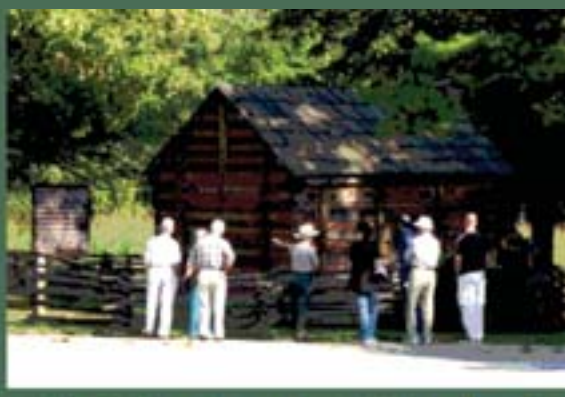
National Park Service
United States Department of the Interior

Abraham Lincoln Birthplace
National Historic Site
Kentucky






Draft General Management Plan /
Environmental Impact Statement

Draft
General Management Plan / Environmental Impact Statement
Abraham Lincoln Birthplace National Historic Site
La Rue County, Kentucky

First authorized as a national park in 1916 under the Secretary of War, Abraham Lincoln Birthplace National Historic Site was redesignated by Congress on September 8, 1959 (73 Stat. 466). The last comprehensive management plan for the site was completed in 1964. Much has changed since then.

When Abraham was about two years old, the Lincolns moved to the Knob Creek Farm, about 10 miles from the birthplace cabin. In 1998 Congress authorized the acquisition and addition of the land and the cultural and natural resources of the historic Knob Creek Farm (Boyhood Home Unit) to the national historic site. Other smaller land additions have been made to the national historic site over the years. Also, visitor use patterns have changed, and people want to bring new recreational activities to the national historic site. Each of these changes has major implications for how visitors access and use the national historic site and what facilities are needed to support those uses, how resources are managed, and how the National Park Service manages its operations.

This document examines four alternatives for managing Abraham Lincoln Birthplace National Historic Site for the next 15 to 20 years. It also analyzes the impacts of implementing each of the alternatives. The **"no-action" alternative, alternative A,** consists of continuing the existing site management and trends and serves as a basis for comparison in evaluating the other alternatives. The concept for site management under **alternative B** would be to emphasize the preservation and conservation of cultural and natural resources and enhance visitor opportunities by developing a more authentic historic scene at both national historic site units. The concept for management under **alternative C** would enhance opportunities for visitors to interact with and appreciate all of the site's resources while preserving or adaptively using cultural resources. Alternative C is the National Park Service's preferred alternative. The concept for management under **alternative D** would be to reestablish a greater semblance of the historic scene and provide greater opportunities for visitors to understand Abraham Lincoln and his early childhood; it would also increase educational opportunities available to visitors to help understand the national historic site and its resources.

The key impacts of implementing the no-action alternative (A) would include minimal interpretation and resource management at the Boyhood Home Unit. The key impacts of implementing alternative B would include beneficial impacts on vegetation and wildlife from the removal of modern structures and Keith Road from the Birthplace Unit, no adverse effects on cultural resources, and minor long-term beneficial impacts on visitor experiences. The key impacts of implementing alternative C would include no adverse effects on cultural resources in the Birthplace Unit, negligible adverse impacts on soils, long-term minor beneficial and long-term minor adverse impacts on vegetation, and a negligible beneficial impact on wildlife. There would be moderate long-term beneficial impacts on visitor experiences. The key impacts of implementing alternative D on natural resources would include minor adverse impacts on soils and vegetation and a short-term moderate adverse impact and long-term minor to moderate adverse impact on wildlife. There would be adverse effects on historic structures (tavern and replica cabin) and cultural landscapes at the Boyhood Home Unit. There would be a moderate long-term beneficial impact on visitor experiences.

This *Draft General Management Plan / Environmental Impact Statement* has been distributed to other agencies and interested organizations and individuals for their review and comment. The public comment period for this document will last for 60 days after the Environmental Protection Agency's notice of availability has been published in the *Federal Register*. Readers are encouraged to send written comments on this draft plan to Superintendent, Abraham Lincoln National Historic Site, 2995 Lincoln Park Road, Hodgenville, KY 42748-9707, or submit comments on-line at http://parkplanning.nps.gov.

SUMMARY

First authorized as a national park in 1916 under the Secretary of War, Abraham Lincoln Birthplace National Historic Site was redesignated by Congress on September 8, 1959 (73 Stat. 466; see appendix A). The last comprehensive management plan for the site was completed in 1964.

Much has changed since then. When Abraham was about two years old, the Lincolns moved to the Knob Creek Farm, about 10 miles from the birthplace cabin. In 1998 Congress authorized the acquisition and addition of the land and the cultural and natural resources of the historic Knob Creek Farm (Boyhood Home Unit) to the national historic site. Other smaller land additions have been made to the national historic site over the years. Also, visitor use patterns have changed, and people want to bring new recreational activities to the national historic site. Each of these changes has major implications for how visitors access and use the national historic site and what facilities are needed to support those uses, how resources are managed, and how the National Park Service (NPS) manages its operations. A new plan is needed to

- Clearly define resource conditions and visitor experiences to be achieved at Abraham Lincoln Birthplace National Historic Site consistent with the site's purpose and significance statements.

- Provide a framework for NPS managers to use when making decisions about how to best protect national historic site resources, how to provide a diverse range of visitor experience opportunities, how to manage visitor use, and what kinds of facilities, if any, to develop at the national historic site.

- Ensure that this foundation for decision making has been developed in consultation with interested stakeholders and adopted by the NPS leadership after an adequate analysis of the benefits, impacts, and economic costs of alternative courses of action.

This *Draft General Management Plan / Environmental Impact Statement* presents four alternatives, including the National Park Service's preferred alternative, for future management of Abraham Lincoln Birthplace National Historic Site. The alternatives, which are based on the national historic site's purpose, significance, and special mandates, present different ways to manage resources and visitor use and improve facilities and infrastructure at the national historic site. The four alternatives are alternative A, alternative B, alternative C, and alternative D.

ALTERNATIVE A: THE NO-ACTION ALTERNATIVE (CONTINUE CURRENT MANAGEMENT)

Under this alternative, current national historic site management direction would continue as guided by the 1964 *Master Plan* and subsequent more detailed implementation plans. There would be no substantial change in interpretation and management of the national historic site. "No action" does not imply the discontinuation of present uses or management practices or trends. Actions that are already funded are included in the no-action alternative, such as expansion of the parking area at the Boyhood Home Unit. NPS staff would continue to protect and maintain known cultural and natural resources as time and funding allow. Cultural and natural resource inventory work and monitoring would continue. NPS staff would continue to encourage and seek funding for the research

that is needed to fill the gaps in knowledge about resources following the park's strategic plan. The no-action alternative provides a baseline for comparison in evaluating the changes and impacts of the other alternatives.

The key impacts of continuing existing management conditions and trends would include having only minimal interpretation and resource management at the Boyhood Home Unit.

ALTERNATIVE B

Under alternative B, park management would emphasize the preservation and conservation of cultural and natural resources. Visitor opportunities would be enhanced through the reestablishment of a greater semblance of the historic scene (early 1930s) for structures and landscapes at both units and telling the story of other Lincoln-related sites in the area.

This alternative recommends that the official name of the site be changed to "Abraham Lincoln Birthplace National Historical Park."

Birthplace Unit

The existing visitor center/headquarters would be removed; a new regional center would be established, possibly in Hodgenville and possibly with regional partners.

The visitor center parking area would be moved towards the highway to reduce distractions from adjacent property and to vacate space to develop a landscaped plaza. A new small visitor contact station with public restrooms and landscaped staging area would be built in the former parking area to orient people to the site. Designed paved walkways would create a sense of arrival and transition to the memorial plaza. This would support the concept of this alternative — to restore the landscape to a condition that is more in keeping with the early 1930s.

Keith Road would be removed to improve safety, thereby helping to return the landscape to a condition that is more in keeping with the 1930s.

Educational activities would continue in the east side environmental education area, and existing trails would remain.

If available from a willing seller, National Park Service would seek to acquire the Nancy Lincoln Inn property. The Inn would be restored to its earliest exterior appearance, depending on the level of documentation available. The guest cabins and house would be evaluated for possible use or removed.

Boyhood Home Unit

A visitor contact desk, sales area, exhibits, restrooms, offices, or staff quarters would be established in the tavern.

The replica cabin would be restored to its original 1930s exterior appearance and interpreted (without public access to the interior).

Ingress/egress to the unit would be redesigned for safety. The parking area would be moved to a new location southwest of the tavern building to remove it from a prominent position in front of the historic structures. Signs would be added or improved to meet NPS standards. Vegetative screening and/or earthen berms would be added to mitigate sight and sound intrusions from the modern highway and to separate the parking area from the historic structures.

Fields at the Boyhood Home Unit would continue to be maintained in their existing configuration by occasional mowing.

If feasible, about 50 acres on the north side of the unit would be acquired from a willing seller to protect a rare hardwood glade and scenic views.

There would be no adverse effects on cultural resources. The key impacts of implementing alternative B on natural resources would include beneficial impacts on vegetation and wildlife from the removal of modern structures and Keith Road from the Birthplace Unit. There would be minor long-term beneficial impacts on visitor experiences.

ALTERNATIVE C, PREFERRED

This alternative would enhance opportunities for visitors to interact with and appreciate all of the national historic site's resources while preserving or adaptively reusing cultural resources.

This alternative would also recommend that the official name of the site be changed to "Abraham Lincoln Birthplace National Historical Park."

Birthplace Unit

The visitor center would be enhanced with NPS administration functions moved to vacant NPS housing (or the house on Nancy Lincoln Inn property if acquired); vacant space would be used for additional interpretation. The visitor center parking area, would be moved towards the highway and enlarged, and a landscaped staging area would be constructed, and designed paved walkways would create a sense of arrival and transition to the memorial plaza. These actions would enhance visitor opportunities while preserving or reusing historic resources.

Keith Road would be removed to improve safety, make the scene closer to its historic appearance, and restore forest habitat. The picnic areas and pavilion and restrooms would be improved to NPS standards, and the parking area would be enlarged; some individual picnic sites would be made accessible to visitors with disabilities.

NPS staff would continue to lead educational activities at the environmental education area on the east side to provide greater visitor appreciation of the resources. A small storage shed would be added to the restroom building to support these activities.

The existing short loop interpretive trail would be made accessible to visitors with disabilities. Other trails would be retained.

If available from a willing seller, the National Park Service would seek to acquire the Nancy Lincoln Inn property. The inn would be restored to the earliest 1930s exterior appearance that the documentation would allow, and adaptively reused on the interior for NPS purposes (such as sales and storage for the cooperating association). The guest cabins would be evaluated for possible NPS use or removed. The modern house would be removed or converted to offices for NPS administrative staff if determined feasible.

Boyhood Home Unit

The tavern would be restored to its 1930s exterior appearance and reused as a visitor contact station, sales and exhibits area, restrooms, offices, or staff quarters. The replica cabin would be restored to its original 1930s appearance and opened to the public. The temporary ranger station, restroom building, and concrete pads would be removed.

Ingress/egress to the unit would be redesigned for safety. The parking area would be moved to a new location outside the historic district behind the tavern building. This would remove the intrusion of modern vehicles from the historic district and cultural landscape. Existing roads would be upgraded to provide vehicular access to the new parking lot. It would be built to accommodate at least 25 vehicles and 3 buses, and sidewalks would be added for universal accessibility to the visitor facility. Providing the bus parking would

accommodate school groups participating in educational programs. Signs would be added or improved to meet NPS standards. Vegetative screening would be added to mitigate sight and sound intrusions from the modern highway and to separate the parking lot from the historic structures.

An interpretive garden would be planted with crop plants common at the time the Lincolns lived here, such as corn, pumpkins, gourds, and herbs. Fields at Boyhood Home Unit would be reestablished to their historic size and configuration. An agricultural lease would be used to maintain the historic appearance and use of the fields.

There would be an accessible path to the fields and creek. The Boy Scout trail would be repaired, and other trails would be improved, which would enhance visitor opportunities to interact with the resources.

If feasible, 50 acres on the north side of the unit would be acquired from willing seller to protect a rare hardwood glade and historic/scenic views.

There would be no adverse effects on cultural resources. The key impacts on natural resources of implementing alternative C would include negligible adverse impacts on soils, long-term minor beneficial and long-term minor adverse impacts on vegetation, and a negligible beneficial impact on wildlife. There would be moderate long-term beneficial impact on visitor experiences.

ALTERNATIVE D

This alternative would help return the landscape to a greater semblance of its historic condition and provide greater opportunities for visitors to understand Abraham Lincoln and his early childhood. It would also increase educational opportunities available to visitors to help understand the national historic site and its resources.

This alternative would also recommend that the official name of the site be changed to "Abraham Lincoln Birthplace National Historical Park."

Birthplace Unit

The visitor center would be rehabilitated, and NPS administration functions would move to the house on the Nancy Lincoln Inn property if it was acquired and feasible. The main visitor center parking area would be moved toward the highway, and a new landscaped staging area would be constructed to orient visitors, and designed paved walkways would also create a sense of arrival and transition to the memorial plaza.

Keith Road would remain, but Big Sink Trail would be shortened to avoid crossing the road and to improve safety.

The picnic areas and pavilion and restrooms would remain and would be brought up to NPS standards, and the parking area would be enlarged. A small resource education center would be built near the picnic area, which would support this alternative's goal of providing greater opportunities for visitor understanding.

If available from a willing seller, National Park Service would seek to acquire the Nancy Lincoln Inn property. The inn would be restored as close as possible to its 1930s exterior appearance based on the available documentation and adaptively reused for NPS purposes on the interior. The guest cabins would be evaluated for possible use or removed. The modern house would be used for NPS office space if determined feasible and cost-effective.

Boyhood Home Unit

The tavern would be removed and a new visitor contact station would be constructed.

An outdoor pioneer lifestyle exhibit would be constructed, and the replica cabin would be moved into this exhibit. A small area (1-2 acres) would be planted in row crops.

The entrance would be redesigned to provide for safer ingress and egress to the site. The parking area would be expanded at its current location to accommodate at least 25 vehicles and 3 school buses. Providing parking for buses would accommodate school groups using the site for educational programs. Signs would be added or improved to conform to NPS standards. Vegetative screening would be developed.

The temporary ranger station, restroom building, and concrete pads would be removed.

Fields at Boyhood Home Unit would be reestablished to their historic size and configuration. An agricultural lease would be used to maintain the historic appearance of the fields.

New trails would be developed; existing trails would be brought up to NPS standards to provide greater opportunities for visitor understanding.

If feasible, and to preserve the historic scene and protect a rare hardwood glade, approximately 50 acres on the north of the unit would be acquired from a willing seller to protect a rare hardwood glade and scenic views.

There would be adverse effects on historic structures (tavern and replica cabin) and cultural landscapes at the Boyhood Home Unit. The key impacts of implementing alternative D on natural resources would include minor adverse impacts on soils and vegetation and a short-term moderate adverse impacts and long-term minor to moderate adverse impact on wildlife. There would be a moderate long-term beneficial impact on visitor experiences.

THE NEXT STEPS

After the distribution of the *Draft General Management Plan / Environmental Impact Statement* there will be a 60-day public review and comment period after which the NPS planning team will evaluate comments from other federal agencies, tribes, organizations, businesses, and individuals regarding the draft plan and incorporate appropriate changes into a *Final General Management Plan / Environmental Impact Statement*. The final plan will include letters from governmental agencies, any substantive comments on the draft document, and NPS responses to those comments. Following distribution of the *Final General Management Plan / Environmental Impact Statement* and a 30-day no-action period, a record of decision approving a final plan will be signed by the NPS regional director. The record of decision will document the NPS selection of an alternative for implementation. With the signed record of decision, the plan can then be implemented, depending on funding and staffing. (A record of decision does not guarantee funds and staff for implementing the approved plan.) The national historic site must compete with other units of the national park system for limited implementation funding.

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Chapter 1:
Introduction

BACKGROUND

This *Draft General Management Plan / Environmental Impact Statement* presents and analyzes four alternative future directions — alternatives A, B, C, and D — for the management and use of Abraham Lincoln Birthplace National Historic Site. Alternative A presents the "no-action" alternative, which is provided for the purposes of comparison with the other alternatives and describes a continuation of current management. Alternative B would emphasize the preservation and conservation of cultural and natural resources. Visitor opportunities would be enhanced through the establishment of a greater semblance of the historic scene at both units and telling the story of other Lincoln-related sites in the area. Alternative C is the National Park Service's preferred alternative. This alternative would enhance visitor opportunities. Cultural resources would be preserved or adaptively used. There would be more opportunities for visitors to appreciate and understand the national historic site's natural resources. Alternative D would instill a stewardship ethic through interpretation and resource education. Re-creation and restoration of the historic scene would be undertaken to provide greater opportunities for visitors to understand Abraham Lincoln and his early childhood. The potential environmental impacts of all alternatives have been identified and assessed.

General management plans are intended to be long-term documents that establish and articulate a management philosophy and framework for decision making and problem solving in the parks. General management plans usually provide guidance during a15- to 20-year period.

The implementation of the approved plan (approval of one of the alternatives in this document) will depend on future funding. The approval of a plan does not guarantee that the funding and staffing needed to implement the plan will be forthcoming. Full implementation of the approved plan could be many years in the future. The national historic site must compete with other units of the national park system for limited implementation funding.

HOW THIS DOCUMENT IS ORGANIZED

This *Draft General Management Plan / Environmental Impact Statement* is organized in accordance with the Council on Environmental Quality's implementing regulations for the National Environmental Policy Act and the National Park Service's Director's Order on "Environmental Analysis" (DO-12), NPS *Management Policies 2001* (chapter 2), and the NPS *Planning Program Standards*.

Chapter 1: Introduction sets the framework for the entire document. It describes why the plan is being prepared and what needs it must address. It gives guidance for the alternatives that are being considered, which are based on the park's legislated purpose, the significance of its resources, special mandates and administrative commitments, servicewide mandates and policies, and other planning efforts in the area.

The chapter also details the planning opportunities and issues that were raised during public scoping meetings and initial planning team efforts; the alternatives in the next chapter address these issues and concerns to varying degrees. This chapter concludes with a statement of the scope of the environmental impact analysis — specifically what impact topics were or were not analyzed in detail.

> The primary goal of **scoping** is to identify issues and determine the range of alternatives to be addressed. During scoping, the NPS staff provides an overview of the proposed project, including purpose and need and

alternatives. The public is asked to submit comments, concerns, and suggestions relating to these goals.

Chapter 2: Alternatives, Including the Preferred Alternative, begins by describing the management prescriptions that will be used to manage the national historic site in the future. It also consists of the continuation of current management and trends at the national historic site (alternative A, the no-action alternative). The action alternatives, including the preferred alternative, are presented. Mitigation measures proposed to minimize or eliminate the impacts of some proposed actions are described just before the discussion of future studies and/or implementation plans that will be needed. The evaluation of the environmentally preferable alternative is followed by summary tables of the alternative actions and the environmental consequences of implementing those alternative actions. The chapter concludes with a discussion of alternatives or actions that were dismissed from detailed evaluation.

Chapter 3: The Affected Environment describes those areas and resources that would be affected by implementing actions in the various alternatives – cultural resources, natural resources, visitor use and experience, and socioeconomic environment.

Chapter 4: Environmental Consequences analyzes the impacts anticipated to occur as a result of implementing the alternatives on topics described in the "Affected Environment" chapter. Methods that were used for assessing the impacts in terms of the intensity, type, and duration of impacts are also outlined in this chapter.

Chapter 5: Consultation and Coordination describes the history of public and agency coordination during the planning effort. It also includes lists of agencies and organizations who will be receiving copies of the document.

The **Appendixes** present supporting information for the document, along with references, and a list of the planning team and other consultants.

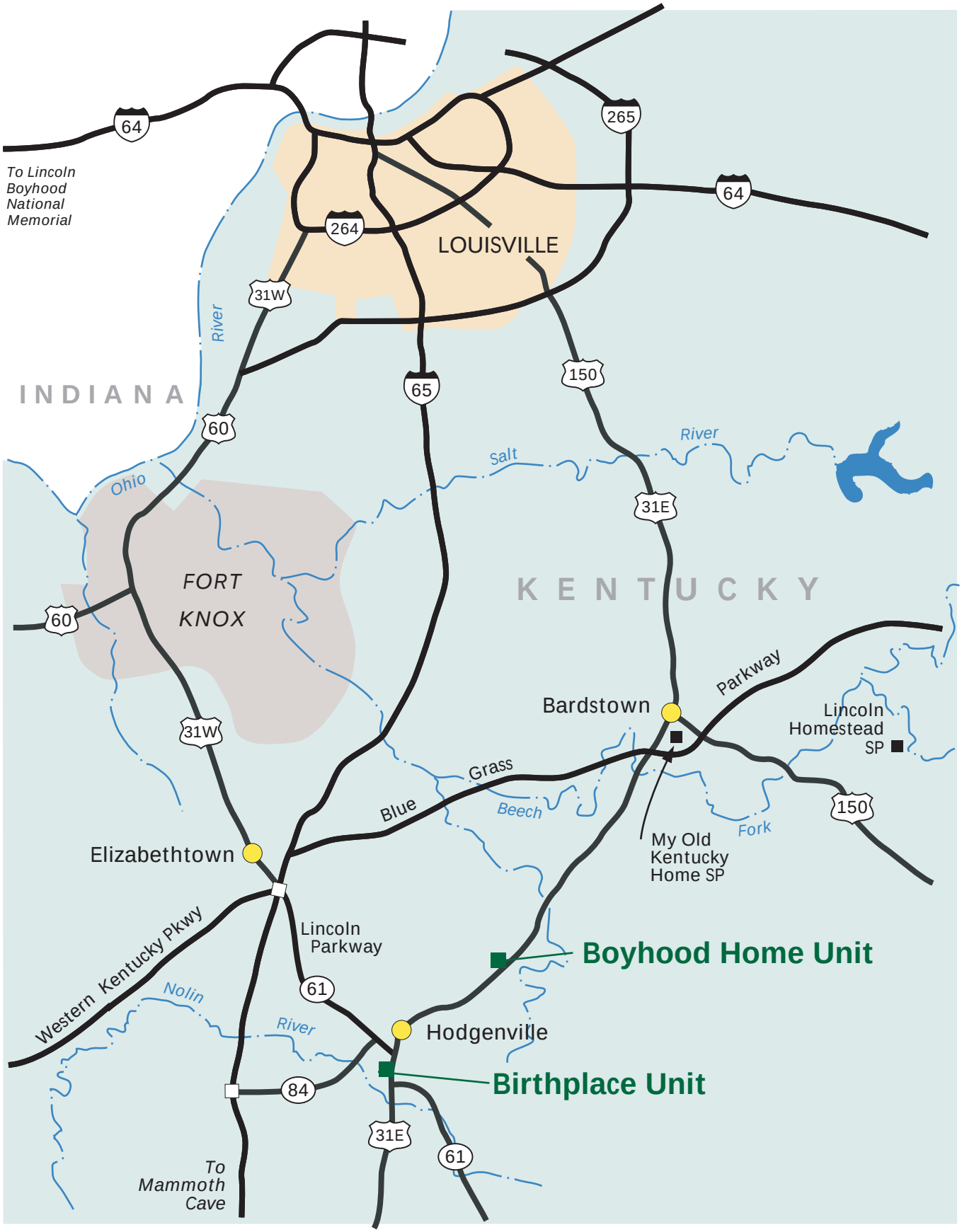
COMMEMORATION OF LINCOLN IN THE NATIONAL PARK SYSTEM

History and Description of the Abraham Birthplace National Historic Site

In December 1808, for $200 cash and the assumption of a small debt of the previous owner, Thomas Lincoln, Abraham's father, purchased the Sinking Spring farm near present day Hodgenville. Abraham was born here on February 12, 1809. A portion of the original Sinking Spring farm lands were established as Abraham Lincoln National Park by Congress on July 17, 1916 (see appendix A). These first lands designated for protection — now known as the Birthplace Unit of Abraham Lincoln Birthplace National Historic Site — are 3 miles south of Hodgenville and about 50 miles south of Louisville, on U.S. Highway 31E in LaRue County in west-central Kentucky (see Region and Vicinity maps).

In 1811, due to an ongoing legal struggle regarding a prior land claim asserted on the Sinking Spring farm, the Lincolns with two-year-old Abraham relocated to the Knob Creek farm, a few miles away. At the time the 230-acre farm at Knob Creek was owned by a George Lindsey. Thomas Lincoln leased 30 acres of Lindsey's property. The Lincolns remained on the Lindsey property —now known as the Boyhood Home Unit of Abraham Lincoln Birthplace National Historic Site —-until 1817 when Thomas Lincoln, frustrated by ongoing legal battles due to Kentucky land titles, moved his family to Indiana when Abraham was about eight years old.

Although interest in Lincoln's birthplace increased after his assassination in 1865, it was not until 1894 that a memorial of his



Region

Abraham Lincoln Birthplace National Historic Site

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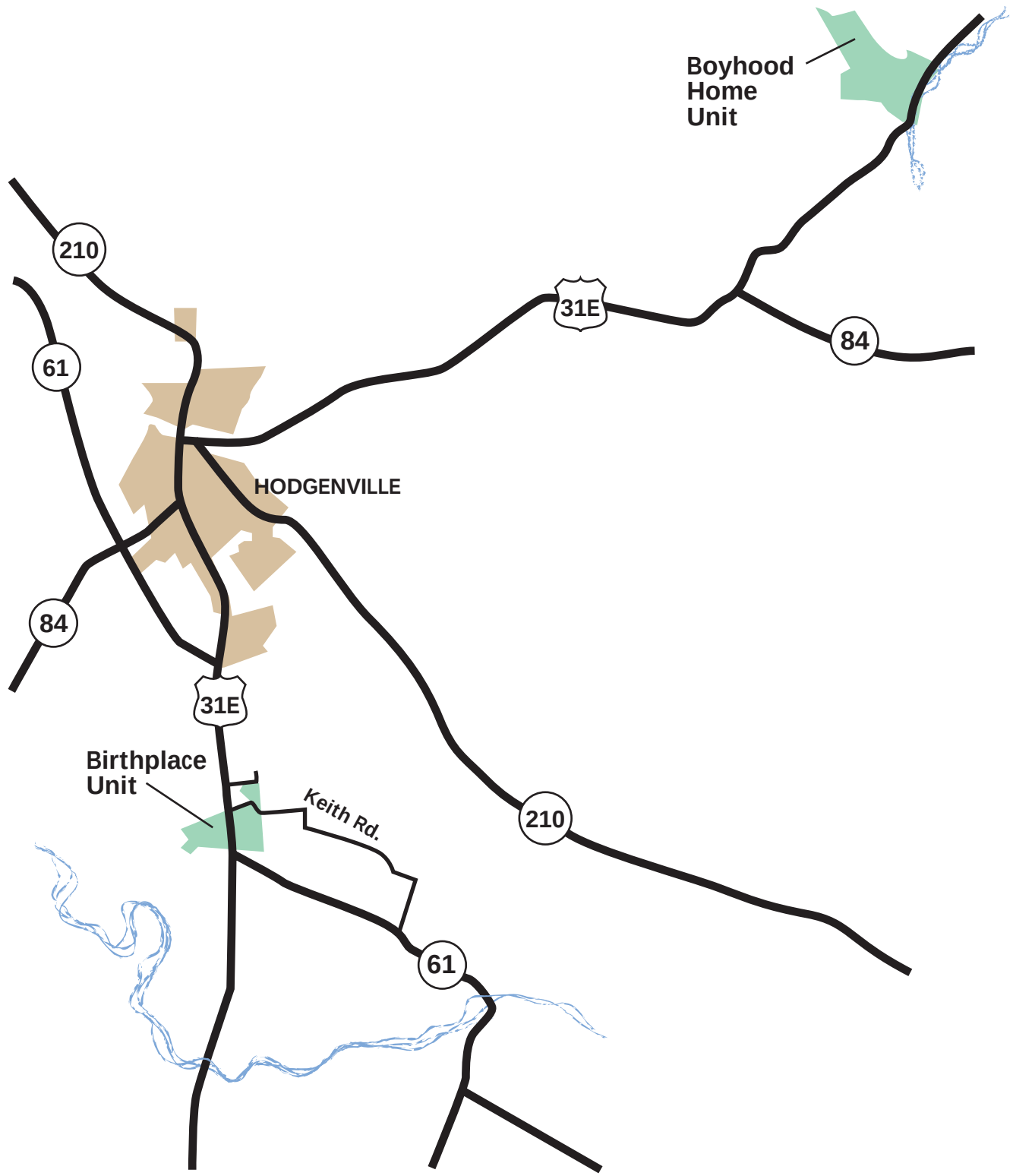

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Abraham Lincoln Birthplace National Historic Site

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birthplace was attempted. The birthplace property was sold at public auction to Richard Lloyd Jones, an editor for Collier's Weekly, on August 1905 with the intention of creating a national memorial to Lincoln. Also purchased was a log cabin containing logs that some local residents had identified as coming from the original Lincoln cabin. The cabin was taken apart, and the logs were put in storage in New York. In February 1906, Jones announced the formation of the Lincoln Farm Association. In 1907 the Lincoln Farm Association commissioned young architect John Russell Pope, a graduate of the École des Beaux-Arts in Paris to the design the memorial building.

Although Pope created his original designs in February 1908, the Lincoln Farm Association could only procure $100,000 of the $250,000 needed to complete the project. In October 1908 Pope modified his designs to the present memorial building. The memorial was smaller than the original design but large enough to house the log cabin symbolic of the place of Lincoln's birth.

The memorial was opened to the public in 1911; it was at the time also that the Lincoln Farm Association donated the 110-acre site along with the Memorial Building and the log cabin to the United States government. On July 17, 1916, the government established Abraham Lincoln National Park. The park was administered by the War Department until August 10, 1933, when it was transferred to the National Park Service (NPS). The park was designated a national historical park August 11, 1939, and was renamed the Abraham Lincoln Birthplace National Historic Site on September 8, 1959. The National Park Service expanded the park's boundaries with the purchase of about 5.25 acres, authorized May 27, 1949, and another addition, authorized April 11, 1972.

The current appearance of the memorial landscape partially reflects the original 1911 design, as well as later War Department alterations intended to improve visitor access and give the plaza a more finished appearance. Some historic materials have been replaced — notably the trees flanking the terraces and the flagstone pavers of the plaza, but the formal, ceremonial aspects of the approach to the memorial building are unchanged. Beyond the immediate area of the memorial building, secondary-growth forest covers about half the site, with the rest consisting of expansive mowed lawns. The site also includes a 1959 Mission 66 architectural style visitor center/headquarters and two employee residences, two small stone maintenance buildings constructed by the War Department, and a maintenance garage. The Mission 66 visitor center was developed as part of the response to the deterioration the national parks and their infrastructure had undergone during the war years. The flat-roofed building constructed of structural steel and white brick was the most significant building built at the park during the Mission 66 period. However, the building no longer retains its original integrity.

The visitor center/headquarters contains interpretive exhibits on the Lincoln family, including Thomas and Nancy Lincoln's Bible.

Southwest of the Memorial Building is the site of the Boundary Oak, a large white oak that was frequently cited in land surveys. In May 1949 the National Park Service acquired 6 acres surrounding the Boundary Oak. The oak died in 1976 and has been removed.

A picnic area with a restroom building and pavilion, several forest trails, and an area for environmental study are east of U.S. Highway 31E in the national historic site.

Some commercial development, including motels and a convenience store, has occurred north of the park, and the potential exists for further development both north and south of the national historic site boundary.

In 1998 Congress authorized the secretary of the interior to acquire about 228 acres of land

of the historic Knob Creek Farm. This property, about 10 miles from the Birthplace Unit, finally became a part of the historic site in 2001. This recently acquired Boyhood Home Unit contains a historic roadside tavern, a replica pioneer cabin, agricultural fields, and forested areas evocative of when the Lincolns lived there.

Other NPS Sites Commemorating Lincoln

Lincoln Boyhood National Memorial (Lincoln City, Indiana) — This national memorial commemorates the pioneer farm where Abraham Lincoln lived from the age of 7 to 21. The memorial contains the farm of Thomas Lincoln and the marked gravesite of Nancy Hanks Lincoln and is associated with the character-building years of Abraham Lincoln's life. The site contains physical expressions of the nation's respect and reverence for Abraham Lincoln, including formal and informal memorial landscapes.

Lincoln Home National Historic Site (Springfield, Illinois) — This national historic site contains the home where Abraham Lincoln, his wife, and children lived from 1844 to 1861. The home is in the community where Abraham Lincoln developed his legal and political skills.

Mount Rushmore National Memorial (South Dakota) — This national memorial commemorates our national history and progress through the visages of George Washington, Thomas Jefferson, Abraham Lincoln, and Theodore Roosevelt. The sculpture busts of the four presidents are significant as commemorations of each of their efforts in addition to the unique creative endeavor of the carvings.

Lincoln Memorial (District of Columbia) — The Lincoln Memorial is a tribute to the achievements and values of Abraham Lincoln and the freedoms in the United States. The memorial is a commemorative monument symbolizing Lincoln's lasting contribution of preserving the Union.

Ford's Theater National Historic Site (District of Columbia) — This national historic site includes the theater where President Abraham Lincoln was shot (Ford's Theater) and the house where he died (the Peterson House).

PURPOSE OF THE PLAN

The approved general management plan will be the basic document for managing Abraham Lincoln National Historic Site for the next 15 to 20 years. The purposes of this general management plan are as follows:

- Confirm the purpose, significance, and special mandates of Abraham Lincoln Birthplace National Historic Site.
- Clearly define resource conditions and visitor uses and experiences to be achieved at the national historic site consistent with the site's purpose and significance statements.
- Provide a framework for NPS managers to use when making decisions about how to best protect national historic site resources, how to provide quality visitor uses and experiences, how to manage visitor use, and what kinds of facilities, if any, to develop in/near the national historic site.
- Ensure that this foundation for decision making has been developed in consultation with interested stakeholders and adopted by the NPS leadership after an adequate analysis of the benefits, impacts, and economic costs of alternative courses of action.

Legislation establishing the National Park Service as an agency and governing its management provides the fundamental direction for the administration of all units and programs of the national park system. This general management plan will build on these

laws and the legislation that established Abraham Lincoln Birthplace to provide a vision for the national historic site's future. The "Servicewide Mandates and Policies" section calls the reader's attention to topics that are important to understanding the management direction at the national historic site. Table 1 summarizes the topics and the conditions to which management is striving. The alternatives in this general management plan address the desired future conditions that are not mandated by law and policy and must be determined through a planning process.

NEED FOR THE PLAN

This new management plan for Abraham Lincoln Birthplace National Historic Site is needed because the last comprehensive planning effort for the national historic site was completed in 1964. Much has occurred since then — patterns of visitor use have changed, and the site was enlarged by the acquisition of Lincoln's early boyhood home at Knob Creek. Each of these changes has major implications for how visitors access and use the national historic site and the facilities needed to support those uses, how resources are managed, and how the National Park Service manages its operations.

A general management plan also is needed to meet the requirements of the National Parks and Recreation Act of 1978 and NPS policy, which require a general management plan for each unit in the national park system. This document also fulfills the call for a study of the Knob Creek Farm property (Boyhood Home Unit) contained in the legislation that allowed the National Park Service to receive that property (16 USC1, Subchapter XXIII, Section 218a).

IMPLEMENTATION OF THE PLAN

Actions directed by general management plans or in subsequent implementation plans are accomplished over time. Budget restrictions, requirements for additional data or regulatory compliance, and competing national park system priorities might prevent immediate implementation of many actions.

The implementation of the approved plan also could be affected by other factors. Once the general management plan has been approved, additional feasibility studies and more detailed planning and environmental documentation would be completed, as appropriate, before any proposed actions can be carried out. For example,

- appropriate federal and state agencies would be consulted concerning actions that could affect threatened and endangered species
- the state historic preservation officer would be consulted during implementation for those actions affecting sites either eligible or in the National Register of Historic Places (see table 13 for further compliance requirements)

The general management plan does not describe how particular programs or projects should be prioritized or implemented. Those decisions would be addressed during the more detailed planning associated with strategic plans and implementation plans. All of those future more detailed plans would tier from the approved general management plan and would be based on the goals, future conditions, and appropriate types of activities established in the approved general management plan.

GUIDANCE FOR THE PLANNING EFFORT

PURPOSE AND SIGNIFICANCE

Purpose

Purpose statements are based on the establishing legislation, legislative history, and NPS policies. The statements reaffirm the reasons for which the site was set aside as a unit of the national park system and provide the foundation for park management and use.

The legislated purpose of Abraham Lincoln Birthplace National Historic Site is to:

- Protect and preserve the significant resources of the birthplace of Abraham Lincoln, especially the Log Cabin, Memorial Building, lands and related features.
- Protect and preserve the significant resources associated with the Knob Creek Farm and the early boyhood of Abraham Lincoln.
- Commemorate the birth and early life of Abraham Lincoln and interpret the relationship of his background and pioneer environment to his service for his country as president of the United States during the crucial years of the Civil War.

Significance

Significance statements capture the essence of the historic site's importance to our country's natural and cultural heritage. Significance statements do not inventory resources; rather, they describe the site's distinctiveness and help to place it within its regional, national, and international contexts.

Abraham Lincoln Birthplace National Historic Site is nationally significant for the following reasons:

- This is the birthplace and early boyhood home of the 16th president of the United States who successfully preserved the Union through the turmoil of the Civil War.
- The park protects a formal landscape and the memorial building that was constructed by the Lincoln Farm Association through popular subscription to formally enshrine and preserve a symbolic birthplace cabin.
- The Boyhood Home Unit at Knob Creek preserves the setting and resources of Abraham Lincoln's early character-building years (1811-1816).
- The Boyhood Home Unit protects unusually diverse and abundant flora in the Piedmont Region representative of the mixed mesophytic forest community along with cedar glades.

FUNDAMENTAL AND OTHER IMPORTANT RESOURCES AND VALUES

The planning team, with input from the public, developed the following list of resources and values that warrant consideration during planning and management because they are critical or important to achieving the national historic site's purpose and maintaining its significance.

Birthplace Unit

- the symbolic birthplace cabin
- the 1911 memorial building surrounding the cabin
- cultural landscape and contemplative atmosphere of the memorial plaza
- historic Sinking Spring that refreshed the Lincolns, and the coolness, sounds, and smells experienced at the spring

- the old-growth forest and the experience of walking through it
- historic Boundary Oak site
- inspirational experience at first view of memorial building and walking into memorial building
- seeing the actual Lincoln family Bible

Boyhood Home Unit

- historic 7-acre field and experience evocative of a rural 19th century landscape
- Knob Creek and its tributaries
- rare limestone glades
- unusually diverse and abundant flora
- boundary oak
- natural quiet in the northwest end of unit
- fossil-bearing limestone of the Mississippian Period
- original Louisville/Nashville Turnpike (Cumberland Road), if located

PRIMARY INTERPRETIVE THEMES

Based on the national historic site's purpose, significance, and primary resources, the following interpretive themes have been developed. Primary interpretive themes are the key stories, concepts, and ideas of a national park system unit. They are the groundwork that NPS staff will use for educating visitors about the national historic site and for inspiring visitors to care for and about the national historic site's resources. With these themes, visitors can form intellectual and emotional connections with national historic site resources and experiences. Subsequent interpretive planning may elaborate on these primary themes.

1) In a log cabin at this place known as the Sinking Spring Farm on February 12, 1809, Abraham Lincoln, the 16th president of the United States was born.
2) The pioneer life experienced in the first seven years at both the Sinking Spring Farm and the Knob Creek Farm shaped the fundamental character Abraham Lincoln would need to lead the nation successfully through the trials of the Civil War.
3) The log cabin preserved at Abraham Lincoln Birthplace National Historic Site is a powerful symbol of America's devotion to the idea of an individual's right to rise to his/her fullest potential.
4) Abraham Lincoln Birthplace National Historic Site preserves the memorial building and log cabin that are significant manifestations of the American people's reverence for Abraham Lincoln. The national historic site represents one of the earliest nationwide efforts to commemorate his life and honor his place in the American culture.
5) In 1909, as the country celebrated the centennial of Abraham Lincoln's birth, the significance of the region (central Kentucky, southern Indiana, and Springfield, Illinois) to his birth and early childhood was recognized. In the 1920s and 1930s, tourists were encouraged to visit the region by improved roads and amenities such as the statue in Hodgenville, and the landscaping and walkways at the birthplace. Businesses associating themselves with Lincoln, such as the Nancy Lincoln Inn and the replica cabin at Knob Creek, began to appear to take advantage of this tourism boom.

SPECIAL MANDATES

Several restrictions were included in the congressional Act of Acceptance that conveyed the property to the United States (16 USC 1 Sec. 211). Among these is the requirement that the property "shall be forever dedicated to the purposes of a national park or reservation, the United States of America agreeing to protect and preserve the said lands, buildings, and appurtenances, and especially the log cabin in which Abraham Lincoln was born and the memorial hall inclosing the same . . ." This act also declares,

"there shall never be any charge or fee made to or asked from the public for admission to the said park or reservation."

SERVICEWIDE LAWS AND POLICIES

This section identifies what must be done at Abraham Lincoln Birthplace National Historic Site to comply with federal laws and policies of the National Park Service. Many national historic site management directives are specified in laws and policies guiding the National Park Service and are therefore not subject to alternative approaches. A general management plan is not needed to decide, for instance, that it is appropriate to protect endangered species, control exotic species, protect archeological sites, or provide for handicap access. Laws and policies have already decided those and many other things for us. Although attaining some of these conditions set forth in these laws and policies may have been temporarily deferred in the national historic site because of funding or staffing limitations, the National Park Service will continue to strive to implement these requirements with or without a new general management plan.

Some of these laws and executive orders are applicable solely or primarily to units of the national park system. These include the 1916 Organic Act that created the National Park Service, the General Authorities Act of 1970, the act of March 27, 1978, relating to the management of the national park system, and the National Parks Omnibus Management Act (1998). Other laws and executive orders have much broader application, such as the Endangered Species Act, the National Historic Preservation Act, and Executive Order 11990 addressing the protection of wetlands.

The NPS Organic Act (16 USC § 1) provides the fundamental management direction for all units of the national park system:

> [P]romote and regulate the use of the Federal areas known as national parks, monuments, and reservations . . . by such means and measure as conform to the fundamental purpose of said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

The National Park System General Authorities Act (16 USC § 1a-1 et seq.) affirms that while all national park system units remain "distinct in character," they are "united through their interrelated purposes and resources into one national park system as cumulative expressions of a single national heritage." The act makes it clear that the NPS Organic Act and other protective mandates apply equally to all units of the system. Further, amendments state that NPS management of park units should not "derogat[e] . . . the purposes and values for which these various areas have been established."

The National Park Service also has established policies for all units under its stewardship. These are identified and explained in a guidance manual entitled NPS *Management Policies 2001*. The alternatives considered in this document incorporate and comply with the provisions of these mandates and policies.

To truly understand the implications of an alternative, it is important to combine the servicewide mandates and policies with the management actions described in an alternative.

Table 1 shows some of the most pertinent servicewide mandates and policy topics related to planning and managing Abraham Lincoln National Historic Site. Under each topic are the *desired conditions that the staff is striving to achieve* for that topic and thus the table is written in the present tense. The alternatives in this general management plan address the desired future conditions that are not mandated by law and policy and must be determined through a planning process.

TABLE 1: SERVICEWIDE MANDATES AND POLICIES PERTAINING TO ABRAHAM LINCOLN BIRTHPLACE NATIONAL HISTORIC SITE

CULTURAL RESOURCES MANAGEMENT

ARCHEOLOGICAL RESOURCES	
Desired Conditions	**Sources**
Archeological sites area identified and inventoried and their significance is determined and documented. Archeological sites are protected in an undisturbed condition unless it is determined through formal processes that disturbance or natural deterioration is unavoidable. When disturbance or deterioration is unavoidable, the site is professionally documented and excavated and the resulting artifacts, materials, and records are curated and conserved in consultation with the Kentucky state historic preservation office. Some archeological sites that can be adequately protected may be interpreted to the visitor.	National Historic Preservation Act; Executive Order 11593; Archeological Resources Protection Act; *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*; Programmatic Memorandum of Agreement among the National Park Service, Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers (1995); NPS *Management Policies 2001;* Director's Order 28 "Cultural Resources Management Guidelines."

Compliance Actions

Limited archeological surveys have been conducted in areas where construction was planned. These surveys have resulted in the identification of one suspected prehistoric site. No historic artifacts or features have been found. However, there has been no systematic survey of the entire park. The National Park Service will take the following actions to meet legal and policy requirements related to archeological sites:

- Conduct complete archeological surveys of both national historic site units. Particular emphasis will be given to areas planned for development.
- If archeological resources are discovered, they would be treated as eligible for listing on the National Register of Historic Places (national register) pending a formal determination of their significance by the National Park Service and the Kentucky state historic preservation office.
- Protect all archeological resources eligible for listing on the National Register of Historic Places; if disturbance to such resources is unavoidable, conduct formal consultation with the Kentucky state historic preservation office, and as necessary with the Advisory Council on Historic Preservation.

HISTORIC STRUCTURES	
Desired Conditions	**Sources**
Historic structures are inventoried and their significance and integrity are evaluated under National Register of Historic Places criteria. The qualities that contribute to the listing or eligibility for listing of historic structures on the national register are protected in accordance with the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (unless it is determined through a formal process that disturbance or natural deterioration is unavoidable).	National Historic Preservation Act; Executive Order 11593; Archeological Resources Protection Act; *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*; Programmatic Memorandum of Agreement among the National Park Service, Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers (1995); NPS *Management Policies 2001;* Director's Order 28 "Cultural Resources Management Guidelines"

Compliance Actions

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to this resource:

- Maintain and certify the List of Classified Structures.
- Determine the appropriate level of preservation for each historic property formally determined to be eligible for listing or listed in the National Register of Historic Places.

CULTURAL LANDSCAPES	
Desired Conditions	**Sources**
Cultural landscape inventories are conducted to identify landscapes potentially eligible for listing in the national register, and to assist in future management decisions for landscapes and associated resources, both cultural and natural. The management of cultural landscapes focuses on preserving the landscape's physical attributes, biotic systems, and use when that use contributes to its historical significance.	National Historic Preservation Act; Executive Order 1593; Archeological Resources Protection Act; *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*; Programmatic Memorandum of Agreement among the National Park Service, Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers (1995); NPS *Management Policies 2001;* Director's Order 28 "Cultural Resources Management Guidelines"; List of Classified Structures; Cultural Landscape Inventory

Compliance Actions

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to this resource:

- A cultural landscape report will be prepared for the Boyhood Unit.
- Cultural landscapes will be maintained following the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*.

MUSEUM COLLECTIONS	
Desired Conditions	**Sources**
All museum collections (objects, specimens, and manuscript collections) are identified and inventoried, catalogued, documented, preserved, and protected, and provision is made for their access to and use for exhibits, research, and interpretation according to NPS standards. The qualities that contribute to the significance of collections are protected in accordance with established standards.	National Historic Preservation Act, Archeological Resources Protection Act, the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation,* NPS *Management Policies 2001;* Director's Order 24 "Museum Collections Management"

Compliance Actions

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to this resource:

- Inventory and catalog all park museum collections in accordance with standards in Director's Order 24 "Museum Collections Management" and the NPS *Museum Handbook.*
- Develop and implement a collection management program according to NPS standards to guide the protection, conservation, and use of museum objects.

NATURAL RESOURCES MANAGEMENT

SOILS	
Desired Conditions	**Sources**
The National Park Service actively seeks to understand and preserve the soil resources, and to prevent, to the extent possible, the unnatural erosion, physical removal, or contamination of the soil, or its contamination of other resources.	NPS *Management Policies 2001*
Natural soil resources and processes function in as natural a condition as possible, except where special considerations are allowable under policy.	
When soil excavation is an unavoidable part of an approved facility development project, the National Park Service will minimize soil excavation, erosion, and offsite soil migration during and after the development activity.	NPS *Management Policies 2001*

Compliance Actions

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to soils:

- Update soil GIS data to include the boyhood home unit.
- When appropriate, NPS staff would educate visitors about the soils.

