeological district or to opportunities for enjoyment of the district, or (3) identified as a goal in the general management plan of Chickamauga and Chattanooga National Military Park or other relevant NPS planning documents, there would be no impairment of the archeological district's resources and values.

Section 106 Summary

After applying the Advisory Council on Historic Preservation's criteria of adverse effect (36 CFR Part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementing alternative D would result in *no adverse effect* on ethnographic resources.

SOCIOECONOMIC ENVIRONMENT

DEFINITIONS

Intensity Levels

Negligible: The effects on socioeconomic conditions are below or equivalent to the level of detection.

Minor: The effects on socioeconomic conditions are slight but detectable, and only affect a small portion of the surrounding population. The impact is considered slight and not detectable outside the affected area.

Moderate: The effects on socioeconomic conditions are readily apparent. Any effects would result in changes to socioeconomic conditions on a local scale in the affected area.

Major: The effects on socioeconomic conditions are readily apparent. Measurable changes in social or economic conditions at the county level occur. The impact is severely adverse or exceptionally beneficial within the affected area.

Duration

Short-term impacts are those lasting generally less than one year. Long-term impacts are those lasting longer than one year.

NO-ACTION ALTERNATIVE

Analysis

Under the no-action alternative, the National Park Service would continue to protect and manage the Moccasin Bend National Archeological District under the administration of Chickamauga and Chattanooga National Military Park. The Park Service would not construct a visitor interpretive center on Moccasin Bend under this alternative. However, other appropriate site development measures such as trails, interpretive signs, etc. could be implemented to support visitor use of the archeological

district. The Trail of Tears National Historic Trail would also continue to attract visitors to Moccasin Bend and other associated local and regional sites. Although the visiting public could experience the archeological district and the national historic trail as part of NPS-led group tours or on their own with certain access restrictions, it is anticipated that few would spend extended periods of time on the Bend or consider it a primary cultural attraction or destination. Statistics for the national military park do not show a marked overall increase in visitation since 2003 that could be directly correlated to increased numbers of visitors to the new Moccasin Bend unit.

Visitors to Moccasin Bend would be anticipated to combine their visit with opportunities to experience additional cultural facilities, museums, and historic sites in the greater Chattanooga area. These visitors, along with other tourists to the vicinity, would also be expected to spend time and dollars in Chattanooga's downtown and North Shore areas because of the proximity of these areas to the Bend. The North Shore offers various tourist amenities (e.g., shops, galleries, restaurants) and is linked to the gateway approach to Moccasin Bend. Although tourism is a major factor contributing to Chattanooga's economic prosperity, the level of visitation to Moccasin Bend under the no action alternative would likely have only negligible to minor beneficial impacts on the overall local economy.

Cumulative Impacts

Proposed city and county measures to enhance the connection between Moccasin Bend and Chattanooga's North Shore and improve the gateway experience for visitors traveling to the Bend would be expected to proceed. However, these measures may not be as extensive as might otherwise occur if a

visitor interpretive facility were constructed on the Bend. Visitors would receive improved initial orientation to the Bend from Chattanooga and have a more enjoyable experience because of way-finding signs, opportunities to take alternative modes of transportation, landscaping, and other proposed enhancements to the gateway approach. Because these improvements would encourage visitors to spend more time in the community and presumably contribute financial revenue to the local economy, these improvements would have long-term minor to moderate beneficial impacts on the socioeconomic environment.

Consequently, the minor to moderate beneficial impacts of the improvements described above, in combination with the negligible to minor beneficial impacts of the no-action alternative, would result in long-term minor beneficial cumulative impacts on the socioeconomic environment. The no action alternative's contribution to these cumulative impacts would be relatively small.

Conclusion

Current modest levels of visitation to the Moccasin Bend National Archeological District and sites associated with the Trail of Tears National Historic Trail on the Bend would be expected to contribute negligible to minor beneficial impacts to the local and regional economies. Implementation of the no-action alternative would result in long-term minor beneficial cumulative impacts on the socioeconomic environment.

ALTERNATIVE A

Analysis

Under alternative A (as under the no-action alternative), the National Park Service would continue to protect and manage the Moccasin Bend National Archeological District under the administration of Chickamauga and Chattanooga National Military Park. The Park Service would not construct a visitor interpretive center on Moccasin Bend under

this alternative. However, other appropriate site development measures such as trails, interpretive signs, etc. could be implemented to support visitor use of the archeological district. The Trail of Tears National Historic Trail would also continue to attract visitors to Moccasin Bend and other associated local and regional sites. Although the visiting public could experience the archeological district and the national historic trail as part of NPS-led group tours or visit on their own with certain access restrictions, it is anticipated that few would spend extended periods of time on the Bend or consider it a primary cultural attraction or destination. Statistics for the national military park do not show a marked overall increase in visitation since 2003 that could be directly correlated to increased numbers of visitors to the new Moccasin Bend unit.