WATER RESOURCES	
Desired Conditions	**Sources**
Surface water and groundwater are protected, and water quality meets or exceeds all applicable water quality standards.	Clean Water Act, Executive Order 11514, NPS *Management Policies 2001*
NPS and NPS-permitted programs and facilities are maintained and operated to avoid pollution of surface water and groundwater.	Clean Water Act, Executive Order 12088, Rivers and Harbors Act, NPS *Management Policies 2001*

Compliance Actions

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to this resource:

- Continue monitoring water flows and quality of Sinking Spring and initiate monitoring of Knob Creek. When degraded water quality and/or flows occur, attempt to locate and mitigate source.
- Conduct hydrological studies to determine the recharge zone for Sinking Spring and work to protect the recharge zone from pollution.
- When appropriate, NPS staff would educate visitors about the water resources.

FLOODPLAINS	
Desired Conditions	**Sources**
Natural floodplain values are preserved or restored.	Executive Order 11988, NPS *Management Policies 2001*
Long-term and short-term environmental effects associated with the occupancy and modifications of floodplains are avoided. When it is not practicable to locate or relocate development or inappropriate human activities to a site outside the floodplain or where the floodplain will be affected, the National Park Service • Prepares and approves a statement of findings in accordance with DO 77-2. • Uses nonstructural measures as much as practicable to reduce hazards to human life and property while minimizing impacts on the natural resources of floodplains. • Ensures that structures and facilities are designed to be consistent with the intent of the standards and criteria of the National Flood Insurance Program (44 CFR 60).	Director's Order 77-2 *Floodplain Management*, NPS *Management Policies 2001*

Compliance Actions

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to this resource:

- Prepare a quantitative analysis of the Knob Creek floodplain and the risk of damaging floods.
- Conduct hydrological study and produce detailed maps of Sinking Spring watershed/basin.

NATIVE VEGETATION AND ANIMALS	
Desired Conditions	**Sources**
The National Park Service will maintain, as part of the natural ecosystem, all native plants and animals in the national historic site. Populations of native plant and animal species function in as natural condition as possible except where special considerations are warranted. Native species populations that have been severely reduced in or extirpated from the national historic site are restored where feasible and sustainable.	NPS *Management Policies 2001*
The management of exotic plant and animal species, up to and including eradication, will be conducted wherever such species threaten national historic site resources or public health and when control is prudent and feasible	NPS *Management Policies 2001*, Executive Order 13112 "Invasive Species"

Compliance Actions

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to this resource:

- Locate and inventory areas of native vegetative communities.
- Complete wildlife inventory studies of both units, including mammals, birds, reptiles, amphibians, and invertebrates.
- Prepare and implement an exotic species management plan.
- Update the resources management plan based on new information.

THREATENED, ENDANGERED, AND SPECIAL STATUS SPECIES	
Desired Conditions	**Sources**
Federal and state-listed threatened and endangered species and their habitats are protected and sustained.	Endangered Species Act, NPS *Management Policies 2001*
Native threatened and endangered species populations that have been severely reduced in or extirpated from the national historic site are restored where feasible and sustainable.	NPS *Management Policies 2001*

Compliance Actions

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to this resource:

- Conduct periodic inventories for special status species.
- Prepare and implement a resources management plan.

GEOLOGIC RESOURCES	
Desired Conditions	**Sources**
The national historic site's geologic resources are preserved and protected as integral components of the national historic site's natural systems.	NPS *Management Policies 2001*
Paleontological resources, including both organic and mineralized remains in body or trace form, are protected, preserved, and managed for public education, interpretation, and scientific research.	NPS *Management Policies 2001*
The Park Service manages caves and karst to perpetuate the natural systems associated with the caves and karst.	NPS *Management Policies 2001*, Federal Cave Resources Protection Act

Compliance Actions

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to this resource:

- Update geological history of the national historic site, using modern theory and techniques, and develop a geological GIS data layer.
- Establish a program to inventory paleontological resources and systematically monitor for newly exposed fossils, especially in areas of rapid erosion.
- Conduct an inventory of known caves and karst features including maps, locations, and assessments, using NPS protocols.

NATURAL SOUNDSCAPE	
Desired Conditions	**Source**
The National Park Service preserves the natural ambient soundscapes, restores degraded soundscapes to the natural ambient condition wherever possible, and protects natural soundscapes from degradation due to human-caused noise. Disruptions from recreational uses are managed to provide a high-quality visitor experience in an effort to preserve or restore the natural quiet and natural sounds where appropriate.	NPS *Management Policies 2001*, Director's Order 47 "Sound Preservation and Noise Management"

Compliance Actions

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to this resource:

- Identify and take actions to prevent or minimize unnatural sounds that adversely affect national historic site resources or values or visitors' enjoyment of them, according to management prescriptions.
- Regulate the use of motorized equipment during visitor hours to minimize noise generated by NPS management activities.

VISITOR USE AND EXPERIENCE	
Desired Conditions	**Source**
Natural and cultural resources are conserved "unimpaired" for the enjoyment of future generations. Visitors have opportunities for forms of enjoyment that are uniquely suited and appropriate to the superlative natural and cultural resources found in the national historic site. No activities occur that would cause derogation of the values and purposes for which the park has been established. For all zones, districts, or other logical management divisions in a national historic site, the types and levels of visitor use are consistent with the desired resource and visitor experience conditions prescribed for those areas. Visitors will have opportunities to understand and appreciate the significance of the national historic site and its resources, and to develop a personal stewardship ethic.	NPS Organic Act, NPS Management Policies
To the extent feasible, programs, services, and facilities are accessible to and usable by all people, including those with disabilities. NPS staff will identify implementation commitments for user capacities for all areas of the national historic site.	Americans with Disabilities Act, Director's Order 42 "Accessibility for Visitors with Disabilities in NPS Programs, Facilities, and Services" National Parks and Recreation Act (PL 95-625, NPS *Management Policies 2001*

Compliance Actions

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to this value:

- Give all visitors the opportunity to understand, appreciate, and enjoy the national historic site.
- Continue to monitor visitor comments on issues such as crowding, parking, access, and other experience-related topics.

SUSTAINABLE DESIGN	
Desired Conditions	**Sources**
NPS visitor management facilities are harmonious with national historic site resources, compatible with natural processes, aesthetically pleasing, functional, as accessible as possible to all segments of the population, energy-efficient, and cost-effective. All decisions regarding NPS operations, facilities management, and development in the national historic site — from the initial concept through design and construction — reflect principles of resource conservation. Thus, all national historic site developments and operations are sustainable to the maximum degree possible and practical. New developments and existing facilities are located, built, and modified according to the *Guiding Principles of Sustainable Design* (NPS 1993) or other similar guidelines. Management decision-making and activities throughout the national park system should use value analysis, which is mandatory for all Department of the Interior bureaus, to help achieve this goal.	NPS *Management Policies 2001*, Executive Order 13123 "Greening the Government through Efficient Energy Management," NPS *Guiding Principles of Sustainable Design*, Director's Order 13 "Environmental Leadership"

Compliance Actions

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to this value:

- NPS staff will work with experts to make national historic site facilities and programs sustainable.

RELATIONSHIP OF OTHER PLANNING EFFORTS TO THIS GENERAL MANAGEMENT PLAN

OTHER AGENCY PLANNING

The Kentucky Heritage Council (state historic preservation office) prepared a statewide plan for preservation of the state's historic, prehistoric, and archeological resources. The 2004 *State Preservation Plan* guides efforts to preserve Kentucky. These endeavors are meant to be a partnership between the state historic preservation office and state and local leaders in preservation. As the primary office in the state with expertise in historic preservation, the Heritage Council advocates preservation of the state's irreplaceable historic resources and provides statewide leadership in carrying out its mission to identify, evaluate, register, and protect historic resources across the state.

The goals of the preservation plan are as follows (Kentucky Heritage Council 2004):

Goal 1: Education — Educate Kentuckians about the importance of our diverse historic and prehistoric places and promote their continued use.

Goal 2: Identification, Evaluation, and Nomination — Identify, evaluate, nominate, and list significant historic and archeological properties.

Goal 3: Planning and Protection — Integrate historic preservation and smart growth into planning efforts across Kentucky and ensure protection of significant historic and prehistoric resources.

Goal 4: Advocacy and Incentives — Expand financial, legal, and technical assistance and build effective coalitions to preserve historic and prehistoric resources.

The general management plan for Abraham Lincoln Birthplace would help to achieve these goals by educating the public, evaluating cultural resources, protecting historic properties, and doing this at no cost to the state.

The *Kentucky Statewide Comprehensive Outdoor Recreation Plan* identified five major issues for action. The state would like to make a wide variety of outdoor recreational opportunities available, making better use of existing recreation facilities, providing for the recreational needs of the elderly and the physically and mentally handicapped, and developing and distributing information concerning the availability of outdoor recreational opportunities. The state would also like to preserve its historical and cultural heritage and to ensure resource protection by preserving the state's natural and environmental integrity.

Programs and services prescribed in this plan at Abraham Lincoln Birthplace meet the needs identified in the state's plan for providing a variety of recreational opportunities and preserving historical heritage.

A metropolitan planning organization (MPO) is a transportation policy-making organization made up of representatives from local government and transportation authorities. The Radcliff/ Elizabethtown metropolitan area had a population of 64,504 in 2000. The Metropolitan Planning Organization covers the cities of Radcliff, Elizabethtown, Vine Grove, West Point, Muldraugh, and Brandenburg. The area also includes portions of unincorporated Hardin and Meade counties. The core functions of the metropolitan planning organization will be the development and maintenance of a long-range transportation plan and a transportation improvement program.

The two units of the national historic site are also in the Lincoln Trail Development District, which is one of several development districts established by the state of Kentucky. The purpose of these districts is to encourage local planning for development and economic growth.

NPS staff at Abraham Lincoln Birthplace National Historic Site will coordinate with LaRue County and local community planning efforts to ensure that NPS management strategies are integrated with plans for surrounding lands. There is nothing in this general management plan that would conflict with current planning being done by state or local agencies and organizations.

OTHER NPS SITES COMMEMORATING ABRAHAM LINCOLN

The following NPS sites have interpretation, programs, exhibits, and activities that highlight and commemorate various aspects of the life and family of Abraham Lincoln. The managers of these sites confer regularly to coordinate activities, reduce duplication, and complement the interpretive stories told at the other sites. The site managers will conduct additional communication to coordinate activities related to the bicentennial of Lincoln's birth in 2009. Communication and coordination between these Lincoln-related sites would be encouraged and expanded in any of the action alternatives presented in this general management plan.

Lincoln Boyhood National Memorial
(Lincoln City, Indiana)
Lincoln Home National Historic Site
(Springfield, Illinois)
Mount Rushmore National Memorial
(South Dakota)
Lincoln Memorial
(District of Columbia)
Ford's Theater National Historic Site
(District of Columbia)

PLANNING ISSUES/CONCERNS

INTRODUCTION

The general public; NPS staff; representatives from other county, state, and federal agencies; and representatives from various organizations identified various issues and concerns during scoping (early information gathering) for this general management plan. An issue is defined as an opportunity, conflict, or problem regarding the use or management of public lands. Comments were solicited at public meetings and through planning newsletters (see "Chapter 5: Consultation and Coordination").

Comments received during scoping demonstrated that there is much that the public likes about the national historic site— its management, use, and facilities. The issues and concerns generally involve determining the appropriate visitor use, types and levels of facilities, services, and activities while remaining compatible with desired resource conditions.

The general management plan alternatives provide strategies for addressing the issues within the context of the site's purpose, significance, and special mandates.

ISSUES

The following issues and management concerns were identified by the public and NPS staff for Abraham Lincoln National Historic Site.

Parkwide

- preparing for the bicentennial of Lincoln's birth in 2009
- protecting the scenic and historic viewshed
- analyzing the effects of the potential community visitor center in Hodgenville
- providing expanded and more in-depth interpretation of the "Lincoln in Kentucky" story
- building a greenway heritage corridor or trail linking the two park units with other Lincoln-related sites (e.g., school Lincoln attended, Thomas Lincoln, Jr. gravesite, old stone house, Little Mount Church site)
- renovating and updating NPS facilities and trails
- obtaining adequate office space for NPS staff

Birthplace Unit

- continuing encroachment of residential and commercial development (including aural and visual encroachment)
- improving safety on the segment of Keith Road on national historic site land

Boyhood Home Unit

- determining appropriate levels of national historic site development and public access at the Boyhood Home Unit
- determining the appropriate management of the tavern and replica cabin at the Boyhood Home Unit
- implementing new responsibilities for interpretation, education, and outreach programs at the Boyhood Home Unit
- determining the appropriate recreational use at the Boyhood Home Unit — picnicking, trail use, overnight camping, and/or other recreational uses
- preserving and interpreting the natural resources at the Boyhood Home Unit
- determining how to improve access to the Boyhood Home, which is potentially dangerous

IMPACT TOPICS — RESOURCES AND VALUES AT STAKE IN THE PLANNING PROCESS

IMPACT TOPICS

An important part of planning is seeking to understand the consequences of making one decision over another. To this end, NPS general management plans are accompanied by full environmental impact statements. Environmental impact statements identify the anticipated impacts of possible actions on resources and on national historic site visitors and neighbors.

Impact topics serve to focus the environmental analysis and to ensure the relevance of impact evaluation. The impact topics identified for this general management plan are outlined in this section; they were identified based on federal laws and other legal requirements, Council on Environmental Quality guidelines, NPS management policies, staff subject-matter expertise, and issues and concerns expressed by the public and other agencies early in the planning process (see previous section). Also included is a discussion of some impact topics that are commonly addressed, but that are not addressed in this plan for the reasons given.

IMPACT TOPICS TO BE CONSIDERED

Cultural Resources

Archeology. Although it remains possible that archeological materials are present in the Birthplace Unit, an extensive preconstruction archeological survey conducted in 1988 did not reveal any historic or prehistoric artifacts or features. This led the investigating archeologist to declare that it is not likely there are any artifacts or features in the Birthplace Unit. Archeological investigations should be conducted at the Boyhood Home Unit to find the original location of the Lincoln cabin or other features related to the Lincolns. Because of this, the topic will be retained.

Historic Structures. There are six structures at the national historic site that are on the List of Classified Structures. (This list is an evaluated inventory of all historic and prehistoric structures that have historical, architectural, and/or engineering significance in units of the national park system.) Two of these, the birthplace cabin and the memorial building, are of national significance. The front 3 acres of the Boyhood Home Unit and the entire Birthplace Unit are listed in the National Register of Historic Places. The action alternatives call for changes in the management of historic structures so this topic is retained for analysis.

Cultural Landscapes. The memorial plaza is listed on the NPS cultural landscape inventory database. The cultural landscape report for the Birthplace Unit focuses on the memorial plaza area; the remainder of the Birthplace Unit was not addressed in the report. The plaza area is managed to preserve the appearance that it had in 1935 according to the "Cultural Landscape Report" (NPS 2004a) prepared for the site. Action alternatives may affect this landscape, so this topic is retained.

Museum Collections. Collections include the cabin in the memorial building; the Lincoln family Bible; tools and household objects relating to pioneer living of the early 19th century, pictures, and documents of the Lincoln Farm Association. One or more of the alternatives could change how or where the collections are stored, so this topic is retained.

Natural Resources

Cave and Karst Resources. Limestone caves and numerous sinkholes have formed within

and near the boundaries of the national historic site. A cave associated with Sinking Spring supports a variety of sensitive cave-adapted biota. It is possible that other caves or related features may contain biological, paleontological, or cultural resources.

Management consideration of caves and cave-related features or resources is required by NPS *Management Policies 2001* (§ 4.8.2.2) and the Federal Cave Resource Protection Act of 1988 (43 CFR 37). Cave resources are therefore retained for analysis in this document.

Soils. The soils at Abraham Lincoln Birthplace National Historic Site can be affected by construction, restoration, and visitor use. The Organic Act and NPS *Management Policies 2001* require the protection and conservation of soil resources that could be affected by actions that would change human use and development patterns in the national historic site. Alternatives presented in this plan could have adverse or beneficial impacts on soils, so this topic is retained.

Soundscapes. NPS *Management Policies 2001* (§ 4.9) require NPS managers to strive to preserve the natural soundscape of a park system unit, which is described as the lack of human-related sound and prevalence of natural sounds. At Abraham Lincoln Birthplace National Historic Site, natural soundscapes are present and may be associated with the physical and biological resources such as the sounds of wind in the trees or birds. Implementing the action alternatives could alter the soundscape in one or more areas of the national historic site, so this topic is retained for analysis.

Special Status Species. Analysis of the potential impacts on special status species (federal or state endangered, threatened, candidate, or species of concern) is required by the Endangered Species Act, NPS *Management Policies 2001*, the National Environmental Policy Act, and other regulations. The U.S. Fish and Wildlife Service has identified the following seven federally listed species that may occur near the national historic site (see appendix B):

- gray bat (*Myotis grisescens*), endangered
- Indiana bat (*Myotis sodalis)*, endangered
- Kentucky cave shrimp (*Palaemonias ganteri)*, endangered
- northern riffleshell (mussel) (*Epioblasma torulosa rangiana)*, endangered
- fanshell (mussel) (*Cyprogenia stegaria)*, endangered
- clubshell (mussel) (*Pleurobema clava)*, endangered
- Eggert's sunflower (*Helianthus eggertii)*, threatened
- Hine's emerald dragonfly *(Somatochlora hineana)* endangered

The Kentucky Department of Fish and Wildlife Resources indicates that no state listed or federally threatened or endangered species are known to occur in the area around either unit of the national historic site (see appendix C). The U.S. Fish and Wildlife Service indicates that these species are not known to occur in the national historic site itself, but records are not all-inclusive. Potentially suitable habitat in the national historic site for these species should be surveyed to determine their presence or absence (a vegetative inventory is being conducted at the Boyhood Home Unit).

Alternatives presented in this document could possibly affect potential habitat for gray bats and Indiana bats, so these species will be retained for analysis. Other species are dismissed because they have not been found in the area (see "Topics Dismissed from Further Consideration").

Vegetation. The Organic Act and NPS *Management Policies 2001* require the protection of vegetative resources that could be affected by management actions. Undeveloped portions of the national historic site are home to an exceptional variety of

vegetation. There is also a concern over the spread of nonnative plants in the national historic site. Alternatives presented in this plan could affect native and nonnative vegetation, so this topic is retained.

Water Resources (including Floodplains). The presence of clean water is important to the ecology of the region. Surface and subsurface streams provide nutrient transport and habitat components in addition to supporting diverse riparian areas for a wide variety of life. Water resources in the national historic site are protected and managed under the Clean Water Act of 1977 and NPS *Management Policies 2001*.

Structures at the Boyhood Home Unit are on the edge of the 100-year floodplain. Executive Order 11988, "Floodplain Management," requires federal agencies to evaluate the potential effects of actions they may take to avoid, to the extent possible, adverse effects associated with direct and indirect development of a floodplain. NPS staff must determine whether an action will be in or will affect a floodplain. If so, the responsible official shall prepare a floodplain assessment (statement of findings) that will become part of this environmental impact statement.

Actions prescribed or allowed by one or more alternatives could affect water resources, so this topic will be retained for analysis.

Wildlife. Abraham Lincoln Birthplace provides habitat for a variety of birds and other wildlife. Wildlife concerns at the national historic site include preserving natural habitats in undeveloped areas and maintaining healthy populations. Alternatives presented in this plan could affect wildlife species or important habitat, so this topic is retained.

Visitor Use and Experience

The Organic Act and NPS policies require the National Park Service to provide opportunities for the enjoyment of a park system unit's resources and values. This enjoyment comes from activities that are appropriate for each park system unit. Scenic and historic viewsheds are considered an important contributing factor to positive visitor experiences.

The planning team for this general management plan identified interpretation and visitor use as an important issue that could be appreciably affected under the alternatives. Impact topics in this category are visitors' experiences of the national historic site's resources, orientation and information, education, interpretation, and visitor safety.

This plan identifies appropriate development at the national historic site, increased interpretation of national historic site significance, and new ways of experiencing national historic site resources. Each of these would affect the amount of time visitors spend at the national historic site and their understanding of the resources. The more understanding and enjoyment the visitor perceives the greater likelihood of a longer stay and a return visit.

The National Park Service anticipates expanding interpretation and educational use of resources at the Boyhood Home Unit. There will likely be a large number of visitors wanting to see this unit. How to protect and interpret the landscape to instill a sense of place reflective of the environment remembered by Abraham Lincoln needs to be addressed in this general management plan.

Views adjacent to the boundaries of both units could be subject to development that might significantly change the character of the national historic site. Structures and activities outside the national historic site boundary

could adversely affect visitor experience of significant national historic site resources.

Socioeconomic Environment

The National Environmental Policy Act requires an examination of social and economic impacts caused by federal actions. Changes at Abraham Lincoln Birthplace National Historic Site can affect the economy of nearby communities. Accordingly, national historic site neighbors and tourism-related businesses in the county are concerned about changes in management of the national historic site that might affect their livelihood.

NPS Operations

The alternatives proposed in this plan could affect national historic site operations and facilities. Topics could include staffing, maintenance, commercial services, facilities, emergency response time, ability to enforce NPS regulations and protect national historic site values, employee and visitor health and safety, distance to work, management of collections and other resources, or administrative access.

TOPICS DISMISSED FROM FURTHER CONSIDERATION

Some impact topics that commonly are considered during the planning process were not relevant to the development of this general management plan due to the following: (a) implementing the alternatives would have no effect or a negligible effect on the topic or resource or (b) the resource does not occur in the national historic site. A brief description of these topics and rationale for their dismissal follows.

Ethnographic Resources

No ethnographic resources associated with national historic site lands have been identified by NPS specialists. No American Indian tribes are identified as being affiliated with the national historic site. Therefore, this topic is dismissed from further analysis. However, if ethnographic resources are identified in the future, they will be dealt with according to NPS policies and regulations, for example the American Indian Religious Freedom Act, the National Historic Preservation Act, and Native American Graves Protection and Repatriation Act.

Air Quality

The 1963 Clean Air Act, as amended (42 USC 7401 et seq.), requires federal land managers to protect air quality, while the NPS *Management Policies 2001* address the need to analyze air quality during planning.

The historic site is designated a Class II airshed under the 1977 amendments to the Clean Air Act. Under Class II, modest increases in air pollution are allowed beyond baseline levels for particulate matter, sulfur dioxide, nitrogen and nitrogen dioxide, provided that the national ambient air quality standards, established by the Environmental Protection Agency, are not exceeded.

There are no major air pollution sources in the national historic site. Vehicle exhaust is the most common pollutant resulting from visitor use and management activities. Principal sources of air pollutants in the national historic site area are manufacturing emissions from nearby Elizabethtown, several coal-fired power plants in the surrounding vicinity, and motor vehicle emissions.

Should any of the action alternatives be selected, local air quality might be temporarily affected by construction-related activities. Hauling material and operating construction

equipment would result in increased vehicle emissions in a localized area. Volatile organic compounds, nitrogen compounds, carbon monoxide, and sulfur dioxide emissions would generally disperse fairly quickly from the construction area. This degradation would last only as long as construction activities occurred and would most likely have a negligible effect on regional pollutant levels. Fugitive dust from construction could intermittently increase airborne particulate concentrations in the area near the project site but mitigating measures would reduce potential adverse effects to a negligible level No long-term impacts on air quality would be expected to occur from implementing any action alternative.

In summary, if any action alternative is implemented, local air quality would be temporarily degraded by dust and emissions from construction equipment and vehicles. Regional air quality would not be more than negligibly affected. For these reasons, air quality is dismissed as an impact topic in this document.

Energy Requirements and Conservation Potential

Action alternatives could result in new facilities with inherent energy needs. In all alternatives, new facilities would be designed with long-term sustainability in mind. The National Park Service has adopted the concept of sustainable design as a guiding principle of facility planning and development (NPS *Management Policies 2001* 9.1.1.7). The objectives of sustainability are to design facilities to minimize adverse effects on natural and cultural values, to reflect their environmental setting, and to require the least amount of nonrenewable fuels or energy.

Action alternatives could result in an increased energy need, but this need is expected to be negligible when seen in a regional context. Thus, this topic is being dismissed from further analysis.

Environmental Justice

Executive Order 12898, "General 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. None of the alternatives in this plan would have adverse economic, health, or environmental effects on socially or economically disadvantaged populations or communities as defined in the Environmental Protection Agency's "Environmental Justice Guidance." Therefore, this topic is dismissed from further analysis.

Geologic Resources

Bedrock in the region is primarily Mississippian limestone (calcium carbonate). Limestone is a sedimentary rock formed when the region was under a shallow inland sea as an accumulation of lime produced from living organisms. Limestone is easily dissolved, and the surface of central Kentucky is pock-marked with sinkholes. There are also some shale outcroppings in and around the national historic site.

None of the alternatives described in this document would affect the geology of the region, so this topic is dismissed from further analysis. However, caves and karst resources, a subtopic of geologic resources, is retained as a topic for analysis.

Indian Trust Lands

No lands comprising Abraham Lincoln National Historic Site are held in trust by the secretary of the interior solely for the benefit of American Indians due to their status as American Indians. Therefore this topic is being dismissed from further analysis.

Natural or Depletable Resources Requirements and Conservation Potential

Consideration of these topics is required by 40 CFR 1502.16. The National Park Service has adopted the concept of sustainable design as a guiding principle of facility planning and development (NPS *Management Policies 2001* 9.1.1.7). The objectives of sustainability are to design facilities to minimize adverse effects on natural and cultural values; to reflect their environmental setting and to maintain and encourage biodiversity; to operate and maintain facilities to promote their sustainability; and to illustrate and promote conservation principles and practices through sustainable design and ecologically sensitive use. Essentially, sustainability is the concept of living within the environment with the least impact on the environment.

Through sustainable design concepts and other resource management principles, all of the alternatives analyzed in this document would conserve natural resources and would not result in an appreciable loss of natural or depletable resources. Thus, this topic is dismissed from further analysis in this document.

Night Sky (Lightscapes)

NPS policy requires the Park Service to preserve, to the extent possible, the natural lightscapes and to seek to minimize the intrusion of artificial light (light pollution) into the night scene (NPS *Management Policies 2001*, 4.10). The clarity of night skies can be important to visitor experience as well as being ecologically important. Artificial light sources both within and outside the national historic site have the potential to diminish the clarity of night skies.

Following NPS policy, outdoor lighting that is found to be contributing to nighttime light pollution will be replaced with fixtures that do not. In addition, any new outdoor lighting installed as a result of implementing any of the alternatives in this document would be the minimum necessary for safety or security and of a design that prevents stray light from spreading upwards into the sky (best lighting practices). NPS staff would work with surrounding communities on ways to decrease light pollution in the region under any alternative. Given these considerations and the fact that the national historic site is open for daytime use only, the topic of night sky is dismissed.

Paleontological Resources

The Boyhood Home Unit contains a layer of fossiliferous limestone of the Mississippian period. The Mississippian limestone of the region formed at the bottom of a shallow sea 300-325 million years ago. The marine life of that ancient sea is reflected in a range of fossils in the various limestone strata and can be seen in the cobbles along Knob Creek. Fossils found here may include crinoids, blastoids, gastropods, and the teeth of prehistoric sharks.

Fossil-bearing rocks in the creek may have been disturbed by past excavation of the creek bottom. Some action alternatives in this management plan call for constructing trails to the creek. Before construction occurs, all known fossil areas would be surveyed for fossils. If paleontological resources were identified, adverse impacts would be avoided by moving or changing the design of the trail. If this was not possible, recovery of surface resources would occur. Any fossils collected

would be managed in accordance with NPS standards and the national historic site's collection management plan.

Given these stipulations, which would be applied under any action alternative, paleontological resources would not be affected and are dismissed from further analysis.

Prime or Unique Farmlands

In 1980 the Council on Environmental Quality directed that federal agencies must assess the effects of their actions on farmland soils classified by the U.S. Department of Agriculture's Natural Resource Conservation Service as prime or unique. Prime or unique farmland is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; unique farmland produces specialty crops such as fruits, vegetables, and nuts.

Crider silt loam, found at the Birthplace Unit, is considered prime farmland. However, the Natural Resource Conservation Service (formerly Soil Conservation Service) has designated the Birthplace Unit as within an approximate limit of urban growth and so it is not important to farming (SCS 1984).

Sensabaugh silt loams, found in the bottomlands of the Boyhood Home Unit, are also prime farmlands. Depending on which alternative is chosen, these lands would remain as they are, undergo restoration, or be used as farmland for historical interpretation purposes. No areas classified as prime or unique farmland would undergo additional development. Thus, no further analysis of this topic is required in this document.

Selected Special Status Species

The only known population of Kentucky cave shrimp occurs in Mammoth Cave National Park 20 miles away so this species will not be discussed further. The three mussels — northern riffleshell, fanshell, and clubshell — are found only in the Green River in Edmondson and Hart counties in Kentucky, 30 miles away, so these species are dismissed from further analysis. Eggert's sunflower is not known in Larue County, so this plant is dropped from further consideration in this plan. An inventory of flora was conducted at the Birthplace Unit in 1993 and no rare or subsequently endangered plant species were discovered (NPS 1997b). Prior to construction, surveys would be done to ensure that no special status species were present. Therefore, these species were dismissed from further analysis.

Urban Quality and Design of the Built Environment

Consideration of this topic is required by 40 CFR 1502.16. The quality of urban areas is not a significant factor in planning for the national historic site because of its rural location. Nonetheless, vernacular architecture would be taken into consideration for any building rehabilitation or new structures built under the action alternatives. Emphasis would be placed on designs, materials and colors that do not detract from the natural and built environment. Given these considerations, no further analysis of this topic is necessary.

Wetlands

Executive Order 11990, "Protection of Wetlands," requires federal agencies conducting certain activities to avoid, to the extent possible, the adverse impacts associated with the destruction or loss of wetlands and to avoid new construction in wetlands if a practicable alternative exists. Wetlands are defined by hydrophytic plants, hydric soils, and flooding frequency. In central Kentucky, wetlands are usually

associated with springs, streams, or surface depressions that collect moisture.

A recent study conducted by Tennessee Technological University indicates that there are nine areas that could be classified as wetlands. These wetlands totaled an estimated 0.76 acres, with the average wetland size being about 0.08 acre. Based on the Cowardin classification system, six wetlands are considered palustrine, forested wetlands temporarily flooded. Two of the remaining wetlands are palustrine, emergent wetlands having persistent vegetation and seasonally flooded. The remaining wetland is a pond in the Boyhood Home Unit and is also palustrine emergent with persistent vegetation, but is semi-permanently flooded (Roberts and Morgan 2005). Seven of these are associated with surface depressions.

None of the alternatives presented in this plan would affect these wetlands, so this topic was dropped from further consideration.

Wilderness and Wild and Scenic Rivers

Wilderness areas and wild and scenic rivers are congressional designations. There are no such designations in or near the national historic site, and no areas or rivers that would be potentially eligible for designation. Thus this topic is dismissed from further analysis.

Chapter 2:
Alternatives, Including the Preferred Alternative

INTRODUCTION

Many aspects of the desired future condition of Abraham Lincoln Birthplace National Historic Site are defined in the establishing legislation, the national historic site's purpose and significance statements, and the service-wide mandates and policies that were described earlier. Within these parameters, the National Park Service solicited input from the public, NPS staff, government agencies, and other organizations regarding issues and desired conditions for the park. Planning team members gathered information about existing visitor use and the condition of the national historic site's facilities and resources. They considered which areas of the national historic site attract visitors and which areas have sensitive resources.

Using the above information the planning team developed a set of four management prescriptions and four alternatives (see the "Management Prescriptions and Alternatives" section for more information) to reflect the range of ideas proposed by the planning team and the public.

This chapter describes the management prescriptions and the alternatives for managing the national historic site for the next 15 to 20 years. It includes tables that summarize the key differences between the alternatives and the key differences in the impacts that are expected from implementing each alternative (The summary of impacts table is based on the analysis in "Chapter 4: Environmental Consequences"). This chapter also describes mitigative measures that would be used to lessen or avoid impacts and includes a discussion of the environmentally preferable alternative.

GENERAL USER (VISITOR) CAPACITY

The General Authorities Act for the National Park Service, section 604, amended section 12(b), requires that general management plans establish a user (carrying) capacity for a unit of the national park system, saying, among other things, that there must be "identification of an implementation commitment for visitor carrying capacity for all areas of the [national park system] unit . . . ." In addition, there also is a requirement in the NPS *Management Policies 2001* that general management plans address the issue of user capacity. The use of the concept of user capacity in planning infrastructure and visitor management programs is expected to result in effective and efficient management.

Visitor Experience and Resource Protection

The National Park Service has developed a framework called Visitor Experience and Resource Protection (VERP) to address user capacities. The VERP process is used to derive meaningful qualitative user capacities and quantitative capacities, i.e., use limits, where they are deemed necessary. The process can be diagrammed as shown in figure 1.

In the VERP framework, user capacity is defined as "The types and levels of visitor use that can be accommodated while sustaining the desired resource and social conditions that complement the purpose of the park units and their management objectives." The VERP framework is an iterative, ongoing process that begins by

(1) Prescribing the desired conditions of resources and visitor experiences for a given area (not by prescribing a maximum number of visitors).These conditions are based on the national historic site's purpose, significance, and outstanding resource values;
(2) Selecting measurable indicators, i.e., characteristics or conditions that reflect the status of national historic site resources and visitor conditions;

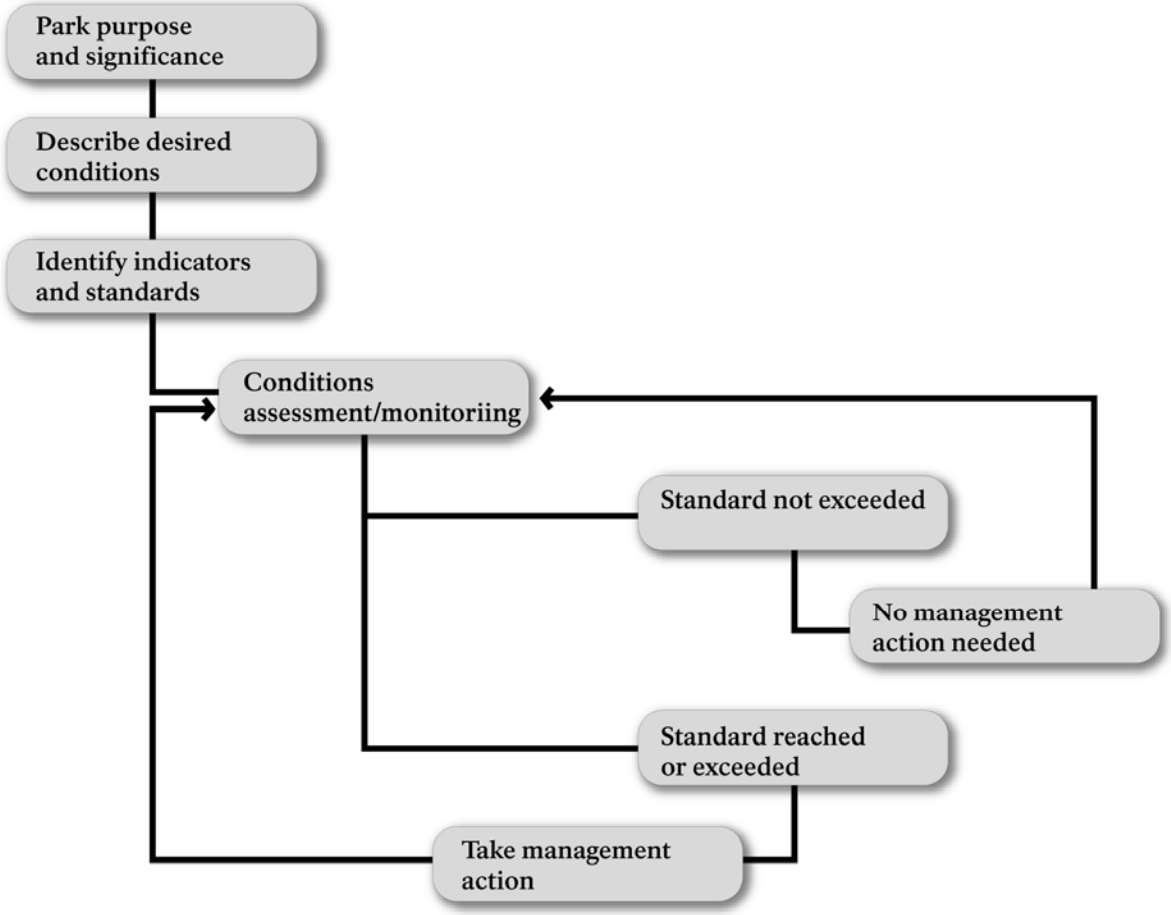


FIGURE 1: THE VERP PROCESS

(3) Setting quantifiable standards, against which the indicator is measured;
(4) Assessing existing conditions, thereby establishing a baseline for future measurements;
(5) Assessing whether or not a management action must be taken because existing conditions are determined to be close to violating standards, and then taking the action;
(6) Monitoring conditions to determine effectiveness of ongoing or new management actions; and
(7) Adapting by revising management strategies when indicated.

These components provide a defensible process for taking informed action to manage all of the elements of visitor use that may influence desired conditions in a park system unit.

User Capacity at Abraham Lincoln Birthplace

Currently, visitor use has had few adverse effects on the resources of Abraham Lincoln Birthplace National Historic Site. As visitor numbers increase, it is expected that the potential for adverse effects on natural and cultural resources also would increase. A large number of visitors at one time could also affect the visitor experience and result in resource damage. Therefore, it is important for the National Park Service to be proactive in preventing problems that could result from visitors' use of the site.

While final user capacities are being determined during the implementation of this plan, NPS staff will monitor resources and visitor use and judge whether or not the capacities (desired conditions) are being exceeded in any area. It is not likely that the expected levels of facility development and visitation and the expected types of use would cause unacceptable impacts on the desired visitor experience or on the site's resources.

For the life of this plan, visitation would be controlled by the number and quality of facilities, by management actions, and by cooperative local efforts and initiatives. The National Park Service's visitor experience and resource protection (VERP) or similar processes would guide planners and managers in addressing user capacity and assessing impacts on resources and the visitor experience. The process would enable the staff to avoid some of the problems that other areas have experienced when visitation has not been managed to protect the resources or the quality of the visitor experience.

Desired Conditions

The Abraham Lincoln Birthplace National Historic Site staff has identified desired conditions for various areas. Any new visitor facility would be designed and managed to accommodate individuals and small groups, even when larger groups were present, to help them to understand the site's story. Adequate areas would be developed for interpretive programs and media that would tell the stories of the site's cultural and natural resources. Adequate space for cars and recreational vehicles would be available in an area near the visitor center. Resources would be preserved by not allowing off-road parking or the development of "informal" parking areas.

The interior of the memorial building would be managed to minimize damage to the fabric of the building and the symbolic cabin and minimize trash inside and outside the memorial building. Visitors would have an opportunity to understand the memorial in a reverential atmosphere. Sinking Spring would be managed to keep the spring free from trash and to provide for safe access and egress. Visitors would have an opportunity to understand the significance of this natural resource.

In picnic areas, the desired condition would be to have minimal impact on natural resources, with the areas shaded by native vegetation. These areas would be managed to allow for mix of young and mature trees and shrubs. Visitor groups would be managed not to exceed the number of tables and grills available. Off-road parking would not be allowed.

The Boyhood Home Unit would be managed to minimize trash and to discourage the creation of "social" (or unauthorized) trails. Visitors would have the opportunity to understand the site's natural resources, to views and landscapes related to the story of Lincoln's early childhood, to experience a variety of habitats at this unit (such as fields, creek, and hillside), and to participate in various recreational activities (such as birding, walking, and nature study).

Indicators and Standards

During development of this *General Management Plan*, indicators of resource conditions and visitor experience were identified, as well as standards for the indicators (table 2). Monitoring programs would be initiated to measure resource condition and the visitor experiences. The indicators would establish the maximum amount of deterioration of the quality of resources or experience allowed before management action is taken. Such indicators would reflect the overall condition of the area and allow the measurement of effects on the national historic site's biological, physical, and cultural resources and on the visitor experience.

TABLE 2: INDICATORS AND STANDARDS

Resource or Area	Indicator	Standard
Visitor Center Capacity	Number of visitors at one time	Does not exceed facility capacity more than three times per year
Memorial Building Capacity	Number of visitors at one time (Regular visitation excluding school groups)	Does not exceed 25 visitors for more than five minutes more than three times per day
Sinking Spring	Number of visitors at one time on steps and around the spring (Regular visitation)	Does not exceed 10 for more than five minutes more than two times per day
	Water quality change caused by human activity	No degradation from current conditions
	Presence of thrown or dropped items (coins, litter, etc.) in spring	None
Knob Creek	Water quality or quantity change caused by human activity	No degradation from current conditions
Historic Structures	Condition of building exteriors	No signs of human-caused wear to significant features
	Condition of building interiors	No signs of human-caused wear to significant features
	Vandalism	No evidence of vandalism
Picnic Area	Worn or damaged vegetation in picnic area	Does not exceed a total of 100 square feet
Unpaved Trails	Width	Does not increase more than 10% above the baseline
	Depth	Does not exceed an average depth of 2" or a maximum of 4" below surrounding terrain at any point
	Erosion	No erosion of adjacent soils
	Unauthorized/social trails	No unauthorized trails (new trails closed/barricaded immediately)
Parking	Amount of degraded vegetation or soil adjacent to approved parking areas	Degraded areas do not total more than 200 square feet at each unit

Indicators are effects on the condition of resources or values that can be measured. Standards are the level of effect on the indicators. The following indicators and standards have been developed for use in a VERP plan to be prepared subsequent to the completion of this general management plan. Modification of these indicators may occur if new knowledge is gained or visitor use patterns change drastically from projected patterns.

Visitor Center Facility Capacity — Different changes to the visitor center are proposed in the action alternatives of this plan. Therefore, it is impossible to set a visitor capacity in this document. Once the approved plan is implemented, NPS staff will determine the practical capacity of the visitor center. If this number is exceeded, the quality of visitor experience would be expected to diminish and desired conditions would cease to be met.

Memorial Building Capacity — NPS staff has determined that once the number of people in the memorial building is between 25 and 30 visitors that not only does the quality of the visitor experience diminish, but damage to the building and cabin's historic fabric can occur.

Sinking Spring — NPS staff have determined that if more than 10 visitors are concentrated in the Sinking Spring area, damage to historic features or natural resources can occur. Water quality will be monitored to determine if current conditions are being maintained or improved. If conditions are degrading, the cause would be studied to determine if it is visitor related and actions would be taken to remedy it. Because the presence of even one piece of human-placed debris (e.g., litter or coins) seems to encourage more to be thrown in, emphasis will be placed on keeping the spring area clean.

Historic Structures — Historic structures will be monitored to determine if any human-caused impacts are occurring. The conditions documented at the time this *General Management Plan* is approved will be used as a baseline. Monitoring will continue to measure such indicators as the general condition of structure exteriors, condition of interiors, and vandalism (theft, defacement, etc.).

Picnic Area — If the number of visitors using the area exceeds the number of tables and grills available, resource damage could occur from people making ground fires or wearing bare spots in the grass.

Unpaved Trails — A baseline will be set as the conditions existing at the time this *General Management Plan* is approved or when trails are upgraded. Monitoring will determine if visitor use impacts are occurring. Indicators will be average trail width, depth (rutting), and erosion caused by the trail.

Vehicle Parking — Space for vehicle parking may become limited at some times of the year. When parking areas fill up, visitors could begin parking outside established areas. This would affect resources adjacent to parking areas. Adjacent areas would be monitored to determine if unauthorized parking is adversely affecting resources.

Monitoring and Remedial Actions

Monitoring would be carried out to evaluate resource conditions and visitor experiences to ensure that the national historic site's desired conditions would remain as prescribed. Through monitoring, NPS staff would determine if these indicators were viable and acceptable; if not, the indicators might be modified. The process of determining how much is too much is a dynamic one. Critical to the success of this process are identifying standards and indicators and adjusting the management strategies when monitoring indicates that conditions are out of standard. If these user capacities were exceeded on a regular basis, NPS staff would take actions to restore conditions to acceptable levels. For example, the number of visitors to critical areas/ buildings could be restricted or a ticketing system to spread out visitation could be instituted. This would be implemented through a strategy developed by NPS staff subsequent to this *General Management Plan*.

BOUNDARY ADJUSTMENTS

As part of the planning process, the National Park Service must identify and evaluate boundary adjustments that may be necessary or desirable to carry out the purposes of the national historic site. NPS *Management Policies 2001* state that the National Park Service will conduct studies of potential boundary adjustments and may make boundary revisions for one or more of the following criteria:

1. to include and protect significant resources and values or to enhance opportunities for public enjoyment related to national historic site purposes
2. to address operational and management issues
3. to protect national historic site resources critical to fulfilling national historic site purposes

NPS policies instruct that any recommendations to expand national historic site boundaries be preceded by determination that the added lands would be feasible to administer considering size, configuration, ownership, cost, and other factors, and that other alternatives for management and resources protection have been considered and are not adequate.

During the course of the planning process, two land parcels have been identified as potential additions to Abraham Lincoln Birthplace National Historic Site under alternatives B, C, or D. The following is a review of the criteria for boundary adjustments as applied to these properties. However, any acquisition would only be from willing sellers and then only if the boundary adjustment is authorized by law.

Congressional legislation would need to be enacted to authorize the proposed boundary revisions and the acquisition of the lands described below.

Nancy Lincoln Inn Property

A 30-acre portion of the Nancy Lincoln Inn property, adjoining the Birthplace Unit, could support improved management and visitor experience at the Birthplace Unit. Some of this property is listed on the National Register of Historic Places but is not directly related to the Lincolns.

This adjacent, privately owned property is on the National Register of Historic Places as a historic district because of its significance to Abraham Lincoln iconography. A large chestnut log structure (the Nancy Lincoln Inn) was built in 1928 by James R. Howell, the current owner's grandfather. Four one-room log cabins were constructed nearby in 1928 by the Howell family. They were used for overnight accommodations until the early 1940s. The property is still owned by the Howell family. Over the years the Nancy Lincoln Inn structure has been used for a gift shop, a restaurant, and for displays of artifacts, historical documents, and Lincoln memorabilia. A popular picnic area served visitors to the property and the national historic site from the 1930s until 1971 when the national historic site built its own picnic area.

Policy: *Protect significant resources and values or enhance opportunities for public enjoyment related to national historic site purposes (Criteria#1); and address operational and management issues (Criteria #2).*

The property (about 30 acres) of interest to the National Park Service includes the entire National Register of Historic Places historic district that encloses the large log structure (currently used as a gift shop and museum for Lincoln-related items), the four log cabins, and the grounds immediately around these structures. It is recommended that the National Park Service own, in fee simple, this portion of the property as well as the portion of the property that adjoins the national historic site's southern boundary.

Inclusion of this property under NPS management/control would be important for a number of reasons: (1) interpreting the tourism history of the national historic site as well as area tourism-related properties (including especially the original 1930s cultural landscape period), (2) for long-term protection of a national register district, (3) for future use by the National Park Service for interpretive activities, outreach programs, and needed office space, and/or (4) as a sales area for the national historic site's cooperating association, Eastern National. Eastern National has expressed an interest in owning/managing this area in partnership with the National Park Service to enhance/expand sales items of interpretive value to visitors, which could include Kentucky-crafted items and on-site 19th century pioneer craft demonstrations.

Due to the potential for incompatible activities and uses on this property, the

National Park Service should own or otherwise obtain a controlling interest in this property as soon as possible.

The property adjoins the national historic site for several hundred yards along the south boundary, and the Inn and cabins are very easy to see from the visitor center parking area. Because of this, some visitors erroneously think it is part of the national historic site and that one of the guest cabins was where Abraham Lincoln was born. Access to the Nancy Lincoln Inn is by a sidewalk from NPS property, adding to the visitor's confusion.

NPS staff is working with the owner to make the property accessible to visitors. Acquisition of the property would permit better NPS interpretation of the theme of the commemorating the Lincoln birthplace in Kentucky because the Nancy Lincoln Inn was an early local effort to commemorate Lincoln's birthplace. Acquisition of this property would meet the national historic site's purpose: "Protect and preserve the significant resources of the birthplace of Abraham Lincoln, especially . . . the lands and related features."