Visitors to Moccasin Bend would be anticipated to combine their visit with opportunities to experience additional cultural facilities, museums, and historic sites in the greater Chattanooga area. Under this alternative, visitors would also be able to receive interpretation of Moccasin Bend at existing park visitor centers. Visitors, along with other tourists to the vicinity, would be expected to spend time and dollars in Chattanooga's downtown and North Shore areas because of the proximity of these areas to the Bend. The North Shore offers various tourist amenities (e.g., shops, galleries, restaurants) and is linked to the gateway approach to Moccasin Bend. Although tourism is a major factor contributing to Chattanooga's economic prosperity, the level of visitation to Moccasin Bend under alternative A would likely have only negligible to minor beneficial impacts on the overall local economy.

Cumulative Impacts

Proposed city and county measures to enhance the connection between Moccasin Bend and Chattanooga's North Shore and improve the gateway experience for visitors traveling to the Bend would be expected to

proceed. However, these measures may not be as extensive as might otherwise occur if a visitor interpretive facility were constructed on the Bend. Visitors would receive improved initial orientation to the Bend from Chattanooga and have a more enjoyable experience because of way-finding signs, opportunities to take alternative modes of transportation, landscaping, and other proposed enhancements to the gateway approach. Because these improvements would encourage visitors to spend more time in the community and presumably contribute financial revenue to the local economy, these improvements would have long-term minor to moderate beneficial impacts on the socioeconomic environment.

Consequently, the minor to moderate beneficial impacts of the improvements described above, in combination with the negligible to minor beneficial impacts of alternative A, would result in long-term minor beneficial cumulative impacts on the socioeconomic environment. Alternative A's contribution to these cumulative impacts would be relatively small.

Conclusion

Anticipated modest levels of visitation to the Moccasin Bend National Archeological District, sites associated with the Trail of Tears National Historic Trail on the Bend, and existing park visitor centers, would be expected to contribute negligible to minor beneficial impacts to the local and regional economies. Implementation of alternative A would result in long-term minor beneficial cumulative impacts on the socioeconomic environment.

ALTERNATIVE B

Analysis

Under alternative B, the Park Service would construct interpretive facilities at Moccasin Bend that provide basic visitor services (e.g., exhibit/museum area, sales area, exterior space for interpretive programs). NPS-led

interpretive tours could also occur to supplement information provided at the interpretive center. These facilities and programs would be anticipated to draw increased numbers of visitors to Moccasin Bend. The interpretive facility would serve as a destination point and recognizable expression of the Bend's important resources and NPS management of the archeological district. The Trail of Tears National Historic Trail would continue to attract visitors to Moccasin Bend and other associated local and regional sites. Visitors would be more likely to spend greater time at Moccasin Bend because of the basic facility elements and interpretive opportunities provided by this alternative. They would also be expected to link their experience at Moccasin Bend with visits to other cultural facilities, museums, and historic sites in the greater Chattanooga area.

It is anticipated that site visitors, along with other tourists to the vicinity, would also spend more time and dollars in Chattanooga's downtown and North Shore areas because of the proximity of these areas to the Bend. The North Shore offers various tourist amenities (e.g., shops, galleries, restaurants) and is linked to the gateway approach to Moccasin Bend. Because tourism is a major contributing element of Chattanooga's economic prosperity, the increased level of visitation to Moccasin Bend under alternative B would likely have minor to moderate beneficial impacts on the overall local economy.

Short-term minor benefits to the local economy would also occur from construction of the interpretive facilities. It is anticipated that building materials would be procured locally and the local labor force and range of construction trades would be adequate to complete the construction to NPS, state, and municipal standards.

Cumulative Impacts

Proposed city and county measures to enhance the connection between Moccasin Bend and Chattanooga's North Shore and improve the gateway experience for visitors

traveling to the Bend would be expected to proceed. Visitors would receive improved initial orientation to the Bend from Chattanooga and have a more enjoyable experience because of way-finding signs, opportunities to take alternative modes of transportation, landscaping, and other proposed enhancements to the gateway approach. Because these improvements would encourage visitors to spend more time in the community and presumably contribute financial revenue to the local economy, these improvements would have long-term minor to moderate beneficial impacts on the socioeconomic environment.

Consequently, the minor to moderate beneficial impacts of the improvements described above, in combination with the minor to moderate beneficial impacts of alternative B, would result in long-term minor to moderate beneficial cumulative impacts on the socioeconomic environment. Alternative B's contribution to these cumulative impacts would be modest.

Conclusion

Greater levels of visitation to the Moccasin Bend National Archeological District and sites associated with the Trail of Tears National Historic Trail on the Bend would be expected from construction of basic NPS visitor interpretation facilities. Increased visitation and facility construction would contribute minor to moderate beneficial impacts to the local and regional economies. Implementation of alternative B would have long-term minor to moderate beneficial cumulative impacts on the socioeconomic environment.