Policy: *The added lands will be feasible to administer, considering their size, configuration, and ownership, hazardous substances, costs, and impacts to local communities and surrounding jurisdiction.*

The National Park Service would have adequate access and staff to provide for the interpretation and protection of the added lands under any of the action alternatives (B, C, or D) in this general management plan. This site could be administered efficiently as part of the Birthplace Unit. A private road enters the property from the main highway and would provide efficient visitor or NPS access to the site. NPS management of the Nancy Lincoln Inn property would result in the application of strict preservation requirements. The National Park Service would be using the structures, which would aid in monitoring and maintaining the structures. This land is privately owned and there would be a slight impact to the local tax structure. There are no known hazardous materials in the area, but a survey to determine if the area contains any hazardous materials would be conducted before acquisition.

Policy: *Other alternatives for management and resources protection have been considered and are not adequate.*

The alternative to federal acquisition is the continuation of private ownership. To enhance the desired characteristics (protection of natural resources and historic viewsheds), NPS staff could investigate a cooperative agreement with the landowner. However, incentives would have to be offered to make such arrangement attractive to the owner. These incentives might easily approach the cost of acquisition and might have to be renegotiated over time and so would not be economically reasonable.

Knob Creek Glade

About 50 acres adjacent to the northeast side of the Boyhood Home Unit is needed to protect a limestone glade containing rare plants and to protect the scenic and historic views from incompatible development.

Policy: *Protect significant resources and values or enhance opportunities for public enjoyment related to national historic site purposes (Criteria #1).*

Preserving the appearance of the original Knob Creek Farm is important to convey an understanding and appreciation of the pioneer farm life experienced by a young Abraham Lincoln. The time spent here may have shaped his beliefs for the rest of his life.

This property also includes a glade containing rare plants. A glade is an uncommon vegetation type in shallow, rocky soils on drier and warmer south-facing slopes. This glade

contains flora and fauna unique to the area and to Kentucky including prickly pear cactus, purple coneflower, and a rare scorpion.

Acquisition of the portion of property on the slope along the northwest side of the Boyhood Home Unit would allow NPS staff to control the use of land to protect significant natural resources and preserve the scenic and historic views. An analysis conducted by the National Park Service has determined that the slope is visible from just behind the tavern and from 0.2 mile up Knob Creek.

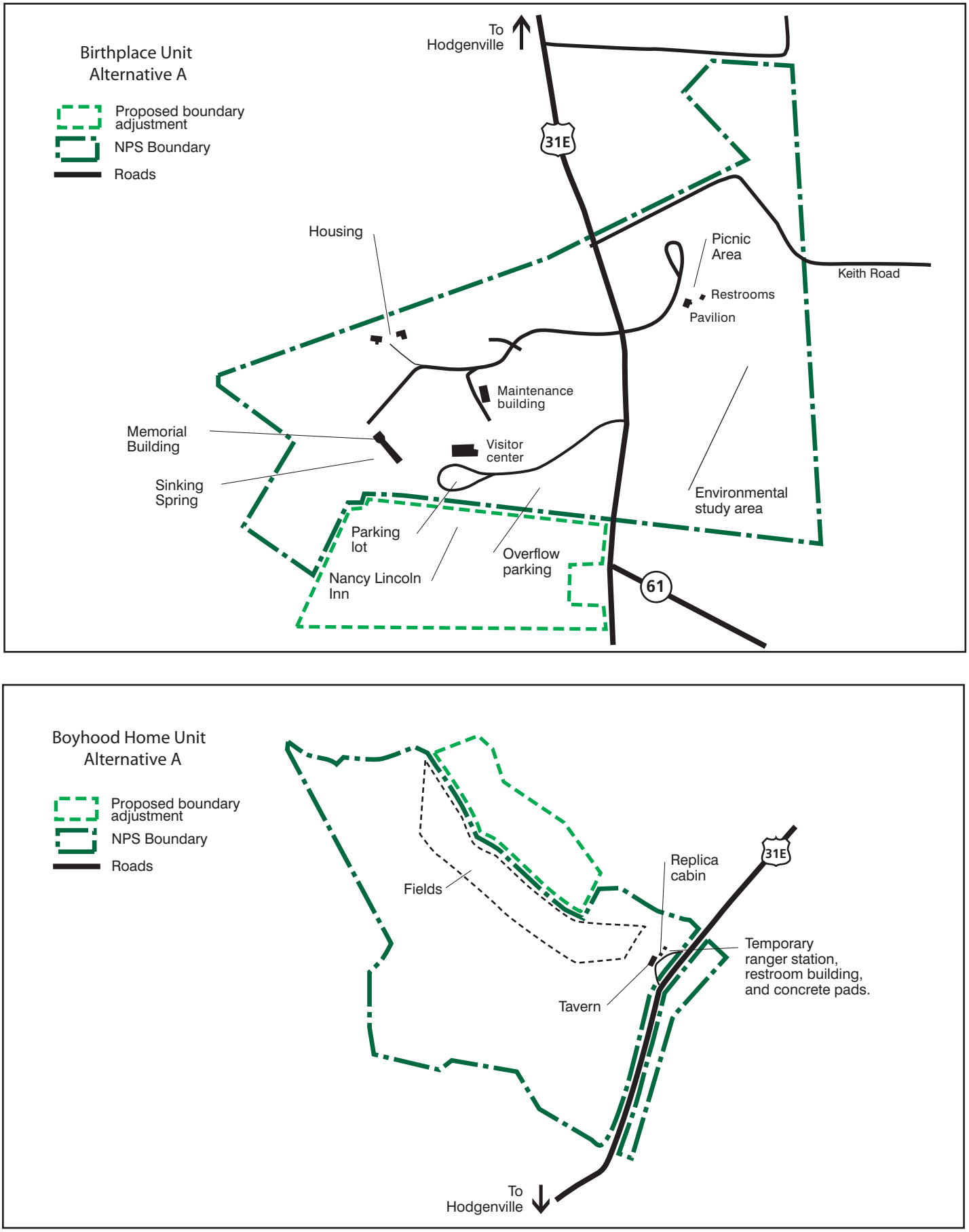
Acquisition of this property (either fee simple or easements) would meet the national historic site purpose: "Protect and preserve the significant resources associated with the Knob Creek Farm and the early boyhood of Abraham Lincoln."

Policy*: The added lands will be feasible to administer considering their size, configuration, and ownership, hazardous substances, costs, and impacts to local communities and surrounding jurisdictions.*

The National Park Service would have adequate staff to provide for the protection and interpretation of the additional land under any of the action alternatives of this general management plan. The site could be administered efficiently as part of the contiguous Boyhood Home Unit and foot access would be available through this unit. The parcel is now privately owned, and there would be a slight impact on the local property tax base should the government acquire it from willing sellers. There are no known hazardous materials on the site, but a survey would be conducted before acquisition.

Policy: *Other alternatives for management and resources protection have been considered and are not adequate.*

The alternative to federal acquisition (either fee simple or easements) is the continuation of private ownership. To enhance the desired characteristics (protection of natural resources and historic viewsheds), NPS staff could investigate a cooperative agreement with the landowner. However, incentives would have to be offered to make such arrangement attractive to the owner. These incentives might easily approach the cost of acquisition and may have to be renegotiated over time, and so would not be economically reasonable.



Proposed Boundary Adjustments

Abraham Lincoln Birthplace National Historic Site

United States Department of the Interior / National Park Service

DSC • Feb 06 • 338 • 20,008A

MANAGEMENT PRESCRIPTIONS AND ALTERNATIVES

The building blocks for reaching an approved plan for managing a national park system unit are the management prescriptions and the alternatives. All are developed within the scope of the park unit's purpose, significance, mandates, and legislation.

MANAGEMENT PRESCRIPTIONS

Management prescriptions are descriptions of desired conditions for national historic site resources and visitor experiences in different areas of the national historic site. The management prescriptions identify the widest range of potential appropriate resource conditions, visitor experiences, and facilities for the national historic site that fall within the scope of the national historic site's purpose, significance, and special mandates. Four management prescriptions have been identified for Abraham Lincoln Birthplace National Historic Site (see table 3).

Four sets of management prescriptions, applied through zoning, were developed for Abraham Lincoln Birthplace and are described in the following table.

THE ALTERNATIVES

This *General Management Plan/ Environmental Impact Statement* presents four alternatives, including the National Park Service's preferred alternative, for future management of Abraham Lincoln Birthplace National Historic Site. Alternative A, the "no-action" alternative, presents a continuation of existing management direction and is included as a baseline for comparing the consequences of implementing each alternative. The other "action" alternatives are alternative B, alternative C (preferred), and alternative D. These action alternatives present different ways to manage resources and visitor use and improve facilities and infrastructure at the national historic site. These alternatives embody the range of what the public and the National Park Service want to see accomplished with regard to natural resource conditions, cultural resource conditions, visitor use and experience, socioeconomic conditions, and NPS operations. The actual configurations for each action alternative were developed by overlaying the management prescriptions (described earlier) on a map of the national historic site.

As noted above in the "Guidance for Planning" section, the National Park Service would continue to follow existing agreements and servicewide mandates, laws, and policies regardless of the alternatives considered in this plan. These mandates and policies are not repeated in this chapter. However, other general management plan proposed actions *do* differ among the alternatives. These alternative actions are discussed in this chapter.

The alternatives focus on *what* resource conditions and visitor uses and opportunities should be at the national historic site rather than on the details of *how* these conditions and uses/experiences should be achieved. Thus, the alternatives do not include many details on resource or visitor use management.

More detailed plans or studies will be required before most conditions proposed in the alternatives are achieved. The implementation of any alternative also depends on future funding and environmental compliance. This plan does not guarantee that that money will be forthcoming. The plan establishes a vision of the future that will guide day-to-day and year-to-year management of the national historic site, but full implementation could take many years. The national historic site must compete with other units of the national park system for limited implementation funding.

TABLE 3: MANAGEMENT ZONES AND PRESCRIPTIONS

Zone	Desired Resource Condition	Desired Visitor Experience	Types of Visitor Use	Types of Development
Support Services Zone	Resources could be modified for NPS operational needs, and nonhistoric additions to the landscape would be expected. Facilities would be intensely managed for safety purposes. Visual and noise impacts of NPS operational activities on the surrounding cultural landscape would be reduced by screening or other appropriate methods. Zone would be applied in previously disturbed areas. New structures would be designed to blend into the landscape and occupy the smallest footprint necessary to function. New structures would be models of best management practice and sustainable development. These areas would avoid to the greatest extent possible sensitive natural or cultural resources. Natural and cultural resources in this area would be managed to prevent their degradation.	The area would not be intended for visitors; however, should they unintentionally enter, they might frequently encounter maintenance/ administrative buildings, equipment, materials, machinery in operation, and lots of sound. If visitors were to enter this zone, they would have a moderate probability of encountering NPS staff.	Visitors would not normally enter the support services zone except unintentionally, for business purposes, or to seek aid or information. The area would be intended for staff and visitors on official business.	Structures in this zone would be used for administration and operations — housing, offices, garages, warehouse, maintenance shops and yards, indoor and outdoor storage areas, heavy equipment storage, employee parking, security systems, secured law enforcement area, heating and cooling systems, phone lines, computer lines, communication equipment, and water supply and treatment. Facilities would give staff a safe, efficient, comfortable, and aesthetic work environment. Hardened circulation and employee parking areas would be appropriate here; these areas would include utility rights-of-way, and administrative roads. Adaptive use of historic structures would be appropriate if done in a manner to preserve the structure's integrity and not interfere with interpretation or visitor recreation.

Zone	Desired Resource Condition	Desired Visitor Experience	Types of Visitor Use	Types of Development
Visitor Services Zone	Environment is modified for visitor use. These areas would be located to the extent possible where few or no important cultural or natural resources are present or in areas that were previously disturbed by development. Cultural resources in this area would be intensively managed for their preservation. Artifacts and collections would be displayed and interpreted, but this would be done in such a manner as to protect and preserve them. There would be a high tolerance for human-related noise. The natural environment could be modified for visitor services. Facilities would still harmonize with the surrounding environment. To the greatest degree practical, facilities would be models of best management practices and sustainable development. Rehabilitation and adaptive reuse of historic structures would be allowed.	In this zone visitors would enter the national historic site and receive their orientation to its resources and interpretive themes. The facilities would provide shelter and relief from extremes of weather and opportunities for picnics to enjoy cultural and natural surroundings. (Natural and cultural resources in this area would be managed to prevent their degradation.) Visitor experience would be highly social and focused on orientation, interpretation, safety, and visitor convenience. Landscapes and structures would be made universally accessible, if feasible, while allowing for the preservation of historic structures. Encounter rates with NPS staff and other visitors would be high, although overcrowding would be avoided. Most visitors would have an opportunity to get an overview of resources in a short time (with minimal physical exertion) and make a personal connection to the meaning and significance of the site.	Visitors would receive personal and self-guided interpretation through a variety of media. Activities could include learning about the national historic site through signs, exhibits, films, publications, and interaction with NPS staff. Research activities and educational programs could take place. Books and other materials related to the site could be purchased here. Picnicking and appropriate recreational activities could be enjoyed at specified locations. Special uses would be allowed in this zone under a permit.	Primary visitor contact facilities would be in this zone. Major visitor facilities could include a visitor center, kiosk, outdoor orientation exhibits, an information desk, museum exhibits, large outdoor exhibits, a theater, classrooms, a research library, and a sales area. Support facilities could include restrooms, drinking fountains, hardened circulation areas and trails, picnic facilities, a means of access into the national historic site from public roads, and a parking area for personal vehicles and tour buses. Utilities would include water, sewer or septic system, electricity, telephones, and computer access.

Zone	Desired Resource Condition	Desired Visitor Experience	Types of Visitor Use	Types of Development
Interaction Zone	Management of identified and evaluated cultural landscapes could highlight their historic period of significance (1911–1935). This could possibly mean rehabilitation of the historic scene. Vista clearing, restoration, and maintenance of historic appearance/landscape would occur; interiors of historic structures would be preserved for interpretation or adaptively used for NPS and visitor support needs. Cultural resources would be protected and preserved. Nonhistoric structures and features would be removed. Natural resources would be modified to maintain historic appearance while minimizing adverse impacts to these resources. Agricultural leases would be appropriate for maintenance of historic appearance and use.	This zone would promote interpretive experiences that help visitors learn about the national historic site. Visitors would be immersed in a cultural setting that reflects a historical period with minimal exposure to modern intrusions, both visible and audible. A contemplative and reverential atmosphere would be created. The probability of encountering other visitors and NPS staff in this zone would be high in summer and on weekends, but moderate at other times of year. Visitors could experience the site on their own or participate in ranger-conducted programs. Recreational activities would be managed to support the area's historic character. Some areas might be closed to visitors to protect resources and resource values.	Primary activities would include seeing cultural and natural resources and participating in interpretive programs. Guided and self-guided tours could be activities here. Large outdoor interpretive exhibits, programs, demonstrations, and tours could take place in this zone.	Historic structures (i.e., memorial building) and settings relating to Abraham Lincoln would be key features. Unobtrusive interpretive waysides, such as signs and displays, would be allowed in this zone. There would be limited visitor amenities (restrooms, drinking fountains, benches, etc.). Rehabilitation and adaptive use of historic structures would be allowed.

Zone	Desired Resource Condition	Desired Visitor Experience	Types of Visitor Use	Types of Development
Discovery Zone	Cultural and natural resources would be preserved while providing visitor safety and preventing all resource degradation in as pristine and protected state as possible to closely reflect the period of significance (1911–1935). These areas would be managed to provide for a natural soundscape. These areas would be managed to provide the most natural-appearing environment of all areas. Natural resources would be managed to attain natural variability and ecosystem integrity. Cultural resources would be inventoried and evaluated for national register eligibility; and preserved if eligible.	Visitors entering these areas would have an independent discovery experience. Primitive trails, sensitively placed, would be allowed in these areas to provide access for self-paced exploration and for the protection of natural and cultural resources. Experiencing a degree of quiet solitude would be promoted. Self-guided visits with signs at trailhead and interpretive brochures would be available. Ranger-guided activities would be allowed. There would be a low probability of encounters with staff and other visitors except on ranger-guided tours. Scientific research could take place in these areas.	Such activities as walking, wildlife viewing, and experiencing scenic views with photographic opportunities, would be promoted. Guided and self-guided tours could be activities here.	Trails would be unpaved. No visitor facilities would be allowed except at trailheads (low-profile directional and interpretive signs). Primitive roads for NPS operations use only would be allowed.

IDENTIFICATION OF THE PREFERRED ALTERNATIVE

The development of a preferred alternative involves evaluating the alternatives with the use of an objective analysis process called "choosing by advantages" or CBA. Through this process, the planning team identified and compared the relative advantages of each alternative according to a set of factors. The benefits or advantages of each alternative were compared for each of the following CBA factors:

- Factor 1: How will the alternative maximize the visitor experience?
- Factor 2: How will the alternative provide the best protection of resources?
- Factor 3: How will the alternative maximize operational efficiency?

The relationships between the advantages and costs of each alternative were established. This information was used to determine which of the alternatives has the greatest value.

Using the CBA process, the planning team determined that alternative C gives the National Park Service the greatest overall advantages for the factors listed above for the cost (it has the greatest value). Factor 2 was determined to be the most important to the national historic site, and alternative C has the most advantages in this factor. In addition, alternative C scores high in factors 1 and 3.

ALTERNATIVE A — CONTINUE CURRENT MANAGEMENT (NO ACTION)

This alternative is presented as a basis for comparing the three "action" alternatives. Examining the no-action alternative is also useful in understanding why the National Park Service or the public may believe that certain changes are necessary or advisable and is used as a baseline to compare proposed alternatives to a continuation of existing management trends. The three action alternatives (B, C, and D) present ways of exploring those changes.

CONCEPT

Under this alternative, current national historic site management direction would continue as guided by the 1964 *Master Plan* and subsequent more detailed implementation plans. "No action" does not imply the discontinuation of present uses or management practices. Instead, there would be no important change in interpretation and management of the national historic site.

Actions that are already funded are included in the no-action alternative. Actions identified in existing planning documents but not funded in the foreseeable future have not been considered in this alternative. NPS staff would continue to protect and maintain known cultural and natural resources as time and funding allow. Cultural and natural resource inventory work and monitoring would continue. NPS staff would continue to encourage and seek funding for the research that is needed to fill the gaps in knowledge about resources following the park's strategic plan.

PARKWIDE

The official name of the site would remain as it is — Abraham Lincoln Birthplace National Historic Site.

Some museum objects and archives would continue to be stored at Mammoth Cave National Park.

Existing staffing at the national historic site would continue at 13 full-time employees.

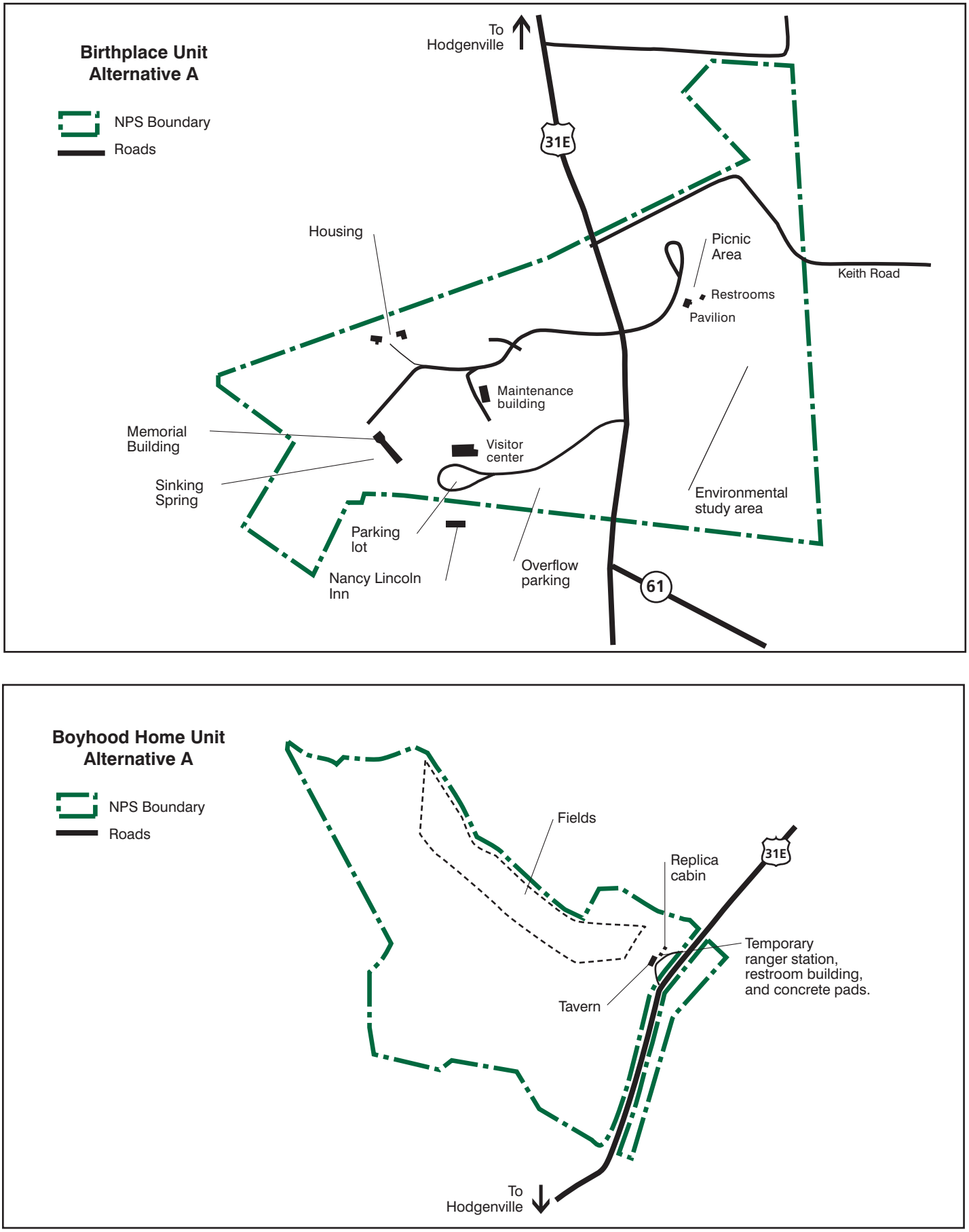
BIRTHPLACE UNIT

There would be little change in visitor services or NPS operations facilities (See Alternative A maps). Existing interpretation and education programs would continue. The visitor center would continue to be staffed from Memorial Day through Labor Day, 8.a.m. until 6:45 p.m. An orientation film would continue to be shown on the hour and half hour daily. The Memorial Building would continue to be staffed from 8.a.m. until 6:45 p.m. during this summer period. Staff would continue to answer visitor questions when asked. Visiting school groups would get the same services as the visitors. Beginning Labor Day and continuing through the winter months, the building would be staffed 8.a.m. until 4:45 p.m. daily. The national historic site would be closed Christmas Day, Thanksgiving Day, and New Years Day. Existing facilities (visitor center/headquarters building, parking, dirt walkways and boardwalk, memorial building, maintenance facility, picnic area, Boundary Oak site and interpretive sign, picnic areas and pavilion, and trails) would remain and continue to be maintained. Some visitors would continue to go to the Nancy Lincoln Inn thinking that it is a part of the national historic site because of its juxtaposition to the national historic site parking area.

Keith Road, which bisects old-growth forest, would remain where it is.

BOYHOOD HOME UNIT

The Boyhood Home Unit would continue to be operated without the guidance of a long-range plan. One person would continue to staff the small ranger station from April through Lincoln Days (the second week in October) to provide information and answer questions. The tavern and replica cabin have been stabilized and would remain, but the parking area would be expanded and redesigned. The "temporary" ranger station would remain on site and be used by NPS staff. The fields, in their existing configuration, would continue to be maintained by mowing.



Alternative A

Abraham Lincoln Birthplace National Historic Site

United States Department of the Interior / National Park Service

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ALTERNATIVE B

CONCEPT

Under alternative B, park management would emphasize the preservation and conservation of cultural and natural resources. Visitor opportunities would be enhanced through the reestablishment of a greater semblance of the historic scene (early 1930s) for structures and landscapes at both units and telling the story of other Lincoln-related sites in the area.

PARKWIDE

This alternative recommends that the official name of the site be changed to "Abraham 4Lincoln Birthplace National Historical Park." The National Park Service defines a national historic site as "containing a single historic feature that was directly associated with its subject." Legislation for this unit revised the boundary to take in a second property (the Boyhood Home Unit) associated with Abraham Lincoln. The site now meets the definition of a national historical park, which is "a historic park that extend(s) beyond single properties or buildings." To make this change, legislative action is required. The name of this NPS unit has changed several times. During the years 1939 to 1959, it was designated a national historical park.

Archive space outside the national historic site would be leased to hold the national historic site's museum objects and archives. Having a larger curatorial space would allow consolidation of the collections from Mammoth Cave National Park and other locations, and would provide more convenient access for research.

Five full-time employees would be needed (in addition to existing staff) to implement this alternative. Additional interpretive/visitor services staff would be needed to have personnel at both units and the visitor center, plus the increased number of visitor sites would require additional maintenance staff.

BIRTHPLACE UNIT

There would be a smaller Visitor Services Zone in this alternative to accommodate the goal of creating a more reverential atmosphere and develop a contemplative setting at the memorial plaza. This would also fulfill the concept of this alternative —to establish a greater semblance of the historic s scene. The Interaction Zone would be largest in this alternative where the following changes would occur. The main visitor center/ headquarters would be removed; a new regional center would be established outside the national historic site, perhaps in Hodgenville, and possibly operated with regional partners to improve interpretation of the regional Lincoln story. The parking area would be moved towards the highway to reduce distractions and to accompany a new small visitor contact station with public restrooms and landscaped staging area that would be built in this area to orient people to the site. Paved walkways would be designed to create a sense of transition and arrival as they lead visitors from the parking area into the memorial plaza.

The maintenance facility would be moved to an adjacent property and NPS housing would be removed. These changes would be done to remove modern intrusions from the park to create a setting more evocative of the time the Lincolns were here in keeping with the overall concept of this alternative. The Boundary Oak site would be restored because the oak has died and been removed; the interpretive exhibit would be updated.

Keith Road would be removed and relocated outside the national historic site to restore

forest habitat, for safety, and to make the area more closely resemble its historic appearance. The picnic area and restrooms would be improved and would be placed in the Visitor Services Zone to allow for continued maintenance and use. Existing nature trails and the boardwalk would be retained.

Educational activities would continue in the east side environmental education area under this alternative.

If acquired from a willing seller, the Nancy Lincoln Inn would be restored to its 1930s appearance on the exterior, if this could be documented, to match the historic period of the memorial plaza. The interior would not be used because of the cost of rehabilitation and lack of need for the space. If acquired, the guest cabins and modern house on the property would be evaluated for possible NPS use. If no use was identified that would further the mission, purpose, or efficiency of the national historic site, the structures would be removed. If acquired, this land would be placed in Visitor Services and/or Support Services zones according to the type of use(s).

BOYHOOD HOME UNIT

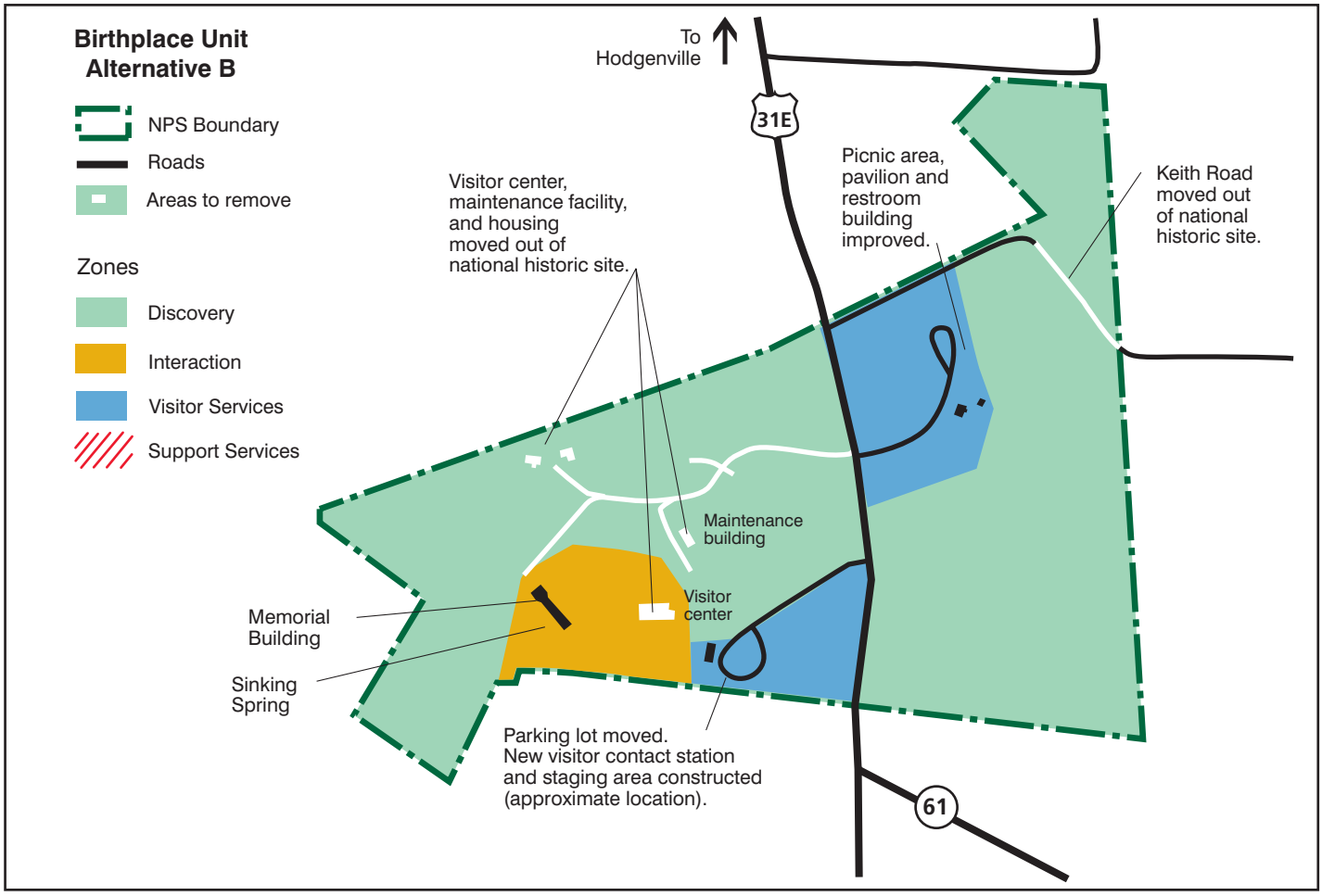
Most of the Boyhood Home Unit would be placed in the undeveloped Discovery Zone to preserve the natural setting and support the concept of this alternative. In the Visitor Services Zone at the south of the unit, the exterior of the tavern building would be preserved in its current configuration, and the interior would be adaptively reused for multiple purposes such as a visitor contact area with an information desk, sales area, interpretive exhibits, restrooms, offices, and staff quarters. The replica cabin would be restored to its original 1930s appearance and interpreted pending a historic structure report, but there would be no public access to the interior because of the large logs used in the interior for stabilization. The temporary visitor contact/ranger station would no longer be needed and would be removed. The grounds would be enhanced by removing the old restroom building and concrete pads, and the fields would continue to be maintained in their existing configuration by occasional mowing.

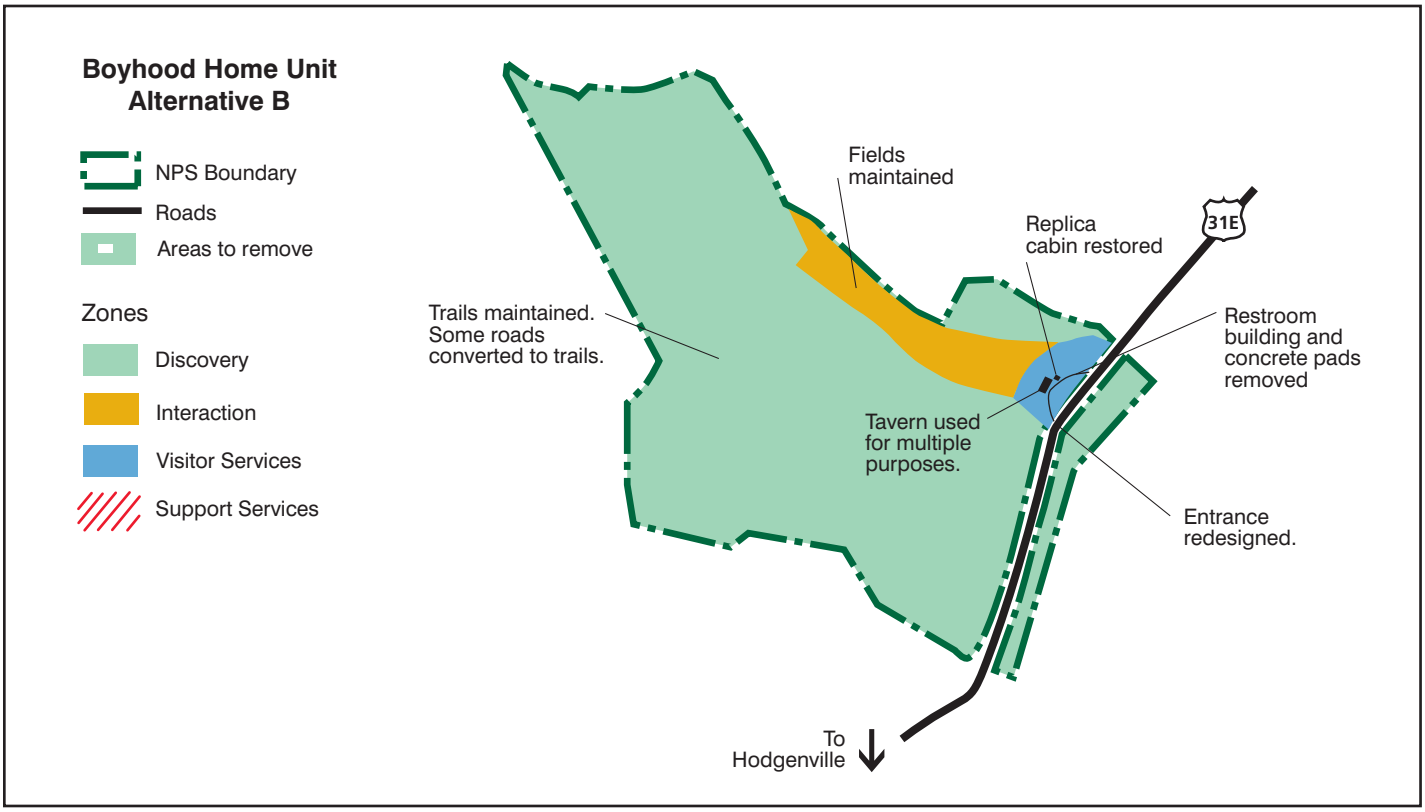
Ingress/egress to the unit would be redesigned for safety. The parking area would be moved to a new location southwest of the tavern building to remove it from a prominent position in front of the historic structures. Signs would be added or improved to meet NPS standards. Vegetative screening and/or earthen berms would be added to mitigate sight and sound intrusions from the modern highway and to separate the parking area from the historic structures.

In this alternative, it is important for visitors to walk through the fields and along the creek to understand how the environment helped build young Abraham Lincoln's character. Some old roads would be converted to trails and maintained to provide safe public access to the interior of the unit and Knob Creek. Other roads would be retained for NPS management activities.

NPS staff would work with local providers to get potable water to the site. Alternatives to the inadequate septic system would be developed. NPS staff would work with the local utility company to get overhead power lines out of the national historic site, if feasible.

Approximately 50 acres on the north side of the unit has been identified for acquisition from a willing seller to protect a rare hardwood glade and scenic views. If acquired, this land would be placed in the Discovery Zone.





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North

Alternative B

Abraham Lincoln Birthplace National Historic Site

United States Department of the Interior / National Park Service

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ALTERNATIVE C — NPS PREFERRED AND ENVIRONMENTALLY PREFERABLE ALTERNATIVE

CONCEPT

This alternative would enhance opportunities for visitors to interact with and appreciate all of the national historic site's resources while preserving or adaptively reusing cultural resources.

PARKWIDE

This alternative recommends that the official name of the site be changed to "Abraham Lincoln Birthplace National Historical Park." The National Park Service defines a national historic site as "containing a single historic feature that was directly associated with its subject." Legislation for this unit revised the boundary to take in a second property (the Boyhood Home Unit) associated with Abraham Lincoln. The site now meets the definition of a national historical park, which is "a historic park that extend(s) beyond single properties or buildings." To make this change, legislative action is required. The name of this NPS unit has changed several times. During the years 1939 to 1959, it was designated a national historical park."

Museum objects and archives would be consolidated and stored in a climate-controlled area in the Birthplace Unit, possibly within an existing building. A larger curatorial space would allow consolidation of the collections from Mammoth Cave National Park and other locations, and would provide more convenient access for researchers.

Three full-time employees would be needed (in addition to existing staff) to implement this alternative. An additional interpretive/visitor services employee would be needed to develop educational programming and enhance interpretation programs at both units. The change in facilities would require two additional maintenance staff.

BIRTHPLACE UNIT

Management zoning at the Birthplace Unit would reflect the alternative concept of enhancing visitor opportunities while preserving or reusing historic resources. Visitor Services Zone would be applied to the visitor center and the parking areas on both sides of the highway. An Interaction Zone would be placed in the area adjacent to the picnic ground to allow upgrading a portion of the nature trail to make it more accessible. All structures would remain in this alternative, but the main parking area would be moved towards the highway and enlarged to improve the reverential and contemplative setting of the memorial plaza. A new landscaped staging area would be developed at the site of the current parking lot, and carefully designed paved walkways would provide a transition and create a sense of arrival as they lead visitors to the visitor center and memorial plaza.

Administrative offices would be moved to vacant NPS housing (or the house on the Nancy Lincoln Inn property, if acquired), and the extra space in the visitor center would be used for additional interpretation to improve visitor understanding of the national historic site. Since the Boundary Oak no longer exists, the interpretive exhibit at the site would be removed and interpretation on the metes-and-bounds method of land survey would be done elsewhere.

Keith Road would be removed and relocated outside the national historic site to restore forest habitat, for safety, and to make the area more closely resemble its historic appearance. The picnic area pavilion and restrooms would be improved to NPS standards, and the

parking area would be enlarged by about 10% to accommodate larger buses and recreational vehicles (RVs) to avoid congestion.

Some individual picnicking sites would be made accessible to visitors with disabilities. The existing short loop interpretive trail would be placed in the Interaction Zone to allow paving it for accessibility. Other trails and the boardwalk would continue to be retained.

NPS staff would continue to lead educational activities at the environmental education area on the east side under this alternative to meet this alternative's goal of providing greater visitor appreciation of the resources. A small storage shed would be added to the restroom building to accommodate supplies for these activities.

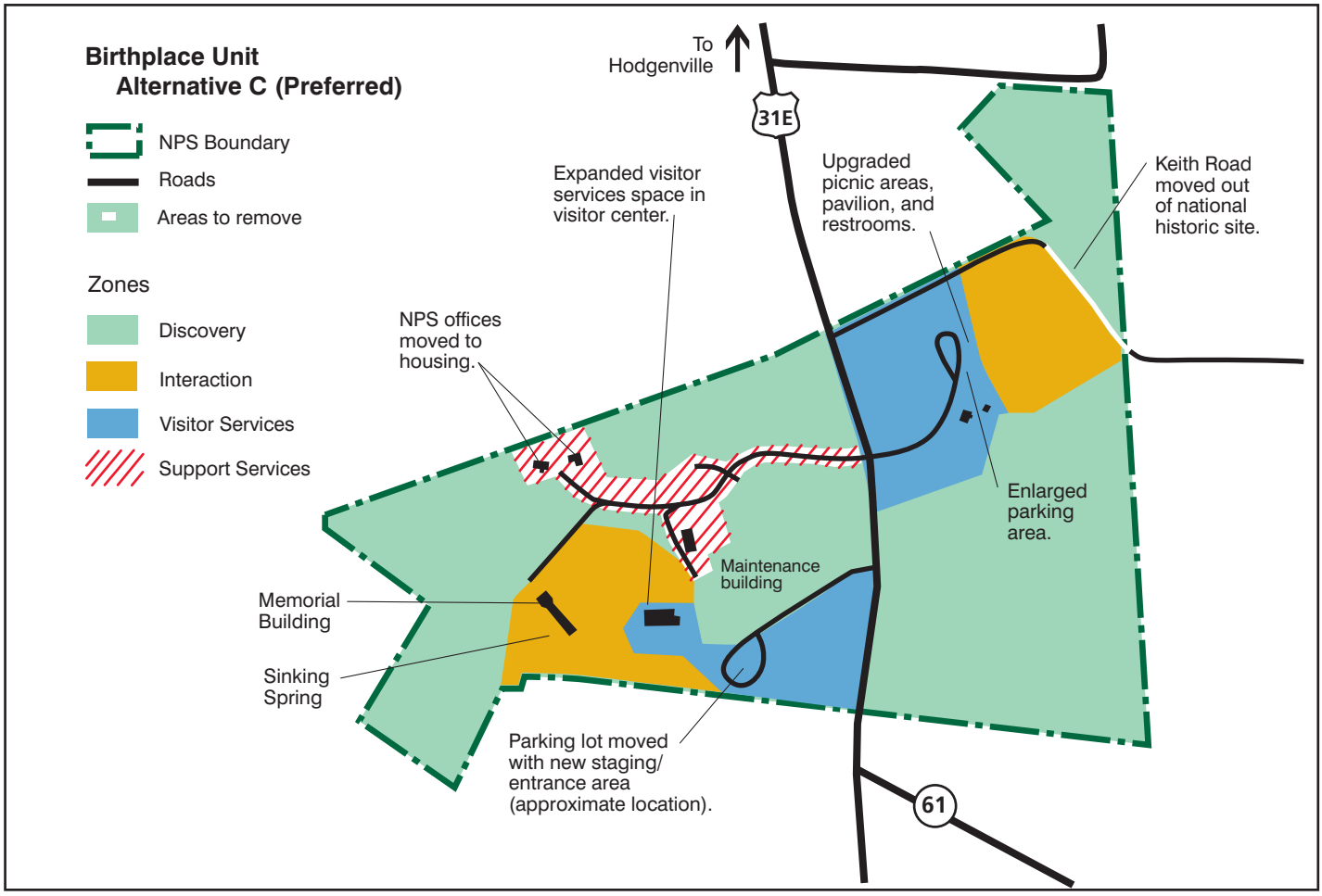
If acquired from a willing seller, the Nancy Lincoln Inn would be restored on the exterior to its earliest 1930s appearance as close as possible to match the historic period of the memorial plaza if this appearance could be documented. The interior would be used for NPS purposes such as sales and storage space for the cooperating association, Eastern National. The associated guest cabins would be evaluated for possible NPS use. If no use was identified that would further the mission, purpose, or efficiency of the national historic site, the structures would be removed. The modern house on the property would be removed or converted to offices for NPS administrative staff if determined feasible. If acquired, this property would be in the Visitor Services and Support Services zones.

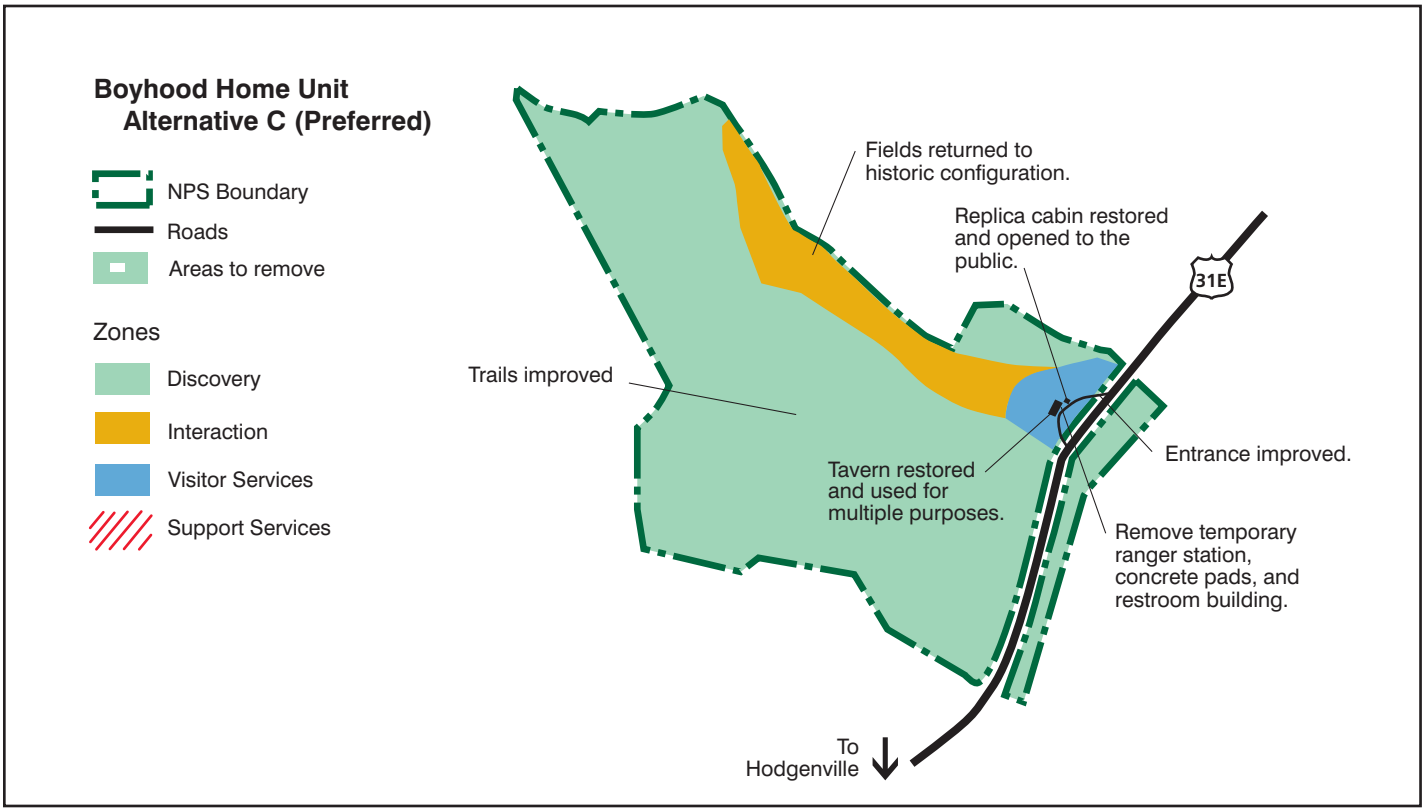
BOYHOOD HOME UNIT

Most of the Boyhood Home Unit would be placed in the undeveloped Discovery Zone to preserve the natural setting. In the Visitor Services Zone at the front of the unit, the exterior of the tavern would be restored to its earliest documentable appearance (1930s), and the interior would be adaptively reused for multiple purposes such as a visitor contact station, sales area, interpretive exhibits, restrooms, offices, or staff quarters. The replica cabin would be restored to its original 1930s appearance and opened to the public pending the completion of a historic structure report. The grounds would be enhanced by removing the old restroom building and concrete pads, and the temporary ranger station would be removed because it would be no longer needed.

To enhance opportunities for visitors to interact with the resources, public access around the unit would be improved with an accessible path to the fields and creek. The Boy Scout trail would be repaired and other trails improved. The improved trails would allow for self-guided and ranger-led walks to the creek and through the fields that would encourage further understanding of the environment that helped shape young Abraham Lincoln's character. Roads would be converted to trails, maintained where needed for NPS maintenance activities, or revegetated.

Ingress/egress to the unit would be redesigned for safety. The parking area would be moved to a new location outside the historic district behind the tavern building. This would remove the intrusion of modern vehicles from the historic district in front of the tavern and relocate the intrusion into the landscape of the big field behind the tavern. Existing roads would be upgraded to provide vehicular access to the new parking area. It would be built to accommodate at least 25 vehicles and 3 buses, and sidewalks would be added for universal accessibility to the visitor facility. Providing the bus parking would accommodate school groups participating in educational programs. Signs would be added or improved to meet NPS standards. Vegetative screening would be added to mitigate sight and sound intrusions from the modern highway and to separate the parking area from the historic structures.





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North

Alternative C (Preferred)

Abraham Lincoln Birthplace National Historic Site

United States Department of the Interior / National Park Service

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An interpretive garden would be planted with crop plants common at the time the Lincolns lived here, such as corn, pumpkins, gourds, and herbs. The fields would be reestablished to their historic size and configuration to present a semblance of their appearance during the time the Lincolns were here. The fields would be placed in the Interaction Zone, and an agricultural lease would be used to maintain their historic appearance.

NPS staff would work with local providers to get potable water to the site. To improve the scenic views and feelings of remoteness, staff would also work with the local utility company to move the overhead power lines out of the national historic site, if feasible. An alternative to the inadequate septic system would be developed.

Approximately 50 acres on the north side of this unit has been identified for acquisition from a willing seller to protect a rare hardwood glade and historic/scenic views. If acquired, this land would be placed in the Discovery Zone.

ALTERNATIVE D

CONCEPT

This alternative would return the historic scene to a greater semblance of its original condition and provide greater opportunities for visitors to understand Abraham Lincoln and his early childhood. Also it would increase educational opportunities available to visitors to help understand the national historic site and its resources.

PARKWIDE

This alternative recommends that the official name of the site be changed to "Abraham Lincoln Birthplace National Historical Park." The National Park Service defines a national historic site as "containing a single historic feature that was directly associated with its subject." Legislation for this unit revised the boundary to take in a second property (the Boyhood Home Unit) associated with Abraham Lincoln. The site now meets the definition of a national historical park, which is "a historic park that extend(s) beyond single properties or buildings." To make this change, legislative action is required. The name of this NPS unit has changed several times. During the years 1939 to 1959, it was designated a national historical park."

The museum collections would be consolidated from Mammoth Cave National Park and other locations and placed in the visitor center at the Birthplace Unit. A portion of the structure would be rehabilitated to meet collection standards.

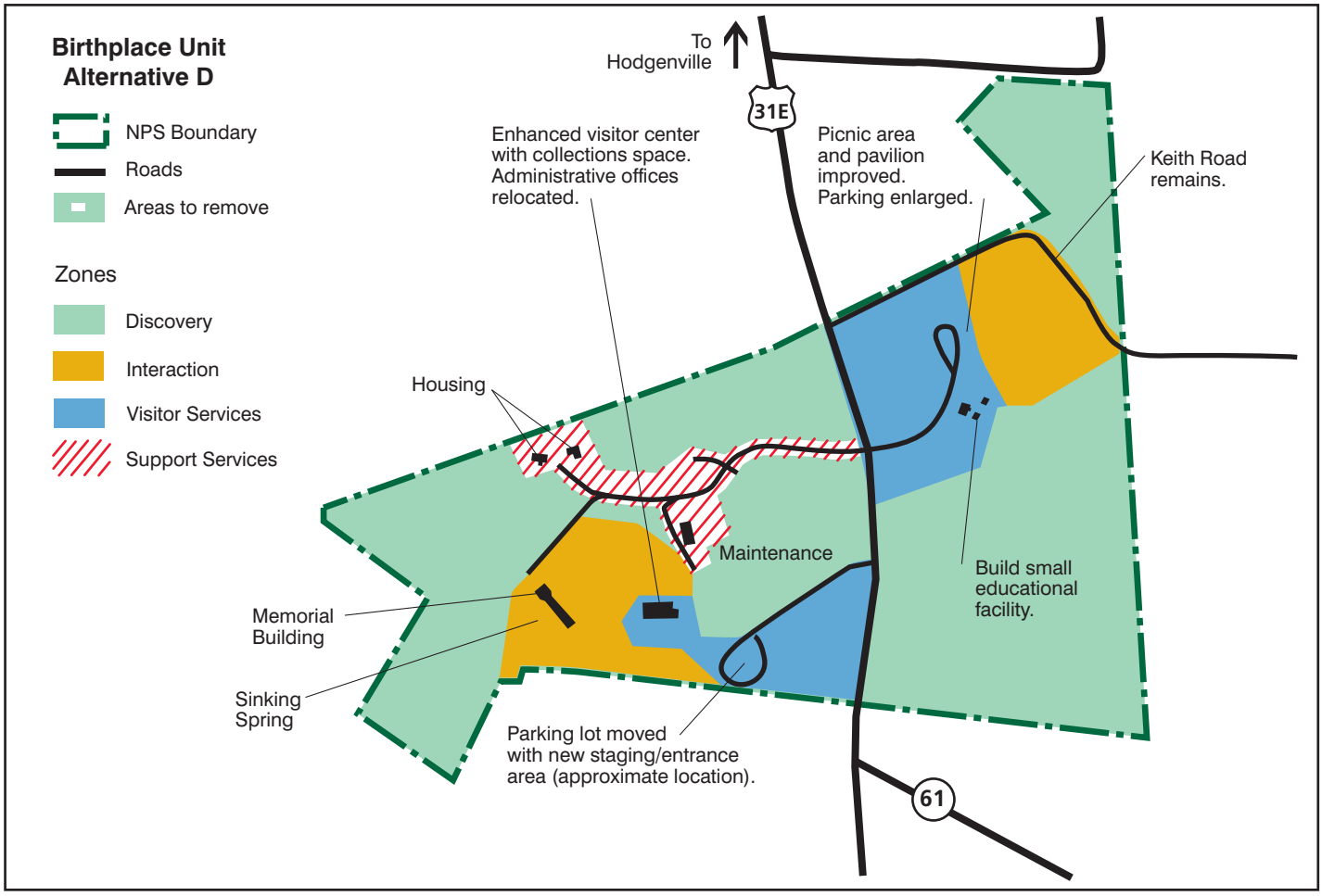
Four employees would be needed (in addition to existing staff) to implement this alternative for the enhanced interpretive program.

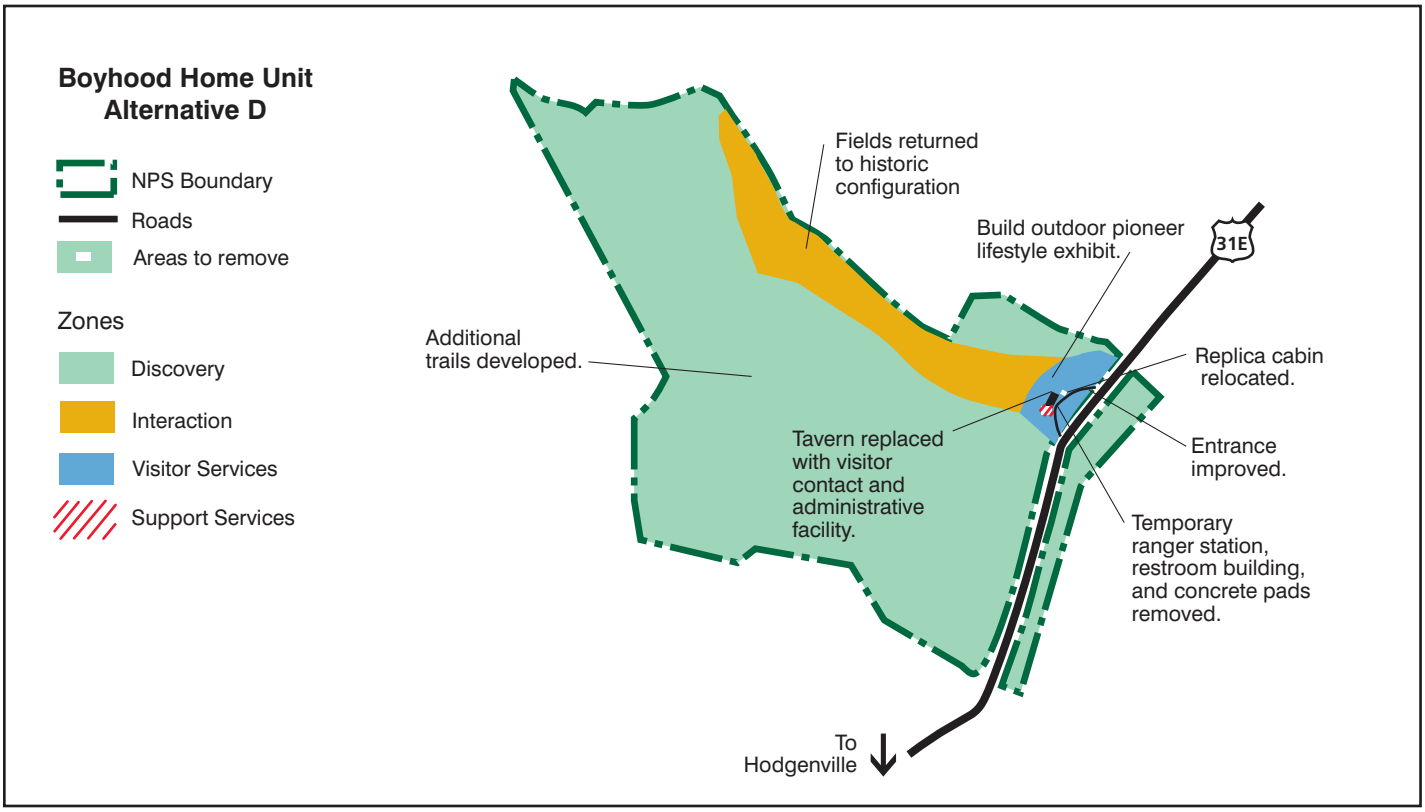
BIRTHPLACE UNIT

Management zoning at the Birthplace Unit reflect the alternative concept of providing a greater understanding of Lincoln's early years. The zones would be applied to the Birthplace Unit in the same as manner as in alternative C. However, management actions differ as described below. All structures would remain in this alternative. The visitor center building would be rehabilitated for collections storage and interpretive/ education space to provide for greater resource education opportunities for visitors. Administration offices would be moved to the house on the Nancy Lincoln Inn property if it is acquired and if determined feasible and compatible to preserving this national register property. The main parking area for the visitor center would be moved towards the highway to improve the reverential and contemplative setting of the memorial plaza. A new landscaped staging area would be developed at the site of the current parking area to provide for visitor orientation, and carefully designed paved walkways would create a sense of arrival as they lead visitors to the visitor center and the memorial plaza. Interpretation at the Boundary Oak site would be improved to better understand the environment and pioneer context of Lincoln's early years.

Keith Road, which bisects old-growth forest, would remain where it is. The Big Sink Trail would be shortened to avoid crossing Keith Road. This would be done to make the trail safer by not having the visitors cross an uncontrolled road twice. Other trails would be maintained in their current configuration.

The picnic areas and pavilion and restrooms would remain and would be brought up to NPS standards, and the parking area would be enlarged to accommodate today's larger recreational vehicles. The boardwalk would be retained and maintained. A small resource





0 500 1000 Feet

North

Alternative D

Abraham Lincoln Birthplace National Historic Site

United States Department of the Interior / National Park Service

DSC • Aug 05 • 338 • 20,007

education center would be constructed near the picnic area to provide for environmental education to meet this alternative's goal of providing greater opportunities for visitor understanding. The center would consist of a small enclosed area where materials can be kept and accommodate a classroom setting.

If acquired from a willing seller, the Nancy Lincoln Inn would be restored as close as possible to its 1930s exterior appearance if this appearance could be documented to match the historic period of the memorial plaza, and the interior would be used for NPS purposes. If acquired, the associated cabins would be evaluated for possible NPS use. If no use was identified that would further the mission, purpose, or efficiency of the park, the structures would be removed. The modern house on the property would be converted to office space for NPS staff, if this was determined feasible. If acquired, this property would be placed in the Visitor Services and Support Services zones.

BOYHOOD HOME UNIT

Most of the Boyhood Home Unit would be placed in the undeveloped Discovery Zone to preserve the natural setting. A Visitor Services Zone would be placed at the south of the unit, with a small support services area for NPS operations. Management actions differ from the other alternatives as described below. The tavern and temporary ranger station and concrete pads would be removed in this alternative to allow for the construction of more functionally efficient structure that would meet NPS needs of orientation, administration, and education. This new visitor contact station would be constructed and contain information/ interpretation space, offices, and storage.

To improve visitors' understanding of the life and times of Abraham Lincoln's early boyhood, an outdoor pioneer lifestyle exhibit would be constructed behind the new visitor contact station. Pending a historic structure report, the replica cabin would be moved to this exhibit, which would have pioneer farm features and exhibits (e.g., split-rail fences, animal pens, historic farming equipment, and a small area (1-2 acres) would be planted in row crops).

Trails would be brought up to NPS standards, and new trails would be developed to provide access to the natural and scenic resources in this unit and to meet this alternative's goal of providing greater opportunities for visitor understanding. Roads determined necessary to maintain the fields and essential for NPS operational purposes would be maintained. All other roads would be converted to trails or revegetated.

The entrance would be redesigned to provide for safer ingress and egress to the site. The parking area would be expanded at its current location to accommodate at least 25 vehicles and 3 school buses. Providing parking for buses would accommodate school groups using the site for educational programs. Signs would be added or improved to conform to NPS standards. Vegetative screening would be developed. The fields would be reestablished to their historic size and configuration to present a semblance of the appearance during the time the Lincolns were here. The fields would be in the Interactive Zone. An agricultural lease would be used to maintain the historic appearance of the fields.

NPS staff would work with local providers to get potable water to the site and move the overhead power lines, if feasible. Such actions would improve the visual appearance of the site and visitor amenities. Alternatives to the inadequate septic system would be developed.

To preserve the historic scene and protect a rare hardwood glade, approximately 50 acres on the north side of this unit has been identified for acquisition from a willing seller to protect a rare hardwood glade and scenic views. If acquired, this land would be placed in the Discovery Zone. An agricultural lease would be used to maintain the historic appearance and use of the fields.

ESTIMATED COSTS

For comparison purposes, the planning team estimated what it would cost to implement each of the alternatives (see table 4). These cost figures are broad estimates based on the cost of construction and employee salaries. These costs do not include the costs for additional studies and are not to be used for budgetary purposes. The NPS Facility Planning Model was run for the museum collection facility, administrative facility, and visitor facilities. These estimates, in combination with the NPS class C cost-estimating guidelines, were used to develop the figures in table 4.

ALTERNATIVE A – NO ACTION

One-time costs in this alternative are those items that are already funded or approved. Included are projects to stabilize or preserve historic structures, repair or maintain facilities and utilities, and manage vegetation.

No additional long-term costs would be required to implement this alternative other than periodic increases in base funding to cover inflation.

ALTERNATIVE B

One-time costs involve structure removal and new construction. This alternative would remove the visitor center/ headquarters building, maintenance facility, NPS housing, and Keith Road. The visitor center (main) parking area would be moved towards the highway to reduce distractions and to accompany a new small visitor contact station with public restrooms and landscaped staging area that would be built in this area. The picnic areas and pavilion would be improved.

At the Boyhood Home Unit, the tavern exterior would be preserved and the interior adaptively reused for multiple purposes; the replica cabin would be restored to its original 1930s appearance and interpreted (without public access inside). Removing the temporary visitor contact/ranger station and restroom building and concrete pads would also occur. Improvements would be made to the unit's entrance road, and some old roads would be converted to trails and maintained for public use. The parking area would be moved to a new, more appropriate location. Additional annual costs in this alternative would include the lease of visitor center and administrative, archival, and maintenance facility space outside the national historic site.

Long-term costs to fully implement this alternative would require five additional staff positions. This increase would be necessary to staff the off-site visitor center and the contact station at the Boyhood Home Unit. There would also be funding needs for additional park vehicles and building maintenance in this alternative.

ALTERNATIVE C, PREFERRED

Rehabilitation of existing structures and minor construction projects would make up the one-time costs in this alternative. Administrative and management staff would move from the visitor center into vacant NPS housing (or the Nancy Lincoln Inn if that property was acquired). This would involve renovation to make these spaces usable. The space in the visitor center would be modified for additional interpretation and visitor services. Parking would be moved away from the memorial plaza.

TABLE 4: ESTIMATED COSTS (IN 2005 DOLLARS)

CATEGORY	ALTERNATIVE A NO ACTION	ALTERNATIVE B	ALTERNATIVE C PREFERRED	ALTERNATIVE D
Annual costs*	$ 926,000	$1,387,000	$ 1,153,000	$1,222,000
Annual costs over 25 years	$10,791,000	$16,164,000	$13,437,000	$14,241,000
One-time costs	$214,000	$1,624,000	$2,188,000	3,218,000
Life-cycle costs (25-year GMP life)	$10,000,000 – $12,000,000	$17,000,000 – $19,000,000	$14,500,000 – $16,500,000	$16,500,000 – $18,500,000

* Annual costs include maintenance, operations, and staffing. This figure reflects a $250,000 increase in base funding received in 2005 and assumes that an increase in staff is approved.

At the Birthplace Unit, there would be a new landscaped staging area, and the parking area would be moved closer to the highway. At the Boyhood Home Unit, the parking area would be removed and a new, larger parking area would be constructed in a more appropriate location. Keith Road would be removed. A small storage shed would be added to the restroom building. Some picnic sites and the loop trail would be made accessible to visitors with disabilities. If acquired, the Nancy Lincoln Inn would be restored on the exterior and the interior used for NPS purposes. The associated cabins would be evaluated for possible NPS use or removed, and the modern house would be removed or converted to offices for NPS administrative staff.

A climate-controlled collections storage area would be developed to meet NPS standards, possibly within an existing building in the Birthplace Unit. Trails in both units would be improved.

At the Boyhood Home Unit, restoration of the exterior of the tavern and replica cabin would occur; the interior of the tavern would also be adaptively used for multiple purposes. Improvements would be made to the unit's entrance area. The restroom building and concrete pads and the temporary ranger station would be removed. The fields would be reestablished to their historic size and configuration, and an accessible path to fields would be developed.

Long-term costs of an additional three staff positions are recommended to fully implement the preferred alternative. This increase would be necessary to have staff available at the Boyhood Home Unit all the time. (Although the cost estimates were made using full-time NPS employees, these positions could be filled by volunteers or cooperating association employees.) If it were not possible to fill the three positions, then the Boyhood Home Unit would not be staffed all seven days a week or would be unstaffed during one or two winter months (when visitation is lowest). There would also be funding needs for additional NPS vehicles and building maintenance in this alternative. This amount would be lowest in this alternative when compared to alternatives B and D (see table 4).

ALTERNATIVE D

One-time costs in this alternative would involve rehabilitation of some structures; removal of the tavern, temporary ranger station, restroom and concrete pads, and possibly the guest cabins on the Nancy Lincoln property; restoring the fields; moving the replica cabin; and new construction projects. Administrative and management

staff would move from the visitor center/ headquarters into the house on the Nancy Lincoln Inn property if it was acquired. The parking area at the Birthplace Unit visitor center would be moved, and a visitor staging area would be constructed. Paved walkways would be constructed. The visitor center would be rehabilitated.

At the Birthplace Unit, the Big Sink Trail would be shortened. A new collections storage area that meets NPS standards would be part of the rehabilitated visitor center. If acquired, the Nancy Lincoln Inn would be rehabilitated, and the modern house would be used for office space if feasible and cost-effective. The associated cabins would be evaluated for NPS use or removed.

At the Boyhood Home Unit, the tavern would be removed, and a new visitor contact station would be built in its place. An outdoor pioneer lifestyle exhibit would be constructed behind the new visitor contact station, and the replica cabin would be moved to this exhibit. The restroom building and concrete pads and temporary ranger station would be removed. Improvements would be made to the unit's entrance and parking area, and the fields would be reestablished to their historic size and configuration. Trails would be improved and new trails would be developed.

Long-term costs to fully implement this alternative would require four to five additional staff positions. This increase would be necessary to staff the two visitor centers (one at each unit) and a resource education position. There would also be funding needs for additional NPS vehicles and building maintenance in this alternative.

MITIGATIVE MEASURES COMMON TO THE ALTERNATIVES

Congress charged the National Park Service with managing the lands under its stewardship "in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (NPS Organic Act, 16 USC 1). As a result, the National Park Service routinely evaluates and implements mitigation whenever conditions occur that could adversely affect the sustainability of national park system resources.

To ensure that implementation of the action alternatives protects natural and cultural resources and the quality of the visitor experience, mitigative measures would be applied to actions proposed in this plan. The National Park Service would prepare appropriate environmental review (i.e., those required by the National Environmental Policy Act, National Historic Preservation Act, and other relevant legislation) for these future actions. As part of the environmental review, the National Park Service would avoid, minimize, and mitigate adverse impacts when practicable. The implementation of a compliance monitoring program could be considered to stay within the parameters of National Environmental Policy Act and National Historic Preservation Act compliance documents, U.S. Army Corps of Engineers Section 404 permits, etc. The compliance-monitoring program would oversee these mitigative measures and would include reporting protocols.

The following mitigation measures and best management practices would be applied to avoid or minimize potential impacts from implementation of the alternatives. These measures would apply to all alternatives.

CULTURAL RESOURCES

The National Park Service would preserve and protect, to the greatest extent possible, the cultural resources of the national historic site. Specific mitigation measures include the following:

- Continue to develop inventories for and oversee research about archeological and historical resources to better understand and manage the resources. Continue to manage cultural resources and collections following federal regulations and NPS guidelines. Inventory the national historic site's collection and keep in a manner that would meet NPS curatorial standards.
- Avoid adverse impacts through the use of the *Secretary of the Interior's Standards for Archeology and Historic Preservation*. If adverse impacts could not be avoided, mitigate these impacts through a consultation process with all interested parties.
- Inventory all unsurveyed areas in the national historic site for archeological, historical, and ethnographic resources as well as cultural and ethnographic landscapes.
- Document cultural landscapes in the national historic site and identify appropriate treatments.
- Conduct additional background research, resource inventory, and national register evaluation where information about the location and significance of cultural resources is lacking. Incorporate the results of these efforts into site-specific planning and compliance documents.
- Mitigation measures include documentation according to standards of the Historic American Buildings Survey/Historic American Engineering Record/Historic American Landscape Survey (HABS/HAER/HALS) as defined in the Re-engineering Proposal (October 1, 1997). The level of this documentation, which could include photography, archeological data recovery, and/or a narrative history, would depend on the context of its significance (national, state,

or local) and individual attributes (an individually significant structure, individual elements of a cultural landscape, etc.) and be determined in consultation with the state historic preservation officer. When demolition of a historic structure is proposed, architectural elements and objects may be salvaged for reuse in rehabilitating similar structures, or they may be added to the national historic site's museum collection. In addition, the historical alteration of the human environment and reasons for that alteration would be interpreted to visitors.

- Wherever possible, locate projects and facilities in previously disturbed or existing developed areas. Design facilities to avoid known or suspected cultural resources.
- Whenever possible, modify project design features to avoid effects on cultural resources. New developments would be relatively limited and would be located on sites that blend with cultural landscapes and not adjacent to ethnographic resources. If necessary, use vegetative screening as appropriate to minimize impacts on cultural landscapes and ethnographic resources.
- Strictly adhere to NPS standards and guidelines on the display and care of artifacts. This would include artifacts used in exhibits in the visitor center. Irreplaceable items would be kept above the 500-year floodplain. This means that no irreplaceable items would be displayed in the structures at the Boyhood Home Unit.

NATURAL RESOURCES

Air Quality

- Implement a dust abatement program. Standard dust abatement measures could include the following elements: water or other stabilization methods, cover haul trucks, employ speed limits on unpaved roads, minimize vegetation clearing, and revegetate after construction.

Exotic Species

- Implement a noxious weed abatement program. Standard measures could include the following elements: ensure construction-related equipment arrives on-site free of mud or seed-bearing material, certify all seeds and straw material as weed-free, identify areas of noxious weeds before construction, treat noxious weeds or noxious weed topsoil before construction (e.g., topsoil segregation, storage, herbicide treatment), and revegetate with appropriate native species.

Soils

- Build new facilities on soils suitable for development. Minimize soil erosion by limiting the time that soil was left exposed and by applying other erosion control measures, such as erosion matting, silt fencing, and sedimentation basins in construction areas to reduce erosion, surface scouring, and discharge to water bodies. Once work was completed, revegetate construction areas with native plants in a timely period.

Threatened and Endangered Species and Species of Concern

Mitigative actions would occur during normal NPS operations as well as before, during, and after construction to minimize immediate and long-term impacts on rare, threatened, and endangered species. These actions would vary by specific project and area affected. Many of the measures listed above for vegetation and wildlife would also benefit rare, threatened, and endangered species by helping to preserve habitat. Mitigative actions specific to rare,

threatened, and endangered species would include the following:

- Conduct surveys for rare, threatened, and endangered species as warranted.
- Site and design facilities/actions to avoid adverse effects on rare, threatened, and endangered species. If avoidance is infeasible, minimize and compensate for adverse effects on rare, threatened, and endangered species as appropriate and in consultation with the appropriate resource agencies.
- Develop and implement restoration and/or monitoring plans as warranted. Plans should include methods for implementation, performance standards, monitoring criteria, and adaptive management techniques.
- Implement measures to reduce adverse effects of nonnative plants and wildlife on rare, threatened, and endangered species.

Vegetation

- Monitor areas used by visitors (e.g., trails) for signs of native vegetation disturbance. Use public education, revegetation of disturbed areas with native plants, erosion control measures, and barriers to control potential impacts on plants from trail erosion or social trailing.
- Develop revegetation plans for the disturbed area and require the use of native species. Revegetation plans should specify seed/plant source, seed/plant mixes, soil preparation, etc. Salvage vegetation should be used to the extent possible.

Water Resources

- To prevent water pollution during construction, use erosion control measures, minimize discharge to water bodies, and regularly inspect construction equipment for leaks of petroleum and other chemicals.

Wildlife

- Employ techniques to reduce impacts on wildlife, including visitor education programs, restrictions on visitor activities, and ranger patrols.
- Implement a natural resource protection program. Standard measures would include construction scheduling, biological monitoring, erosion and sediment control, the use of fencing, topsoil salvage, revegetation, or other means to protect sensitive resources adjacent to construction.

Cave and Karst Resources

- Existing adverse impacts on cave and karst resources would be studied, and NPS staff would work with local landowners to mitigate adverse impacts.

Wetlands

- Delineate wetlands and apply protection measures during construction. Wetlands would be delineated by qualified NPS staff or certified wetland specialists and would be clearly marked before construction work. Perform construction activities in a cautious manner to prevent damage caused by equipment, erosion, siltation, etc.

VISITOR EXPERIENCE

- Implement an interpretation and education program. Continue directional signs and education programs to promote visitor understanding.
- Conduct an accessibility study to understand barriers to programs and

facilities. Based on this study, implement a strategy to provide the maximum level of accessibility.

HAZARDOUS MATERIALS

- Implement a spill prevention and pollution control program for hazardous materials. Standard measures could include hazardous materials storage and handling procedures; spill containment, cleanup, and reporting procedures; and limitation of refueling and other hazardous activities to upland/ nonsensitive sites.

NOISE ABATEMENT

Mitigative measures would be applied to protect the natural sounds in the national historic site. Specific mitigation measures would include the following:

- Identify and take actions to prevent or minimize unnatural sounds that adversely affect national historic site resources or values or visitors' enjoyment of them, according to management prescriptions.
- Regulate the use of motorized equipment during visitor hours to minimize noise generated by NPS management activities.

SCENIC RESOURCES

Mitigative measures are designed to minimize visual intrusions. These include the following:

- Where appropriate, use facilities such as boardwalks and fences to route people away from sensitive natural and cultural resources while still permitting access to important viewpoints.
- Design, site, and construct facilities to avoid or minimize adverse effects on natural and cultural resources and visual intrusion into the natural and/or cultural landscape.
- Provide vegetative screening, where appropriate.

SUSTAINABLE DESIGN AND AESTHETICS

- Projects would avoid or minimize adverse impacts on natural and cultural resources. Development projects (e.g., buildings, facilities, utilities, roads, bridges, trails) or reconstruction projects (e.g., road reconstruction, building rehabilitation, utility upgrades) would be designed to work in harmony with the surroundings, particularly in historic districts. Projects would reduce, minimize, or eliminate air and water nonpoint-source pollution. Projects would be sustainable whenever practicable, by recycling and reusing materials, by minimizing the amount of materials, and by minimizing energy consumption during the project and throughout the lifespan of the project.

IMPLEMENTATION PLANS

Several plans have influenced or would be influenced by the approved *General Management Plan* for Abraham Lincoln Birthplace. The implementation plans listed here would need to be prepared or revised to include the Boyhood Home Unit.

- cultural landscape report
- long range interpretive plan
- historic structure report
- historic resource management plan
- collections management plan
- natural resources management plan (including exotic species management)

CONSISTENCY WITH SECTION 101 AND 102 OF THE NATIONAL ENVIRONMENTAL POLICY ACT

The environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in Section 101 of the National Environmental Policy Act. Section 101 states "it is the continuing responsibility of the Federal Government to

(1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
(2) assure 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 to heath or safety, or other undesirable and unintended consequences;
(4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choices;
(5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
(6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Two of the above criteria did not make a difference in determining the environmentally preferred alternative. Criterion 1 is satisfied by all of the alternatives because Abraham Lincoln Birthplace is already a unit of the national park system and the National Park Service would continue to fulfill its responsibilities to protect this area for future generations. The differences between the alternatives in this regard are not appreciable. Criterion 6 also was determined to be not applicable to this study as these programs are outside the scope of a general management plan.

Alternative A (no action) lacks the range of diversity and individual choices found in the other alternatives. It also does not provide as much resource protection as the other alternatives — more resource impacts would be expected with increasing visitor use levels in this alternative. Thus, the no-action alternative would not meet the following national environmental policy criteria as well the other alternatives:

- attain the widest range of beneficial uses of the environment without degradation
- preserve important natural aspects and maintain an environment that supports diversity and variety of individual choice
- achieve a balance between population and resource use

By moving some facilities out of the national historic site, alternative B would provide the highest level of resource protection (meeting criteria 2 and 4). Visitor use opportunities at Abraham Lincoln Birthplace would be expanded with trails and a resource education area, thus providing for a wide range of neutral and beneficial uses of the environment (meeting criteria 3 and 5).

Alternative D would greatly expand visitor use opportunities and education at Abraham Lincoln Birthplace through the new resource education center and the Boyhood Home visitor station and pioneer farm exhibit (meeting criteria 3 and 5). However, a historic structure would be removed in this alternative. Thus, alternative D would not meet policy criteria 4 (preserve important historic and cultural aspects . . .) as well as the other alternatives.

The environmentally preferable alternative is the NPS preferred alternative (alternative C) for Abraham Lincoln Birthplace National Historic Site in this general management plan. This alternative would more fully satisfy all the national environmental criteria. Alternative C would provide a high level of protection of natural and cultural resources (criterion 4). The alternative would also maintain an environment that supports a diversity and variety of individual choices and it would integrate resource protection with an appropriate range of visitor uses (criteria 3 and 4). This would be accomplished in the alternative by the continued protection of the nondeveloped areas of the national historic site, the removal of an intrusion (road) into important habitat, and enhancement of the national historic site's resource education program, which would lead to long-term protection of the environment by instilling a stewardship ethic in young people (criteria 2, 3, and 4).

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The National Park Service is required to identify the environmentally preferable alternative in its environmental impact analysis documents for public review and comment. The Park Service, in accordance with the Department of the Interior policies contained in the *Department Manual* (516 DM 4.10) and the Council on Environmental Quality's Forty Questions, defines the environmentally preferable alternative (or alternatives) as the alternative that best promotes the national environmental policy expressed in the National Environmental Policy Act (Section 101(b)) (516 DM 4.10). The Council on Environmental Quality's Forty Questions (Q6a) further clarifies the identification of the environmentally preferable alternative stating, "simply put, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and native processes."

The Park Service has determined that alternative C best protects the biological and physical environment by eliminating the consequences of an intrusion (Keith Road) in an old-growth forest and continued protection of the nondeveloped areas of the national historic site over the long term. It would also preserve and enhance the historic and cultural environment by moving the parking lot away from the memorial plaza cultural landscape.

ALTERNATIVES AND ACTIONS CONSIDERED BUT DISMISSED FROM DETAILED EVALUATION

Another concept considered by the planning team was to establish a living history farm at the Boyhood Home Unit. It would have involved a reproduction of a pioneer farm, farm animals, and historically accurate crops planted in the fields using period methods and tools. This idea was determined not practical and dismissed for the following reasons.

1. NPS standards for living history are quite strict. Very little is known about how the farm may have appeared and it would be impossible to reproduce the scene of the Lincoln's farm in the early 1800s.
2. The opportunity to visit a living historical farm is available at Lincoln Boyhood National Memorial in southern Indiana. However, even there, the farm is a demonstration based on general knowledge and is not a re-creation of the actual Lincoln property.
3. The costs to create and operate a historically accurate farm would be exorbitant.
4. The purpose of the Abraham Lincoln National Historic Site is to commemorate Abraham Lincoln, and a living history farm is not necessary to accomplish this purpose.

Alternative locations were considered for construction of a new parking lot at the Boyhood Home Unit. The area northeast of the replica cabin was considered but dismissed because this location is within the floodplain of Knob Creek. Runoff from a parking lot built here would contain oil and other automotive fluids that could pollute the pristine waterway.

TABLE 5: SUMMARY COMPARISON OF ALTERNATIVES

	ALTERNATIVE A – NO ACTION	ALTERNATIVE B	ALTERNATIVE C – PREFERRED	ALTERNATIVE D
Concept	Current management strategies would continue.	Under alternative B, park management would emphasize the preservation and conservation of cultural and natural resources. Visitor opportunities would be enhanced through the reestablishment of a greater semblance of the historic scene (early 1930s) for structures and landscapes at both units and telling the story of other Lincoln-related sites in the area.	This alternative would enhance opportunities for visitors to interact with and appreciate the national historic site's resources while preserving or adaptively reusing cultural resources.	This alternative would rehabilitate the historic scene to provide greater opportunities for visitors to understand Abraham Lincoln and his early childhood. It would also increase educational opportunities available to visitors to help understand the national historic site and its resources.
PARKWIDE				
Name of National Historic Site	There would be no change in the national historic site name.	The name of national historic site would be changed to national historical park.	The name of national historic site would be changed to national historical park.	The name of national historic site would be changed to national historical park.
Museum Collection	Some of the museum collection would continue to be stored at Mammoth Cave National Park.	Collections would be consolidated in a facility near the national historic site (possibly a leased facility).	Collections would be consolidated in a collections facility/ area developed in the Birthplace Unit, possibly within an existing building.	The museum collections would be consolidated from other locations and placed in a portion of the visitor center at the Birthplace Unit.
Staffing	Existing staff is 13 full-time-equivalent employees.	An additional five employees would be needed to implement this alternative.	An additional three employees would be needed to implement this alternative.	Four additional employees would be needed to implement this alternative.

	ALTERNATIVE A – NO ACTION	ALTERNATIVE B	ALTERNATIVE C – PREFERRED	ALTERNATIVE D
BIRTHPLACE UNIT				
Visitor Center, Parking, Memorial Plaza, and Memorial Building Areas	Existing visitor center/ headquarters, memorial building, and picnic area would remain.	Existing visitor center/headquarters would be removed; a new regional center would be established, possibly in Hodgenville and possibly with regional partners.	Visitor center would be enhanced with NPS administration functions moved to vacant NPS housing (or house on Nancy Lincoln Inn property if acquired); vacant space would be used for interpretation.	Visitor center would be rehabilitated for collections storage and interpretive education space. Administrative offices would move to the house on the Nancy Lincoln Inn property if it was acquired if feasible.
	The parking area would remain as it is.	The visitor center parking area would be moved towards the highway to reduce distractions and to accompany a new small visitor contact station with public restrooms and landscaped staging area that would be built in this area to orient people to the site.	Visitor center parking area would be moved towards the highway and enlarged, and a landscaped staging area would be constructed to enhance sense of place/arrival.	Visitor center parking area would be moved toward the highway, and a new landscaped staging area would be constructed to enhance sense of place/arrival.
	Dirt walkways and boardwalk would remain. Little sense of arrival would continue.	Designed paved walkways would also create a sense of arrival and transition to the memorial plaza.	Designed paved walkways would also create a sense of arrival and transition to the memorial plaza.	Designed paved walkways would also create a sense of arrival and transition to the memorial plaza.
NPS Housing and Maintenance Facilities	NPS maintenance facility and vacant NPS housing would remain.	Most structures and functions would be moved outside the national historic site.	Most structures and functions would remain in national historic site.	All structures would remain in the national historic site.
Boundary Oak Site	Existing interpretive exhibit would remain.	Interpretation would be updated.	The interpretive exhibit would be removed.	Site interpretation would be improved.
Keith Road	Keith Road would remain where it is.	Keith Road would be removed to improve safety, make the scene closer to its historic appearance, and restore forest habitat.	Keith Road would be removed to improve safety, make the scene closer to its historic appearance, and restore forest habitat.	Keith Road would remain, but Big Sink Trail would be shortened to avoid crossing the road and to improve safety.

	ALTERNATIVE A – NO ACTION	ALTERNATIVE B	ALTERNATIVE C – PREFERRED	ALTERNATIVE D
Picnic areas, pavilion, and trails	There would be no change at the picnic area.	The picnic areas and pavilion and restrooms would remain and be improved.	The picnic areas and pavilion and restrooms would be improved to NPS standards, and the parking area would be enlarged; some individual picnic sites would be made accessible to visitors with disabilities.	The picnic areas and pavilion and restrooms would remain and would be brought up to NPS standards. The parking area would be enlarged.
		Educational activities would continue in the east side environmental education area.	Educational activities would continue in the east side environmental education area. A small storage shed would be added to the restroom building to support these activities.	A small resource education resource center would be built near the picnic area.
	Existing trails would remain.	Existing trails would remain.	The short loop interpretive trail would be made accessible to visitors with disabilities. Other trails would be maintained.	Trails would be maintained in their current configuration.
Boundary Adjustment and Associated Resources	None	If available from a willing seller, National Park Service would seek to acquire the Nancy Lincoln Inn property. The Inn would be restored to its 1930s exterior appearance if this could be documented.	If available from a willing seller, National Park Service would seek to acquire the Nancy Lincoln Inn property. The Inn would be restored to 1930s exterior appearance if this could be documented, and adaptively reused for NPS purposes (sales and storage for cooperating association).	If available from a willing seller, National Park Service would seek to acquire the Nancy Lincoln Inn property. The inn would be restored to 1930s exterior appearance if this could be documented, and adaptively reused for NPS purposes on the interior.

	ALTERNATIVE A – NO ACTION	ALTERNATIVE B	ALTERNATIVE C – PREFERRED	ALTERNATIVE D
Boundary Adjustment and Associated Resources (cont.)		The guest cabins and house would be evaluated for possible NPS use or removed.	The guest cabins would be evaluated for possible NPS use or removed. The modern house would be removed or converted to offices for NPS administrative staff if feasible.	The guest cabins would be evaluated for possible use or removed. The modern house would be used for NPS office space if feasible.
BOYHOOD HOME UNIT				
Tavern and Cabin Area	The tavern would remain and has been stabilized. Replica cabin has been stabilized but with no public access.	Tavern would be reused as a visitor contact area with a desk, sales area, exhibits, restrooms, offices, or staff quarters. Replica cabin would be restored to original 1930s exterior appearance and interpreted (without public access to the interior).	Tavern would be restored to its 1930s exterior appearance and the interior would be used as a visitor contact station, sales and exhibits area, restrooms, offices, or staff quarters. Replica cabin would be restored to its original 1930s appearance and opened to the public. An interpretive garden would be developed.	Tavern would be removed and a new visitor contact station and administrative facility would be constructed. Outdoor pioneer lifestyle exhibit would be constructed, and the replica cabin would be moved into this exhibit. A small area (1-2 acres) would be planted in row crops.
Entrance, Parking, and Signs	The entrance road would remain as it is.	Ingress/egress to the unit would be redesigned for safety. The parking area would be removed and constructed in an area southwest of the tavern. Signs would be improved or added.	Ingress/egress to the unit would be redesigned for safety. The parking area would be removed and rebuilt behind the tavern. Signs would be improved or added.	Entrance to the site would be rede-signed for safer ingress and egress. Parking would be expanded, and signs would be improved or added.
Temporary Ranger Station and Restrooms	Temporary ranger station would remain and be used by NPS staff.	Temporary ranger station and old restroom building and concrete pads would be removed.	The temporary ranger station and restroom building, and concrete pads would be removed.	The temporary ranger station and restroom building and concrete pads would be removed.

Table 5: Summary Comparison of Alternatives

	ALTERNATIVE A – NO ACTION	ALTERNATIVE B	ALTERNATIVE C – PREFERRED	ALTERNATIVE D
Fields	Fields at Boyhood Home Unit would continue to be mowed.	Fields at Boyhood Home Unit would continue to be mowed.	Fields at Boyhood Home Unit would be reestablished to their original size and configuration. An agricultural lease would be used to maintain the historic appearance of the fields.	Fields at Boyhood Home Unit would be reestablished to their historic size and configuration as there were when the Lincolns were there. An agricultural lease would be used to maintain the historic appearance of the fields.
Water and Utilities	There would continue to be no potable water at the site. Portable toilets would remain in use at the site. Overhead powerlines would remain at the site.	NPS staff would work to get potable water to the site. Alternatives to the inadequate septic system would be developed. NPS staff would work with local utility company to get overhead powerlines out of the national historic site if feasible.	NPS staff would work to get potable water to the site. Alternatives to the inadequate septic system would be developed. NPS staff would work with local utility company to get overhead powerlines out of the national historic site if feasible.	NPS staff would work to get potable water to the site. Alternatives to the inadequate septic system would be developed. NPS staff would work with local utility company to get overhead powerlines out of the national historic site if feasible.
Trails and Roads	Primitive trails would remain; roads would continue to be used as trails and for NPS maintenance activities.	Some old roads would be converted to trails that would be maintained for public use. Other roads would continue for NPS maintenance activities.	Trails would be improved. There would be an accessible path to the fields and creek. The Boy Scout trail would be repaired and other trails would be improved. Roads would be converted to trails, maintained where needed for NPS maintenance activities, or revegetated.	New trails would be developed; existing trails would be brought up to NPS standards. Roads necessary to maintain the fields and essential for NPS operations would be maintained. All other roads would be converted to trails or revegetated.

	ALTERNATIVE A – NO ACTION	ALTERNATIVE B	ALTERNATIVE C – PREFERRED	ALTERNATIVE D
Boundary Adjustments and Associated Resources	None.	If feasible, 50 acres north of the unit would be acquired from willing seller to protect a rare hardwood glade and scenic views.	If feasible, 50 acres north of the unit would be acquired from willing seller to protect a rare hardwood glade and historic/scenic views.	If feasible, 50 acres north of the unit would be acquired from willing seller to protect a rare hardwood glade and scenic views.

TABLE 6: SUMMARY OF KEY IMPACTS OF IMPLEMENTING THE ALTERNATIVES

Note: There would be no impairment of resources or values under any proposed alternative actions.

	ALTERNATIVE A – NO ACTION	ALTERNATIVE B	ALTERNATIVE C – PREFERRED	ALTERNATIVE D
Impacts on Cultural Resources				
Archeological Resources	Continued management actions under the no-action alternative would have substantial levels of adverse impacts on archeological resources. Adverse impacts on archeological resources resulting from implementing alternative A would contribute substantially to the overall adverse cumulative impacts.	No disturbance of eligible archeological resources would occur before consultation between Abraham Lincoln Birthplace National Historic Site and the Kentucky state historic preservation officer (and/or the Advisory Council on Historic Preservation, if necessary) and the preparation of a memorandum of agreement, in accordance with 36 CFR part 800.6, "Resolution of Adverse Effects" was concluded. Adverse impacts on archeological resources resulting from implementing alternative B would be a moderate component of the overall adverse cumulative impact.	Any disturbance of eligible archeological resources would not occur before consultation between Abraham Lincoln Birthplace National Historic Site and the Kentucky state historic preservation officer (and/or the Advisory Council on Historic Preservation, if necessary) and the preparation of a memorandum of agreement, in accordance with 36 CFR part 800.6, "Resolution of Adverse Effects." Adverse impacts on archeological resources resulting from implementing alternative C would be moderate. Adverse impacts on archeological resources resulting from implementing this alternative could be expected to contribute a considerable component of the overall adverse cumulative impacts in the region.	Any disturbance of eligible archeological resources would not occur before consultation between Abraham Lincoln Birthplace National Historic Site and the Kentucky state historic preservation officer (and/or the Advisory Council on Historic Preservation, if necessary) and the preparation of a memorandum of agreement, in accordance with 36 CFR part 800.6, "Resolution of Adverse Effects." Adverse impacts on archeological resources would result from implementing alternative D. Adverse impacts on archeological resources resulting from implementing this alternative could be expected to be a considerable component of the overall adverse cumulative impacts in the region.

	ALTERNATIVE A – NO ACTION	ALTERNATIVE B	ALTERNATIVE C – PREFERRED	ALTERNATIVE D
Historic Structures and Cultural Landscapes	After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of alternative A would result in no adverse effects on historic structures and cultural landscapes.	After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of alternative B would generally result in no adverse effects on historic structures and cultural landscapes.	After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of alternative B would generally result in no adverse effects on historic structures and cultural landscapes.	After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of alternative D would result in limited adverse effects on historic structures and cultural landscapes at the Boyhood Home Unit. Implementation of this alternative would require that a memorandum of agreement be developed with the Kentucky state historic preservation officer to mitigate adverse effects. Removing the tavern, which is not key to the national historic site's purpose or significance, would still result in an adverse effect on the historic district. The overall cumulative impacts would be adverse; the impacts of implementing alternative D would contribute considerably to the overall adverse cumulative impacts.

	ALTERNATIVE A – NO ACTION	ALTERNATIVE B	ALTERNATIVE C – PREFERRED	ALTERNATIVE D
Museum Collections	The overall effect of this alternative would have a long-term minor beneficial impact on preserving and managing the national historic site's museum collections. NPS actions would add slightly to the overall long-term improvement in the care and management of museum collections in the region and would contribute a long-term, minor beneficial impact to the cumulative impact, which would be long term, minor to moderate, and beneficial.	The overall effect of this alternative would have a long-term moderate beneficial impact on preserving and managing the museum collections. The actions in this alternative would slightly add to the overall long-term improvement in the care and management of museum collections in the region and contribute a long-term moderate beneficial impact to the cumulative impact, which would be moderate, long term, and beneficial.	The overall effect of this alternative would have a long-term moderate beneficial impact on preserving and managing the museum collections. The actions under this alternative would slightly add to the overall long-term improvement in the care and management of museum collections in the region and would contribute a long-term moderate beneficial impact to the cumulative impacts, which would be moderate, long term, and beneficial.	The overall effect of this alternative would have a long-term moderate beneficial impact on preserving and managing the museum collections. Actions proposed in this alternative would slightly add to the overall long-term improvement in the care and management of museum collections in the region and would contribute a long-term moderate beneficial impact to the cumulative impact, which would be moderate, long term, and beneficial.
Impacts on Natural Resources				
Impacts on Water Resources	The no-action alternative would have no new effect on water resources in the national historic site. Because this alternative would have no effects on water resources, there would be no cumulative effects.	This alternative would have a long-term minor beneficial impact on water resources and no effect on floodplains in the national historic site. The overall cumulative impacts would be minor and adverse; this alternative's contribution to these effects would be small.	This alternative would have a negligible adverse and a long-term minor beneficial impact on water resources and no effect on floodplains in the national historic site. The overall cumulative impacts would be minor and adverse; this alternative's contribution to these effects would be small.	Implementing alternative D would have a long-term negligible adverse impact on water resources and a long-term negligible beneficial impact on the floodplain in the national historic site. The overall cumulative impacts would be minor and adverse; this alternative's contribution to these effects would be relatively small.
Impacts on Karst or Cave Resources	The no-action alternative would have no new effect on caves or karst features. Because this alternative would have no impacts on cave or karst resources, there would be no cumulative impacts.	Implementing alternative B would have a long-term minor beneficial impact on caves or karst features in the national historic site. The overall cumulative impacts would be minor and adverse; alternative B's contribution to these effects would be small.	Alternative C would have a long-term minor beneficial impact on caves/ or karst features in the national historic site. The overall cumulative impacts would be minor and adverse; alternative C's contribution to these effects would be slight.	Alternative D would have a long-term minor beneficial impact on caves or karst features in the national historic site. The overall cumulative impacts would be minor and adverse; alternative D's contribution to these effects would be slight.