ALTERNATIVE C

Analysis

Under alternative C, the Park Service would construct visitor interpretive facilities at Moccasin Bend that provide both the basic facility and visitor service elements identified for alternative B and additional and expanded facilities (e.g., theater, classroom, expanded

exhibit/museum area, sales area, and exterior space for interpretive programs). NPS-led interpretive tours could also occur to supplement information provided at the interpretive center. These facilities and programs would be anticipated to draw increased numbers of visitors to Moccasin Bend. The interpretive facility would serve as both a destination point and a recognizable expression of the Bend's important resources and NPS management of the archeological district. The Trail of Tears National Historic Trail would continue to attract visitors to Moccasin Bend and other associated local and regional sites. Visitors would be more likely to spend greater time at Moccasin Bend because of the expanded and enhanced facility elements and interpretive opportunities provided by this alternative. They would also be expected to link their experience at Moccasin Bend with visits to other cultural facilities, museums, and historic sites in the greater Chattanooga area.

It is anticipated that site visitors, along with other tourists to the vicinity, would also spend more time and dollars in Chattanooga's downtown and North Shore areas because of the proximity of these areas to the Bend. The North Shore offers various tourist amenities (e.g., shops, galleries, restaurants) and is linked to the gateway approach to Moccasin Bend. Because tourism is a major contributing element of Chattanooga's economic prosperity, the increased level of visitation to Moccasin Bend under alternative C would likely have minor to moderate beneficial impacts on the overall local economy.

Short-term minor benefits to the local economy would also occur from construction of the interpretive facilities. It is anticipated that building materials would be procured locally and the local labor force and range of construction trades would be adequate to complete the construction to NPS, state, and municipal standards.

Cumulative Impacts

Proposed city and county measures to enhance the connection between Moccasin Bend and Chattanooga's North Shore and improve the gateway experience for visitors traveling to the Bend would be expected to proceed. Visitors would receive improved initial orientation to the Bend from Chattanooga and have a more enjoyable experience because of way-finding signs, opportunities to take alternative modes of transportation, landscaping, and other proposed enhancements to the gateway approach. Construction of a visitor interpretive facility at Moccasin Bend would provide a more recognizable destination for visitors as part of their gateway approach from Chattanooga. Because these improvements would encourage visitors to spend more time in the community and presumably contribute financial revenue to the local economy, these improvements would have long-term minor to moderate beneficial impacts on the socioeconomic environment.

Consequently, the minor to moderate beneficial impacts of the improvements described above, in combination with the minor to moderate beneficial impacts of alternative C, would result in long-term minor to moderate beneficial cumulative impacts on the socioeconomic environment. Alternative C's contribution to these cumulative impacts would be modest.

Conclusion

Greater levels of visitation to the Moccasin Bend National Archeological District and sites associated with the Trail of Tears National Historic Trail on the Bend would be expected from construction of expanded NPS visitor interpretation facilities. Increased visitation and facility construction would contribute minor to moderate beneficial impacts to the local and regional economies. Implementation of alternative C would have long-term minor to moderate beneficial cumulative impacts on the socioeconomic environment.

ALTERNATIVE D

Analysis

Under alternative D, the Park Service would construct visitor interpretive facilities at Moccasin Bend that provide both the basic facility and visitor service elements identified for alternative B and the additional and expanded facilities of alternative C (e.g., theater, classroom, expanded exhibit/museum area, sales area, and exterior space for interpretive programs). Additional visitor use facilities could be constructed and managed on adjoining property owned by a partnership organization.

In comparison with the other alternatives, these NPS and partnership facilities and programs would be anticipated to draw the greatest numbers of visitors to Moccasin Bend. The joint interpretive facilities would serve as both a primary destination and a recognizable expression of the Bend's important resources and NPS management of the archeological district. The economic analysis prepared for the Friends of Moccasin Bend in 1996 postulated that the expanded facility development envisioned by the Friends would result in Moccasin Bend becoming a major visitor attraction, enhancing and solidifying Chattanooga's status as a tourism destination area.

NPS-led interpretive tours could also occur to supplement information provided at the interpretive centers. The Trail of Tears National Historic Trail would continue to attract visitors to Moccasin Bend and other associated local and regional sites. Visitors would be more likely to spend greater time at Moccasin Bend because of the expanded and enhanced facility elements and interpretive opportunities provided by this alternative. They would also be expected to link their experience at Moccasin Bend with visits to other cultural facilities, museums, and historic sites in the greater Chattanooga area.

It is anticipated that site visitors, along with other tourists to the vicinity, would spend

more time and dollars in Chattanooga's downtown and North Shore areas because of the proximity of these areas to the Bend. The North Shore offers various tourist amenities (e.g., shops, galleries, restaurants) and is linked to the gateway approach to Moccasin Bend. Because tourism is a major contributing element of Chattanooga's economic prosperity, the increased level of visitation to Moccasin Bend under alternative D would likely have moderate beneficial impacts on the overall local economy.