	ALTERNATIVE A – NO ACTION	ALTERNATIVE B	ALTERNATIVE C – PREFERRED	ALTERNATIVE D
Impacts on Soils	This alternative would have long-term minor adverse effects on soil resources at the Boyhood Home Unit. The no-action alternative would contribute slightly to these effects, and thus there would be minor to moderate adverse cumulative effects on the soil resources. There would be no impairment of this resource.	This alternative would result in long-term minor beneficial impacts and long-term minor adverse impacts. The overall cumulative effects on soils would be minor and adverse; this alternative's contribution to these effects would be small. There would be no impairment of this resource as a result of implementing this alternative.	Alternative C would result in long-term minor adverse impacts on soils in the national historic site. The overall cumulative effects on soils would be minor and adverse; this alternative's contribution to these effects would be slight.	This alternative would result in long-term minor adverse impacts on soils in the national historic site. The overall cumulative effects on soils would be minor and adverse; this alternative's contribution to these effects would be small.
Impacts on Vegetation	The no-action alternative would have no new impacts on native vegetation. The no-action alternative would not add to these impacts, and thus there would be no project-related cumulative effect on native vegetative resources. Thus, there would be no impairment of this resource as a result of implementing this alternative.	Implementing alternative B would have a long-term minor beneficial impact on vegetation. The overall cumulative impacts would be moderate and adverse; this alternative's contribution to these effects would be small and beneficial.	Alternative C would have long-term minor beneficial and long-term minor adverse impacts on vegetation. The overall cumulative impacts would be minor and adverse; this alternative's contribution to these effects would be small.	Alternative D would have a long-term minor adverse impact on vegetation. The overall cumulative impacts would be minor and adverse; this alternative's contribution to these effects would be small.
Impacts on Wildlife	Implementing the no-action alternative would result in no new effect on wildlife populations. Because this alternative would have no new changes on wildlife, there would be no cumulative impacts.	Implementing alternative B would have a short-term minor to moderate adverse impact and long-term minor beneficial impacts on wildlife populations. The overall cumulative impacts would be negligible and adverse; this alternatives' contribution to these effects would be small.	Implementing alternative C would have a long-term negligible beneficial effect on wildlife populations. The overall cumulative impacts would be negligible and adverse; this alternatives' contribution to these effects would be small.	Implementing alternative D would have short-term moderate adverse and long-term minor adverse impacts on wildlife populations. The overall cumulative impacts would be negligible and adverse; this alternatives' contribution to these effects would be modest.

Table 6: Summary of Key Impacts of Implementing the Alternatives

	ALTERNATIVE A – NO ACTION	ALTERNATIVE B	ALTERNATIVE C – PREFERRED	ALTERNATIVE D
Impacts on Special Status Species	The no-action alternative would have no effect on the Indiana bat, gray bat, Hine's emerald dragonfly, or state species. Because this alternative would not contribute to the impacts of other past, present, and reasonably foreseeable future actions, there would be no project-related cumulative impacts on listed, candidate, or other special status species.	Implementing alternative B would have no effect on the Indiana bat, gray bat Hine's emerald dragonfly. Because this alternative would not contribute to the impacts of other past, present, and reasonably foreseeable future actions, there would be no project-related cumulative impacts on listed, candidate, or other special status species.	Alternative C may effect, but is not likely to adversely affect, the Indiana bat or Hine's dragonfly. There would be no effect on the gray bat. Cumulative impacts on listed, candidate or other special status species would be moderate and adverse; however, this alternative's contribution to these impacts would be slight.	Alternative D may effect, but is not likely to adversely affect, the Indiana bat and Hine's dragonfly. There would be no effect on the gray bat. The overall cumulative impacts would be moderate and adverse; this alternative's contribution to these effects would be slight.
Impacts on Natural Soundscapes	Alternative A would have no new effects on natural soundscapes. Because this alternative would not have any new effects on the natural soundscape, there would be no cumulative effects.	Implementing alternative B would have short-term moderate adverse impacts on soundscapes during construction and long-term minor beneficial impacts after construction was completed. The overall cumulative impacts would be minor and adverse; this alternative's contribution to these effects would be small and beneficial.	Alternative C would have short-term moderate adverse impacts on soundscapes during construction and long-term negligible beneficial impacts after construction was completed. The overall cumulative impacts would be minor and adverse; this alternative's contribution to these effects would be small.	Implementing alternative D would have short-term moderate adverse impacts on soundscapes at both units during construction. The overall cumulative impacts would be minor and adverse; this alternative's contribution to these effects would be small. There would be long-term negligible beneficial impacts at the Birthplace Unit and a long-term minor adverse impact at the Boyhood Home Unit after construction.
Impacts on Visitor Use and Experience				
	Implementing alternative A would result in the continuation of long-term moderate adverse impacts on all aspects of visitor use and experience. Because actions in this alternative would have no new effects on visitor use and experience, there would be no project-related cumulative impacts.	Implementing alternative B would result in minor long-term beneficial impacts on the visitor experience. The overall cumulative impacts would be minor and beneficial; this alternative's contribution to these effects would be modest.	Implementing the preferred alternative (alternative C) would result in moderate long-term beneficial impacts on the visitor experience. The overall cumulative impacts would be minor and beneficial; this alternative's contribution to these effects would be small.	Implementing alternative D would result in moderate long-term beneficial impacts on the visitor experience. The overall cumulative impacts would be minor and beneficial; this alternative's contribution to these effects would be modest.

	ALTERNATIVE A – NO ACTION	ALTERNATIVE B	ALTERNATIVE C – PREFERRED	ALTERNATIVE D
Impacts on the Socioeconomic Environment				
	The no-action alternative would have no new effect on the socioeconomic environment in the region. Because this alternative would have no new effects on the socioeconomic environment, there would be no cumulative impacts.	Implementing alternative B would result in short-term and long-term minor beneficial impacts on the socioeconomic environment. The overall cumulative effects would be minor and beneficial; this alternative's contribution to these effects would be small and beneficial	Implementing alternative C would result in long-term minor beneficial impacts on the socioeconomic environment. The overall cumulative effects would be minor and beneficial; this alternative's contribution to these effects would be small and beneficial.	Implementing alternative D would result in short-term and long-term moderate beneficial impacts on the socioeconomic environment. The overall cumulative effects would be minor to moderate and beneficial; this alternative's contribution to these effects would be small and beneficial.
Impacts on NPS Operations				
	The no-action alternative would result in no new impacts on NPS operations at the national historic site. Because there would be no new impacts on NPS operations, there would be no cumulative effects.	Implementing alternative B would have both long-term minor beneficial impacts and long-term minor adverse impacts on NPS operations at the national historic site. Because this alternative has both adverse and beneficial impacts on NPS operations, there would be no net contribution from this alternative to the overall cumulative effects and thus there would be no cumulative effects.	Implementing alternative C would result in long-term minor beneficial impacts on NPS operations at the national historic site. The overall cumulative effects would be negligible and beneficial; this alternative's contribution to these effects would be modest.	Implementing alternative D would result in long-term negligible beneficial impacts and minor adverse impacts on NPS operations at the national historic site. The overall cumulative effects would be negligible and adverse; this alternative would have a substantive contribution to these effects.

Chapter 3:
Affected Environment

INTRODUCTION

This chapter describes the existing environment of Abraham Lincoln Birthplace National Historic Site and the surrounding region. It is focused on the resources, uses, and socioeconomic characteristics that have the potential to be affected if any of the alternatives were implemented. Some features, such as floodplains and endangered species, are discussed because they provide context or are required to be considered in an environmental impact statement.

LOCATION AND SETTING

Abraham Lincoln Birthplace is in LaRue County of central Kentucky. The site, originally comprising 116.5 acres, was designated a national park in 1916, a national historical park in 1939, and a national historic site in 1959. On November 6, 2001, Lincoln's early boyhood home at Knob Creek Farm (228 acres) was added to the national historic site. This addition is referred to in this document at the Boyhood Home Unit. The Lincolns lived at the Knob Creek Farm (Boyhood Home Unit) for about five years and then the family moved to Indiana. The national historic site now contains about 345 acres of Kentucky farmland consisting of open fields and woodlands.

CLIMATE

The climate of LaRue County is considered temperate and humid. Summers are hot in the valleys and slightly cooler in the hills, with an average high of 87°F and an average temperature of 76°F. Winters are moderately cold with an average temperature of 37°F and an average low of 27°F.

Rain falls throughout the year but is heaviest in winter. Snow falls nearly every winter but melts off after a few days.

CULTURAL RESOURCES

OVERVIEW OF ARCHEOLOGICAL RESOURCES

Abraham Lincoln Birthplace National Historic Site is recognized primarily as a cultural resource park with significant natural resources. This site provides a direct link to the birth and early years of America's 16th president.

The national historic site contains two units. The Birthplace Unit encompasses about one-third of the original Sinking Spring Farm where Abraham Lincoln was born in 1809. The Lincoln family lived here for another two years after Abraham was born before moving to the Knob Creek Farm (Boyhood Home Unit) some 10 miles away.

The Lincoln farms are in the Pennyroyal region of west central Kentucky. The area is characterized as rolling upland plain with a hilly countryside with stream beds, sinkholes, and limestone and sandstone outcroppings. People have occupied the Pennyroyal region since at least 11,000 BC. These early Paleo-Indian inhabitants were hunters of Pleistocene megafauna. Occupation of the region by prehistoric humans continued through the Mississippian period, ca. 1000 to 1650 AD, which is characterized as a maize agriculture-based society. Historic and archeological information suggest that the area around the Birthplace Unit was not used for settlement by native people in historic times, but was used for hunting and fishing by people of the Cherokee, Chickasaw, Shawnee, and Iroquois tribes. The barrens, a large area of land burned off by native people to attract buffalo, was adjacent to the Birthplace Unit.

Settlers first entered the area in 1788. Not long afterwards they established two mills on the Nolin River and South Fork Creek. These became the center for permanent settlements in the area.

Thomas Lincoln bought the Sinking Spring Farm in 1808. The Lincolns lived on this farm for two years after Abraham Lincoln was born in 1809. The land bought by Thomas Lincoln might have been partially cleared for farming, since there had been prior owners. If not, it probably was partially cleared by Thomas Lincoln. The same was true of the farm at Knob Creek. Over the years various crops were raised at both farms.

In 1916 Congress passed a bill authorizing the federal government's acceptance of a portion of the Sinking Spring Farm from the Lincoln Farm Association. In 1998 Congress authorized the expansion of the national historic site's boundaries to take in the Knob Creek Farm, which was transferred to the National Park Service on November 6, 2001.

There is still much to learn about the prehistory and history of Abraham Lincoln Birthplace National Historic Site. Archeological research is incomplete, with only a small percentage of the national historic site having been surveyed. Surveys have been limited to those areas in the national historic site where development has been undertaken. A 1988 survey of a sewer line of more than 4,000 linear feet that included the national historic site's visitor center, picnic area, and residences at the Birthplace Unit did not reveal any evidence of prehistoric peoples. It did reveal a plow zone and disturbance from earlier road and utility work.

An archeological survey of the developed area and fields at the Boyhood Home Unit found a possible large prehistoric site. Shovel testing identified a large chert procurement and flaking (primary reduction) site. It appears that stone for tool-making was collected from what is now the Knob Creek area. It is possible that a prehistoric domestic camp may be located in the developed portion of the property, as a number of completed tools and

flakes were recovered in the area. No prehistoric ceramics were recovered, suggesting that the site is either a pre-ceramic archaic period site or that it was used for lithic procurement only.

No evidence was found of the original Lincoln cabin, the Louisville-Nashville road, or other features related to the Lincoln family's occupation at the Knob Creek site. Modern and historic development and construction may have obliterated any features from the archeological record.

No archeological properties of the national historic site have been identified as meeting national register criteria. As surveys and inventories are completed, some eligible archeological sites may be identified.

HISTORIC STRUCTURES

There are two National Register of Historic Places nomination forms submitted for the national historic site — one for the Birthplace Unit and one for the Boyhood Home Unit. The structures listed as being nationally significant in the Birthplace Unit are the traditional Lincoln birthplace cabin and Lincoln birthplace memorial building. The National Park Service has identified the Sinking Spring entrance and drain, Lincoln birthplace memorial plaza, and the plaza wall/bench as being contributing features and the stone stairs from the parking area as being of local significance.

The traditional Lincoln birthplace cabin is now inside the Lincoln birthplace memorial building. The remains of a log cabin on the Sinking Spring farm site was moved in 1860 (almost 50 years after Thomas sold it) to a nearby farm. Although its history before that date is obscure, the log cabin now displayed came to be thought of as the birthplace of Abraham Lincoln. A New York businessman purchased the Lincoln farm in 1894 and had the cabin moved to its original site near the Sinking Spring. Shortly thereafter it was dismantled and reerected for exhibition in many cities. About 1900, the Lincoln Farm Association was formed to preserve Lincoln's birthplace and establish a memorial to the country's 16th president. Today the approximately 12 x 17 foot cabin, which consists of 63 mostly white oak squared logs, sits inside the memorial building.

The Lincoln Birthplace memorial was conceived in 1906-1908 as the nation's principal memorial to Abraham Lincoln. The Lincoln Farm Association was formed to preserve and memorialize the Lincoln farm with the purpose of making it a national park. A nationwide fund-raising campaign was launched, and a noted architect was selected to design the memorial. Using a Greek Classical design, the memorial was built with pink Connecticut granite and Tennessee marble between 1909 and 1911. The cornerstone was laid in 1909 by President Theodore Roosevelt. However, the building was not finished until 1911, and President William H. Taft presided over the dedication. The memorial stands on or near the presumed original site of the cabin. It is a one-story building approached by a formal entrance of fifty-six steps (relating to Lincoln's age when he died) and has bronze doors. Doric porticoes are on the front and sides. Some modifications have occurred over the years to provide for better visitor safety and preservation of the cabin (such as enclosing and air-conditioning the building).

Other features on the national historic site's list of classified structures include the following:

- The Sinking Spring entrance and drain, which was constructed in 1929-30 by the War Department to provide access to the spring. A set of limestone steps with flagstone landing and limestone walls lead to the spring. The spring pool is visible through a circular hole in flagstone paving and is sheltered by a natural rock ledge.

- The Lincoln birthplace memorial plaza was laid out and built by the War Department between 1929 and 1933. The geometrically ordered rectangular plaza lies in a flat basin at the foot of the Memorial Building and steps. It contains two cross-axial concrete walks that meet a central flagstaff. A stone/wall bench ends the shorter axis.
- A plaza wall/bench was erected by the War Department at the same time that memorial plaza was being constructed. This 44' x 2' x 4' high, three-part, coursed limestone wall forms the southeast edge of the memorial plaza. Four piers with limestone caps mark the ends of the wall and bracket the bench, which forms the central portion of the wall.
- Stone stairs were constructed by the War Department from the parking lot into the memorial plaza. These 13-foot-wide stair of two runs of 12 and 13 concrete (originally limestone) steps are flanked by coursed limestone retaining walls with stone pedestals.

The Boyhood Home Unit contains a National Register of Historic Places Historic District of local significance. The district consists of the Lincoln Tavern, a replica of the Lincoln boyhood home, and a small area around these structures. The district is significant for its role in LaRue County tourism and its place in Abraham Lincoln iconography. The Lincoln Tavern is a 1 ½ story log and concrete, asymmetrical building with an exterior constructed from unhewn logs with saddle and V-notching and concrete chinking. The west facade features a prominent limestone block chimney, and at the rear is a 1-story addition. The tavern was built in 1933 and served for many years as a local tourist attraction and entertainment center. About the same time the tavern was constructed, the replica of the Lincoln Boyhood Home was constructed. This rectangular single-pen log building consists of hewn logs with mud and rock slat chinking and a prominent log and mud chimney.

All national historic site structures on the List of Classified Structures are in good condition. All national register sites receive preservation maintenance. Structures receive preservation treatment as staff time and funding allow.

CULTURAL LANDSCAPES

NPS staff has completed a cultural landscape report for the Birthplace Unit. The remainder of the Birthplace Unit, beyond the memorial area, was not addressed in the report. No equivalent work has been done for major structures at the Boyhood Home Unit.

The cultural landscape report prepared for the Birthplace Unit identified the memorial landscape as being significant. The period of significance was identified in the cultural landscape report as 1911–1935. However, substantive documentation is available only dating back to the beginning of the early 1930s. Features associated with this landscape include: walkways in the memorial plaza, steps and walls in the memorial plaza, the memorial building stairway and walls, Sinking Spring rock work, lawn terraces, trees, hedges, and groundcover in the area originally purchased by the Lincoln Farm Association plus the land purchased to protect the Boundary Oak. The cultural landscape report has provided treatment recommendations for this area, which include the following:

- retain the formal alignment of the walks as they pass through the memorial plaza
- preserve and maintain the steps in the memorial plaza
- preserve and maintain the memorial building stairway and walls
- rehabilitate the lawn terraces
- replant the red cedar allée
- reestablish woodland edge
- replace and replant hedge areas

The national historic site staff is working toward restoring the cultural landscape to good condition as time and funding permits.

Decisions to change the Boyhood Unit from its current condition will take into consideration the results of a cultural landscape report prepared for the unit.

MUSEUM COLLECTIONS

National historic site collections inventory lists more than 400 objects in its museum collections. Most of the objects are related to the Lincoln Farm Association and their efforts to preserve Lincoln's birthplace. However, there are a few objects that are connected to Abraham Lincoln or his family. The remaining objects are representative of the period only and are primarily used in exhibits. The museum collection is either stored or exhibited in three different locations including the visitor center, the memorial building, and Mammoth Cave National Park.

In addition to maintaining a condition assessment on each item, the National Park Service assesses the condition of facilities housing the museum collections. The park annually evaluates the conditions in park facilities according to the environmental, security, and fire protection standards necessary to preserve and protect museum objects as identified on the NPS "Checklist of "Preservation and Protection of Museum Collections."

National historic site environmental, security, and fire protection standards necessary to preserve and protect museum objects are identified annually on the NPS "Checklist for Preservation and Protection of Museum Collections." In 1999, 131 of 177 standards applicable to the national historic site were met. The goal is to meet 140 of these standards by 2005.

NATURAL RESOURCES

OVERVIEW

Natural resources in central Kentucky have attracted attention for centuries. Native Americans, early settlers, railroaders, and road builders used the region. Hardwood forests provided building material and fuel for fireplaces. Natural springs provided clean water. The fertile soils made good cropland.

Plant and animal habitat types include riparian zones, agricultural fields, mowed lawns, upland forests, developed areas, a wetland, geologic features, and a portion of a rare limestone glade.

WATER RESOURCES

Surface water resources in the area include the South Fork Nolin and North Fork Nolin rivers; Sportsman and McDougal Lakes, and many other smaller lakes; Knob Creek and many other perennial creeks; Sinking, Howell, Terhune, Heady, and other springs; and some small ponds. Most of the Birthplace Unit is in the Sinking Spring watershed, part of the greater Nolin River watershed. The Boyhood Home Unit is in the Knob Creek watershed.

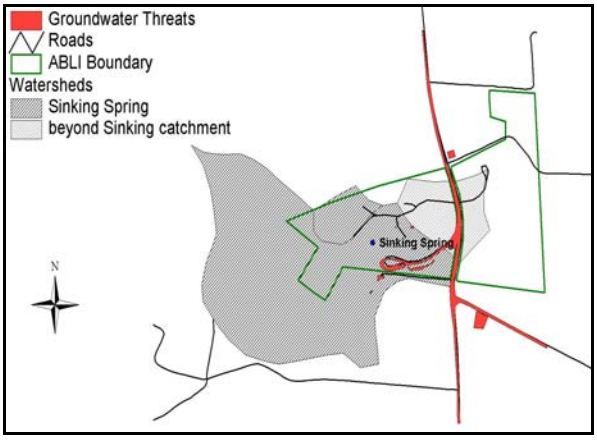
Sinking Spring is a significant natural resource typical of Kentucky's karst topography and subsurface hydrologic systems. The spring has produced a moderate, but continual, flow of water since the 1800s.

Water from the spring immediately enters a small cave and then flows underground before emptying into the South Fork Nolin River about 1 mile southwest of the spring. Sinking Spring is a part of a possible network of springs and subsurface streams in and around the national historic site. Because the spring's cave supports a variety of fragile cave biota, it is particularly sensitive to pollutants and disturbance. Another spring near the site of the Boundary Oak has been reported.

In the northeastern corner of the Birthplace Unit is a large depression called Big Sink. The sink contained a natural spring that ceased flowing in the 1930s.

Hydrologic studies have indicated that the watershed or basin around Sinking Spring is about 110 acres and extends outside the national historic site (figure 2). The principal recharge area for Sinking Spring (area in which precipitation percolates through the ground into the subsurface) is larger than the basin and may include the rapidly developing area adjacent to the northern boundary. As development outside the national historic site boundaries continues, there is a distinct possibility that the flow of the spring will be altered or cease entirely (NPS 1987). Additional studies have been identified to determine the exact recharge area and the extent of threats to the spring.

FIGURE 2: WATERSHEDS AND GROUNDWATER THREATS



Data source: Hoffman Institute, Western Kentucky University

WATER QUALITY

Water quality information comes from the report entitled "Hydrogeologic Assessment of the Parks of the Cumberland Piedmont Network" (Meiman 2004).

During the late 1990s, the Kentucky Division of Water sampled Sinking Spring as part of its Ambient Water Quality Program. These samples, generally taken quarterly, showed slightly elevated levels of nitrate and seasonal presence of agricultural chemicals. In 2001 the Hoffman Environmental Research Institute of Western Kentucky University was contracted to examine the water quality of Sinking Spring during floods. Preliminary results of this study have shown elevated levels of fecal coliform. No water quality sampling has occurred at the Boyhood Home Unit.

Water quality is assessed as follows for three sites at the national historic site:

- Sinking Spring (Birthplace Unit): degraded
- North Branch Knob Creek (Boyhood Home Unit): pristine
- Knob Creek (Boyhood Home Unit): potentially degraded

According to the report, these general categories are based on data and assumption. If water quality data exist and show water quality degradation, then the site is considered "degraded." If there are little or no data and adjacent, upstream land uses indicate a strong potential for water quality degradation, the site is considered potentially degraded. If data indicate, or if it can be reasonably assumed based on adjacent, upstream land use, that water quality is unimpaired, the site is considered "pristine." If reasonable assumptions cannot be made—if a karst watershed is undefined for example—the site is considered potentially degraded.

Based on the information contained in "NPS Baseline Water Quality Data Inventory and Analysis" (NPS 1999a), there are five water quality monitoring stations in the national historic site boundaries, including the one at Sinking Spring. Dissolved copper concentrations were measured 14 times in Sinking Spring from 1995 through 1997. One concentration of 20 micrograms per liter (ug/L) exceeded the acute freshwater criterion of 18 ug/L in May 1996. Dissolved thallium concentrations were also measured 14 times in Sinking Spring from 1995 through 1997. One concentration in November of 1997 exceeded the drinking water criterion (NPS 1999a). Potential human-caused sources of contaminants to the water in Sinking Spring or Knob Creek include municipal wastewater discharges, agricultural activities, stormwater runoff, improperly treated sewage, recreational use, and atmospheric deposition. All of these except atmospheric deposition are from outside the national historic site.

Features/areas that pose possible contamination threats to water resources have been identified for the Sinking Spring watershed (figure 2). These threat sources are primarily roads (oil, fuel and hazardous material), industrial sites (hazardous materials and other contaminants), and service stations with underground fuel storage tanks. More recent studies indicate that spills on U.S. Highway 31E may not flow directly into the spring.

FLOODPLAINS

Although the basin surrounding the Sinking Spring at the Birthplace Unit is subject to occasional flooding from excessive precipitation runoff, it is not considered a floodplain because it does not meet the NPS definition of a floodplain. In a flood situation, eruptions or blowouts of the storm drain system can occur here.

The entrance road and structures at the Boyhood Home Unit are on the edge of the 100-year floodplain of Knob Creek and its tributary.

CAVE AND KARST RESOURCES

Central Kentucky is known for its limestone karst topography. The term "karst" is defined as an area of soluble rock where the water flows mostly underground and the surface is marked by numerous sinkholes, caves, disappearing streams (insurgences), and springs or reappearing streams (resurgences). These features are also called karst windows because they are openings into the subsurface. Sinkholes occur when the ceiling of a cave collapses, leaving a depression on the surface. Sinkholes may or may not connect to cave passages.

Most of the western part of the Birthplace Unit is one large sink. This entire area drains into the cave below Sinking Spring. Big Sink, in the eastern part of the Birthplace Unit, along with the cave at Sinking Spring, are part of an interrelated system of karst features in and around the Birthplace Unit.

The cave that the spring flows into reportedly extends for about 80 feet before it becomes too small to negotiate. The waters of Sinking Spring have been traced and found to empty into the South Fork of the Nolin River about 1 mile southwest of the spring (NPS 1997b). There could be some additional cave passages along this route.

Visitors occasionally throw coins or litter into Sinking Spring. Coins cause discoloration of the substrate, and litter can degrade the water quality. NPS staff periodically clean out the spring area.

Weak spots in the ceilings of limestone cavities may collapse during heavy rains as indicated by the subsidence of soil and turf into these cavities.

Rock shelters have been found in the Boyhood Home Unit and should be inventoried for possible cultural resources and use by bats or other life-forms.

SOILS

Birthplace Unit

According the Natural Resource Conservation Service (formerly the Soil Conservation Service), there are two main soil types in the Birthplace Unit (SCS 1979). About half of this Unit is Crider silt loam and the other half is Cumberland silt loam (see table 7).

Boyhood Home Unit

Soils at the Boyhood Home Unit are composed of Sensabaugh silt loam, Garmon silt loams, Hagerstown silt loam, and Caneyville-Rock outcrop complex (see table 8).

TABLE 7: SOILS AT BIRTHPLACE UNIT

NAME	SLOPE	LOCATION	RESTRICTIONS
Crider silt loam	2 to 6%	Primarily east of highway and lower lands in the west	Moderate risk for development due to low strength and shrink-swell potential
Cumberland silt loam	6 to 20%	Slopes in remainder of unit	Moderate risk for development due to low strength and slopes

Source: Natural Resource Conservation Service (SCS 1979)

TABLE 8: SOILS AT BOYHOOD HOME UNIT

NAME	SLOPE	LOCATION	RESTRICTIONS
Sensabaugh silt loam	Level	Bottomlands	Severe restrictions for all construction because of flooding.
Garmon silt loams	25 to 60%	Side slopes	Severe for all construction because of slopes
Hagerstown silt loam	2 to 12%	Top of knobs	Moderate for all construction because of slopes, low strength and shallow depth to rock
Caneyville-Rock outcrop complex	6 to 30%	Top of knobs	Severe for buildings and moderate for roads because of low strength, high slopes, rock

Source: Natural Resource Conservation Service (SCS 1979)

VEGETATION

Overview

Central Kentucky is in a transition zone between the southern hardwood forests and the northern plains. The Boyhood Home Unit is also in an ecotone, or transition zone, between the Mississippian Plateau and the Knobs Region of Kentucky. Because of this, there is an unusually diverse and abundant community of flora at this unit. The northeastern corner of the Birthplace Unit, covering about 9 acres, is an impressive old-growth oak forest.

Tree species in the region include red oak, white oak, wild apples, wild cherries, hazel, hickory, and black walnut. Shrubs of the mesophytic forests include spicebush, American bladdernut, eastern hop hornbeam, and pawpaw. Ground cover is composed of forbs such as sassafras, wild rose, mint, wild berries, wild lettuce, pokeweed, and milkweed, as well as various grasses. In addition, vines such as poison ivy and others root in the ground and climb up on other species.

A huge white oak served as an original boundary marker for one corner of the Sinking Spring property. The Boundary Oak was a well-known landmark when the Lincolns were here and later. It was estimated to be 195 years old at the time of its death in 1976. A similar oak serves as a boundary marker for the original Knob Creek Farm.

The area around the memorial building and visitor center now bears little resemblance to the countryside of the 1800s. NPS management efforts are directed towards maintaining the landscape so that it appears as it did in the 1930s. The turf and other vegetation are managed to preserve the manicured appearance. Sod replacement, seeding, and fertilization are performed annually. Trees in the landscaped areas are given special

attention to ensure maximum life and pleasing appearance and to minimize safety hazards. According to initial public comments, public acceptance of the present appearance is good, and any lowering of grounds maintenance standards could be expected to result in extensive public criticism.

The Boyhood Home Unit contains a variety of vegetation types including heavily vegetated slopes of red buckeye (*Aesculus pavia*) and chinquapin oak (*Quercus muehlenbergii*), mixed hardwood forest along ridgetops and Knob Creek, fields, hardwood glades, and a small area of regularly maintained lawn. The steep bluffs around Knob Creek exhibit more natural vegetation, and the lowlands have been farmed or landscaped. Some areas of vegetation on top of the south knob have been manipulated by past landowners to create habitat for game animals.

Current boundaries at the Boyhood Home Unit include a portion of a rare limestone glade in the northeast corner. Glades occur on limestone outcroppings on south- or west-facing slopes. They are characterized by shallow rocky soils and a number of flowering prairie/glade plants that have adapted to the harsh, dry conditions. The glade extends onto adjacent private land, and the National Park Service is studying this property for possible willing-seller acquisition or donation.

Most of the native forest in both units has been cut down in the past to provide wood for construction or fuel, or to clear land for agriculture. In addition to other trees, settlers used wood from the American chestnut for their buildings. This use, combined with a chestnut blight that affected the eastern U.S. in the first half of the 20th century, has led to this tree being extremely rare today. A multi-agency project to restore the American chestnut has begun in the region, and the National Park Service is participating.

Nonnative Plants

For the last 200 years, level areas have been cleared of native vegetation and planted with crops such as flax, corn, tobacco, or others. Nonnative trees and shrubs were planted by homesteaders for decoration or other purposes. There are reports of the Civilian Conservation Corps planting nonnative fescue grass seed at the Boyhood Home Unit and throughout the region in the 1930s. Invasive noxious weeds have appeared on disturbed lands unless the land has been treated or planted with native species.

Nonnative plants become a problem when they force out native species and upset natural ecological processes.

WILDLIFE

Abraham Lincoln Birthplace National Historic Site contains a variety of birds and small animals. The following lists are comprised from information provided to the National Park Service by various biologists.

Reptiles and Amphibians

Reptiles and amphibians at the national historic site include black racer, western earth snake, black rat snake, northern ringneck snake, eastern garter snake, northern water snake; fence lizard, five-lined skink, ground skink; eastern box turtle; wood frog, southern leopard frog, pickerel frog, green frog, bull-frog, Blanchard's cricket frog, spring peeper, Cope's gray tree frog, American toad, eastern tiger salamander, Jefferson salamander, red-spotted newt, slimy salamander, northern zigzag salamander, southern two-lined salamander, and long-tail salamander.

Birds

Birds at the national historic site include permanent residents as well as migratory species. Common species at the national historic site include the chimney swift, mourning dove, cedar waxwing, blue-gray gnatcatcher, Carolina wren, American crow, blue jay, red-winged blackbird, northern cardinal, American goldfinch, various warblers, dark-eyed junco, song sparrow, brown-headed cowbird, rufous-sided towhee, summer tanager, common grackle, wood thrush, tufted titmouse, white-breasted nuthatch, European starling, brown thrasher, eastern wood-peewee, Acadian flycatcher, great crested flycatcher, northern flicker, red-bellied woodpecker, downy woodpecker, and eastern screech owl.

Mammals

Mammals at the national historic site include raccoon, Virginia opossum, white-tailed deer, striped skunk, mink, gray fox, coyote, eastern cottontail, groundhog, southern flying squirrel, eastern chipmunk, white-footed mouse, eastern harvest mouse, prairie vole, pine vole (woodland vole), southern bog lemming, short-tailed shrew, smoky shrew, least shrew, eastern mole, little brown bat, and red bat.

Species of Interest

Species of interest are the eastern harvest mouse (somewhat uncommon in many sections of Kentucky), wood frog (uncommon to rare in the western Knobs), and eastern tiger salamander (near the eastern edge of its range in Kentucky). There is an amphibian breeding pond on a ridge in the Boyhood Home Unit. The permanent streams of Knob Creek are too small for aquatic turtles or mudpuppies (pers. comm. with John MacGregor, contract biologist).

A bald eagle has been seen at the Boyhood Home Unit, but is considered an infrequent visitor. Large wildlife such as bison, elk, and black bear inhabited the area at the time the Lincolns lived here but are not seen today.

Although the two national historic site units are relatively small in area, they do serve as protected refuges for wildlife amid disturbance and development in the region.

SPECIAL STATUS SPECIES

The U.S. Fish and Wildlife Service has identified seven federally listed species that occur in the vicinity of the national historic site (see appendix B). However, the U.S. Fish and Wildlife Service and the Kentucky Department of Fish and Wildlife Resources indicate that no federally listed species are known to occur in the national historic site, but records are not all-inclusive. Potentially suitable habitat in the national historic site for federal and state listed species is being surveyed to determine their presence or absence. Habitat for the following three species could exist in the national historic site, so these will be included in this document

Gray Bat (*Myotis grisescens)* — Endangered

Gray bat colonies are restricted entirely to caves or cave-like habitats. During summer the bats are highly selective for caves that provide specific temperature and roost conditions. Usually these caves are all within a kilometer of a river or reservoir. In winter they use only deep, vertical caves having a temperature of 6-11 degrees centigrade (USFWS 2004). Consequently, only small proportions of the caves in any area are or can be used regularly. About 95% of the hibernating population uses only nine known caves, and none of these are within NPS boundaries at the national historic site.

The bats forage for insects in riparian areas that have open water and a forest canopy. There is no designated critical habit for this species in the area, but the national historic site could include suitable foraging or watering habitat.

Indiana Bat (*Myotis sodalis)* — Endangered

Limestone caves are used for winter hibernation by this species. The preferred caves have a temperature averaging 37 degrees to 43 degrees Fahrenheit in midwinter, and a relative humidity averaging 87%.

It is possible that the Indiana bat may use the area for summer foraging and roosting. Summer foraging habitats are generally defined as riparian and bottomland (generally used by females and juveniles), and upland forest and old fields or pastures with scattered trees (generally used by males). Creeks may not be used if riparian trees have been removed. Foraging areas average 11.2 acres per animal in midsummer (USFWS 2004).

Roosting and maternity habitat consists primarily of live or dead hardwood tree species such as shagbark hickory, which have exfoliating bark providing space for bats to roost between the bark and the bole of the tree. Tree cavities, crevices, splits, or hollow portions of tree boles and limbs also provide roost sites for females. Males usually roost in caves. There is no designated critical habit for this species in the national historic site, but potential foraging and watering habitat does exist.

Hine's Emerald Dragonfly (*Somatochlora hineana*) — Endangered

This dragonfly has bright, emerald-green eyes, a body size ranging from 60 to 65 mm (2.5 inches) in length, and a wing span of 80–85 mm (3.3 inches) (USFWS 1995). It is not known to be in Kentucky, but was known in Indiana where it now may be extirpated.

The habitat of the Hine's emerald dragonfly usually consists of complex wetlands with underlying limestone bedrock or shallow, spring-fed streams that drain into wet meadows and cattail marshes (USFWS 1995). This type of habitat may be found along Knob Creek in the Boyhood Home Unit, but there are no recorded sightings of this species in the national historic site.

Table 9 shows the current state listed species that are also on the known species list for the national historic site. This list is subject to change as several plant and wildlife inventories are still in progress.

SOUNDSCAPES

Natural soundscapes exist in the absence of human-caused sound. Some natural sounds are part of the biological or physical resources of the national historic site. Examples of such natural sounds at Abraham Lincoln Birthplace include

- sounds produced by birds, frogs, or insects to define territories or attract mates
- sounds produced by physical processes such as wind in the trees, flowing water, or claps of thunder

At Abraham Lincoln Birthplace, human-caused sounds are most noticeable along major roads and in developed areas such as the visitor center, main parking lot, and picnic area. The level of noise varies by location and time of year (relating to number of visitors).

Natural soundscapes can be experienced in the undeveloped portions of the Boyhood Home Unit away from the highway where the soft, intermittent sounds of nature prevail. This natural quiet was mentioned as a national historic site value by several public commenters during scoping.

Threats to natural soundscapes come primarily from activities on lands adjacent to the national historic site boundaries such as vehicle traffic, occasional construction, and some industrial activity.

TABLE 9: STATE-LISTED SPECIES

STATE STATUS	SCIENTIFIC NAME	COMMON NAME
	PLANTS	
S	Aster pratensis	Barrens silky aster
T	Care rugosperma	umbel-like sedge
E	Castilleja coccinea	scarlet Indian paintbrush
E	Collinsonia verticillata	whorled horse-balm
S	Dryopteris carthusiana	spinulose wood fern
S	Heteranthera limosa	blue mud-plantain
S	Lespedeza capitata	round-head bush-clover
T	Muhlenbergia cuspidata	plains muhly
S	Najas gracillima	thread-like naiad
T	Sporobolus clandestinus	rough dropseed
S	Vitis labrusca	northern fox grape
	ANIMALS	
S	Accipiter striatus	sharp-shinned hawk
S	Ammodramus henslowii	Henslow's sparrow
E	Certhia americana	brown creeper
T	Dendroica fusca	blackburnian warbler
E	Empidonax minimus	least flycatcher
S	Junco hyemalis	dark-eyed junco
S	Pheucticus ludovicianus	rose-breasted grosbeak
T	Vermivora chrysoptera	golden-winged warbler
S	Wilsonia canadensis	Canada warbler

Key to Status: E= State Endangered, T=State Threatened, S= Species of Concern. Information is based on the *NPSpecies* database and provided by the Inventory and Monitoring Coordinator, NPS Cumberland Piedmont Network.

VISITOR USE

The two national historic site units (Birthplace Unit and Boyhood Home Unit) are open for day use activities. Camping and other lodging are available outside the national historic site.

Visitation statistics indicate a 10-year average of 254,000 annual visits (1993–2003). The trend over the last decade is a small but steady drop in numbers (table 10). The slight increase in 2002 is probably due to the expansion of the national historic site to include Abraham Lincoln's early boyhood home at Knob Creek. Use of the picnic area averages 45,000-50,000 people per year with heaviest use on weekends in late spring, summer, and early fall. Most of this use is from highway travelers or local residents who do not visit other areas of the national historic site.

TABLE 10: VISITATION

Year	Total Visits
2004	198,222
2003	211,650
2002	250,772
2001	229,675
2000	239,298
1999	247,615
1998	251,785
1997	264,417
1996	245,475
1995	277,403
1994	279,046
1993	297,049

Source: NPS Public Use Statistics Office

Parking lot surveys indicate that most visitors come from Kentucky and adjoining states to the north, east, and west (Indiana, Ohio, West Virginia, and Illinois). Some foreign visitors also stop at the national historic site, mostly from Japan and Western Europe.

The national historic site is busiest during June, July, and August when 55% of the annual visitation occurs. The slowest time of year is November and December when 4% of the visitation occurs (NPS 1987).

Surveys have been conducted at the Birthplace Unit for several years to determine visitor satisfaction with the overall quality of facilities, services, and recreational opportunities. Results have been consistently high. The survey for fiscal year 2003 reflected a positive 97% satisfaction measure (composite very good and good scores). The results of the surveys show that visitors were most satisfied with the picnic area (100%), restrooms (98%), walks/trails/roads (97%), employee assistance (97%), and exhibits (96%). Visitors were least satisfied with commercial services (60%). This could include lack of such services since there are no commercial services in the national historic site. Visitors probably included in this category services at a nearby private gift shop that most visitors think is in the national historic site (data from NPS staff).

Professional visitor use studies have not been conducted at the national historic site to develop visitor profiles and assess visitor understanding and appreciation of national historic site resources. Existing visitor profile information was developed by NPS staff from observation of visitor behavior, review of comments recorded in visitor registers, and the satisfaction surveys described previously. The data collected is inadequate in scope to develop visitor use programs. Additional studies are needed to provide current, accurate data for developing future information/orientation, education, and interpretation activities.

Birthplace Unit

The Birthplace Unit contains 116.5 acres bisected by Highway 31E. The property includes about 100 acres of the original 300-acre Sinking Spring Farm. In this unit are the visitor center, NPS headquarters offices, memorial building and cabin, Sinking Spring, memorial plaza, maintenance area, employee residences, picnic area, and trails. The average length of stay for visitors in the Birthplace Unit is one hour.

Many visitors spend most of their time west of Highway 31E where a memorial landscape surrounds the visitor center, memorial building, and Sinking Spring. From the conception of the birthplace farm as a monument to Abraham Lincoln in 1907, a memorial setting was designed as the emphasis for the area. The landscaped grounds in this area retain a shrine-like quality that affects visitor use.

Visitors are encouraged to stop first at the visitor center for orientation to site opportunities. Here, they can see a movie about Abraham Lincoln's early years and see interpretive exhibits, including the Lincoln family Bible.

The memorial building is the most heavily visited site in the unit. The memorial atmosphere inside the building during periods of heavy visitation is impacted by noise, congestion, undirected traffic, uncontrolled visitation patterns, and organized talks presented to groups.

The Sinking Spring and the knoll shadowing it are the only surviving landmarks related to the period of Lincoln family use of this land. Current visitor use includes reflection surrounded by the soothing sounds of trickling, splashing water and the cool dampness of a place Abraham Lincoln knew as a child.

East of Highway 31E is a picnic area with restrooms, tables, grills, parking, and hiking/interpretive trails that provide closer contact with natural resources resembling those encountered by the Thomas Lincoln family. Discussions with NPS staff indicate that there is significant use of the woodland trails in the national historic site. Some visitors may walk these trails to interact with the land that molded our nation's 16th president.

The unit is open daily, except Thanksgiving Day, December 25, and January 1, for day-use activities.

Interpretive staff provide orientation and information, roving contacts, and informal interpretive talks in the visitor center, memorial building, and memorial grounds. The staff also conducts environmental education activities with local school groups in an area on the east side established for that purpose.

Boyhood Home Unit

Within the Boyhood Home Unit of the national historic site are cultural landscapes related to Lincoln's early childhood and current use of the site as a tourist attraction. The valley and creeks remain much as they were in Lincoln's time. A replica cabin and tavern building built in the 1930s remain on the site.

The Knob Creek property was privately owned and operated as a tourist attraction before it was transferred to the National Park Service in 2001. The owners gave tours of the replica cabin that contained period furniture and accessories. The tavern building was open as a museum and gift shop.

Both buildings are being stabilized by the National Park Service. Stabilization efforts involving massive beams inside the cabin preclude opening this structure to visitors. Until a structural integrity analysis can be conducted, the tavern interior is also closed to the public.

A picnic area with tables is provided for visitors; however, there is currently no approved source of potable water.

The unit is open daily during daylight hours year round. Interpretive staff occupy a ranger station and provide orientation, roving contacts, and informal interpretive talks from April 1 until October 31. About 30,000 visitors were contacted at the site by NPS interpretive rangers in 2003. A traffic counter indicated 60,000 total visits to the unit (number of vehicles multiplied by an average number of persons per vehicle).

National historic site property has been used by Boy Scout groups for hiking, education, camping, ceremonies, service projects, and other get-togethers for many years. Since 1942, a Boy Scouts of America hiking trail, the Kentucky Lincoln Trail, linked the birthplace to the boyhood home. It was a 33-mile, two-day hiking trail from Elizabethtown High School in Elizabethtown, Kentucky, to the Boyhood Home Unit, where there was over-night camping, and then on to the Birthplace Unit. This trail has been sponsored and operated by the Zit Kala Sha Lodge of the Order of the Arrow to encourage hiking and environmental awareness. The Lincoln Memorial Trail consists of the 14-mile section of the Kentucky Lincoln Trail from the Boyhood Home Unit to the Birthplace Unit. This shorter trail is appropriate for day hikes.

Currently, visitor use of the Kentucky Lincoln (Boy Scout) Trail is minimal or nonexistent, mainly because of the lack of potable water at the Boyhood Home and the lack of trail maintenance. On-site conditions and facilities do not meet health and safety standards required by the National Park Service.

NPS managers want to renew and strengthen the relationship between the NPS staff and local Boy Scout groups for the benefit of both parties. Continued use and maintenance of the Kentucky Lincoln (Boy Scout) Trail would contribute to the quality and quantity of interpretation and education activities available to national historic site visitors and Boy Scout groups visiting both units.

ORIENTATION AND INFORMATION

Visitors interact with NPS personnel at three staffed stations — the visitor center and memorial building at the Birthplace unit and ranger station at the Boyhood Home unit.

Visitors are encouraged to stop at the visitor center for directions to other points of interest in the national historic site. However, the location and site design of the visitor center, parking lot, and memorial plaza causes visitor uncertainty about the preferred route of travel. Private development adjacent to the southern boundary of the national historic site contributes to visitor confusion. The rustic, log cabin appearance of private residential and commercial gift shop buildings attracts visitors and focuses their attention away from national historic site resources. Sidewalk access to the gift shop through an NPS boundary fence contributes to visitor confusion as to the owner of the gift shop even though a sign posted prominently near the boundary advises visitors they are leaving NPS property and entering private property. Additional development outside the south and north national historic site boundaries could further impact visitor use of the national historic site.

Staff at the memorial building reports significantly more visitors than recorded at the visitor center. These visitors tour the national historic site without benefit of orientation and information offered at the visitor center. Future development of clearly identified preferred routes and compellingly designed visitor center entry, parking lot, and trails/walks should attract visitors from the parking lot to the visitor center and from the visitor center to the memorial plaza.

The visitor center is staffed with NPS rangers and volunteers who provide information on

how to best visit the national historic site. A brochure provides basic information about the national historic site; a map helps visitors find places of interest, and a general historical overview of national historic site interpretive themes.

Videos, pre-visit packets, and an Internet homepage linked to the NPS website provide information.

EDUCATION

School groups account for much of the visitation in late April and May. Groups are encouraged to make reservations, but many arrive at the national historic site unannounced, creating congestion.

"A Curriculum Guide for Abraham Lincoln Birthplace National Historic Site" provides guidance for the education program. The guide was developed by NPS and school system staffs as part of the NPS "Parks as Classrooms" program. It includes activities designed and developed for major subject areas taught in the primary and intermediate levels of elementary schools to meet Kentucky education standards.

A designated environmental study area at the Birthplace Unit is maintained for use by schools and other interested groups. Resources at the Boyhood Home Unit provide opportunities to expand environmental study activities.

A Junior Ranger Program, available to children, provides access to national historic site resources in a manner young people can understand. Completion of activities earns each child a patch and certificate noting their accomplishments in learning about national historic site resources and the National Park Service.

Traveling Trunks, including objects, interpretive devices, and educational activity guides, are available for offsite use by education groups.

INTERPRETATION

Wayside exhibits throughout the national historic site have been designed and installed at various times. They include a variety of materials, styles, and formats that do not reflect a unified appearance. A long-range interpretive plan approved in 1999 provides guidance for wayside exhibit improvements for the Birthplace Unit and the Boyhood Home Unit. When produced and installed, these exhibits will provide an important means of explaining site-specific features to visitors.

NPS staff coordinate activities with other historic organizations, such as The Lincoln Museum, to improve visitor understanding of Abraham Lincoln's early life in Kentucky. Several annual special events are especially popular with regional audiences.

Interpretation at the Birthplace Unit

Interpretive media, an information desk staffed by NPS employees, and a cooperating association sales area at the visitor center provide basic interpretation of national historic site themes. New exhibits being produced and a film introduce visitors to Abraham Lincoln's early life and the environment that helped mold his character. These interpretive media provide opportunities for visitors to see artifacts and photographs that cannot be displayed elsewhere in the national historic site. Brochures, books, and appropriate educational items are available for reading or may be purchased in the cooperating association sales area.

Most visitors to the Birthplace Unit participate in self-guided tours of the memorial area. The Sinking Spring, site of the Lincoln property boundary, memorial

building, and forest trails are interpreted with self-guiding nature/history interpretive devices.

A log, clay-chinked cabin preserved in the memorial building is representative of early Kentucky farmstead cabins. The log cabin was placed inside the memorial building in 1911 after being exhibited and stored throughout the United States from 1895 until 1911 with little documentation of its condition or repairs. Its history before 1895 is even less certain. Lack of documentation challenges interpretation of the origin of this popular resource.

NPS rangers present regularly scheduled talks and roving contacts at the memorial building. Noise and congestion inside the building at peak visitation can detract from the visitor experience.

Short loop trails in the memorial area provide routes to major points of interest. A wheelchair-accessible trail and boardwalk connects the visitor center and memorial building. A 0.7-mile trail east of Highway 31E invites visitors to learn about the resourcefulness of early pioneers.

Interpretation at the Boyhood Home Unit

Establishment of the Boyhood Home Unit (at Knob Creek) as part of the national historic site greatly increases the extent and scope of NPS interpretive responsibilities. Currently, limited interpretive services are available at the Boyhood Home Unit. An interpretive ranger is stationed there from April through October to conduct exterior tours of the tavern and cabin replica and interpret the cultural landscape. A wayside exhibit and folder provides basic orientation and interpretation when staff is not available. A long-range interpretive plan approved in 1999 provides recommendations for future development of additional wayside exhibits to interpret the site.

Until completion of a general management plan, the structures at the Boyhood Home Unit will remain closed to the public. Interpretation will present structures as exterior exhibits reflecting 19th century farming and 20th century tourism.

An old road now serves as a trail that visitors can take into the back portions of this unit. Other roads/trails access the uplands, but these are more difficult.

VISITOR SAFETY AND ACCESS

U.S. Highway 31E/KY61, a busy north/south thoroughfare, bisects the Birthplace Unit and segregates visitor use. Visitors turning into and out of the national historic site and those crossing from one section of the site to the other, either on foot or by automobile, must contend with heavy, fast traffic. Improvements have been made in the past several years, but visitor safety in this area remains a concern for NPS managers.

A loop interpretive trail on the east side of the Birthplace Unit crosses Keith Road twice, creating a potentially dangerous situation. Visitors using the trail must use caution and remain alert for automobile traffic.

Extensive, lush growth of poison ivy surrounding national historic site trails requires frequent maintenance and warnings for visitors to stay on trails and remain cautious of poisonous growth encroaching onto trail surfaces.

A wheelchair accessible trail from the visitor center to the memorial building provides access for visitors with mobility impairments.

Structures and grounds at the Boyhood Home Unit are not currently accessible to visitors with mobility impairments. These structures are closed pending study of structural integrity and planning for appropriate uses as a component of the general management plan.

SOCIOECONOMIC ENVIRONMENT

THE STUDY AREA

For the purposes of this document, the study area (the area of consideration) for socioeconomic analysis is LaRue County in central Kentucky. This county contains both units of the national historic site as well as the communities of Hodgenville (LaRue county seat), White City, and Buffalo.

LaRue County retains a predominantly rural character where farms of fewer than 200 acres are typical. Some commercial development, including motels and a convenience store, has occurred north of the Birthplace Unit, and the potential exists for further development both north and south of the unit. Land use in the area around the Boyhood Home Unit is primarily agricultural, residential, and an occasional commercial enterprise.

The U.S. Census Bureau estimates that the population of LaRue County was 13,437 in 2003. The population grew by almost 15% in the period 1990 to 2000 and continues to increase slowly. The population density in this rural county is about 51 persons per square mile, one-half the statewide average (Census Bureau 2003).

The socioeconomy of LaRue County (based on number of employees) is based on manufacturing, health and social services, and the retail trade (Census Bureau 2003). Agriculture is reported separately, but is an important component of the economy with crops of wheat, tobacco, soybeans, and corn. Tourism plays a relatively small role, but local businesses and chambers of commerce would like to see it increase.

In 1999 the median household income was $32,056 in the county. The average income per capita was $15,865 and the number of persons living below the poverty level was 15.4%. Statewide, the average income per capita was $18,093, with 15.8% of the population living below the poverty level (Census Bureau 2003).

VISITOR SPENDING IN THE STUDY AREA

The latest study year for visitor spending analysis is 2003. Abraham Lincoln Birthplace National Historic Site hosted about 210,000 visitors in 2003. Twenty percent (20%) of all visitors were local residents on day trips, 55% were visitors on day trips from outside the local area, 20% were visitors on overnight trips staying in lodges, motels, hotels, or bed-and-breakfasts in the area, and 5% were camping (NPS Public Use Statistics Office).

The total visitors represent 110,000 party days in the local area (party days = days each party of visitors spent in the vicinity). On average, visitors spent $62 per party per day in the local area. Total visitor spending was $6.53 million dollars in 2003 (table 11).

The direct effects of this spending covers sales, income, and jobs in businesses selling goods and services directly to national historic site visitors. The direct effects of the $ 6.53 million spent by Abraham Lincoln Birthplace National Historic Site visitors were $5.26 million in sales, $1.81 million in personal income (wages and salaries), $2.72 million in value added, and 146 jobs. The largest direct effects were $1.86 million in the hotel sector, $1.53 million in food and drinking places, $0.70 million in amusements, and $0.77 million in retail trade. As visitor spending circulates through the local economy, secondary effects created an additional $0.57 million in personal income and 26 jobs (table 12).

In summary, visitors to Abraham Lincoln Birthplace spent $ 6.53 million dollars in 2003, which supported a total of $ 6.97 million in sales, $ 2.38 million in personal income, 172 jobs, and $ 3.77 million in value added in 2003.

TABLE 11: VISITS AND SPENDING BY VISITOR SEGMENT (2003 DATA)

	Local Day Trips	Non-local Day Trips	Hotel	Camp	Total
Recreation Visits	42,330	116,408	42,330	10,583	211,650
Segment Shares in Rec. Visits	20%	55%	20%	5%	100%
Party Days	16,932	46,563	33,864	8,480	105,839
Avg. Spending Per Party Day	$ 26	$ 39	$ 117	$ 41	$ 62
Total Spending (millions)	**$ 0.43**	**$ 1.82**	**$ 3.93**	**$ 0.35**	**$ 6.53**

Source: NPS Public Use Statistics Office

TABLE 12: ECONOMIC IMPACTS OF VISITOR SPENDING BY SECTOR (2003 DATA)

Sectors	Sales (millions)	Personal Incomes (millions)	Jobs	Value Added (millions)
Direct Effects				
Motel, Hotel, B&B and Cabins	$ 1.86	$ 0.54	46	$ 0.82
Campsites	$ 0.08	$ 0.02	3	$ 0.04
Restaurants & Bars	$ 1.53	$ 0.48	46	$ 0.67
Admissions & Fees	$ 0.70	$ 0.24	20	$ 0.39
Retail	$ 0.77	$ 0.39	27	$ 0.62
Others	$ 5.26	$ 1.81	7	$ 2.71
Total	$ 5.26	$ 1.81	146	$ 2.72
Secondary Effects	$ 1.71	$ 0.57	26	$ 1.06
Total Effects	$ 6.97	$ 2.38	172	$ 3.77

Source: NPS Public Use Statistics Office

NPS OPERATIONS

There are 13 full-time equivalent employees at Abraham Lincoln National Historic Site to provide interpretation and education, administration, grounds keeping, and facility management at the two units. Seasonal employees, cooperating association employees, and volunteers assist the permanent staff.

Personnel are responsible for managing more than 210,000 visitors each year and the cultural and natural resources on 345 acres of NPS land. The historic site's base funding was $727,000 in fiscal year 2004.

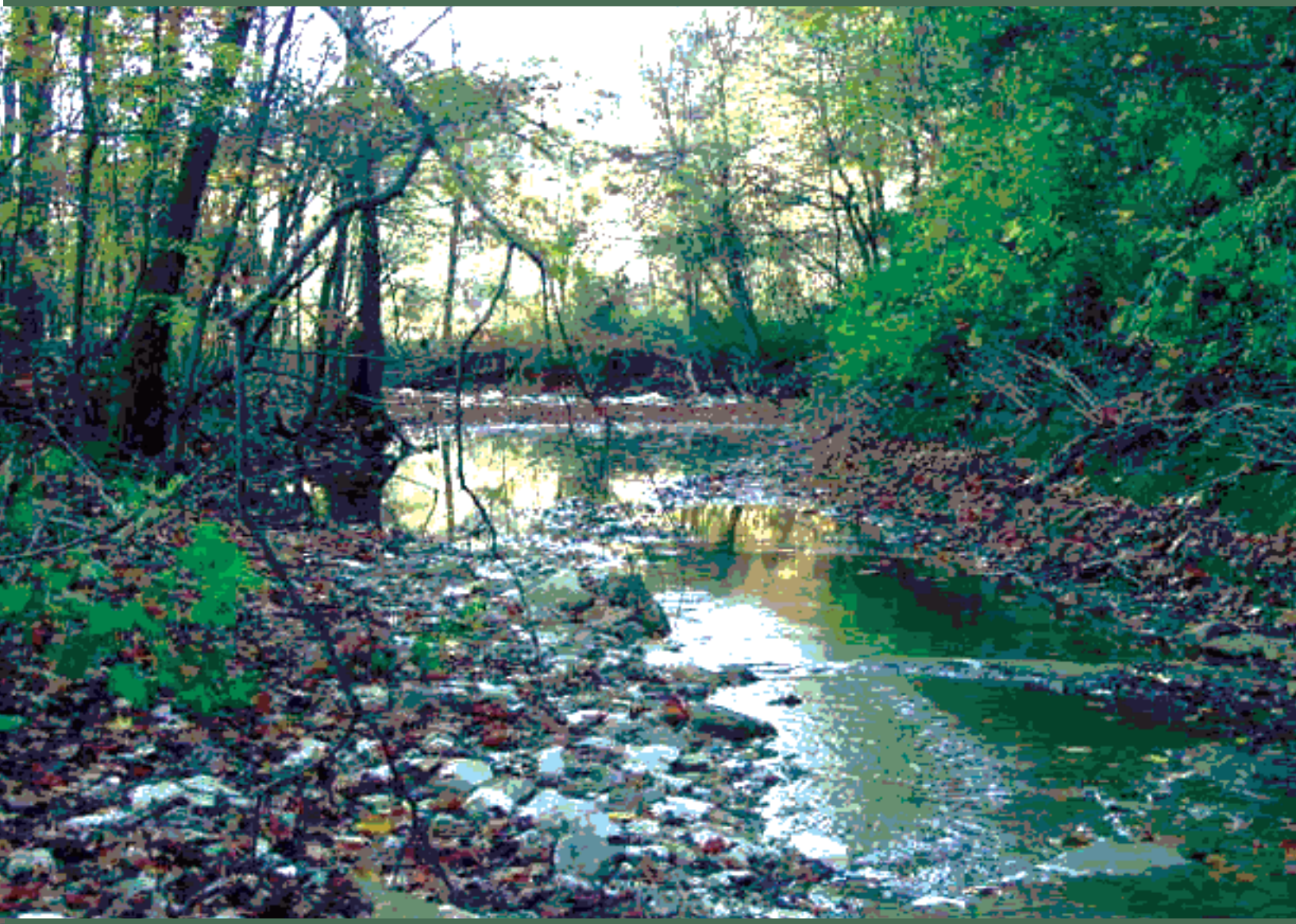
Interpretation and education programs are centered around the visitor center and memorial cabin at the Birthplace Unit. The visitor center desk is staffed, and there is an interpreter in the memorial building at all times the national historic site is open. An interpretation ranger is stationed at the boyhood home during the primary visitor season.

Both units are day use only and closed at night. There are no commissioned law enforcement rangers on staff. Law enforcement is currently provided by personnel from the local sheriff's office or Mammoth Cave National Park when requested.

The Birthplace Unit is bisected by U.S. Highway 31E. In addition to the visitor center/administration building and memorial building on the west side, there are access roads, a paved parking lot, gravel overflow parking area, the maintenance area, employee residences and utilities on the west side. The east side contains an access road, parking area, and restroom (with associated utilities). NPS staff are responsible for maintaining all these facilities.

The Boyhood Home Unit is 10 miles away from the birthplace, so maintenance crews must travel 24 miles round-trip to do work at this unit. A small pre-fabricated building has been moved onto the site to serve as a temporary visitor contact station and ranger office. Operations staff maintain the driveway/parking area, temporary office, and grounds. The National Park Service is also completing stabilization efforts on the historic tavern and replica log cabin.

Chapter 4:
Environmental Consequences



INTRODUCTION

The National Environmental Policy Act (NEPA) requires that environmental documents discuss the environmental impacts of a proposed federal action, feasible alternatives to that action, and any adverse environmental effects that cannot be avoided if a proposed action is implemented. In this case the proposed federal action would be the adoption of a general management plan for Abraham Lincoln Birthplace National Historic Site. This chapter analyzes the environmental impacts of implementing the four alternatives on cultural resources, natural resources, the visitor experience, and the socioeconomic environment. The analysis is the basis for comparing the beneficial and adverse effects of implementing the alternatives.

Because of the general, conceptual nature of the actions described in the alternatives, the impacts of these actions are analyzed in general qualitative terms. Thus, this environmental impact statement should be considered a programmatic analysis. If and when site-specific developments or other actions are proposed for implementation subsequent to this *General Management Plan*, appropriate detailed environmental and cultural compliance documentation will be prepared in accord with the National Environmental Policy Act and National Historic Preservation Act requirements.

Impact analysis discussions are organized by impact topic and then by alternative under each topic. Each alternative discussion also describes cumulative impacts and presents a conclusion. At the end of the chapter there is a brief discussion of unavoidable adverse impacts, irreversible and irretrievable commitments of resources, and the relationship of short-term uses of the environment and the maintenance and enhancement of long-term productivity. The impacts of each alternative are briefly summarized in table 6, at the end of the "Alternatives, Including the Preferred Alternative" chapter.

CUMULATIVE IMPACT ANALYSIS

A cumulative impact is described in the Council on Environmental Quality's regulation 1508.7 as follows:

> *Cumulative impacts* are incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other action. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time.

To determine potential cumulative impacts, *other* projects within and surrounding the two units of Abraham Lincoln National Historic Site were identified. The area included LaRue County and surrounding communities. Projects were identified by discussions with the NPS staff, federal land managers, and representatives of county and town governments. Potential projects identified as cumulative actions included any planning or development activity that was currently being implemented, or would be implemented in the reasonably foreseeable future. Impacts of past actions were also considered in the analysis.

These actions are evaluated in conjunction with the impacts of each alternative to determine if they would have any cumulative effects on a particular natural, cultural, or socioeconomic resource or visitor use. If the cumulative action is still in the early planning stages, the qualitative evaluation of cumulative impacts was based on a general description of the project.

Past Actions

Both of the units have been subject to agricultural use (farming and livestock grazing) over the last century until acquisition by the National Park Service. Other actions that have occurred include commercial and residential development on adjacent lands, utility lines construction, highway construction, introduction of invasive plants, and effluent from adjacent property (affecting water quality). These activities can disrupt soil profiles and native vegetation, affect water quality, introduce nonnative plants, and cause impacts on views and soundscapes.

In 2001 the National Park Service acquired the Knob Creek Farm property, site of the early boyhood home of Abraham Lincoln. This acquisition more than doubled the size of the national historic site and protects the natural and cultural resources on the property.

Present Actions

The state of Kentucky has designated the segment of U.S. Highway 31E that goes by the boyhood home unit as a scenic byway. With this designation are setback restrictions that limit construction next to the roadway. These restrictions will serve to protect the scenic values and rustic feel of the area around the boyhood home.

Exhibits in the visitor center, and the interior of the center itself, recently underwent a major rehabilitation. The exterior of the memorial building has been pressure cleaned and the doors replaced. The tavern and replica cabin at the boyhood unit are being stabilized.

Commercial and residential development has occurred up to the boundary at the Birthplace Unit and continues to be a concern.

The town of Hodgenville is applying for grant money to refurbish the town center and study the feasibility of a new lodging establishment. If implemented, these actions might attract more people to the town and surrounding area, which in turn could lead to an increase in visitation at the national historic site.

Future Actions

NPS staff have applied for funding for several projects through the NPS Project Management Information System. If approved, these projects could affect the management, facilities, base knowledge, or resources of the national historic site. These projects are listed by topic.

Cultural Resource Management: Historic resource studies of historic structures and landscapes, museum collection protection actions.

Natural Resource Management: Restoration of the American chestnut and American elm, removal of an underground storage tank and contaminated soil, wildfire hazard reduction, conduct wildlife inventory, conduct hydrological study of basin around Sinking Spring.

Facility Management: Rehabilitate memorial building, marble steps, boardwalk, visitor center auditorium, and deteriorating landscape features; replace wayside interpretive exhibits.

Also, as development outside the national historic site boundaries continues, there is a distinct possibility that the flow of Sinking Spring will be altered or cease entirely (NPS 1987).

In addition, the bicentennial of Abraham Lincoln's birth is February 2009. For six months before and after this time, large crowds are expected at all the Lincoln-related sites. Special programs, exhibits, and

supporting infrastructure are planned at the national historic site for this period.

IMPAIRMENT OF NATIONAL HISTORIC SITE RESOURCES

In addition to determining the environmental consequences of implementing the preferred and other alternatives, NPS *Management Policies 2001* (section 1.4) requires analysis of potential effects to determine whether or not proposed actions would impair national historic site resources and values.

The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park system resources and values. NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on a park unit's resources and values. However, the laws do give the National Park Service the management discretion to allow impacts on park unit resources and values when necessary and appropriate to fulfill the purposes of the park unit, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the National Park Service the management discretion to allow certain impacts within a park unit, that discretion is limited by the statutory requirement that the National Park Service must leave resources and values unimpaired unless a particular law directly and specifically provides otherwise.

The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of the park unit's resources and values, including the opportunities that otherwise would be present for the enjoyment of those resources or values (NPS *Management Policies 2001* 1.4.5). An impact on any park unit's resource or value may constitute an impairment. An impact would be more likely to constitute an impairment to the extent it affects a resource or value whose conservation is

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

Impairment may result from NPS activities in managing the park unit, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park unit. A determination on impairment is made in the conclusion section in this document for each impact topic related to the national historic site's resources and values. An evaluation of impairment is not required for topics related to visitor use and experience (unless the impact is resource based), NPS operations, or the socioeconomic environment. When it is determined that an action(s) would have a moderate to major adverse effect, a justification for nonimpairment is made. Impacts of only negligible or minor intensity would, by definition, not result in impairment.

METHODS AND ASSUMPTIONS FOR ANALYZING IMPACTS

The planning team based the impact analysis and the conclusions in this chapter largely on the review of existing literature and studies, information provided by experts in the National Park Service and other agencies and national historic site staff insights and professional judgment. The team's method of analyzing impacts is further explained below. It is important to remember that all the impacts have been assessed assuming that mitigative measures would be implemented to minimize or avoid impacts. If mitigative measures described in the "Alternatives Including the Preferred Alternative" chapter were not applied, the potential for resource impacts and the magnitude of those impacts would increase.

Director's Order 12, "Conservation Planning, Environmental Impact Analysis, and Decision Making," presents an approach to identifying the duration (short or long term), type (adverse or beneficial), and intensity or magnitude (e.g., negligible, minor, moderate, or major) of the impact(s), and that approach has been used in this document. Direct and indirect effects caused by an action were considered in the analysis. Direct effects are caused by an action and occur at the same time and place as the action. Indirect effects are caused by the action and occur later in time or farther removed from the place, but are still reasonably foreseeable.

The impacts of the action alternatives describe the *difference between* implementing the no-action alternative and implementing each of the action alternatives. To understand a complete "picture" of the impacts of implementing any of the action alternatives, the reader must also take into consideration the impacts that would occur under the no-action alternative.

METHODOLOGY

Potential impacts on cultural resources (archeological resources, prehistoric or historic structures, and cultural landscapes, either listed in or eligible to be listed in the National Register of Historic Places were identified and evaluated in accordance with the Advisory Council on Historic Preservation's regulations implementing Section 106 of the National Historic Preservation Act (36 CFR 800, *Protection of Historic Properties*): by (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that are national register listed or eligible; (3) applying the criteria of adverse effect to affected resources; and (4) considering ways to avoid, minimize, or mitigate adverse effects.

Under the Advisory Council's regulations a determination of *no historic properties affected*, *adverse effect,* or *no adverse effect* must be made for affected national-register-listed or -eligible cultural resources. A determination of *no historic properties affected* means that either there are no historic properties present or there are historic properties present but the undertaking will have no effect upon them (36 CFR 800.4(d)(1)). 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 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(a)(1)). A determination of *no adverse effect* means there is an effect, but the effect would not meet the criteria of an adverse effect, i.e., diminish the characteristics of the cultural resource that qualify it for inclusion in the national register (36 CFR 800.5(b)).

Thus, the characterization for determining the severity or intensity of impacts on national register listed or eligible archeological resources, prehistoric or historic structures, and cultural landscapes are the Section 106 determinations of effect: *no historic properties affected*, *adverse effect,* or *no adverse effect.* A Section 106 determination of effect is included in the conclusion section for each analysis of impacts on national-register-listed or -eligible cultural resources.

ARCHEOLOGICAL RESOURCES

Impacts from Implementing Alternative A — No Action

The present actions and plans by national historic site management, including expansion of the parking area at the Boyhood Home Unit, would be expected to have no adverse effect on the current conditions or situations of archeological resources. A prehistoric lithic scatter throughout much of the Knob Creek Unit would be assessed for its eligibility for inclusion in the National Register of Historic Places before any actions are taken that could have an impact. For the purposes of analysis if the scatter site was found to be eligible, an appropriate mitigation strategy would be developed in consultation with the Kentucky state historic preservation officer. Should the site be determined to be eligible for inclusion in the National Register of Historic Places, such mitigation activities would nevertheless result in an adverse effect to the archeological site.

Any ongoing impacts would be expected to continue at the same level and intensity as they are now. Archeological resources accessible from trails, buildings, and

landscapes would continue to be vulnerable to surface disturbance, inadvertent damage, and vandalism. A loss of surface archeological materials, alteration of artifact distribution, and a reduction of contextual evidence could result in adverse impacts. Ranger patrols and emphasis on visitor education would continue to discourage vandalism and inadvertent destruction of cultural remains.

Cumulative Effects. Past development in the national historic site, e.g., the construction of the memorial, visitor center, picnic area, and support facilities, may have resulted in the disturbance and loss of some archeological resources during the construction activities. In addition, agricultural practices and the expansion of residential and commercial development near the national historic site may also have disturbed archeological resources. The continuation of such activities could result in further adverse effects on archeological resources in the region.

The level of management actions under alternative A could contribute substantial adverse impacts to the impacts of other past, present, and reasonably foreseeable actions occurring both within and outside the national historic site. Adverse impacts on archeological resources resulting from implementing this alternative would be a considerable component of the overall adverse cumulative impacts in the region.

Conclusion. Continued management actions under the no-action alternative would have substantial levels of adverse impacts on archeological resources. Adverse impacts on archeological resources resulting from implementing alternative A would contribute substantially to the overall adverse cumulative impacts.

Although prehistoric archeological resources could be impacted during ground disturbing activities, there would be no adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Abraham Lincoln Birthplace National Historic Site; (2) key to the natural or cultural integrity of the national historic site or to opportunities for enjoyment of the national historic site; or (3) identified as a goal in the national historic site's general management plan or other relevant NPS planning documents. Thus, there would be no impairment of the national historic site's resources or values.

Impacts from Implementing Alternative B

At the Birthplace Unit, removing the visitor center, maintenance facilities, NPS housing, associated access roads, and Keith Road; restoring the area's natural vegetation; and constructing a new parking area and visitor contact station and designed walkways could result in a small amount of surface disturbance and inadvertent damage. These actions would be expected to have no adverse impact on archeological resources.

In this alternative, the parking lot and accompanying sidewalks in front of the historic structures would be relocated southwest of the tavern at the Boyhood Home Unit. A prehistoric lithic scatter throughout the Knob Creek Unit would be assessed for its eligibility for inclusion in the National Register of Historic Places. For the purposes of analysis, if the archeological lithic scatter site was found to be eligible, the proposed parking area and sidewalks would be designed to avoid the site to the greatest extent possible. To the extent that such resources could not be avoided, an appropriate mitigation strategy would be developed in consultation with the Kentucky state historic preservation officer. Should the site be determined to be eligible for inclusion in the National Register of Historic Places, such mitigation activities would nevertheless result in an adverse effect on the archeological site.

If the Nancy Lincoln Inn property was acquired and the guest cabins and modern house were removed, a small amount of surface disturbance and inadvertent damage could result. However, such damage would be expected to have no adverse effect on archeological resources.

Removing the restroom building and concrete pads at the Boyhood Home Unit would result in the reduction of vandalism and inadvertent damage and a reduction in areas currently vulnerable to surface disturbance. Archeological resources accessible from trails, buildings, and landscapes would continue to be vulnerable to surface disturbance, inadvertent damage, and vandalism. A loss of surface archeological materials, alteration of artifact distribution, and a reduction of contextual evidence could result. For the purposes of analysis if the site were found to be eligible, effects would be expected to be adverse. Ranger patrols and emphasis on visitor education would continue to discourage vandalism and inadvertent destruction of cultural remains.

Cumulative Impacts. Past development in the national historic site, e.g., the construction of the memorial, visitor center, picnic area, and support facilities, may have resulted in the disturbance and loss of some archeological resources during construction. In addition, agricultural practices and the expansion of residential and commercial development near the national historic site may also have disturbed archeological resources. The continuation of such activities could continue to result in adverse impacts on archeological resources in the region.

As described above, actions associated with implementing alternative B could be expected to disturb archeological resources at the national historic site. Although archeological resources would be avoided to the greatest extent possible, the actions associated with the alternative would be expected to contribute to the adverse impacts of other past, present, and reasonably foreseeable actions occurring both inside and outside the national historic site. Thus, any adverse impacts on archeological resources resulting from implementing alternative B would be expected to result in a moderate addition to an overall adverse cumulative impact on archeological resources.

Adverse impacts on archeological resources resulting from implementing this alternative could be expected to be a considerable component of the overall adverse cumulative impacts in the region.

Conclusion. No disturbance of eligible archeological resources would occur before consultation between Abraham Lincoln Birthplace National Historic Site and the Kentucky state historic preservation officer (and/or the Advisory Council on Historic Preservation, if necessary) and the preparation of a memorandum of agreement, in accordance with 36 CFR part 800.6, "Resolution of Adverse Effects" was concluded. Adverse impacts on archeological resources resulting from implementing alternative B would be a moderate component of the overall adverse cumulative impact.

Although prehistoric archeological resources would be impacted during ground-disturbing activities, there would be no adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Abraham Lincoln Birthplace National Historic Site; (2) key to the natural or cultural integrity of the national historic site or to opportunities for enjoyment of the national historic site; or (3) identified as a goal in the national historic site's general management plan or other relevant NPS planning documents. Thus, there would be no impairment of the national historic site's resources or values.

Impacts from Implementing Alternative C

At the Birthplace Unit, redesigning the current parking area, constructing a new staging area, redesigning walkways, improving picnic area facilities and parking, and rerouting Keith Road could result in a minor amount of surface disturbance, inadvertent damage, and vandalism (because more areas would be vulnerable to surface disturbance) resulting in no adverse effect.

At the Boyhood Home Unit, removing the restroom building and concrete pads and temporary ranger station, providing some picnic tables, improving and developing trails, and reestablishing the fields to their historic size and configuration could result in a slight increase of areas vulnerable to surface disturbance, inadvertent damage, and vandalism. These impacts would be expected to result in no adverse effect.

In this alternative, the parking lot and accompanying sidewalks in front of the historic structures would be relocated to an area outside the national register district behind the tavern at the Boyhood Home Unit. In addition an interpretive garden would be planted with crops common to the period of Lincoln's association with the land. A prehistoric lithic scatter throughout the Knob Creek Unit would be assessed for its eligibility for inclusion in the National Register of Historic Places. For the purposes of this analysis if the archeological lithic scatter site was found to be eligible, the proposed parking lot, sidewalks, and garden would be designed to avoid the site to the greatest degree possible. To the extent that such resources could not be avoided, an appropriate mitigation strategy would be developed in consultation with the Kentucky state historic preservation officer. Should the site be determined to be eligible for inclusion in the National Register of Historic Places, alternative C would result in adverse effects on archeological resources.

A loss of surface archeological materials, alteration of artifact distribution, and a reduction of contextual evidence could result. For the purposes of analysis if the site was found to be eligible, effects would be expected to be adverse. Ranger patrols and emphasis on visitor education would continue to discourage vandalism and inadvertent destruction of cultural remains.

Cumulative Impacts. Past development in the national historic site, e.g., the construction of the memorial building, visitor center, picnic area, and support facilities at the Birthplace Unit, may have resulted in the disturbance and loss of some archeological resources during the excavation and construction activities. In addition, agricultural practices and the expansion of residential and commercial development near the national historic site may also have disturbed archeological resources. The continuation of such growth of residential and commercial development in the Hodgenville area could result in further adverse impacts on archeological resources in the region.

As described above, actions associated with implementing alternative C could affect archeological resources at the national historic site. If national-register-eligible or -listed archeological resources could not be avoided, the impacts would be adverse. However, because archeological resources would be avoided to the greatest extent possible, the actions associated with this alternative would contribute moderately to the adverse impacts of other past, present, and reasonable foreseeable actions occurring both within and outside the national historic site.

The level of management actions under alternative C would be expected to contribute moderate levels of adverse impacts to the impacts of other past, present, and reasonably foreseeable actions occurring both within and outside the national historic site. Adverse impacts on archeological resources resulting from implementing this alternative would be a

considerable component of the overall adverse cumulative impacts in the region.

Conclusion. Any disturbance of eligible archeological resources would not occur before consultation between Abraham Lincoln Birthplace National Historic Site and the Kentucky state historic preservation officer (and/or the Advisory Council on Historic Preservation, if necessary) and the preparation of a memorandum of agreement, in accordance with 36 CFR part 800.6, "Resolution of Adverse Effects." Adverse impacts on archeological resources resulting from implementing alternative C would be moderate. Adverse impacts on archeological resources resulting from implementing this alternative could be expected to contribute a considerable component of the overall adverse cumulative impacts in the region.

Although prehistoric archeological resources would be impacted during ground-disturbing activities, there would be no adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Abraham Lincoln Birthplace National Historic Site; (2) key to the natural or cultural integrity of the national historic site or to opportunities for enjoyment of the national historic site; or (3) identified as a goal in the national historic site's general management plan or other relevant NPS planning documents. Thus, there would be no impairment of the national historic site's resources or values.

Impacts from Implementing Alternative D

At the Birthplace Unit, removing the current visitor parking area, constructing a new parking area closer to the highway, constructing a new staging area, redesigning walkways, improving pavilion facilities to include a resource education facility, and shortening the Big Sink Trail could result in a small amount of surface disturbance and inadvertent damage. If the National Park Service acquired the Nancy Lincoln Inn property and removed the guest cabins and adaptively used the modern house, this could result in a small amount of surface disturbance and inadvertent damage. However, it is expected that no archeological properties would be affected by these actions.

At the Boyhood Home Unit, the tavern, restroom building, and concrete pads would be removed; a new pioneer lifestyle exhibit would be undertaken with the replica cabin included in this exhibit; a new visitor contact station would be built; new picnic tables would be provided; the fields would be returned to conditions reflecting their historic configuration; utilities would be provided to the site, and trails would be improved or developed. These actions would not be expected to impact the archeological lithic scatter site and would result in no adverse effect.

The current parking area would be expanded. A prehistoric lithic scatter-throughout the Knob Creek Unit would be assessed for its eligibility for inclusion in the National Register of Historic Places. For purposes of this analysis if the site is found to be eligible, the proposed actions would be designed to avoid the site to the greatest degree possible. To the extent that such resources could not be avoided, an appropriate mitigation strategy would be developed in consultation with the Kentucky state historic preservation officer. Should the site be determined to be eligible for inclusion in the National Register of Historic Places, such mitigation activities would result in an adverse effect on the archeological property.

Archeological resources accessible from trails, buildings, and landscapes would continue to be vulnerable to surface disturbance, inadvertent damage, and vandalism. A loss of surface archeological materials, alteration of artifact distribution, and a reduction of contextual evidence could result. For the

purposes of analysis if the site were found to be eligible, effects would be expected to be adverse. Ranger patrols and emphasis on visitor education would continue to discourage vandalism and inadvertent destruction of cultural remains.

Cumulative Impacts. Past development in the national historic site, e.g., the construction of the memorial, visitor center, picnic area, and support facilities may have resulted in the disturbance and loss of some archeological resources during excavation and construction. In addition, agricultural practices and the expansion of residential and commercial development near the national historic site may also have disturbed archeological resources. The continuation of such activities could result in further adverse impacts on archeological resources in the region.

As described above, actions associated with implementing alternative D could affect archeological resources at the national historic site. If national-register-eligible or listed archeological resources could not be avoided, the impacts would be adverse. However, because archeological resources would be avoided to the greatest extent possible, the actions associated with this alternative would contribute moderately to the adverse impacts of other past, present, and reasonable foreseeable actions occurring both within and outside the national historic site.

Conclusion. Any disturbance of eligible archeological resources would not occur before consultation between Abraham Lincoln Birthplace National Historic Site and the Kentucky state historic preservation officer (and/or the Advisory Council on Historic Preservation, if necessary) and the preparation of a memorandum of agreement, in accordance with 36 CFR part 800.6, "Resolution of Adverse Effects." Adverse impacts on archeological resources would result from implementing alternative D. Adverse impacts on archeological resources resulting from implementing this alternative could be expected to be a considerable component of the overall adverse cumulative impacts in the region.

Although prehistoric archeological resources would be impacted during ground-disturbing activities, there would be no adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Abraham Lincoln Birthplace National Historic Site; (2) key to the natural or cultural integrity of the national historic site or to opportunities for enjoyment of the national historic site; or (3) identified as a goal in the national historic site's general management plan or other relevant NPS planning documents. Thus, there would be no impairment of the national historic site's resources or values.

HISTORIC STRUCTURES AND CULTURAL LANDSCAPES

Impacts from Implementing Alternative A — No Action

Under the no-action alternative existing conditions would remain unchanged. Visitation trends would remain stable and begin to increase with the approach of the Lincoln Bicentennial in 2009. This could result in some additional wear and tear associated with increased visitation. The only construction-related impacts on historic structures and cultural landscapes might be any work done in preparation for the Lincoln Bicentennial. This work would consist of preservation and stabilization activities. The associated impacts would be expected to have no adverse effect.

Redesign of and enlarging the visitor center parking area and walkways at the Boyhood Home Unit would minimally affect the visual relationship among landscape features. As a result there would be no adverse effect on the cultural landscape.

To preserve and protect the national-register-eligible or -listed historic structures and cultural landscapes, all stabilization and preservation efforts, as well as daily, cyclical, and seasonal maintenance, would continue to be undertaken in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995). Stabilization and preservation, including that being done for the Lincoln Bicentennial celebration, would have no adverse effects on historic structures and cultural landscapes.

Cumulative Impacts. Over the years historic structures in the national historic site and general vicinity have been adversely affected by weathering, and historic structures outside the national historic site have been demolished for agriculture and development. Historic structures in the national historic site have also been adversely affected by wear associated with visitor access.

Past development in the national historic site, such as the development of the visitor center/headquarters and parking area and building the memorial building have altered land use and circulation patterns and the relationships between landscape elements — resulting in adverse effects.

Currently, no new residential or commercial development has been undertaken in the national historic site's viewshed. However, in the past structures have been constructed in the national historic site's viewshed resulting in no adverse effects.

Because existing conditions would remain unchanged under the no-action alternative, implementing alternative A would not contribute to the impacts of other past, present, and reasonably foreseeable actions. Therefore, there would be no cumulative impacts on historic structures and cultural landscape under this alternative.

Conclusion. After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of alternative A would result in no adverse effects on historic structures and cultural landscapes.

Because there would be no adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Abraham Lincoln Birthplace National Historic Site; (2) key to the natural or cultural integrity of the national historic site or to opportunities for enjoyment of the national historic site; or (3) identified as a goal in the national historic site's general management plan or other relevant NPS planning documents, there would be no impairment of the national historic site's resources or values.

Impacts from Implementing Alternative B

To preserve and protect the national-register-eligible or -listed historic resources of the national historic site, all stabilization, preservation and rehabilitation efforts, as well as daily, cyclical, and seasonal maintenance, would be undertaken in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995). Any materials removed during the stabilization process would be evaluated to determine their value to the site's museum collection and/or for their comparative use in future preservation work. The preservation, rehabilitation, and restoration work would have no adverse effects on historic structures and cultural landscapes.

At the Birthplace Unit, removal of the visitor center/headquarters and parking lot would return the landscape to more of a semblance of its historic appearance and have no adverse effect on the visual relationship among landscape features. In addition, the topography, vegetation, circulation features, and land use patterns of the landscape would remain

largely unaltered by such actions, resulting in no adverse effect.

The restoration of the Nancy Lincoln Inn would have no adverse effect on the structure because key features would be identified and preserved. Restoration would be accomplished in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995).

At the Boyhood Home Unit, the preservation of the tavern building following the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995) would result in minimal loss of historic fabric. This loss of historic fabric could occur through changes made in the building or in changing the visitor use patterns within the building but would result in no adverse effect.

Careful design would ensure that the construction of picnic areas, and trails, or redesign of trails, would minimally affect the scale and visual relationship among landscape features. The topography, vegetation, circulation features, and land use patterns of the landscape would remain largely unaltered by such actions, resulting in no adverse effect.

Removal and relocation of the parking lot to a location southwest of the tavern at the Boyhood Home Unit would occur. Moving it to this location would remove it from its visually invasive location in front of the tavern and historic district and would be a beneficial impact. However, it would still be located within the historic district. Developing a new parking area in the proposed location southwest of the tavern would continue to have an adverse impact on the cultural landscape of the historic district.

Cumulative Impacts. Over the years historic structures in the national historic site and general vicinity have been adversely affected by weathering, and historic structures outside the national historic site have been demolished for agriculture and development. Historic structures in the national historic site have also been adversely affected by wear associated with visitor access.

Past development in the national historic site such as the development of the visitor center/ headquarters and parking area and building the memorial building have altered land use patterns, circulation patterns, and relationships between landscape elements resulting in no adverse effect.

As described above, the impacts associated with implementing alternative B would generally not alter the national historic site's historic structures and cultural landscapes. When these impacts are combined with the readily identifiable past present and future impacts beyond the limits of the park it would be expected that there would be no adverse cumulative impacts.

Conclusion. After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of alternative B would generally result in no adverse effects on historic structures and cultural landscapes.

Because there would be no adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Abraham Lincoln Birthplace National Historic Site; (2) key to the natural or cultural integrity of the national historic site or to opportunities for enjoyment of the national historic site; or (3) identified as a goal in the national historic site's general management plan or other relevant NPS planning documents, there would be no impairment of the national historic site's resources or values.

Impacts from Implementing Alternative C

To preserve and protect the national-register-eligible or -listed historic resources of the

national historic district, all stabilization, preservation, and rehabilitation efforts, as well as daily, cyclical, and seasonal maintenance, would be undertaken in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995). Any materials removed during the process would be evaluated to determine their value to the site's museum collection and/or for their comparative use in future preservation work. The stabilization, preservation, and rehabilitation work would have no adverse effects on historic structures and cultural landscapes.

Removal of the visitor center/headquarters' parking area would return the landscape to greater semblance of its historic appearance and would have no adverse effects. In addition, the topography, vegetation, circulation features, and land use patterns of the landscape would remain largely unaltered by such actions, resulting in no adverse effect.

The restoration, if feasible, of the Nancy Lincoln Inn would return the building to more of a semblance of its historic appearance. The work on the buildings could result in a slight change in how visitors use the structure and result in a small loss of historic fabric resulting in no adverse effect.

The preservation of the tavern at the Boyhood Home Unit would have a long-term beneficial impact on the building (compared to the temporary stabilization). The work on both of these structures would be undertaken following the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995), but would result in no adverse effect due to the loss of historic fabric. Also the work on the buildings could result in a slight change in the visitor use patterns and result in no adverse effect due to a small loss of historic fabric.

The parking area at the Boyhood Home Unit would be removed and relocated behind the tavern outside the historic district. The removal of the existing parking lot would have a beneficial impact since it would be removing a modern intrusion from the historic landscape. Its relocation behind the tavern and outside the historic district would be also be beneficial, although vegetative screening would likely be necessary to fully mitigate its visual intrusion into the overall historic scene. Generally the adverse impacts would be outweighed by the beneficial impacts of its removal from the ~~front of the~~ historic district. Thus, the parking lot relocation would be expected to have no adverse effect.

Careful design would ensure that the construction of some picnic tables, parking areas, and trails, or redesign of existing trails, as well as reestablishment of the fields at the Boyhood Home Unit to their historic size and configuration would minimally affect the scale and visual relationship among landscape features. In addition the introduction of the interpretive vegetable garden would have a minimal impact on the cultural landscape resulting in no adverse effect. The topography, vegetation, circulation features, and land use patterns of the landscape would remain unaltered by such actions, resulting in no adverse effect.

Cumulative Impacts. During the years historic structures in the national historic site and general vicinity have been adversely affected by weathering, and historic structures outside the national historic site have been demolished for agriculture and development. Historic structures in the national historic site have also been adversely affected by wear associated with visitor access.

Past development in the national historic site, such as the development of the visitor center/ headquarters and parking area and building the memorial building, have altered land use circulation patterns and the special relationships between landscape elements, but have resulted in no adverse effects.

As described above, the impacts associated with implementing alternative C would generally result in no adverse effects on the

national historic site's historic structures and cultural landscapes. When these impacts are combined with the past present, and future impacts beyond the limits of the national historic site it would be expected that there would be no adverse cumulative impacts.

Conclusion. After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of alternative B would generally result in no adverse effects on historic structures and cultural landscapes.

Because there would be no adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Abraham Lincoln Birthplace National Historic Site; (2) key to the natural or cultural integrity of the national historic site or to opportunities for enjoyment of the national historic site; or (3) identified as a goal in the national historic site's general management plan or other relevant NPS planning documents, there would be no impairment of the national historic site's resources or values.

Impacts from Implementing Alternative D

To preserve and protect the national-register-eligible or listed historic resources of the national historic site, all stabilization, preservation, and rehabilitation efforts, as well as daily, cyclical, and seasonal maintenance, would be undertaken in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995). Any materials removed during the process would be evaluated to determine their value to the site's museum collection and/or for their comparative use in future preservation work. The stabilization, preservation, and rehabilitation work would have no adverse effects on historic structures and cultural landscapes.

Redesign of and enlarging the visitor center parking area and design of a new staging area and walkways would minimally affect the visual relationship among landscape features. In addition, the topography, vegetation, circulation features, and land use patterns of the landscape would remain largely unaltered by such actions, resulting in no adverse effect.

The restoration of the Nancy Lincoln Inn would have no adverse effect on the building by returning it to more of a semblance of its historic appearance. The work on this structure would be undertaken following the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (1995). Also the work on the building could result in changing the use patterns. These altered use patterns could create wear and tear on portions of the structure where it did not occur before rehabilitation. This could result in a small loss of historic fabric but would be expected to result in no adverse effect.

Removing the tavern, building a visitor contact station and a pioneer lifestyle exhibit, and moving the cabin at the Boyhood Home Unit would have an adverse impact on those properties. Removal would be carried out in accordance with the guidance of the procedures of the Advisory Council on Historic Preservation (36 CFR 800). This would include consultation with the Kentucky state historic preservation officer and development of a memorandum of agreement.

Redesign of and enlarging the visitor center parking area and walkways at the Boyhood Home Unit would minimally affect the visual relationship among landscape features. As a result there would be no adverse effect on the cultural landscape

Careful design would ensure that the construction of/improving picnic areas, parking areas, and trails, or redesign of existing trails, as well as reestablishing the fields at the Boyhood Home Unit to reflect their historic size and configuration would minimally affect

the scale and visual relationship among landscape features. The topography, vegetation, circulation features and land use patterns of the landscape would remain largely unaltered by such actions, resulting in no adverse effect.

Cumulative Impacts. Over the years natural processes such as weathering have adversely impacted historic structures in the national historic site and general vicinity, and historic structures outside the national historic site have been demolished for agriculture and development. Historic structures in the national historic site have also been adversely impacted by wear associated with visitor access.

Past development in the national historic site such as the development of the visitor center/ headquarters and parking area in the area of the memorial and building the memorial building have altered land use patterns and circulation patterns and the special relationships between landscape elements. However, these impacts have resulted in no adverse effect.

As described above, the impacts associated with implementing alternative D would generally result in no adverse effects on most of the national historic site's historic structures and cultural landscapes with the exception of removing the tavern building and moving the cabin at the Boyhood Home Unit. As a result, the actions associated with alternative D would contribute an adverse impact on the tavern at the Boyhood Home Unit. These actions would add modestly to the overall adverse cumulative impacts. When these impacts are combined with the past, present, and future impacts beyond the limits of the national historic site, it would be expected that there would be limited adverse cumulative impacts.

Conclusion. After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of alternative D would result in limited adverse effects on historic structures and cultural landscapes at the Boyhood Home Unit. Implementation of this alternative would require that a memorandum of agreement be developed with the Kentucky state historic preservation officer to mitigate adverse effects. Removing the tavern, which is not key to the national historic site's purpose or significance, would still result in an adverse effect on the historic district. The overall cumulative impacts would be adverse; the impacts of implementing alternative D would contribute considerably to the overall adverse cumulative impacts.

There would be no adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Abraham Lincoln Birthplace National Historic Site; (2) key to the natural or cultural integrity of the national historic site or to opportunities for enjoyment of the national historic site; or (3) identified as a goal in the national historic site's general management plan or other relevant NPS planning documents. Therefore, there would be no impairment of the national historic site's resources or values.

MUSEUM COLLECTIONS

Methodology

Museum collections (prehistoric and historic objects, artifacts, works of art, archival documents, and natural history specimens), which are generally ineligible for listing in the national register are not subject to Section 106 of the National Historic Preservation Act. Potential impacts on museum collections are described in terms of duration — short-term (less than one year), long-term (one year or longer), or permanent. Identified impacts are also described in terms of intensity (the degree or severity of effects is either negligible, minor, moderate, or major). The definitions of

impact intensity for museum collections follow.

Negligible: Impact is at the lowest levels of detection — barely measurable with no perceptible consequences, either adverse or beneficial, to museum collections.
Minor: — Would affect the integrity of few items in the museum collection but would not degrade the usefulness of the collection for future research and interpretation.
Moderate: — Would affect the integrity of many items in the museum collection and diminish the usefulness of the collection for future research and interpretation.
Major: — Would affect the integrity of most items in the museum collection and destroy the usefulness of the collection for future research and interpretation.

Impacts from Implementing Alternative A — No Action

Continuing to store most of the national historic site's museum collections off-site would continue to limit the collection's usefulness for future research and interpretation due to the lack of a central place for researchers to use the collections. This would continue to be a long-term minor adverse impact. However, the environmental, security, and fire protection standards necessary to protect and preserve museum objects continue to be improved, which has resulted in a long-term minor beneficial impact.

Cumulative Impacts. Past development in the national historic site, such as the construction of the visitor center with a small area for the museum collections, has resulted in better care for items in the collection. Also the efforts by the National Park Service to upgrade requirements for the care and management of collections have resulted in better care of collections stored on-site or at Mammoth Cave National Park. Various universities and private groups would continue to care for collections and provide for their availability to researchers and the public. The actions by the NPS staff would add slightly to the overall long-term improvement in the care and management of museum collections in the region and would contribute a long-term minor beneficial impact to the overall cumulative impact, which would be long term, minor to moderate, and beneficial.

Conclusion. The overall effect of this alternative would have a long-term minor beneficial impact on preserving and managing the national historic site's museum collections. NPS actions would add slightly to the overall long-term improvement in the care and management of museum collections in the region and would contribute a long-term, minor beneficial impact to the cumulative impact, which would be long term, minor to moderate, and beneficial. The museum collections would not be impaired by implementing actions in alternative A.