Short-term minor benefits to the local economy would also occur from construction of the joint interpretive facilities. It is anticipated that building materials would be procured locally and the local labor force and range of construction trades would be adequate to complete the construction to NPS, state, and municipal standards.

Cumulative Impacts

Proposed city and county measures to enhance the connection between Moccasin Bend and Chattanooga's North Shore and improve the gateway experience for visitors traveling to the Bend would be expected to proceed. Visitors would receive improved initial orientation to the Bend from Chattanooga and have a more enjoyable experience because of way-finding signs, opportunities to take alternative modes of transportation, landscaping, and other proposed enhancements to the gateway approach. Construction of expanded visitor interpretive facilities at Moccasin Bend would

provide a more recognizable destination for visitors as part of their gateway approach from Chattanooga. Because these improvements would encourage visitors to spend more time in the community and presumably contribute financial revenue to the local economy, these improvements would have long-term minor to moderate beneficial impacts on the socioeconomic environment.

Consequently, the minor to moderate beneficial impacts of the improvements described above, in combination with the moderate beneficial impacts of alternative D, would result in long-term minor to moderate beneficial cumulative impacts on the socioeconomic environment. Alternative D's contribution to these cumulative impacts would be substantial.

Conclusion

The comparatively greatest level of visitation to the Moccasin Bend National Archeological District and sites associated with the Trail of Tears National Historic Trail on the Bend would be expected from construction of expanded NPS visitor interpretation facilities and the additional enhanced facilities proposed by the partnership organization. Increased visitation and facility construction would contribute moderate beneficial impacts to the local and regional economies. Implementation of alternative D would have long-term minor to moderate beneficial cumulative impacts on the socioeconomic environment.

NPS OPERATIONS AND FACILITIES

DEFINITIONS

Intensity Levels

Negligible: NPS operations would not be affected or the effect would be at or below the lower levels of detection, and would not have an appreciable effect on NPS operations.

Minor: The effects would be detectable, but would be of a magnitude that would not have an appreciable effect on NPS operations.

Moderate: The effects would be readily apparent and would result in a substantial change in NPS operations in a manner noticeable to staff and the public.

Major: The effects would be readily apparent and would result in a substantial change in NPS operations in a manner noticeable to staff and the public and be markedly different from existing operations.

Duration

Short-term impacts are those lasting generally less than one year. Long-term impacts are those lasting longer than one year.

NO-ACTION ALTERNATIVE

Analysis

Under the no-action alternative, NPS staff of Chickamauga and Chattanooga National Military Park would continue to carry out routine resource and visitor protection patrols of the national archeological district. Because no NPS facilities would be constructed on Moccasin Bend under this alternative, NPS staff would coordinate patrol activities from their primary duty station at other units of the national military park. Occasional NPS-led interpretive tours of the archeological district would also be coordinated and managed from other park units. NPS archeological monitoring would occur on a regular basis to

assess the condition of archeological resources and ensure that resources are adequately protected from erosion and other potential site disturbances.

Although no NPS facilities would be constructed that would place additional demands on the park's budgetary requirements, the park would continue to face the logistical and staffing challenges of providing adequate site security and protection at Moccasin Bend. Park staff assigned to work at the archeological district may also continue to have increased workloads from shared duty assignments with other park units. These factors would have long-term minor to moderate adverse impacts on NPS operations.

Cumulative Impacts

The streambank erosion control activities being undertaken by the U.S. Army Corps of Engineers on Moccasin Bend would continue to assist NPS operational objectives for protecting and preserving the national archeological district. The city and county gateway improvements and signs planned for the approach to Moccasin Bend from Chattanooga would also assist the Park Service by better orienting visitors to the archeological district and providing them with information that they are approaching a unit of the national park system with sensitive resource protection requirements. These orientation and protection measures would have long-term minor beneficial impacts on NPS operations.

Consequently, the minor beneficial impacts of the improvements described above, in combination with the minor to moderate adverse impacts of the no-action alternative, would result in long-term minor adverse and beneficial cumulative impacts on NPS operations. The no-action alternative's

contribution to these cumulative impacts would be modest.

Conclusion

Long-term minor to moderate adverse impacts to NPS operations would occur under the no-action alternative as a consequence of the logistical and staffing challenges associated with providing adequate site security and protection at Moccasin Bend without on-site dedicated facilities and staff. Implementation of the no-action alternative would result in long-term minor adverse and beneficial cumulative impacts on NPS operations.

ALTERNATIVE A

Analysis

Under alternative A, NPS staff of Chickamauga and Chattanooga National Military Park would continue to carry out routine resource and visitor protection patrols of the national archeological district. Because no NPS facilities would be constructed on Moccasin Bend under this alternative, NPS staff would coordinate patrol activities from their primary duty station at other units of the national military park. Occasional NPS-led interpretive tours of the archeological district would also be coordinated and managed from other park units. NPS archeological monitoring would occur on a regular basis to assess the condition of archeological resources and ensure that resources are adequately protected from erosion and other potential site disturbances.

Although no NPS facilities would be constructed on Moccasin Bend that would place additional demands on the park's budgetary requirements, the park would use or modify existing park visitor center facilities to assist interpretation of the archeological district and to potentially store and exhibit artifacts collected from the site. In addition to the expenses associated with using or modifying existing facilities, the park would continue to face the logistical and staffing

challenges of providing adequate site security and protection at Moccasin Bend. Park staff assigned to work at the archeological district may also continue to have increased workloads from shared duty assignments with other park units. These factors would have long-term minor to moderate adverse impacts on NPS operations.

Cumulative Impacts

The streambank erosion control activities being undertaken by the U.S. Army Corps of Engineers on Moccasin Bend would continue to assist NPS operational objectives for protecting and preserving the national archeological district. The city and county gateway improvements and signs planned for the approach to Moccasin Bend from Chattanooga would also assist the Park Service by better orienting visitors to the archeological district and providing them with information that they are approaching a unit of the national park system with sensitive resource protection requirements. These orientation and protection measures would have long-term minor beneficial impacts on NPS operations.

Consequently, the minor beneficial impacts of the improvements described above, in combination with the minor to moderate adverse impacts of alternative A, would result in long-term minor adverse and beneficial cumulative impacts on NPS operations. Alternative A's contribution to these cumulative impacts would be modest.

Conclusion

Long-term minor to moderate adverse impacts to NPS operations would occur under alternative A as a consequence of adapting existing park visitor center facilities, and the logistical and staffing challenges associated with providing adequate site security and protection at Moccasin Bend without on-site dedicated facilities and staff. Implementation of alternative A would result in long-term minor adverse and beneficial cumulative impacts on NPS operations.

ALTERNATIVE B

Analysis

Under alternative B, the Park Service would construct basic visitor interpretive facilities at Moccasin Bend outside the boundaries of the national historic landmark district, but on NPS property included in the national archeological district. The facility would provide a more clearly recognizable NPS presence for the archeological district and serve as a base of operations for NPS staff assigned to management of the district. Although the exact numbers and composition of the staff have not been determined, it is anticipated that NPS personnel would be required for resource and visitor protection, interpretation and education, administration, maintenance, and possibly museum collections management. NPS archeological personnel (possibly from the Southeast Archeological Center) would continue to monitor the archeological district on a regular basis to assess the condition of archeological resources and ensure that resources are adequately protected from erosion and other potential site disturbances.

The additional staff requirements for the archeological district and visitor interpretive center would entail budgetary increases for the national military park, resulting in long-term minor to moderate adverse impacts on operations. However, the addition of personnel stationed at the center would also provide long-term moderate to major beneficial impacts to NPS operations by ensuring more coordinated and dedicated management attention to the district than would otherwise be expected under the no action alternative and alternative A.

The visitor interpretive center would be constructed according to all applicable NPS standards and guidelines for sustainability, energy efficiency, universal accessibility, and other design principles that demonstrate environmental leadership and resource protection. Although located above the 100-year floodplain, special design and

construction measures would be incorporated as necessary to mitigate or protect against possible flood damage and safety hazards. It is anticipated that existing utility lines on Moccasin Bend (e.g., water, gas, electrical, wastewater) would be extended to serve the interpretive facility. If the exhibit or storage of artifacts and museum objects were determined appropriate at the facility, additional design measures would be incorporated to provide climate control and other necessary curatorial protection systems. Ongoing facility maintenance and operational requirements would also be factored into the park's budgetary requests. The short-term construction-related expenses associated with the interpretive facility together with the long-term expenses associated with facility operations and maintenance would have overall long-term moderate adverse impacts on NPS operations. Implementation of sustainable design and energy efficiency measures would serve to mitigate the costs associated with ongoing operations.

Cumulative Impacts

The streambank erosion control activities being undertaken by the U.S. Army Corps of Engineers on Moccasin Bend would continue to assist NPS operational objectives for protecting and preserving the national archeological district. The city and county gateway improvements and signs planned for the approach to Moccasin Bend from Chattanooga would also assist the Park Service by better orienting visitors to the archeological district and providing them with information that they are approaching a unit of the national park system with sensitive resource protection requirements. These orientation and protection measures would have long-term minor beneficial impacts on NPS operations.

Consequently, the minor beneficial impacts of the improvements described above, in combination with the moderate to major beneficial and adverse impacts of alternative B, would result in long-term moderate beneficial and adverse cumulative impacts on

NPS operations. Alternative B's contribution to these cumulative impacts would be substantial.

Conclusion

Long-term moderate to major beneficial impacts to NPS operations would occur under alternative B as a consequence of providing a visitor interpretive facility on Moccasin Bend with adequate staffing to effectively coordinate and manage the site protection and visitor use requirements of the archeological district. The short-term expenses associated with construction of the basic interpretive facility, along with the long-term expenses associated with its operation and maintenance would have overall long-term moderate adverse impacts on NPS operations and budgetary allocations. Implementation of alternative B would result in long-term moderate beneficial and adverse cumulative impacts on NPS operations.