Impacts from Implementing Alternative B

NPS staff would continue to upgrade the management and care of its museum collections. In addition the museum collections would be consolidated in one location, which would be of benefit to visitors and researchers. Also the new exhibit areas in the visitor center would be designed to meet all NPS standards for the preservation and protection of museum objects. All these actions would have a long-term moderate beneficial impact.

Cumulative Impacts. Past development in the national historic site, such as the construction of the visitor center with a small area for the museum collections have resulted in better care for items in the collection. Also NPS efforts to continually upgrade requirements for the care and management of collections has resulted in better care of collections stored on-site or at Mammoth Cave National Park. Various universities and

private groups would continue to care for collections and provide for their availability to researchers and the public. The actions in this alternative would slightly add to the overall long-term improvement in the care and management of museum collections in the region and contribute a long-term moderate beneficial impact to the overall cumulative impact, which would be moderate, long term, and beneficial.

Conclusion. The overall effect of this alternative would have a long-term moderate beneficial impact on preserving and managing the museum collections. The actions in this alternative would slightly add to the overall long-term improvement in the care and management of museum collections in the region and contribute a long-term moderate beneficial impact to the cumulative impact, which would be moderate, long term, and beneficial. The museum collections would not be impaired by implementing alternative B.

Impacts from Implementing Alternative C

The management and care of the national historic site's museum collections would continue to be upgraded. In addition, the museum collections would be consolidated in one location inside the national historic site, which would be of benefit to visitors and researchers. Also the new exhibit areas in the visitor center would be designed to meet NPS standards for the preservation and protection of museum objects. All these actions would have a long-term moderate beneficial impact.

Cumulative Impacts. Past development in the national historic site, such as the construction of the visitor center/headquarters with a small area for the museum collections, has resulted in better care for items in the collection. Also, NPS efforts to continually upgrade standards for the care and management of collections has resulted in better care of collections stored on-site or at Mammoth Cave National Park. Various universities and private groups would continue to care for collections and provide for their availability to researchers and the public. The actions under this alternative would slightly add to the overall long-term improvement in the care and management of museum collections in the region and would contribute a long-term moderate beneficial impact to the overall cumulative impacts, which would be moderate, long term, and beneficial.

Conclusion. The overall effect of this alternative would have a long-term moderate beneficial impact on preserving and managing the museum collections. The actions under this alternative would slightly add to the overall long-term improvement in the care and management of museum collections in the region and would contribute a long-term moderate beneficial impact to the cumulative impacts, which would be moderate, long term, and beneficial. The museum collections would not be impaired by actions proposed in alternative C.

Impacts from Implementing Alternative D

NPS staff would continue to upgrade the management and care of its museum collections. In addition the museum collections would be consolidated in one location inside the national historic site, which would be of benefit to visitors and researchers. Also the new exhibit areas would be designed to meet all standards to provide for the preservation and protection of museum objects. All these actions would have a long-term moderate beneficial impact.

Cumulative Impacts. Past development in the national historic site, such as the construction of the visitor center with a small area for the museum collections, has resulted in better care for items in the collection. Also NPS efforts to continually upgrade requirements for the care and management of collections has resulted in better care of

collections stored on-site or at Mammoth Cave National Park. Various universities and private groups would continue to care for collections and provide for their availability to researchers and the public. These actions would slightly add to the overall long-term improvement in the care and management of museum collections in the region and would contribute a long-term moderate beneficial impact to the cumulative impacts, which would be moderate, long term, and beneficial.

Conclusion. The overall effect of this alternative would have a long-term moderate beneficial impact on preserving and managing the museum collections. Actions proposed in this alternative would slightly add to the overall long-term improvement in the care and management of museum collections in the region and would contribute a long-term moderate beneficial impact to the cumulative impact, which would be moderate, long term, and beneficial. The museum collections would not be impaired by actions proposed in alternative D.

NATURAL RESOURCES

Analysis of natural resources was based on research, knowledge of existing resources, and the best professional judgment of planners, biologists, hydrologists, and botanists who have experience with similar types of projects. Information on the national historic site's natural resources was gathered from several sources. As appropriate, additional sources of data are identified under each topic heading.

Where possible, map locations of sensitive resources were compared with the locations of proposed developments and modifications. Predictions about short-term (less than one year) and long-term (one year or more) site impacts were based on previous studies of development impacts on natural resources.

WATER RESOURCES

For the most part, potential impacts of actions comprising the alternatives cannot be defined relative to site-specific locations. Consequently, water quality impacts of the alternatives were assessed qualitatively.

Negligible — An action may have an effect on water quality or the timing or intensity of flows, but it would not be readily measurable or detectable.

Minor — An action would have measurable effects on water quality or the timing or intensity of flows. Effects could include increased or decreased loads of sediment, debris, chemical or toxic substances, or pathogenic organisms.

Moderate — An action would have clearly detectable effects on water quality or the timing or intensity of flows and potentially would affect organisms or natural ecological processes.

Major — An action would have substantial effects on water quality or the timing or intensity of flows and potentially would affect organisms or natural ecological processes.

Impacts from Implementing Alternative A — No Action

The no-action alternative would not create any changes to current situations affecting water resources. Existing conditions and influences on hydrology and water quality would continue at the same level and intensity as they are now. There would be no new development or change in existing development in the floodplain.

Water monitoring would continue at Sinking Spring. If an increase in pollutants or a decrease in the flow of this waterway was detected by monitoring, actions would continue to be taken to identify the cause and remedy it, resulting in continuing beneficial impacts.

Cumulative Effects. Agriculture, residential development, and commercial development use available water sources, disrupting natural runoff and percolation patterns. Effluent from adjacent property often contains metals or chemicals that adversely affect water quality in the national historic site. This pollution can be transported by surface or subsurface flows. The National Park Service has no control or jurisdiction over Knob Creek or its tributaries. These effects would have minor to moderate adverse impacts on water resources in the region.

This alternative would have no contribution to these effects, and therefore there would be no cumulative effects.

Conclusion. The no-action alternative would have no new effect on water resources in the national historic site. Because this alternative would have no effects on water resources,

there would be no cumulative effects. There would be no impairment of this resource.

Impacts from Implementing Alternative B

Reducing the development footprint by removing the visitor center/headquarters building, maintenance facilities, NPS housing and accompanying roads and recontouring these sites would restore more natural surface water flow and percolation, resulting in long-term minor beneficial impacts.

Water monitoring would continue at Sinking Spring and would be initiated at Knob Creek. If an increase in pollutants or a decrease in average flows in these waterways were detected by monitoring, actions would continue to be taken to identify the cause and remedy it. This involves working with a landowner outside the national historic site. A long-term minor beneficial impact would be realized if mitigative actions are implemented.

There would be no change in existing development or any new development that would affect the floodplain at the Boyhood Home Unit.

Cumulative Effects. Agriculture, residential development, and commercial development use available water sources, disrupting natural runoff and percolations patterns. Effluent from adjacent property often contains metals or chemicals that adversely affect water quality in the national historic site. This pollution is transported by surface and subsurface flows. The National Park Service has no control or jurisdiction over Knob Creek or its tributaries. These effects would have a minor to moderate adverse impact on water resources in the area.

This alternative, in combination with the above minor to moderate adverse impacts, would result in a minor adverse cumulative impact on water resources; however, this alternative would contribute only a small portion of these effects.

Conclusion. This alternative would have a long-term minor beneficial impact on water resources and no effect on floodplains in the national historic site. The overall cumulative impacts would be minor and adverse; this alternative's contribution to these effects would be small. There would be no impairment of this resource.

Impacts from Implementing Alternative C

Implementing this alternative would result in negligible adverse impacts on water resources resulting from changes in the footprints of facilities at the Birthplace Unit. These changes could disrupt some surface water flow or ground percolation. Mitigation such as silt fencing and sediment dams would reduce the impacts of these facilities on water quality.

Water monitoring would continue at Sinking Spring and would be initiated at Knob Creek. If an increase in pollutants or a decrease in average flows in these waterways were detected by monitoring, actions would continue to be taken to identify the cause and remedy it. This involves working with a landowner outside the national historic site. A long-term minor beneficial impact would be realized if mitigative actions are implemented.

There would be no change in existing development or any new development that would affect the floodplain at the Boyhood Home Unit under this alternative.

Cumulative Effects. Agriculture, residential development, and commercial development use available water sources, disrupting natural runoff and percolations patterns. Effluent from adjacent property often contains metals or chemicals that adversely affect water quality in the national historic site. This pollution is transported by surface and subsurface flows. The National Park Service

has no control or jurisdiction over Knob Creek or its tributaries. These effects have a minor to moderate adverse impact on water resources in the area.

This alternative, in combination with the above minor to moderate adverse impacts on water resources, would result in a minor adverse cumulative impact; however, this alternative would contribute only a small portion of these effects.

Conclusion. This alternative would have a negligible adverse and a long-term minor beneficial impact on water resources and no effect on floodplains in the national historic site. The overall cumulative impacts would be minor and adverse; this alternative's contribution to these effects would be small. There would be no impairment of this resource.

Impacts from Implementing Alternative D

This alternative would result in negligible adverse impacts on water resources resulting from changes in the footprints of facilities — such as moving the parking area at the Birthplace Unit and building a small education resource facility at the Boyhood Home Unit. These changes in land use patterns could disrupt some surface water flow or ground percolation. Mitigation, such as silt fencing and sediment dams, would reduce impacts of these facilities on water quality.

Water monitoring would continue at Sinking Spring and would be initiated at Knob Creek. If an increase in pollutants or a decrease in average flows in these waterways were detected by monitoring, actions would continue to be taken to identify the cause and remedy it. This involves working with a landowner outside the national historic site. A long-term minor beneficial impact would be realized if mitigative actions are implemented.

Moving the replica cabin at the Boyhood Home Unit out of the floodplain in this alternative would return the floodplain to a more natural state and result in a long-term negligible beneficial impact on the floodplain.

Cumulative Effects. Agriculture, residential development, and commercial development use available water sources, disrupting natural runoff and percolations patterns. Effluent from adjacent property often contains metals or chemicals that adversely affect water quality in the park. This pollution is transported by surface and subsurface flows. The National Park Service has no control or jurisdiction over Knob Creek or its tributaries. These effects have minor to moderate adverse impacts on water resources in the area.

This alternative, in combination with the above minor to moderate adverse impacts on water resources, would result in a minor adverse cumulative impact; however, this alternative would contribute only a small portion of these effects.

Conclusion. Implementing alternative D would have a long-term negligible adverse impact on water resources and a long-term negligible beneficial impact on the floodplain in the national historic site. The overall cumulative impacts would be minor and adverse; this alternative's contribution to these effects would be relatively small. There would be no impairment of water resources.

CAVE AND KARST RESOURCES

Information on potential impacts on caves and karst features was gathered from effects of past actions and analysis by subject-matter experts. The following categories were used to qualify the severity of impacts from implementing the alternatives.

Negligible — Effects on caves or karst features would not be measurable and would be confined to a relatively small area.
Minor — The effects on caves or karst features would be detectable but slight, and the area affected would be small.
Moderate — The effects on a single cave or karst feature would be readily apparent and considerable, or cause slight changes to characteristics or features over a relatively large karst area/system.
Major — The effect on caves or karst features would be readily apparent and would substantially change the subterranean geologic, biotic, or hydrologic characteristics over a large area in and out of the national historic site.

Impacts from Implementing Alternative A — No Action

The no-action alternative would not create any changes to current conditions or situations regarding cave and karst resources. Existing adverse influences — for example pollution and disruption of water infiltration — would most likely continue at the same level and intensity as they are now. The cave at Sinking Spring would continue to be monitored and cleaned out when necessary. Because harmful intrusions such as coins and litter would be removed, this would continue to be a long-term minor beneficial impact.

Cumulative Impacts. Cave resources and karst features are affected by activities occurring on the surface. Effluent from improperly maintained sewage systems, leaking storage tanks, or agricultural runoff contaminates underground water causing adverse impacts on hydrologic and biologic cave resources. Sinking Spring water contains some of these pollutants.

Construction on top of weak cave ceilings can result in loss of property or life if the ceilings collapse. Commercial and residential development in the area has affected the percolation of precipitation, which disrupts the growth of cave formations and the health of water-dependant cave life. These actions result in minor adverse impacts on cave and karst resources.

The no-action alternative would not contribute to these actions, and thus there would be no cumulative effects.

Conclusion. The no-action alternative would have no new effect on caves or karst features. Because this alternative would have no impacts on cave or karst resources, there would be no cumulative impacts. There would be no impairment of this resource.

Impacts from Implementing Alternative B

Alternative B would increase knowledge and management of cave-related resources after a systematic inventory is completed in both units. Moving the parking area and removing some building footprints in the area around Sinking Spring would reduce impacts related to disrupted hydrologic patterns and the potential for pollutants to enter the cave.

Existing adverse impacts on cave and karst resources would be studied — for example pollution and disruption of water infiltration — and NPS staff would work with local landowners to mitigate adverse impacts. The cave at Sinking Spring would continue to be monitored and cleaned out when necessary. Because harmful intrusions such as coins and litter would be removed, this would continue a long-term minor beneficial impact.

Implementation of this alternative would result in long-term minor beneficial impacts on cave and karst resources.

Cumulative Impacts. Cave resources and karst features are affected by activities occurring on the surface. Effluent from improperly maintained sewage systems,

leaking storage tanks, or agricultural runoff contaminates underground water, causing adverse impacts on hydrologic and biologic cave resources. Sinking Spring water contains some of these pollutants.

Construction on top of weak cave ceilings can result in loss of property or life if the ceilings collapse. Commercial and residential development in the area has affected the percolation of precipitation, which disrupts the growth of cave formations and the health of water-dependant cave life. All these actions result in minor to moderate adverse impacts on cave and karst resources.

This alternative, in combination with the above minor to moderate adverse impacts on cave and karst resources, would result in a minor adverse cumulative impact; however, this alternative would contribute only a small portion of these effects.

Conclusion. Implementing alternative B would have a long-term minor beneficial impact on caves or karst features in the national historic site. The overall cumulative impacts would be minor and adverse; this alternative's contribution to these effects would be small. There would be no impairment of cave or karst resources resulting from implementing this alternative.

Impacts from Implementing Alternative C

Alternative C would increase knowledge and management of cave-related resources after a systematic inventory is completed in both units. Existing adverse impacts on cave and karst resources — for example pollution and disruption of water infiltration — would be studied, and NPS staff would work with local landowners to mitigate adverse impacts. The cave at Sinking Spring would continue to be monitored and cleaned out when necessary. Because harmful intrusions such as coins and litter would be removed, this would continue a long-term minor beneficial impact.

Implementation of this alternative would result in long-term minor beneficial impacts on cave and karst resources.

Cumulative Impacts. Cave resources and karst features are affected by activities occurring on the surface. Effluent from improperly maintained sewage systems, leaking storage tanks, or agricultural runoff contaminates underground water causing adverse impacts on hydrologic and biologic cave resources. Sinking Spring water contains some of these pollutants.

Construction on top of weak cave ceilings can result in loss of property or life if the ceilings collapse. Commercial and residential development in the area has affected the percolation of precipitation, which disrupts the growth of cave formations and the health of water-dependant cave life. All these actions result in minor to moderate adverse impacts on cave and karst resources.

This alternative, in combination with the above minor to moderate adverse impacts on cave and karst resources, would result in a minor adverse cumulative impact; however, this alternative would contribute only a slight portion of these effects.

Conclusion. Alternative C would have a long-term minor beneficial impact on caves or karst features in the national historic site. The overall cumulative impacts would be minor and adverse; this alternative's contribution to these effects would be slight. There would be no impairment of this resource resulting from this alternative.

Impacts from Implementing Alternative D

Alternative D would increase knowledge and management of cave-related resources after a systematic inventory is completed in both units. Existing adverse impacts on cave and karst resources — for example pollution and disruption of water infiltration — would be

studied, and NPS staff would work with local landowners to mitigate adverse impacts. The cave at Sinking Spring would continue to be monitored and cleaned out when necessary. Because harmful intrusions such as coins and litter would be removed, this would result in a long-term minor beneficial impact.

Implementation of this alternative would result in long-term minor beneficial impacts on cave and karst resources.

Cumulative Impacts. Cave resources and karst features are affected by activities occurring on the surface. Effluent from improperly maintained sewage systems, leaking storage tanks, or agricultural runoff contaminates underground water causing adverse impacts on hydrologic and biologic cave resources. Sinking Spring water contains some of these pollutants.

Construction on top of weak cave ceilings can result in loss of property or life if the ceilings collapse. Commercial and residential development in the area has affected the percolation of precipitation, which disrupts the growth of cave formations and the health of water-dependant cave life. All these actions result in minor to moderate adverse impacts on cave and karst resources.

This alternative, in combination with the above minor to moderate adverse impacts on cave and karst resources, would result in a minor adverse cumulative impact; however, this alternative would contribute only a slight portion of these effects.

Conclusion. Alternative D would have a long-term minor beneficial impact on caves or karst features in the national historic site. The overall cumulative impacts would be minor and adverse; this alternative's contribution to these effects would be slight. There would be no impairment of these resources resulting from implementing this alternative.

SOILS

Methodology

Predictions about site impacts were based on knowledge of impacts on natural resources from development of visitor and operations facilities under similar situations. The following categories were used to evaluate the potential impacts on soils:

Negligible — The impact on soil resources would not be measurable. Any effects on productivity or erosion potential would be slight.

Minor — An action would change a soil's profile in a relatively small area, but it would not appreciably increase the potential for erosion of additional soil.

Moderate — An action would result in a change in quantity or alteration of the topsoil, overall biological productivity, or the potential for erosion to remove small quantities of additional soil. Changes to localized ecological processes would be of limited extent.

Major — An action would result in a change in the potential for erosion to remove large quantities of additional soil or in alterations to topsoil and overall biological productivity in a relatively large area. Significant ecological processes would be altered, and landscape-level changes would be expected.

Impacts from Implementing Alternative A — No Action

No new impacts on the soil resources would be expected as a result of implementing alternative A, because no new developments or changes to existing developments are proposed under this alternative at the Birthplace Unit. Expansion of the parking area at the Boyhood Home Unit would result in increased surface disturbance of about 1 acre. Impacts on soils from existing development would continue.

Cumulative Effects. Actions that have occurred or will occur affecting soil resources include commercial and residential development on adjacent lands and the development of powerlines and highways.

There has been concentrated human activity around the area where the birthplace memorial building and other structures are since the national historic site was established in 1916. Development, maintenance, and relocation of various facilities (residences, tavern, visitor contact facilities, picnic areas, landscaping, and maintenance area) have taken place at both units sporadically over the years. Farming has occurred historically at both the Birthplace and Boyhood Home units. Much of the native forest in both units has been cut down to provide wood for construction or fuel. These activities have adversely impacted soils to varying degrees by affecting compaction, displacement, erodibility, and nutrient availability.

Impacts from existing roads and developments in the national historic site would remain under the no-action alternative.

Impacts on soils have also occurred in the national historic site. Construction of service and public roads, structures, and other developments in the national historic site have disturbed soils and affected productivity of the land.

The no-action alternative would contribute slightly to these effects, and thus there would be minor to moderate adverse cumulative effects on the soil resources.

Conclusion. This alternative would have long-term minor adverse effects on soil resources at the Boyhood Home Unit. The no-action alternative would contribute slightly to these effects, and thus there would be minor to moderate adverse cumulative effects on the soil resources. There would be no impairment of this resource.

Impacts from Implementing Alternative B

Alternative B would result in the removal of the visitor center, maintenance facility, NPS housing, Keith Road, and some additional administrative roads. These areas would then be recontoured and reseeded. Mitigative measures would be applied to minimize erosion before the seeding becomes established. There would be long-term minor beneficial impacts after rehabilitation was complete as soils regain more natural functioning. Impacts from existing roads and developments in the national historic site would be reduced under this alternative.

Moving the parking area and constructing the new visitor contact station and walkways would occur in a previously disturbed area. In addition mitigative measures would be used ton minimize disturbance and subsequent erosion of soils. Consequently, adverse impacts on soils would be negligible.

Implementing this alternative would cause changes to soils at the Boyhood Home Unit. Actions such as removing the old restrooms and parking area would result in long-term minor beneficial impacts from replacing impervious surfaces with vegetation cover. Adding new utility lines, construction of the new parking area, and improving the trails would result in long-term minor adverse impacts such as topsoil displacement and addition of impervious surfaces. The proposed construction actions would occur in previously disturbed areas, which would reduce the intensity of impacts from what they would be in pristine areas. The combined effect of these actions would be long term, minor, and adverse because the size of the development footprint would increase slightly.

Cumulative Effects. There has been concentrated human activity around the area of the birthplace memorial building and other national historic site structures since the national historic site was established in 1916.

Development, maintenance, and relocation of various facilities (residences, visitor facilities, picnic areas, landscaping, and maintenance area) have taken place at both units sporadically over the years. Farming has occurred historically at both the Birthplace and Boyhood Home units. These activities have adversely impacted soils, through compaction and displacement, to varying degrees.

Foreseeable future actions of continued development outside the national historic site would adversely impact soils through compaction and displacement from construction of roads, residential development, commercial development, and associated infrastructure.

This alternative, in combination with the above minor to moderate adverse impacts on soil resources, would result in a minor adverse cumulative impact; however, this alternative would contribute a small beneficial portion of these effects.

Conclusion. This alternative would result in long-term minor beneficial impacts and long-term minor adverse impacts. The overall cumulative effects on soils would be minor and adverse; this alternative's contribution to these effects would be small. There would be no impairment of this resource as a result of implementing this alternative.

Impacts from Implementing Alternative C

Long-term negligible adverse impacts on the soil resources would be expected as a result of implementing alternative C, because the level of development would change only slightly. Existing buildings and development footprints in both units would remain approximately the same. The visitor center parking area would be moved further away from the memorial plaza. The new location is previously disturbed as an overflow parking area, and the old location would be recontoured and landscaped, resulting in a slight net change. Moving the parking area and paving the walkways would occur in a previously disturbed area and mitigative measures would be implemented to minimize erosion, so adverse impacts on soils would be negligible.

On the east side, the picnic area parking lot would be reconfigured to accommodate larger vehicles. Part of the existing interpretive loop trail and some individual picnicking sites would be made universally accessible. This would result in increased surface disturbance (about one-half acre). Because the area is already disturbed and mitigative measures would be implemented to minimize erosion during construction, the impact would be long term and adverse but minor.

Implementing this alternative would cause changes to soils at the Boyhood Home Unit. Actions such as removing the old restrooms, concrete pads, and parking area would result in long-term minor beneficial impacts from replacing impervious surfaces with vegetation cover. Adding new utility lines, construction of the new parking area, and improving the trails would result in long-term minor adverse impacts such as topsoil displacement and addition of impervious surfaces. The proposed construction actions would occur in previously disturbed areas, which would reduce the intensity of impacts from what they would be in pristine areas. The combined effect of these actions would be long-term, minor, and adverse because the size of the development footprint would increase slightly.

Cumulative Effects. There has been concentrated human activity around the memorial building and other national historic site structures since the site was established in 1916.

Development, maintenance, and relocation of various facilities (residences, tavern, visitor contact facilities, picnic areas, landscaping, and maintenance area) have taken place at both units sporadically over the years.

Farming has occurred historically at both the Birthplace and Boyhood Home units. These activities have adversely impacted soils and native vegetation to varying degrees by affecting soil compaction, erodibility, and nutrient availability.

Foreseeable future actions of continued development outside the national historic site would continue to cause minor to moderate adverse impacts on soils through compaction and displacement from construction of roads, residential development, commercial development, and associated infrastructure.

This alternative, in combination with the above minor to moderate adverse impacts on soil resources, would result in a minor adverse cumulative impact; however, this alternative would contribute only a slight portion of these effects.

Conclusion. Alternative C would result in long-term minor adverse impacts on soils in the national historic site. The overall cumulative effects on soils would be minor and adverse; this alternative's contribution to these effects would be slight. There would be no impairment of this resource as a result of implementing this alternative.

Impacts from Implementing Alternative D

Under this alternative, as in alternative C, the visitor center parking area would be moved further away from the memorial plaza. The new location is previously disturbed as an overflow parking area, and the old location would be recontoured and landscaped. Some additional soil disturbance would occur as a result of construction activities, but mitigative measures to minimize erosion would be implemented. This would be a long-term minor adverse impact. There would also be a potential for short-term erosion effects before reseeding takes effect.

Moving the parking area and paving the walkways would occur in a previously disturbed area, so adverse impacts on soils would be negligible.

A new resource education facility would be constructed near the picnic area on the east side. Some additional soil disturbance would occur as a result of construction activities, but mitigative measures would minimize erosion. This would be a long-term minor adverse impact.

The Big Sink Trail would be shortened to avoid crossing Keith Road, and a short section paralleling the road would be added in this alternative. The trail segment east of the road would be rehabilitated and revegetated. The net effect of this trail work on soils would be long term, negligible, and beneficial.

At the Boyhood Home Unit, the tavern, temporary ranger station, and restroom and concrete pads would be removed. A new visitor contact station would be constructed at the location of the tavern and the parking lot would be expanded. A new outdoor exhibit area would be constructed behind the visitor facility area, and the replica cabin would be moved into this exhibit. The septic system would be improved. This would result in increased surface disturbance of about 2 acres. Some new trails would also be constructed. The proposed actions would occur in an area of localized development. Soils in an area of about one-quarter acre total would be slightly impacted for these new trails. These actions would result in long-term minor adverse impacts.

Long-term minor adverse impacts on the soil resources would be expected as a result of implementing alternative D.

Cumulative Effects. There has been human activity around the area where the national historic site structures are since long before the national historic site was established.

Development, maintenance, and relocation of various facilities (residences, tavern, visitor contact facilities, picnic areas, landscaping, and maintenance area) have taken place at both units over the years. Farming has occurred historically at both the birthplace and boyhood home unit. These activities have adversely impacted soils to varying degrees by affecting soil compaction, stratigraphy, erosion potential, and nutrient holding.

Foreseeable future actions of continued development outside the national historic site would result in long-term minor to moderate adverse impacts on soils through compaction and displacement from construction of roads, residences, commercial development, and associated infrastructure.

This alternative, in combination with the above minor to moderate adverse impacts on soil resources, would result in a minor adverse cumulative impact; however, this alternative would contribute only a small portion of these effects.

Conclusion. This alternative would result in long-term minor adverse impacts on soils in the national historic site. The overall cumulative effects on soils would be minor and adverse; this alternative's contribution to these effects would be small. There would be no impairment of this resource as a result of this alternative.

VEGETATION

Methodology

Impacts were assessed qualitatively. Site-specific information was gleaned from other documents, such as the "Resource Management Plan" and results of national historic site surveys. Predictions about impacts were based on previous studies of development impacts on natural resources.

Negligible — The impact on vegetation (individuals and/or communities) would not be measurable. The abundance or distribution of individuals would not be affected or would be slightly affected. Ecological processes and biological productivity would not be affected.

Minor —The impact would not necessarily decrease or increase the area's overall biological productivity. An action would affect the abundance or distribution of individuals in a localized area but would not affect the viability of local or regional populations or communities.

Moderate —The impacts would result in a change in overall biological productivity in a small area. An action would affect a local population sufficiently to cause a change in abundance or distribution, but it would not affect the viability of the regional population or communities. Changes to ecological processes would be of limited extent.

Major — An action would result in a change to overall biological productivity in a relatively large area. An action affecting a regional or local population of a species sufficiently to cause a change in abundance or in distribution to the extent that the population or communities would not be likely to return to its/their former level (adverse), or would return to a sustainable level (beneficial). Significant ecological processes would be altered.

Impacts from Implementing Alternative A —No Action

There would be no new ground disturbance or other major changes resulting from implementing this alternative at the Birthplace Unit. Expansion of the parking area at the Boyhood Home Unit would disturbed about 1 acre of vegetation. However, this vegetation is not native so there would be no new impacts on native vegetative communities. Management programs for exotic species would

continue according to other national historic site planning.

Cumulative Effects. Native vegetation in the region has been systematically disturbed for thousands of years. From early Native American cultures through the Industrial era, humans have relied on vegetation for food, fuel, and shelter. As more people came into the region, nonnative plants came with them. These actions altered the vegetation in relatively small areas throughout much of the region.

More recently, development, maintenance, and relocation of various facilities (residences, tavern, visitor contact facilities, picnic areas, landscaping, and maintenance area) have taken place at both units. Farming has occurred historically at both the Birthplace and Boyhood Home units. Much of the native forest in both units has been cut down to provide wood for construction or fuel. These activities have caused adverse impacts by disrupting or destroying native vegetation to varying degrees.

Foreseeable future actions of further development outside the national historic site, such as road construction, residential development, commercial development, and associated infrastructure, would adversely impact vegetation. These activities have caused adverse impacts by disrupting or destroying native vegetation to varying degrees.

Seeds of nonnative plants carried by wind and humans have created infestations of noxious weeds and other invasive species that cause long-term adverse effects on native vegetation.

The anticipated increase in visitation around the Lincoln bicentennial would most likely result in short-term minor adverse impacts such as additional vegetation trampling and increased social trails.

The establishment of Abraham Lincoln Birthplace National Historic Site has resulted in long-term beneficial impacts on vegetation through protection of native communities and exotic species eradication efforts.

The no-action alternative would not add to these impacts, and thus there would be no project-related cumulative effect on native vegetative resources.

Conclusion. The no-action alternative would have no new impacts on native vegetation. The no-action alternative would not add to these impacts, and thus there would be no project-related cumulative effect on native vegetative resources. Thus, there would be no impairment of this resource as a result of implementing this alternative.

Impacts of Implementing Alternative B

This alternative would have the most acreage in the natural Discovery Zone, preserving native vegetation communities.

Implementing alternative B would result in the removal of the visitor center, maintenance facility, and NPS housing. These areas would then be recontoured and reseeded. There would be long-term minor beneficial impacts on vegetation after rehabilitation was completed from restoring native communities.

Removing Keith Road from the old-growth forest and rehabilitating the area with native plant species would be a long-term minor beneficial impact on plant communities in the national historic site.

If the Nancy Lincoln Inn property was acquired and the guest cabins and/or house were removed, this would also be a long-term minor beneficial impact on vegetation after rehabilitation was completed and native communities were restored.

Some impacts to vegetation at the Boyhood Home Unit would occur from implementing this alternative. The planting of a vegetative screen between the parking area and the highway would use native species and would not adversely impact plant communities. Areas where the restrooms and concrete pads would be removed would most likely be planted in turf grass and not affect native vegetation. The area where the new parking area would be constructed is currently planted with turf grass and sugar maple trees so this construction would not affect native vegetation.

If the glade north of the unit is acquired by the National Park Service, native vegetation would be afforded protection from potential development. This would be a long-term minor beneficial impact.

Cumulative Effects. Native vegetation in the region has been systematically disturbed for thousands of years. From early Native American cultures through the Industrial era, humans relied on the vegetation for food, fuel, and shelter. As more people came into the region, nonnative plants came with them. These actions altered the vegetation throughout much of the region.

More recently, development, maintenance, and relocation of various facilities (residences, tavern, visitor contact facilities, picnic areas, landscaping, and maintenance area) have taken place at both units over the years. Farming has occurred historically at both units. Much of the native forest in both units has been cut down to provide wood for construction or fuel. These activities have caused adverse impacts by disrupting or destroying native vegetation to varying degrees.

Foreseeable future actions of continued development outside the national historic site, such as road construction, residential development, commercial development, and associated infrastructure, would adversely impact vegetation. These activities have caused adverse impacts by disrupting or destroying native vegetation to varying degrees.

Seeds of nonnative plants carried by wind and humans have created infestations of noxious weeds and other invasive species that cause long-term adverse effects by replacing native vegetation.

The anticipated increase in visitation around the Lincoln bicentennial would most likely result in short-term minor adverse impacts such as additional vegetation trampling and increased social trails.

The establishment of Abraham Lincoln Birthplace National Historic Site has resulted in long-term beneficial impacts on vegetation through protection of native communities and exotic species eradication efforts.

This alternative, in combination with the above moderate adverse impacts on vegetation, would result in a minor adverse cumulative impact; however, this alternative would contribute a small beneficial portion of these effects.

Conclusion. Implementing alternative B would have a long-term minor beneficial impact on vegetation. The overall cumulative impacts would be moderate and adverse; this alternative's contribution to these effects would be small and beneficial. There would be no impairment of this resource as a result of implementing this alternative.

Impacts of Implementing Alternative C

Long-term negligible adverse impacts on vegetation would be expected as a result of implementing alternative C, because the level of NPS development would change only slightly. Existing buildings and development footprints in both units would remain about the same. At the Birthplace Unit the visitor

center parking area would be moved further away from the memorial plaza. The new location is previously disturbed as an overflow parking area, and the old location would be recontoured and landscaped resulting in no net change of developed area. If the Nancy Lincoln Inn property was acquired and the guest cabins and/or house were removed, this would also be a long-term minor beneficial impact on vegetation after rehabilitation was completed and native communities were restored.

Alteration of the picnic area parking lot on the east side would result in a negligible loss of maintained lawn and have no impact on native vegetation. Part of the existing interpretive loop trail would be made universally accessible causing a negligible loss of vegetation on 0.1 acre. Removing Keith Road from the old-growth forest and rehabilitating the area with native plant species would be a long-term minor beneficial impact on plant communities in the national historic site.

Some impacts on vegetation at the Boyhood Home Unit would occur from implementing this alternative. The planting of a vegetative screen between the parking area and the highway would use native species and would not adversely impact plant communities. Areas where the restrooms, concrete pads, and current parking area would be removed would most likely be planted in turf grass and would not have an effect on native vegetation. The area (0.5 to 1 acre) where the parking lot and interpretive garden would be constructed are currently planted with hay, so this construction would not affect native vegetation. Restoring/enlarging the agricultural fields to their historic size would require the removal of a small amount of riparian vegetation, resulting in long-term minor adverse impacts.

If the glade north of the unit is acquired by the National Park Service, native vegetation would be afforded protection from potential development. This would be a long-term minor beneficial impact.

Cumulative Effects. Native vegetation in the region has been systematically disturbed for thousands of years. From early Native American cultures through the Industrial era, humans relied on vegetation for food, fuel, and shelter. As more people came into the region, nonnative plants came with them. These actions altered the vegetation throughout much of the region.

More recently, development, maintenance, and relocation of various facilities (residences, tavern, visitor contact facilities, picnic areas, landscaping, and maintenance area) have taken place at both units over the years. Farming has occurred historically at both the Birthplace Unit and Boyhood Home Unit. Much of the native forest in both units has been cut down to provide wood for construction or fuel. These activities have caused adverse impacts by disrupting or destroying native vegetation to varying degrees.

Foreseeable future actions of continued development outside the national historic site, such as road construction, residential development, commercial development, and associated infrastructure, would adversely impact vegetation. These activities have caused adverse impacts by disrupting or destroying native vegetation to varying degrees.

Seeds of nonnative plants carried by wind and humans have created infestations of noxious weeds and other invasive species that cause long-term adverse effects by replacing native vegetation.

The anticipated increase in visitation around the Lincoln bicentennial would most likely result in short-term minor adverse impacts such as additional vegetation trampling and increased social trails.

The establishment of Abraham Lincoln Birthplace National Historic Site has resulted in long-term beneficial impacts on vegetation through protection of native communities and exotic species eradication efforts.

This alternative, in combination with the above moderate adverse impacts on vegetation, would result in a minor adverse cumulative impact; however, this alternative would contribute only a small portion of these effects.

Conclusion. Alternative C would have long-term minor beneficial and long-term minor adverse impacts on vegetation. The overall cumulative impacts would be minor and adverse; this alternative's contribution to these effects would be small. There would be no impairment of this resource as a result of this alternative.

Impacts from Implementing Alternative D

Under this alternative, as in alternative C, the visitor center parking area at the Birthplace Unit would be moved further away from the memorial plaza. The new location is previously disturbed as an overflow parking area, and the old location would be recontoured and landscaped resulting in no net change of development.

Constructing a new resource education facility near the picnic area on the east side and shortening the Big Sink Trail would result in increased surface disturbance (about 0.5 acre) in previously disturbed areas, so the impact on vegetation would be long term, adverse, and minor.

Keith Road would remain and continue to bisect an old-growth woodlot in the northeast corner of the Birthplace Unit. This would continue a long-term moderate adverse impact on this vegetation community.

If the Nancy Lincoln Inn property was acquired and the guest cabins were removed, this would also be a long-term minor beneficial impact on vegetation after rehabilitation was completed and native communities were restored.

At the Boyhood Home Unit, the tavern, ranger station, and restrooms and concrete pads would be removed. A new visitor contact station would be constructed at the location of the tavern and the parking area would be expanded. A new outdoor exhibit area would be constructed behind the visitor facility, and the replica cabin would be moved into this exhibit. A small area (1-2 acres) would be planted in row crops. This would result in increased total vegetative disturbance of about 3 acres. This construction and disturbance would occur in previously disturbed areas so the adverse impacts would be long term but minor. There would be some short-term impacts from construction, but these areas would be revegetated to reduce long-term adverse effects.

Some new trails would also be constructed. Vegetation in an area of about 0.25 acre total would be impacted for these new trails. These impacts would be adverse, long term, and negligible due to the limited area affected.

If the glade north of the unit is acquired by the National Park Service, native vegetation would be afforded protection from potential development. This would be a long-term minor beneficial impact.

Restoring/enlarging the agricultural fields to their historic size would require the removal of a small amount of riparian vegetation, resulting in long-term minor adverse impacts.

Long-term minor adverse impacts on vegetative resources would be expected as a result of implementing alternative D.

Cumulative Effects. Native vegetation in the region has been systematically disturbed for

thousands of years. From early Native American cultures through the Industrial era, humans relied on the vegetation for food, fuel, and shelter. As more people came into the region, nonnative plants came with them. These actions altered the vegetation throughout much of the region.

More recently, development, maintenance, and relocation of various facilities (residences, tavern, visitor contact facilities, picnic areas, landscaping, and maintenance area) have taken place at both units over the years. Farming has occurred historically at both the Birthplace and Boyhood Home units. Much of the native forest in both units has been cut down to provide wood for construction or fuel. These activities have caused adverse impacts by disrupting or destroying native vegetation to varying degrees.

Foreseeable future actions of continued development outside the national historic site, such as road construction, residential development, commercial development, and associated infrastructure, would adversely impact vegetation. These activities have caused adverse impacts by disrupting or destroying native vegetation to varying degrees.

Seeds of nonnative plants carried by wind and humans have created infestations of noxious weeds and other invasive species that cause long-term adverse effects on native vegetation.

The anticipated increase in visitation around the Lincoln bicentennial would most likely result in short-term minor adverse impacts such as additional vegetation trampling and increased social trails.

The establishment of Abraham Lincoln Birthplace National Historic Site has resulted in long-term beneficial impacts to vegetation through protection of native communities and exotic species eradication efforts.

This alternative, in combination with the above moderate adverse impacts on vegetation, would result in negligible adverse cumulative impacts; however, this alternative would contribute only a small portion of these effects.

Conclusion. Alternative D would have a long-term minor adverse impact on vegetation. The overall cumulative impacts would be minor and adverse; this alternative's contribution to these effects would be small. There would be no impairment of this resource as a result of implementing this alternative.

WILDLIFE

Methodology

Impacts on wildlife are closely related to impacts on habitat. The evaluation considered whether actions would be likely to displace some or all individuals of a species in the national historic site or would result in loss or creation of habitat conditions needed for the viability of local or regional populations. Impacts associated with wildlife might include any change in roosting or foraging areas, food supply, protective cover, or distribution or abundance of species.

Negligible — The impact would not be measurable on individuals, and the local populations would not be affected.
Minor — An action would affect the abundance or distribution of individuals in a localized area but would not affect the viability of local or regional populations.
Moderate — An action would affect a local population sufficiently to cause a minor change in abundance or distribution but would not affect the viability of the regional population.
Major — An action would affect a regional or local population of a species sufficiently to cause a change in abundance or in distribution to the extent that the population would not be likely to return to

its former level (adverse), or would return to a sustainable level (beneficial).

Impacts from Implementing Alternative A — No Action

The no-action alternative would not result in any new changes in the current status of wildlife communities either in terms of species composition, habitat, or population dynamics other than those brought about by natural environmental processes. Expansion of the parking area at the Boyhood Home Unit would not occur in habitat useful to native wildlife, so there would be no impacts on native wildlife.

Keith Road would continue to bisect high-quality wildlife habitat, resulting in a continuing long-term minor adverse impact.

Cumulative Effects. Regional wildlife populations have been historically affected by agricultural, commercial, and residential land uses and the introduction of nonnative species. There have been subsequent minor to moderate adverse impacts in the form of habitat loss or disruption associated with these uses.

Establishment of the national historic site and acquisition of the Boyhood Home Unit have resulted in long-term beneficial impacts on wildlife by preserving these small pieces of habitat and eliminating hunting.

Because this alternative would not contribute to the impacts of other past, present, and reasonably foreseeable future actions, there would be no project-related cumulative impacts on wildlife populations.

The anticipated increase in visitation around the Lincoln bicentennial would most likely result in short-term minor adverse impacts on wildlife from disturbance from additional wildlife-human interactions and increased human presence (noise, smells, etc.)

Because this alternative would have no new changes on wildlife, there would be no cumulative impacts.

Conclusion. Implementing the no-action alternative would have no new effect on wildlife populations. Because this alternative would result in no new changes on wildlife, there would be no cumulative impacts. There would be no impairment of any wildlife resources.

Impacts from Implementing Alternative B

This alternative would have the most acreage in the natural Discovery Zone that preserves native wildlife habitat.

This alternative would remove the visitor center, NPS housing, and maintenance facility from the Birthplace Unit. Removal of these structures would result in short-term minor to moderate adverse impacts during construction as the sounds and presence of heavy equipment and more humans would disturb and displace individual animals. Once the areas were restored after completion of construction, the areas could be recolonized by wildlife such as birds, rodents, and other small mammals. This additional habitat would be a long-term minor beneficial impact.

A visitor contact station and parking area would be built in a previously disturbed area, and rehabilitation of the current site would create a highly modified landscape, which would offer little value as wildlife habitat. There would be negligible adverse long-term effects from this action.

Moving Keith Road out of the national historic site would reduce habitat fragmentation and make additional habitat available for use by all wildlife species, a minor beneficial impact after construction was completed.

Removing the restroom and concrete pads, restoring the cabin, redesigning the entrance, moving the parking area, and changing the utility and water lines and septic system at the Boyhood Home Unit would have short-term minor to moderate impacts on wildlife due to disruptions from construction. There would be no net change in available habitat because the construction would occur in heavily modified areas and therefore, there would be no long-term effect on wildlife.

If the glade north of the unit was acquired by the National Park Service, the wildlife and habitat would be afforded protection from potential development, resulting in a long-term minor beneficial impact.

These actions would result in net short term minor to moderate adverse impacts and long-term minor beneficial impacts on wildlife.

Cumulative Effects. Regional wildlife populations have been affected by agricultural, commercial, and residential land uses and the introduction of nonnative species. Quality habitat available for wildlife has been increasingly restricted and fragmented. Hunting and the lack of natural predators has adversely affected population structure and dynamics of game species. There has been subsequent minor to moderate adverse impacts in the form of habitat loss or disruption associated with human land uses.

Establishment of the national historic site and acquisition of the Boyhood Home Unit has resulted in long-term beneficial impacts to wildlife by preserving these small pieces of habitat and eliminating hunting.

The anticipated increase in visitation around the Lincoln bicentennial would most likely result in short-term minor adverse impacts on wildlife from disturbance from additional wildlife-human interactions and increased human presence (noise, smells, etc.)

This alternative, in combination with the above moderate adverse impacts on wildlife, would result in negligible and adverse cumulative impacts; however, this alternative would contribute a small portion of these effects.

Conclusion. Implementing alternative B would have a short-term minor to moderate adverse impact and long-term minor beneficial impacts on wildlife populations. The overall cumulative impacts would be negligible and adverse; this alternatives' contribution to these effects would be small. There would be no impairment of any wildlife resources.

Impacts from Implementing Alternative C

Alternative C would result in changes in conditions affecting wildlife populations or their habitat. The visitor center parking area would be moved to a previously disturbed area and rehabilitation of the current site would create a highly modified landscape, which offers little value as wildlife habitat. There would be no net long-term effects from this action.

Removing Keith Road from the national historic site would reduce habitat fragmentation and make additional habitat available for use by wildlife resulting in a long-term, negligible to minor beneficial impact.

Actions proposed for the Boyhood Home Unit would affect wildlife. Restoring the agricultural fields to their historic size would require the removal of a small amount of riparian vegetation, resulting in long-term, minor adverse impacts to fish and wildlife species using the creek or riparian area. There would be short-term minor adverse impacts on wildlife during construction of the new parking area from displacement of individuals due to the increased noise and human activity. There would be no net change in available habitat because the construction would occur

in heavily modified areas and therefore, there would be no long-term effect on wildlife. The interpretive garden may have to be fenced to prevent deer and other wildlife from eating the crops.

If the glade north of the unit was acquired by the National Park Service, the wildlife and habitat would be afforded protection from potential development, resulting in a long-term minor beneficial impact.

Cumulative Effects. Regional wildlife populations have been historically affected by agricultural, commercial, and residential land uses and the introduction of nonnative species. Quality habitat available for wildlife has been increasingly restricted and fragmented. Hunting and the lack of natural predators has adversely affected population structure and dynamics of game species. There has been subsequent minor to moderate adverse impacts in the form of habitat loss or disruption associated with human land uses.

Establishment of the national historic site and acquisition of the Boyhood Home unit has resulted in long-term beneficial impacts on wildlife by preserving these small pieces of habitat and eliminating hunting.

The anticipated increase in visitation around the Lincoln bicentennial would most likely result in short-term minor adverse impacts on wildlife from disturbance from additional wildlife-human interactions and increased human presence (noise, smells, etc.)

This alternative, in combination with the above minor adverse impacts on wildlife, would result in negligible and adverse cumulative impacts; however, this alternative would contribute a small portion of these effects.

Conclusion. Implementing alternative C would have a long-term negligible beneficial effect on wildlife populations. The overall cumulative impacts would be negligible and adverse; this alternatives' contribution to these effects would be small. No impairment of any wildlife species would occur from this implementing this alternative.

Impacts from Implementing Alternative D

Under alternative D, the visitor center parking area would be moved to a previously disturbed area, and rehabilitation of the current site would be towards a highly modified landscape which offers little value as wildlife habitat. Visual and noise disturbance related to construction would cause short-term minor adverse impacts. There would be no net long-term effects from this action.

A resource education facility would be constructed at the picnic area. Construction activities associated with this action would disturb local wildlife and remove some low-quality habitat. This would result in short-term minor adverse impacts and long-term negligible adverse impacts.

When the Big Sink Trail is shortened, the portion of trail northeast of Keith Road would be closed and the area rehabilitated. This would result in a long-term, negligible beneficial impact because habitat fragmentation would be decreased and disturbance by visitors would be reduced. However, the long-term adverse impacts on wildlife and habitat caused by Keith Road would continue.

At the Boyhood Home Unit, the tavern, restroom building and concrete pads, and ranger station would be removed and a new visitor contact station and a pioneer exhibit would be constructed and the parking area expanded. The replica cabin would be moved into the pioneer exhibit. A small plot would be farmed with row crops. Demolition and construction would create short-term minor to moderate adverse impacts on local wildlife from disruption or displacement of individual animals due to the increased noise and human

activity. Long-term impacts would be minor and adverse because the amount of human disturbance would be increased.

Restoring the agricultural fields to their historic size would require the removal of a small amount of riparian vegetation, resulting in long-term, minor adverse impacts to fish and wildlife species using the creek or riparian area.

If the glade north of the unit was acquired by the National Park Service, the wildlife and habitat would be afforded protection from potential development, resulting in a long-term minor beneficial impact.

Cumulative Effects. Regional wildlife populations have been historically affected by agricultural, commercial and residential land uses, and the introduction of nonnative species. Quality habitat available for wildlife has been increasingly restricted and fragmented. Hunting and the lack of natural predators has adversely affected population structure and dynamics of game species. There has been subsequent minor to moderate adverse impacts in the form of habitat loss or disruption associated with human land uses.