ALTERNATIVE C

Analysis

Under alternative C, the Park Service would construct expanded visitor interpretive facilities at Moccasin Bend outside the boundaries of the national historic landmark district, but on NPS property included in the national archeological district. The facility would provide a more clearly recognizable NPS presence for the archeological district and serve as a base of operations for NPS staff assigned to management of the district. Although the exact numbers and composition of the staff have not been determined, it is anticipated that NPS personnel would be required for resource and visitor protection, interpretation and education, administration, maintenance, and possibly museum collections management. NPS archeological personnel (possibly from the Southeast Archeological Center) would continue to monitor the archeological district on a regular basis to assess the condition of archeological resources and ensure that resources are

adequately protected from erosion and other potential site disturbances.

The additional staff requirements for the archeological district and visitor interpretive center would entail budgetary increases for the national military park, resulting in long-term minor to moderate adverse impacts on operations. However, the addition of personnel stationed at the center would also provide long-term moderate to major beneficial impacts to NPS operations by ensuring more coordinated and dedicated management attention to the district than would otherwise be expected under the no action alternative and alternative A.

The visitor interpretive center would be constructed according to all applicable NPS standards and guidelines for sustainability, energy efficiency, universal accessibility, and other design principles that demonstrate environmental leadership and resource protection. Although located above the 100-year floodplain, special design and construction measures would be incorporated as necessary to mitigate or protect against possible flood damage and safety hazards. It is anticipated that existing utility lines on Moccasin Bend (e.g., water, gas, electrical, wastewater) would be extended to serve the interpretive facility. If the exhibit or storage of artifacts and museum objects were determined appropriate at the facility, additional design measures would be incorporated to provide climate control and other necessary curatorial protection systems. Ongoing facility maintenance and operational requirements would also be factored into the park's budgetary requests. The short-term construction-related expenses associated with the interpretive facility together with the long-term expenses associated with facility operations and maintenance would have overall long-term moderate adverse impacts on NPS operations. Implementation of sustainable design and energy efficiency measures would serve to mitigate the costs associated with ongoing operations.

Cumulative Impacts

The streambank erosion control activities being undertaken by the U.S. Army Corps of Engineers on Moccasin Bend would continue to assist NPS operational objectives for protecting and preserving the national archeological district. The city and county gateway improvements and signs planned for the approach to Moccasin Bend from Chattanooga would also assist the Park Service by better orienting visitors to the archeological district and providing them with information that they are approaching a unit of the national park system with sensitive resource protection requirements. These orientation and protection measures would have long-term minor beneficial impacts on NPS operations.

Consequently, the minor beneficial impacts of the improvements described above, in combination with the moderate to major beneficial and adverse impacts of alternative C, would result in long-term moderate beneficial and adverse cumulative impacts on NPS operations. Alternative C's contribution to these cumulative impacts would be substantial.

Conclusion

Long-term moderate to major beneficial impacts to NPS operations would occur under alternative C as a consequence of providing an expanded visitor interpretive facility on Moccasin Bend with adequate staffing to effectively coordinate and manage the site protection and visitor use requirements of the archeological district. The short-term expenses associated with construction of the interpretive facility, along with the long-term expenses associated with its operation and maintenance would have overall long-term moderate adverse impacts on NPS operations and budgetary allocations. Implementation of alternative C would result in long-term moderate beneficial and adverse cumulative impacts on NPS operations.

ALTERNATIVE D

Analysis

Under alternative D, the Park Service would construct expanded visitor interpretive facilities at Moccasin Bend outside the boundaries of the national historic landmark district, but on NPS property included in the national archeological district. The facility would provide a more clearly recognizable NPS presence for the archeological district and serve as a base of operations for NPS staff assigned to management of the district. Additional visitor use facilities could be constructed and operated by a partnership organization on an adjoining land parcel. Although the exact numbers and composition of the NPS staff have not been determined, it is anticipated that NPS personnel would be required for resource and visitor protection, interpretation and education, administration, maintenance, and possibly museum collections management. NPS archeological personnel (possibly from the Southeast Archeological Center) would continue to monitor the archeological district on a regular basis to assess the condition of archeological resources and ensure that resources are adequately protected from erosion and other potential site disturbances.

The additional staff requirements for the archeological district and NPS visitor interpretive center would entail budgetary increases for the national military park, resulting in long-term minor to moderate adverse impacts on operations. However, the addition of personnel stationed at the center would also provide long-term moderate to major beneficial impacts to NPS operations by ensuring more coordinated and dedicated management attention to the district than would otherwise be expected under the no action alternative and alternative A. The potential construction and operation of visitor use facilities by a partnership organization would also benefit NPS operations by providing a broad range of enhanced visitor uses and activities to be undertaken and cooperatively managed, including some uses

and activities expected to be outside the authorization or funding capabilities of the Park Service.

The NPS visitor interpretive center would be constructed according to all applicable NPS standards and guidelines for sustainability, energy efficiency, universal accessibility, and other design principles that demonstrate environmental leadership and resource protection. Although located above the 100-year floodplain, special design and construction measures would be incorporated as necessary to mitigate or protect against possible flood damage and safety hazards. It is anticipated that existing utility lines on Moccasin Bend (e.g., water, gas, electrical, wastewater) would be extended to serve the interpretive facility. If the exhibit or storage of artifacts and museum objects were determined appropriate at the facility, additional design measures would be incorporated to provide climate control and other necessary curatorial protection systems. Ongoing facility maintenance and operational requirements would also be factored into the park's budgetary requests. The short-term construction-related expenses associated with the interpretive facility together with the long-term expenses associated with facility operations and maintenance would have overall long-term moderate adverse impacts on NPS operations. Implementation of sustainable design and energy efficiency measures would serve to mitigate the costs associated with ongoing operations.

Cumulative Impacts

The streambank erosion control activities being undertaken by the U.S. Army Corps of Engineers on Moccasin Bend would continue to assist NPS operational objectives for protecting and preserving the national archeological district. The city and county gateway improvements and signs planned for the approach to Moccasin Bend from Chattanooga would also assist the Park Service by better orienting visitors to the archeological district and providing them with information that they are approaching a unit

of the national park system with sensitive resource protection requirements. These orientation and protection measures would have long-term minor beneficial impacts on NPS operations.

Consequently, the minor beneficial impacts of the improvements described above, in combination with the moderate to major beneficial and adverse impacts of alternative D, would result in long-term moderate beneficial and adverse cumulative impacts on NPS operations. Alternative D's contribution to these cumulative impacts would be substantial.

Conclusion

Long-term moderate to major beneficial impacts to NPS operations would occur under alternative D as a consequence of providing joint NPS and partnership visitor interpretive facilities on Moccasin Bend with adequate staffing to effectively coordinate and manage the site protection and visitor use requirements of the archeological district. The short-term expenses associated with construction of the expanded NPS interpretive facility, along with the long-term expenses associated with its operation and maintenance, would have overall long-term moderate adverse impacts on NPS operations and budgetary allocations. Implementation of alternative D would result in long-term moderate beneficial and adverse cumulative impacts on NPS operations.



Photo provided by Friends of Moccasin Bend National Park



CHAPTER 5:

Consultation and Coordination

CONSULTATION AND PUBLIC INVOLVEMENT

During the preparation of this development concept plan and environmental assessment, the National Park Service has consulted on multiple occasions with public agencies, organizations, affiliated tribal representatives, and other individuals having a stake in the project.

Internal NPS scoping for the project was conducted at the headquarters of Chickamauga and Chattanooga National Military Park in January 2005 and January 2006. NPS staff from the national military park, Southeast Regional Office (SER), and Denver Service Center (DSC) conducted public scoping meetings and workshops in Chattanooga in September 2005, March 2006, and September 2007. The public was encouraged to provide comments at these meetings or respond to newsletter questionnaires (September 2005, February 2006, and August 2007). A summary of the key issues and considerations received by the public during these meetings and workshops is presented in the “Project-Related Issues and Considerations” section of chapter one.

The National Park Service held government-to-government meetings in Chattanooga with American Indian tribal representatives in September 2005, March 2006, and October 2006. The Friends of Moccasin Bend also participated in these consultation meetings. The tribes represented at the meetings were the Absentee Shawnee Tribe of Oklahoma, Alabama-Quassarte Tribal Town, Cherokee Nation, Chickasaw Nation, Coushatta Tribe of Louisiana, Eastern Band of Cherokee Indians, Eastern Shawnee Tribe of Oklahoma, Kialegee Tribal Town, and the Muscogee

(Creek) Nation. A summary of the key issues and considerations received from the tribal representatives during these meetings is presented in the “Project-Related Issues and Considerations” section of chapter one.

The National Park Service will continue to consult as necessary with the following affiliated tribal groups with regard to the proposed development actions for Moccasin Bend and will provide them with copies of the development concept plan: Alabama-Coushatta Tribes of Texas, Alabama-Quassarte Tribal Town, Catawba Indian Nation, Choctaw Nation of Oklahoma, Cherokee Nation, Eastern Band of Cherokee Indians (Qualla Boundary), United Keetoowah Band of Cherokee Indians, Chickasaw Nation, Coushatta Indian Tribe, Kialegee Tribal Town, Muscogee (Creek) Nation, Poarch Band of Creek Indians, Thlopthlocco Tribal Town, Seminole Nation of Oklahoma, Seminole Tribe of Florida, Absentee Shawnee Tribe of Oklahoma, Eastern Shawnee Tribe of Oklahoma, Shawnee Tribe, Jena Band of Choctaw Indians, and the Mississippi Band of Choctaw Indians.

Among these tribes, those recognized by the National Park Service as having specific associations with the Trail of Tears National Historic Trail are the Cherokee Nation of Oklahoma, Eastern Band of Cherokee Indians, Muscogee (Creek) Nation of Oklahoma, Chickasaw Nation, Choctaw Nation of Oklahoma, Seminole Nation of Oklahoma, Poarch Band of Creek Indians, and United Keetoowah Band of Cherokee Indians.

COORDINATION

In January 2008, the Park Service notified the U.S. Fish and Wildlife Service and the Tennessee Wildlife Resources Agency of the development concept plan and requested information regarding the potential existence on Moccasin Bend of threatened or endangered species, species of concern, or other special status species that might be affected by project actions. On April 30, 2008, the U.S. Fish and Wildlife Service notified the park that “no significant adverse impacts to wetlands or federally listed endangered or threatened species are anticipated from the proposal.” The Tennessee Wildlife Resources Agency notified the park on July 29, 2008 that no extant populations of state-listed threatened or endangered species are known to exist within the Moccasin Bend National Archeological District. However, one historic record from 1977 identified the presence of Bachman’s sparrow (*Aimophila aestivalis*) in the project area. The sparrow is state-listed as endangered and federally-listed as a management concern. Several caves that are near the project area but on the opposite side of the Tennessee River provide critical habitat for several subterranean species including the Tennessee cave salamander (*Gyrinophilus palleucus*).

The Park Service has consulted with the U.S. Army Corps of Engineers since 2005 regarding erosion control efforts to stabilize the river bank along Moccasin Bend. The Park Service will continue to consult with the Corps and the Tennessee Valley Authority regarding ongoing erosion control and stabilization measures, and any specific flood control measures that may potentially be incorporated into project design and construction for the visitor interpretive facility.

The Park Service notified the Tennessee State Historic Preservation Office (SHPO) in September 2005 of the intent to prepare the development concept plan for Moccasin Bend

with alternatives for construction of a cultural/interpretive center. The SHPO also has been invited to attend the various public meetings for the project. The Park Service will provide the SHPO with a copy of this document for review and comment.

Throughout the planning project, the Park Service has consulted with its partnership organization, the Friends of Moccasin Bend, to coordinate joint planning objectives and strategies. The Friends will continue to be involved in decisions to finalize and implement the selected alternative for Moccasin Bend.

A draft of this document will be placed on the NPS planning website for public review: (<http://parkplanning.nps.gov/chch>).

Future Consultation and Compliance

The National Park Service will continue to consult with agencies, tribes, partners, stakeholders and the public as the project progresses towards more detailed design development stages. Under separate planning, and with input solicited from the above parties and the public, architectural designs will be developed that fully consider site compatibility and the contextual requirements for the design and construction of the proposed visitor/cultural center on Moccasin Bend. As site designs are refined, additional compliance and permitting requirements will be addressed for the placement of utility lines and infrastructure, flood and erosion control, construction of access roads and turnoff lanes, and other construction-related requirements.



Photo provided by Friends of Moccasin Bend National Park



Appendixes, References, Preparers, and Consultants

APPENDIX A: ADDITIONAL COST INFORMATION

Moccasin Bend National Archeological District-----Interpretive Center

Cost Estimate for Alternative B (based on preliminary facility modeling)

Building, 7,500 sq. ft. – 9,000 sq. ft.	\$3,667,500 – \$4,401,000
Infrastructure	<u>\$1,510,000 – \$1,681,000</u>
Net Construction Costs	\$5,177,500 – \$6,082,000
Planning/Design/Construction Mgmt. (standard 35% of net construction)	\$1,812,125 – \$2,128,700
Exhibits	\$1,010,000 – \$1,320,000
Total Project Costs	\$7,999,625 – \$9,530,700

Note: This cost estimate incorporates all functional requirements described in alternative B. If limited funding is available, functional requirements will be prioritized and included in the architectural program based on available funds.

Cost Estimate for Alternative C and Alternative D (based on preliminary facility modeling)

Building, 11,000 sq. ft. – 17,500 sq. ft.	\$5,346,000 – \$8,505,000
Infrastructure	<u>\$2,101,000 – \$2,336,000</u>
Net Construction Costs	\$7,447,000 – \$10,841,000
Planning/Design/Construction Mgmt. (standard 35% of net construction)	\$2,606,450 – \$3,794,350
Exhibits	\$3,100,000 – \$3,820,000
Audio/Visual Program	\$0,700,000 – \$0,700,000
Total Project Costs	\$13,853,450 – \$19,155,350

Note: This cost estimate incorporates all functional requirements described in alternative C and in alternative D. If limited funding is available, functional requirements will be prioritized and included in the architectural program based on available funds. This cost estimate reflects federal funding only, and does not include estimates for funding contributions from the partnership organization or options for privately funded development on nonfederal lands.

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