Establishment of the national historic site and acquisition of the Boyhood Home Unit has resulted in long-term beneficial impacts on wildlife by preserving these small pieces of habitat and eliminating hunting.

The anticipated increase in visitation around the Lincoln bicentennial would most likely result in short-term minor adverse impacts on wildlife from disturbance from additional wildlife-human interactions and increased human presence (noise, smells, etc.)
This alternative, in combination with the above minor adverse impacts on wildlife, would result in negligible and adverse cumulative impacts; however, this alternative would contribute a modest portion to these effects.

Conclusion. Implementing alternative D would have short-term moderate adverse and long-term minor adverse impacts on wildlife populations. The overall cumulative impacts would be negligible and adverse; this alternatives' contribution to these effects would be modest. No impairment of any wildlife species would occur from implementing this alternative.

SELECTED SPECIAL STATUS SPECIES

Methodology

Through coordination with the U.S. Fish and Wildlife Service, species of special concern were identified that could be located in or near the national historic site. Information on each species, including their preferred habitat, prey, and foraging areas, was included. For special status species, including federally listed species, the following impact intensities were used. These definitions are consistent with the language used to determine effects on threatened and endangered species under section 7 of the Endangered Species Act.

No effect — The action would cause no effect on the special status species or critical habitat.

Not likely to adversely affect — The action would be expected to result in discountable effects on a species or critical habitat (that is, unlikely to occur and not able to be meaningfully measured, detected, or evaluated), or it would be completely beneficial.

Likely to adversely affect — The action would result in a direct or indirect adverse effect on a species or critical habitat, and the effect would not be discountable or completely beneficial.

Impacts from Implementing Alternative A — No Action

This alternative would continue current management of the national historic site with no changes in wildlife management. No changes in national historic site development would occur and, therefore, no new impacts on habitat would occur. Existing conditions and situations would continue. Therefore, there would be no effect and no change from the current status of the federally listed Indiana bat, gray bat, Hine's emerald dragonfly, or state-listed species from implementing this alternative.

Cumulative Effects. Habitat loss or disruption is the most common reason for a terrestrial species to become threatened or endangered. Loss or fragmentation of habitat has occurred in the region as a result of commercial and residential development, road construction, and agriculture. Incremental development of the region has affected the abundance and diversity of wildlife by changing the capacity of habitats to provide necessary food, shelter, and reproduction sites. Wildlife is slowly becoming more restricted by current land uses, increasing development, and human activity, causing individuals and populations to either adapt or move.

Indiana bats and gray bats have such stringent criteria for maternity and hibernating sites that they are especially susceptible to habitat disturbance. Acquisition of the Boyhood Home Unit offers protection to potential bat roost sites in the limestone outcroppings.

Because this alternative would not contribute to the impacts of other past, present, and reasonably foreseeable future actions, there would be no project-related cumulative impacts on listed, candidate, or other special status species.

Conclusion. The no-action alternative would have no effect on the Indiana bat, gray bat, Hine's emerald dragonfly, or state species. Because this alternative would not contribute to the impacts of other past, present, and reasonably foreseeable future actions, there would be no project-related cumulative impacts on listed, candidate, or other special status species. No impairment of special status species would occur as a result of implementing the no-action alternative.

Impacts from Implementing Alternative B

Although there are some changes in national historic site development proposed under this alternative, they would not occur in potential habitat for either listed bat or the Hine's emerald dragonfly. Existing conditions and situations would continue. Therefore, there would be no effect on the Indiana bat or gray bat resulting from implementing this alternative.

If the glade north of the Boyhood Home Unit was acquired by the National Park Service, this would result in the long-term protection of any state-listed species found in the glade, a beneficial impact.

Cumulative Effects. Habitat loss or disruption is the most common reason for a terrestrial species to become threatened or endangered. Loss or fragmentation of wildlife habitat has occurred in the region as a result of commercial and residential development, road construction, and agriculture. Incremental development of the region has affected the abundance and diversity of wildlife by changing the capacity of habitats to provide necessary food, shelter, and reproduction sites. Wildlife is slowly becoming more restricted by current land uses, increasing development and human activity, causing individuals and populations to either adapt or move. The combination of these actions causes moderate adverse impacts on special status species.

Indiana bats and gray bats have such stringent criteria for maternity and hibernating sites that they are especially susceptible to habitat disturbance. This has led to their population decline and being listed. Acquisition of the Boyhood Home Unit offers protection to potential bat roost sites in the limestone outcroppings and foraging habitat in the riparian areas along the two forks of Knob Creek.

Because this alternative would not contribute to the impacts of other past, present, and reasonably foreseeable future actions, there would be no project-related cumulative impacts on listed, candidate, or other special status species.

Conclusion. Implementing alternative B would have no effect on the Indiana bat, gray bat, or Hine's emerald dragonfly. Because this alternative would not contribute to the impacts of other past, present, and reasonably foreseeable future actions, there would be no project-related cumulative impacts on listed, candidate, or other special status species. No impairment of special status species would occur as a result of this alternative.

Impacts from Implementing Alternative C

No changes in NPS development at the Birthplace Unit would occur on potential habitat for either listed bat under this alternative.

This alternative calls for restoring (increasing) the size of the fields to their historic configuration in the Boyhood Home Unit. This may involve some removal of some riparian vegetation along Knob Creek. Removal of trees from the riparian area could affect habitat for Indiana bats and Hine's emerald dragonfly. However, this is only potential habitat as no Indiana bats or emerald dragonflies are known to occur here. Therefore, this alternative may affect, but is not likely to adversely affect, Indiana bats or Hine's dragonfly.

If the glade north of the Boyhood Home Unit was acquired by the National Park Service, this would result in the long-term protection of any state-listed species found in the glade, a beneficial impact.

Cumulative Effects. Habitat loss or disruption is the most common reason for a terrestrial species to become threatened or endangered. Loss or fragmentation of habitat has occurred in the region as a result of commercial and residential development, road construction, and agriculture. Incremental development of the region has affected the abundance and diversity of wildlife by changing the capacity of habitats to provide necessary food, shelter, and reproduction sites. Wildlife is slowly becoming more restricted by current land uses, increasing development, and human activity, causing individuals and populations to either adapt or move. The combination of these actions causes moderate adverse impacts on special status species.

Indiana bats and gray bats have such stringent criteria for maternity and hibernating sites that they are especially susceptible to habitat disturbance. This has lead to their population decline and being listed. Acquisition of the Boyhood Home Unit offers protection to potential bat roost sites in the limestone outcroppings and foraging habitat in the riparian areas along the two forks of Knob Creek.

This alternative, in combination with the above adverse impacts on selected special status species, would result in cumulative impacts on listed, candidate or other special status species that would be moderate and adverse; however, this alternative would contribute a slight portion of these effects. There would be no effect on the gray bat.

Conclusion. Alternative C may effect, but is not likely to adversely affect, the Indiana bat or Hine's emerald dragonfly. There would be no effect on the gray bat. Cumulative impacts on listed, candidate or other special status species would be moderate and adverse; however, this alternative's contribution to these impacts would be slight. No impairment of a special status species would occur as a result of this alternative.

Impacts from Implementing Alternative D

No changes in NPS development at the Birthplace Unit would occur on potential habitat for either listed bat under this alternative. Alternative D calls for restoring (increasing) the size of the fields to their historic configuration in the Boyhood Home unit. This may involve some removal of riparian vegetation along Knob Creek. Removal of trees from the riparian area could affect habitat for Indiana bats and Hine's emerald dragonfly. However, this is only potential habitat; no Indiana bats or Hine's emerald dragonflies are known to occur here. Therefore, this alternative may affect, but is not likely to adversely affect, Indiana bats. It would not affect gray bats.

If the glade north of the Boyhood Home Unit was acquired by the National Park Service, this would result in the long-term protection of any state-listed species found in the glade — a beneficial impact.

Cumulative Effects. Habitat loss or disruption is the most common reason for a terrestrial species to become threatened or endangered. Loss or fragmentation of habitat has occurred in the region as a result of commercial and residential development, road construction, and agriculture. Incremental development of the region has affected the abundance and diversity of wildlife by changing the capacity of habitats to provide necessary food, shelter, and reproduction sites. Wildlife is slowly becoming more restricted by current land uses, increasing development, and human activity, causing individuals and populations to either adapt or move. The combination of these actions causes moderate adverse impacts on special status species.

Indiana bats and gray bats have such stringent criteria for maternity and hibernating sites that they are especially susceptible to habitat disturbance. This has led to their being listed. Acquisition of the Boyhood Home Unit offered protection to potential bat roost sites in the limestone outcroppings and foraging habitat in the riparian areas along the two forks of Knob Creek.

This alternative, in combination with the above moderate adverse impacts on selected special status species, would result in cumulative impacts on listed, candidate or other special status species that would be moderate and adverse; however, this alternative would contribute a slight portion of these effects. There would be no effect on the gray bat.

Conclusion. Alternative D may effect, but is not likely to adversely affect, the Indiana bat and Hine's emerald dragonfly. There would be no effect on the gray bat. The overall cumulative impacts would be moderate and adverse; this alternative's contribution to these effects would be slight. No impairment of a special status species would occur as a result of implementing this alternative.

NATURAL SOUNDSCAPES

Methodology

Context, time, and intensity together determine the level of impact of an activity. For example, noise for a certain period and intensity would be a greater impact in a highly sensitive context, and a given intensity would be a greater impact if it occurred more often, or for longer duration. In some cases an analysis of one or more factors may indicate

one impact level, while an analysis of another factor may indicate a different impact level, according to the criteria below. In such cases, best professional judgment based on a documented rationale was used to determine which impact level best applies to the situation being evaluated.

Negligible — Natural sounds would prevail; human-caused noise would be absent or very infrequent and mostly unmeasurable.

Minor — Natural sounds would predominate in zones where management objectives call for natural processes to predominate, with human-caused noise infrequent and at low levels. In zones where human-caused noise is consistent with national historic site purpose and objectives, natural sounds could be heard occasionally.

Moderate — In zones where management objectives call for natural processes to predominate, natural sounds would predominate, but human-caused noise could occasionally be present at low to moderate levels. In areas where human-caused noise is consistent with national historic site purpose and objectives, it would predominate during daylight hours and would not be overly disruptive to visitor activities in the area; in such areas, natural sounds could still be heard occasionally.

Major — In zones where management objectives call for natural processes to predominate, natural sounds would be impacted by human-caused noise sources frequently or for extended periods of time. In zones where human-caused noise is consistent with national historic site purpose and zoning,

- the natural soundscape would be impacted most of the day
- noise would disrupt conversation for long periods of time and/or make enjoyment of other activities in the area difficult
- natural sounds would rarely be heard during the day

Impacts from Implementing Alternative A — No Action

The level of human-related noise in all areas of the national historic site would not change from existing levels as a result of implementing the no-action alternative. Consequently no new impacts would be anticipated.

Cumulative Effects. Natural soundscapes have been degraded from activities on lands adjacent to the national historic site boundaries such as vehicle traffic, agricultural or industrial activity, and occasional construction.

The concentration of visitors around the memorial building and parking lot also affects the natural soundscape at the Birthplace Unit, but this is generally tolerated in this Visitor Services Zone so the related impacts would be long term, negligible, and adverse. Grass mowing by the NPS staff causes short-term adverse impacts on the soundscapes.

Natural soundscapes dominate at most of the Boyhood Home Unit because it is in a rural part of the county, but this is being adversely impacted by highway noise in part of the unit.

This alternative would not contribute to the impacts of other past, present and reasonably foreseeable future actions, so there would be no cumulative impacts on soundscapes resulting from implementing this alternative.

The anticipated increase in visitation around the Lincoln bicentennial would add to the number of visitors at one time in the units. More people would lead to an increased noise level in the Visitor Service Zone and result in short-term minor adverse impacts.

Conclusion. Alternative A would have no new effects on natural soundscapes. Because this alternative would not have any new effects on the natural soundscape, there

would be no cumulative effects. Thus, there would be no impairment of this resource.

Impacts from Implementing Alternative B

Under alternative B, the visitor center would be removed and the parking area would be relocated further away from the memorial plaza. This would reduce the concentration of human-related noise in the memorial plaza. Removal of the maintenance facility would eliminate any noises produced by NPS operations at this location. There would be short-term moderate adverse impacts on soundscapes from demolition of the structures and construction of the new parking area and visitor contact station. After construction is completed, there would be long-term minor beneficial impacts on critical soundscapes in the memorial plaza.

Existing natural soundscapes at the Boyhood Home Unit would be protected by vegetative screening.

If the glade north of the Boyhood Home Unit is acquired by the National Park Service, there would be long-term negligible beneficial impacts on the soundscape because the property would be protected from development.

Cumulative Effects. Natural soundscapes have been adversely affected by activities on lands adjacent to the national historic site boundaries such as vehicle traffic, agricultural or industrial activity, and occasional construction.

Grass mowing and other maintenance tasks done at the national historic site cause short-term adverse impacts on the soundscapes. The concentration of visitors around the memorial building and parking area also affects the natural soundscape, but this is generally expected in this area.

Natural soundscapes dominate at most of the Boyhood Home Unit because it is in a rural part of the county, but in part of the unit this natural soundscape is being adversely impacted by highway noise.

The anticipated increase in visitation around the Lincoln bicentennial would add to the number of visitors at one time in the units. More people would lead to an increased noise level in the Visitor Service Zone and result in short-term minor adverse impacts.

This alternative, in combination with the minor adverse impacts above, would result in minor and adverse cumulative impacts on the natural soundscape; however, the contribution of this alternative to these impacts would be small and beneficial.

Conclusion. Implementing alternative B would have short-term moderate adverse impacts on soundscapes during construction and long-term minor beneficial impacts after construction was completed. The overall cumulative impacts would be minor and adverse; this alternative's contribution to these effects would be small and beneficial. There would be no impairment of this resource.

Impacts from Implementing Alternative C

Under alternative C, the visitor center parking area would be relocated further away from the memorial plaza. This would slightly reduce the concentration of human-related noise in the memorial plaza. There would be short-term moderate adverse impacts on soundscapes from construction, and long-term negligible beneficial impacts after construction is completed.

Existing natural soundscapes at the Boyhood Home Unit would be protected by vegetative screening.

If the glade north of the Boyhood Home Unit is acquired by the National Park Service, there would be long-term negligible beneficial impacts on the soundscape because the property would be protected from development.

Cumulative Effects. Natural soundscapes have been adversely affected by activities on lands adjacent to the national historic site boundaries such as vehicle traffic, agricultural or industrial activity, and occasional construction.

Grass mowing and other maintenance tasks at the national historic site cause short-term adverse impacts on the soundscapes. The concentration of visitors around the memorial building and parking area also affects the natural soundscape, but this is generally expected in this area.

Natural soundscapes dominate at most of the Boyhood Home Unit because it is in a rural part of the county, but this natural soundscape is being adversely impacted in part of the unit by highway noise.

The anticipated increase in visitation around the Lincoln bicentennial would add to the number of visitors at one time in the units. More people would lead to an increased noise level in the Visitor Service Zone and result in short-term minor adverse impacts.

This alternative, in combination with the minor adverse impacts above, would result in minor and adverse cumulative impacts on the natural soundscape; however, the contribution of this alternative to these impacts would be small.

Conclusion. Alternative C would have short-term moderate adverse impacts on soundscapes during construction and long-term negligible beneficial impacts after construction was completed. The overall cumulative impacts would be minor and adverse; this alternative's contribution to these effects would be small. There would be no impairment of this resource.

Impacts from Implementing Alternative D

Under alternative D, the visitor center parking area at the Birthplace Unit would be relocated further away from the memorial plaza. This would slightly reduce the concentration of human-related noise in the memorial plaza. There would be short-term moderate adverse impacts on soundscapes from construction of the parking area, and long-term negligible beneficial impacts after construction is completed.

Opening the new visitor contact station and pioneer farm exhibit at the Boyhood Home Unit might increase the number of visitors here, which would increase the level of human-related noise. This would cause a short-term moderate adverse impact on the soundscape during construction and a long-term, minor adverse impact after construction. Natural soundscapes away from the front of the property would be protected by vegetative screening.

If the glade north of the Boyhood Home Unit is acquired by the National Park Service, there would be long-term negligible beneficial impacts on the soundscape because the property would be protected from development.

Cumulative Effects. Natural soundscapes have been adversely affected by activities on lands adjacent to the national historic site boundaries, such as vehicle traffic, agricultural or industrial activity, and occasional construction.

Grass mowing and other maintenance tasks at the national historic site cause short-term adverse impacts on the soundscapes. The concentration of visitors around the memorial building and parking area also affects the

natural soundscape, but this is generally expected and tolerated in this zone.

Natural soundscapes dominate at the Boyhood Home Unit because it is in a rural part of the county, but this is being adversely impacted by highway noise.

The anticipated increase in visitation around the Lincoln bicentennial would add to the number of visitors at one time in the units. More people would lead to an increased noise level in the Visitor Service Zone and result in short-term minor adverse impacts.

This alternative, in combination with the minor adverse impacts above, would result in minor and adverse cumulative impacts on the natural soundscape; however, the contribution of this alternative to these impacts would be small.

Conclusion. Implementing alternative D would have short-term moderate adverse impacts on soundscapes at both units during construction. The overall cumulative impacts would be minor and adverse; this alternative's contribution to these effects would be small. There would be long-term negligible beneficial impacts at the Birthplace Unit and a long-term minor adverse impact at the Boyhood Home Unit after construction. There would be no impairment of this resource.

VISITOR USE AND EXPERIENCE

METHODOLOGY

The analysis of potential effects of the alternatives on visitor use and experience is based on how visitor use and experiences would change with the addition or removal of certain facilities and the way management prescriptions were applied in the alternatives. The analysis is primarily qualitative rather than quantitative due to the conceptual nature of the alternatives.

Duration of Impact. Short-term impacts would occur during one visit only; long-term impacts would occur during more than one visit.

Intensity of Impact. Impacts were evaluated comparatively between alternatives, using the no-action alternative as a baseline for comparison with each action alternative:

- **Negligible** — Visitors would likely be unaware of any effects associated with implementation of the alternative.
- **Minor** — Changes in visitor use and/or experience would be slight but detectable, would affect few visitors, and would not appreciably limit or enhance experiences identified as fundamental to the national historic site's purpose and significance.
- **Moderate** — Some characteristics of visitor use and/or experience would change, and many visitors would likely be aware of the effects associated with implementation of the alternative; some changes to experiences identified as fundamental to the national historic site's purpose and significance would be apparent.
- **Major** — Multiple characteristics of visitor experience would change, including experiences identified as fundamental to national historic site purpose and significance; most visitors would be aware of the effects associated with implementing the alternative.

Type of Impact. Adverse impacts are those that most visitors would perceive as undesirable. Beneficial impacts are those that most visitors would perceive as desirable.

Impacts from Implementing Alternative A —No Action

Visitor Experience with Resources. Continuation of current management direction with no substantial change in visitor programs and facilities would indefinitely extend currently identified impacts on visitor experience. The Nancy Lincoln Inn developed area adjacent to the Birthplace Unit is distracting to arriving visitors and competes with visitor needs for clear way-finding. The current parking area, visitor center, and Nancy Lincoln Inn facilities would remain as visual distractions that result in continuing long-term adverse impacts on way-finding from the entrance to the memorial building. Noise and activity from the primary parking area adversely impacts visitor experience at the memorial plaza. All these adverse conditions compromise the visitor sense of arrival and continue a major long-term adverse impact.

Lack of facilities at the Boyhood Home Unit would continue to degrade the visitor experience by causing visitor frustration over being unable to get adequate information and interpretation they need. There would continue to be no approved potable water available and inadequate public restrooms at the Boyhood Home Unit. Continuing the current limitations would constitute an ongoing moderate long-term adverse impact on visitor experience at the Boyhood Home Unit. Expansion of the parking area and redesign of the entrance would result in long-term negligible beneficial impacts.

Opportunities are offered at both units for many types of experiences — from social

interactions in developed areas to solitude in natural settings and from brief visits in visitor contact stations to extended visits exploring the grounds and trails. Continuing to have this diversity of opportunities available would result in an on-going moderate long-term benefit to visitors seeking experiences that meet individual needs to fit time constraints, levels of interest, educational level, or physical ability.

Orientation and Information. Continuation of current practices offers visitors the opportunity to visit two units, but primary orientation for both units is at the visitor center at the Birthplace Unit. Unless visitors arrive at that unit first they do not have the benefit of audiovisual and exhibit media to learn about Abraham Lincoln's life in Kentucky.

NPS staff in the visitor center and memorial building at the Birthplace Unit provide adequate orientation and information to visitors. However, because of facility design and orientation of the parking area, some visitors tour the national historic site without going to the visitor center. Continuation of this situation creates a moderate beneficial long-term impact on those visitors who do go to the center and a major adverse impact on visitors who do not go to the center. The impact is considered major because they do not receive the important interpretation and orientation to fully appreciate the historic site.

Design of the Boyhood Home arrival area does not provide clear guidance about how to visit the unit. Lack of orientation and information media and facilities creates a moderate, long-term adverse impact for most visitors at that site. The site is not staffed for visitor services during five months of the year, and it is minimally staffed during the other seven months. Continuation of the low level of information services, facilities, and media available to visitors constitutes a moderate adverse impact on visitor need for information and orientation.

Interpretation and Education. Existing formal and informal interpretation and resource education at the Birthplace Unit would continue to create a moderate beneficial impact on visitors to the site.

At the Boyhood Home Unit the low level of interpretive staffing for only seven months, unmarked and unmaintained trails, the absence of accessible trails to the creek and fields, and the tavern and replica cabin that are exterior exhibits do not provide adequate opportunities for self-guided exploration and learning about key resources and stories at the unit. Continuation of these conditions would result in a long-term moderate adverse impact on visitors to the site.

Safety. Safety information would continue to be available at the Birthplace Unit visitor center and on bulletin boards at the Boyhood Home Unit. Lack of potable water and obsolete public restrooms would continue to present safety issues to all visitors at the latter site. Keith Road at the Birthplace Unit would continue to bisect a key experience area and intersect with the Big Sink Trail (in two places). The retention of Keith Road and Big Sink Trail in their current locations would place all visitors who choose to walk the trail at risk of an automobile/pedestrian collision. Visitors who choose not to walk the trail would not have access to high-quality wildlife habitat and the section of this unit that best reflects the woodlots experienced by the Lincoln family. Continuation of this condition would constitute a moderate adverse impact.

Expansion/redesign of the parking and entrance areas would improve safety along Highway 31E, resulting in a long-term minor beneficial impacts to public and employee safety.

Cumulative Effects. The numerous other NPS sites related to Abraham Lincoln (e.g., Lincoln Boyhood National Memorial in Indiana, Lincoln Home National Historic Site in Illinois, and Lincoln Memorial in the

District of Columbia) may confuse some visitors. Other visitors may plan their vacation to follow the "Lincoln Trail," visiting many of these sites. Local chambers of commerce, museums, and other attractions also offer visitor information and interpretation related to Lincoln.

This alternative would not result in any new actions that would contribute to these effects and so would not have any cumulative effects.

Visitation trends would likely increase with the approach of the Lincoln Bicentennial in 2009. This could result in congestion at parking and activity sites. Some visitors might experience a sense of crowding, especially during scheduled special events. Increased visitation and time spent at the national historic site would result in short-term minor adverse impacts during events; long-term moderate beneficial impacts would result by development of increased or renewed public interest in Abraham Lincoln. There would be no cumulative adverse effects created by the bicentennial events.

Conclusion. Implementing the no-action alternative would result in the continuation of long-term moderate adverse impacts and minor beneficial impacts to aspects of visitor use and experience. Because actions proposed in this alternative would have no new effects on visitor use and experience, there would be no project-related cumulative impacts.

Impacts from Implementing Alternative B

Visitor Experience with Resources. This alternative emphasizes preservation and conservation of resources with enhancement of visitor experience through restoration of historic scenes at both units. Visitor experience opportunities would reflect a more reverential atmosphere in a contemplative setting at the Birthplace Unit. Opportunities at the Boyhood Home Unit would emphasize a connection with nature reflective of the experiences of the Lincoln family in the early 1800s.

Removal of facilities (Keith Road, maintenance facility, and visitor center at the Birthplace Unit; and temporary ranger station, restrooms and concrete pad at the Boyhood Home Unit) and design of new facilities and landscapes (parking lot, staging area, visitor contact station, paved walkways, and Nancy Lincoln Inn at the Birthplace Unit; redesign of the entrance and parking area at the Boyhood Home Unit) would improve visitors' sense of arrival at both units to create a major long-term beneficial impact on the visitor experience.

Acquisition of the Nancy Lincoln Inn and associated property would allow the National Park Service to manage this property compatibly with the other areas of the national historic site. Visitors would be directed through the new arrival/transition area to the memorial plaza, without mistaking the Nancy Lincoln Inn as the first stop on their visit to the national historic site. Relocating the parking area closer to the entrance, building a visitor contact station, and removing the maintenance facilities, housing units, and associated roads would greatly improve the contemplative atmosphere of this unit.

Redesigning the parking area entrance and relocating parking southwest of the tavern would result in a long-term minor beneficial impact on the visitor experience.

Relocating the temporary ranger station and restrooms at the Boyhood Home Unit to inside the tavern would create a beneficial impact on the visitor experience.

Together these actions would create a major long-term beneficial impact on experiences for visitors to both units.

The acquisition of 50 acres on the north side of the Boyhood Home Unit would ensure that

incompatible development in the future does not negatively impact visitor views from the core historic area. Perpetual protection would create a moderate long-term beneficial impact on visitor experience for all visitors to the site.

Orientation and Information. Under this alternative, primary orientation for the national historic site would be at an off-site visitor center. Location of the visitor center between the two units, perhaps in Hodgenville, would provide opportunity for visitors who arrive at the center before visiting either unit to acquire the information needed to decide their visit patterns. Small visitor contact facilities with restrooms at both units would provide specific unit information and orient visitors to the site, the off-site visitor center, and the other unit. A center operated jointly with regional tourism entities could also provide a single-stop source of information for many local attractions. This action would create a moderate long-term beneficial impact for visitors who arrived at the center before visiting either unit.

However, many visitors traveling on Highways 61, 31E, and 84 would arrive at one of the units before arriving at the visitor center. Those visitors would probably visit the site without benefit of information and interpretation at the primary visitor center. This would result in a moderate adverse impact on the ability of many visitors to acquire optimal orientation and information about all national historic site opportunities.

Development of an information station inside the tavern building at the Boyhood Home Unit would provide an expanded information area and exhibits that are not possible in the current temporary ranger contact station. The result would be a major beneficial impact on orientation and information for all visitors to the unit.

Interpretation and Education. In this alternative, visitors would have three sites to visit to learn the full story of Abraham Lincoln's Kentucky years — the Birthplace Unit, the Boyhood Home Unit, and the off-site visitor center. This increase in the level of formal and informal interpretation and resource education with more regional partnership interpretation and local interpretation would create a moderate beneficial impact on interpretation and education at the national historic site.

The location of Abraham Lincoln Birthplace National Historic Site in central Kentucky near major highways means that many visitors stop in without preplanning their visit. Visitors receive a quality experience at the Birthplace Unit because NPS staff and interpretive media are available for introduction and orientation.

Paved sidewalks, a board walk, and unpaved trails would continue to be available to visitors at the Birthplace Unit. No trails accessible to visitors with disabilities and limited marked and maintained trails to the fields at the Boyhood Home Unit would be available to visitors. This would result in a minor adverse impact on visitor opportunities to learn about and enjoy resources beyond the developed area near the highway.

Rehabilitation and interpretation of log buildings at the Boyhood Home Unit would have a moderate long-term beneficial impact on the quality of interpretation and education at the site.

The number of employees needed to staff both units year-round would increase by five full-time-equivalent employees.

The replica cabin at the Boyhood Home Unit would be restored to its 1930s appearance and remain closed, but NPS staff would interpret it as an exterior exhibit.

Staff stationed in the memorial building and visitor center and roving rangers at both units during peak periods of visitation would provide numerous opportunities for personal

interaction between visitors and NPS interpreters. This would result in a moderate beneficial impact by improving the ability of many visitors to receive interpretation at both units.

Safety. Removal of Keith Road would create a negative impact for the few visitors who use the road to access Highway 31E; however, a moderate beneficial impact would be realized by eliminating potential collisions between visitors walking the Big Sink Trail and automobiles on the road.

Visitation trends would likely increase with the approach of the Lincoln Bicentennial in 2009. This could result in congestion at parking and activity sites. Some visitors might experience a sense of crowding, especially during scheduled special events. Increased visitation and time spent at the national historic site would result in short-term minor adverse impacts during events; long-term moderate beneficial impacts would result by development of increased or renewed public interest in Abraham Lincoln. There would be no cumulative adverse effects created by the bicentennial events.

Expansion/redesign of the parking and entrance areas would improve safety along Highway 31E, resulting in a long-term minor beneficial impact on public and employee safety.

Cumulative Effects. The numerous other NPS sites related to Abraham Lincoln (e.g., Lincoln Boyhood National Memorial in Indiana, Lincoln Home National Historic Site in Illinois, and Lincoln Memorial in the District of Columbia) may confuse some visitors. Other visitors may plan their vacation to follow the "Lincoln Trail," visiting many of these sites. Local chambers of commerce, museums, and other attractions also offer visitor information and interpretation related to Lincoln.

Future development at the national historic site's borders would adversely impact the scenic views as well as cause sound encroachment. This was mentioned by the public as a threat to national historic site resources.

The Nancy Lincoln Inn's location adjacent to the Birthplace Unit is distracting to arriving visitors and may prevent them from receiving orientation and background information at the visitor center. This and the presence of the parking area result in adverse impacts on visitor's experience.

When impacts discussed above are considered in combination with the impacts of this alternative, the resulting cumulative effects on the visitor experience would be long term, minor, and beneficial; however, this alternative's contribution to these effects would be modest.

Conclusion. Implementing alternative B would result in minor long-term beneficial impacts on the visitor experience. The overall cumulative impacts would be minor and beneficial; this alternative's contribution to these effects would be modest.

Impacts from Implementing Alternative C — Preferred

Visitor Experience with Resources. The focus of this alternative would be enhancement of visitor experience opportunities. The enhancement would be achieved through additional interpretive programs and facilities and preservation or adaptive use of cultural resources.

Removal of facilities (Keith Road at the Birthplace Unit and temporary contact/ranger station, restrooms and concrete pad and temporary ranger station at the Boyhood Home Unit) and design of new facilities and landscapes (relocated parking lot and staging area and Nancy Lincoln Inn landscapes at the

Birthplace Unit and improved entrance and the removal of powerlines at the Boyhood Home Unit) would improve the sense of arrival at both units to create a major beneficial impact on visitor experience.

Relocation of the current visitor center parking area closer to the entrance would improve the sense of arrival, increase opportunities for interpretation, and improve the contemplative atmosphere of the unit. Development of an arrival/transition and staging area on the abandoned parking area site would eliminate distractions currently degrading arrival experiences Visual intrusions and attraction of the Nancy Lincoln Inn sometimes misguide arriving visitors, and noise in the parking lot can be heard in the memorial plaza. The staging area would enhance the reverential and contemplative setting desired for the Birthplace Unit. Acquisition of Nancy Lincoln Inn and property would allow NPS managers to manage this property compatibly with the other areas of the national historic site. Visitors would be directed through an arrival/transition area to the memorial plaza without mistaking the Nancy Lincoln Inn as the arrival destination. This action would create a major beneficial impact on visitor experience. Landscape character as well as facility design and location would focus attention toward primary resources. Areas between visitor stops at the new parking area, visitor center, and memorial plaza would provide transitional experiences from the turmoil of highways and parking areas to historic and natural landscapes.

Removal of intrusive concrete pads and the obsolete restroom building, addition of a few picnic tables, and relocation of the temporary ranger station and restrooms to inside the tavern at the Boyhood Home Unit would create a major long-term beneficial impact on experiences for all visitors to this unit. The visual quality of the site would be improved, and the removal of modern intrusions would enhance visitors' abilities to understand and appreciate interpretive information.

Moving the parking area to a new location behind the tavern would result in long-term moderate adverse impacts on visitor experience. The national historic site's mission, purpose, and significance statements confirm that cultural and natural resources associated with the birth and early years of Abraham Lincoln are the important resources to be experienced by visitors. The fields, hills, and creek behind the tavern preserve the setting and resources of Lincoln's first memories during his early formative years. Location of the parking area behind the tavern would place vehicles in the view of visitors from the visitor center in the tavern and the hills and fields of Lincoln's memory. This would adversely impact opportunities for visitors to achieve understanding, appreciation, and enjoyment of the most important resources, as stated in the mission, purpose, and significance statements, reflecting Lincoln's background and pioneer environment.

Establishment of an interpretive garden and cyclic maintenance of the garden with traditional methods would result in a long-term moderate beneficial impact on visitor experiences.

Development of new trails and improvement of existing trails would encourage more visitors to explore more of resources at both units. Increased use of trails could somewhat reduce opportunities for quiet and contemplation sought by some visitors in the Big Sink area at the Birthplace Unit and the fields and uplands at the Boyhood Home Unit. However, these developments would offer opportunities for most visitors to connect with nature as the Lincolns did.

Acquisition of about 50 acres on the north side of the Boyhood Home Unit would contribute to perpetuating the scenic views from the historic area. Inclusion of this property in the national historic site would

ensure that incompatible development in the future does not negatively impact visitor views from the core historic area. Protection would create a major long-term beneficial impact on visitor experience for all visitors to the unit.

Orientation and Information. Implementing this alternative would provide a moderate long-term beneficial impact on orientation and information at the two units, each with orientation/information facilities. Year-round staffing in the visitor center at Birthplace Unit and in the tavern building at the Boyhood Home Unit would create great opportunities for visitors to the national historic site to receive sufficient information to enjoy resources and stories. An increase in the quantity and quality of nonpersonal media and activities in visitor facilities would supplement services offered in both facilities. Staff in the memorial building and roving both units during peak periods of visitation would provide numerous opportunities for additional information and orientation through personal interaction with visitors.

Relocation of the Birthplace Unit parking area and development of a landscaped staging area would provide more obvious way-finding from the parking area, through the visitor center, and then to the memorial plaza. The improved sense of arrival would focus attention toward primary resources and not the Nancy Lincoln Inn. Areas between the parking area, visitor center, and memorial plaza would provide transitional experiences from the turmoil of highways and parking areas to historic and natural landscapes.

Currently, visitors are confused upon arrival at the Boyhood Home Unit about where to park and find information. An improved entrance from Highway 31E to the unit, improved parking, signs, and vegetative screening would mitigate sights and sounds of the highway and contribute to positive arrival and way-finding experiences.

Development of an information station inside the tavern at the Boyhood Home Unit would provide an expanded information area and informational exhibits that are not possible in the current temporary ranger contact station.

Implementation of this alternative would enable visitors to easily, quickly, and effectively find information they need for orientation to both units and visitor experience opportunities. The result would be a major long-term beneficial impact on orientation and information for all visitors to the national historic site.

Interpretation and Education. This alternative would create a major beneficial impact on interpretation and education programs at the national historic site. It would provide better use of existing facilities and a high level of access for visitors with disabilities, including expansion of interpretation facilities, an increase in interpretive media, and improved maintenance and expansion of trails. Expansion of interpretive media and personal services at both units would enhance opportunities for visitors to appreciate and understand the national historic site's values while continuing to preserve cultural and natural resources.

Removing administrative offices from the Birthplace Unit visitor center would provide space for more exhibits interpreting additional topics needed by visitors to increase their understanding of national historic site themes and related stories. Providing media and staff at the visitor center and memorial building at all times and roving interpreters throughout the unit during peak periods would have a moderate beneficial impact on the visitor experience.

The Nancy Lincoln Inn and associated buildings, if acquired by the National Park Service, would be used for NPS purposes. Development of a cooperating association sales area at this location would vacate space at the visitor center that could be used to expand interpretation in the center. Improved experiences for all visitors to the national historic site would constitute a major

beneficial impact. A larger interpretive sales area in the Inn would also add a major beneficial impact to the interpretation and education program by increasing the quantity, type, and variety of interpretive materials available to visitors. Space inside the inn not needed for interpretive sales could be used, along with cabins adjacent to the inn, as an education center for a curriculum-based education program to supplement the education area near the pavilion.

If the inn and surrounding property is acquired by the National Park Service, NPS managers would have more capability to landscape the area between the inn and visitor center/memorial areas to screen the intrusive property. This action could reduce the adverse impact on the memorial area to a minor to negligible level.

Development of the interior of the tavern building at the Boyhood Home Unit for interpretation would offer visitors exhibit, audiovisual, and sales areas that are not possible in the current temporary ranger contact station. The result would be a major beneficial impact on interpretation and education programs that enable visitors to enhance their enjoyment of the unit and their understanding and appreciation of key resources and values.

Restoring and opening the replica cabin at the Boyhood Home Unit for interpretation would add a significant sensory experience for all visitors to that unit. Visitors would be able to surround themselves in an environment similar to that experienced by young Abraham Lincoln, resulting in a moderate beneficial impact on visitor ability to realize a cultural sense of place. This action combined with reestablishment and maintenance of surrounding fields to their historic size and configuration would have a major positive impact on visitor ability to enjoy, understand, and appreciate the environment experienced by the Lincoln family.

Providing parking to accommodate school buses would result in long-term negligible beneficial impacts on visitors participating in the site education program.

Establishment of an interpretive garden and cyclic maintenance of the garden with traditional methods would result in a long-term moderate beneficial impact on both curriculum-based educational activities and informal interpretation experiences.

Public access to resources and interpretation would be increased by improving existing trails at both units and developing new trails at the Boyhood Home unit. A short loop interpretive trail that is accessible to visitors with disabilities at each unit would provide access to creek, field, and forest. Renovation and reactivation of the Boy Scout trail linking national historic site units and improvement or development of trails at the Boyhood Home Unit would provide opportunities for self-guided and ranger-led walks into fields and uplands surrounding the Knob Creek Valley. A variety of trails would provide a variety of opportunities — from social near the tavern to solitude and contemplation in the hills. This variety of opportunities would meet the needs of most visitors and constitute a moderate beneficial impact when compared to current conditions. The improved trail system would provide opportunities for contact with more resources by many visitors to both park units. Interpretive media and services at the trails would substantially increase visitor understanding and enjoyment of the national historic site. The improvements would result in a moderate long-term beneficial impact on visitor opportunity to learn about and enjoy resources beyond developed areas near parking areas.

Safety. Removing Keith Road at the Birthplace Unit would result in a moderate long-term beneficial impact by eliminating potential collisions between visitors walking the Big Sink Trail and automobiles on the road.

An improved entrance at the Boyhood Home Unit would provide a major long-term beneficial impact by reducing the risk of accidents between through-travelers on Highway 31E and visitors trying to enter or exit the national historic site. Implementing this improvement would also reduce pedestrian/automobile conflicts. The design of new entrance facilities would clearly indicate a preferred route, making it as easy as possible for visitors traveling in an unfamiliar area.

Visitation trends would likely increase with the approach of the Lincoln Bicentennial in 2009. This could result in congestion at parking and activity sites. Some visitors might experience a sense of crowding, especially during scheduled special events. Increased visitation and time spent at the national historic site would result in short-term minor adverse impacts during events; long-term moderate beneficial impacts would result by development of increased or renewed public interest in Abraham Lincoln. There would be no cumulative adverse effects created by the bicentennial events.

Cumulative Effects. The numerous other NPS sites related to Abraham Lincoln (e.g., Lincoln Boyhood National Memorial in Indiana, Lincoln Home National Historic Site in Illinois, and Lincoln Memorial in the District of Columbia) may confuse some visitors. Other visitors may plan their vacation to follow the "Lincoln Trail," visiting many of these sites. Local chambers of commerce, museums, and other attractions also offer visitor information and interpretation related to Lincoln.

Future development at the national historic site's borders would adversely impact the scenic views as well as causing sound encroachment. This was mentioned by the public as a threat to the national historic site's resources.

The location of Abraham Lincoln Birthplace National Historic Site in central Kentucky near major highways means that many visitors stop without preplanning their visit. Visitors would continue to receive a quality experience at the Birthplace Unit because NPS staff and interpretive media are available for introduction and orientation.

When the actions discussed above are considered in combination with the impacts of this alternative, the resulting cumulative effects on visitor experience would be beneficial; however, this alternative's contribution to these effects would be small.

Conclusion. Implementing the preferred alternative (alternative C) would result in moderate long-term beneficial impacts on the visitor experience. The overall cumulative impacts would be minor and beneficial; this alternative's contribution to these effects would be small.

Impacts from Implementing Alternative D

Visitor Experience with Resources. The focus of this alternative would be to instill a stewardship ethic through interpretation and resource education. This alternative would provide the highest level of programs and services at both units. Exhibits would provide greater opportunities for visitors to understand Abraham Lincoln, his family, and his childhood than under the no-action alternative. Positive impacts on visitor experiences would be realized through greater opportunities to understand national historic site significance and themes.

Keith Road would remain in the national historic site bisecting a substantial experience area, and Big Sink Trail would be shortened to avoid crossing the road. This would be a major long-term adverse impact on the visitor experience because visitors would no longer be able to see the most accurate reflection of the farm and woodlot environment experienced by the Lincoln family — the old-growth forest in the Big Sink section of the national

historic site east of Keith Road. Interpretation of this area would also be more difficult.

If the inn and surrounding property is acquired by the National Park Service, NPS staff could landscape the area between the visitor center and memorial areas to screen the intrusive property. This action could reduce the existing moderate adverse impact to a minor or negligible level.

Expansion of parking in its current location at the Boyhood Home Unit would result in long-term negligible beneficial impacts.

Orientation and Information. Implementing this alternative would provide orientation/information facilities at both units instead of just one unit. Year-round staffed orientation stations in a new visitor center at the Boyhood Home Unit and in the visitor center at the Birthplace Unit would create opportunities for all visitors to the national historic site to find sufficient information to enjoy resources and stories.

Relocation of the parking area and development of a landscaped staging area on the site of the current parking lot at the Birthplace Unit would facilitate transition of visitors from arrival to the memorial plaza. An enhanced sense of arrival and easier way-finding from the parking area, through the visitor center, and then to the memorial plaza would create a major beneficial impact on visitor experience. Landscape character and facility design and location should focus attention on primary resources. Areas between visitor stops at the parking area, visitor center, and memorial plaza would provide transitional experiences from the turmoil of highways and parking areas to historic and natural landscapes that contribute to a major long term beneficial impact on visitors.

At the Boyhood Home Unit, removing the tavern building and temporary ranger station, constructing a new visitor contact station for information and orientation, and building the pioneer lifestyle exhibit would have a long-term major beneficial impact on visitor experience. New construction would be designed to provide efficient orientation and information space and media without limitations of adaptively using an old structure not designed for those functions.

Interpretation and Education. At the Birthplace Unit, space vacated by administrative/office staff and cooperating association staff would be additional space for interpretation, educational activities /programs and additional topics needed by visitors to increase their understanding of national historic site themes and related stories. This would improve opportunities for all visitors to this unit —a moderate long-term beneficial impact on the interpretation and education programs.

The Nancy Lincoln Inn, if acquired by the National Park Service, would be used for NPS purposes. The expanded sales area in the current visitor center would also add a major beneficial impact on the interpretive/ education program through an increase in the quantity, type and variety of interpretive materials that would be available to visitors.

The new visitor contact station at the Boyhood Home Unit would provide the same major long-term beneficial impact for interpretation and education as described above for information and orientation. The new facility could be designed to provide optimum opportunities for visitors to learn and understand about the national historic site resources and values. Visitors using media and services in the visitor contact station would have greater opportunities for understanding Abraham Lincoln and his early childhood.

The proposed outdoor pioneer lifestyle exhibit near the Boyhood Home Unit visitor contact station would improve visitor understanding of national historic site themes. Actively managed and interpreted farm fields and a replica cabin in the pioneer exhibit

would greatly increase the quality of interpretation of the environment experienced by young Abraham Lincoln. An outdoor pioneer lifestyle exhibit could interpret a broad range of topics and provide a multisensory experience that contributes a major beneficial change to learning and retention of things learned.

Providing parking to accommodate school buses would result in long-term negligible beneficial impact on visitors participating in the site education program.

Safety. Retention of Keith Road in its current location and shortening Big Sink Trail to avoid crossing Keith Road would eliminate a safety hazard for visitors walking the trail. This would only create a moderate beneficial impact on safety because most visitors do not walk the trail.

Visitation trends would likely increase with the approach of the Lincoln Bicentennial in 2009. This could result in congestion at parking and activity sites. Some visitors might experience a sense of crowding, especially during scheduled special events. Increased visitation and time spent at the national historic site would result in short-term minor adverse impacts during events; long-term moderate beneficial impacts would result by development of increased or renewed public interest in Abraham Lincoln. There would be no cumulative adverse effects created by the bicentennial events.

Expansion/redesign of the parking and entrance areas would improve safety along Highway 31E, resulting in a long-term minor beneficial impact on public and employee safety.

Cumulative Effects. The numerous other NPS sites related to Abraham Lincoln (e.g., Lincoln Boyhood National Memorial in Indiana, Lincoln Home National Historic Site in Illinois, and Lincoln Memorial in the District of Columbia) may confuse some visitors. Other visitors may plan their vacation to follow the "Lincoln Trail," visiting many of these sites. Local chambers of commerce, museums, and other attractions also offer visitor information and interpretation related to Lincoln.

Future development at the historic site's borders would adversely impact the scenic views as well as causing sound encroachment. This was mentioned by the public as a threat to the national historic site's resources.

When the impacts discussed above are considered in combination with the impacts of this alternative, the resulting cumulative effects would be beneficial to visitor experience; however, this alternative's contribution to these effects would be modest.

Conclusion. Implementing alternative D would result in moderate long-term beneficial impacts on the visitor experience. The overall cumulative impacts would be minor and beneficial; this alternative's contribution to these effects would be modest.

SOCIOECONOMIC ENVIRONMENT

METHODOLOGY

The National Park Service applied logic, experience, professional expertise, and professional judgment to analyze the impacts on the social and economic environment resulting from each alternative. Economic data, historic visitor use data, expected future visitor use, and future developments of the national historic site were all considered in identifying, discussing, and evaluating expected impacts.

Intensity of Impact. Assessments of potential socioeconomic impacts for the action alternatives were based on comparisons between the no-action alternative and each of the action alternatives. The following intensity definitions were used.

Negligible — Effects on socioeconomic conditions would be at or below the level of detection. There would be no noticeable change in any defined socioeconomic indicators.
Minor — Effects on socioeconomic conditions would be slight but detectable.
Moderate — Effects on socioeconomic conditions would be readily apparent and result in changes to socioeconomic conditions on a local scale.
Major — Effects on socioeconomic conditions would be readily apparent, resulting in demonstrable changes to socioeconomic conditions in the region.

IMPACTS FROM IMPLEMENTING ALTERNATIVE A — NO ACTION

The no-action alternative would have no impact on the regional economy.

The average time of a visit or length of stay in the region would not likely change. Visitors would continue to visit the two units of the historic site in the same manner and experience the same social conditions.

Common to all alternatives would be the relatively large increase in the number of visitors expected in the period leading up to and including the bicentennial of Lincoln's birth. This would be a short-term, moderate benefit to businesses in the region. If the number of visitors doubled in the year leading up to the bicentennial, up to $7 million additional direct and indirect value could be injected into the local economy.

Cumulative Effects

The social and economic situation in LaRue County is affected by a combination of many factors, including an NPS presence. The livelihoods of service-related businesses in the region rely to some degree on the inflow of tourist dollars, especially restaurants and motels. Although tourism is not the driving factor in the regional economy, the national downward trend in visitation may be adversely affecting tourism-related businesses.

The town of Hodgenville is planning on developing its downtown area and bringing in new businesses including a motel. These actions could attract more tourists to the area, contributing to the local economy. The anticipated increase in visitation near the Lincoln birth bicentennial would provide a short-term minor to moderate beneficial economic impact.

This alternative would not contribute to other past, present and future impacts on social or economic conditions and thus would have no related cumulative effects.

Conclusion

The no-action alternative would have no new effect on the socioeconomic environment in the region. Because this alternative would have no new effects on the socioeconomic environment, there would be no cumulative impacts.

IMPACTS FROM IMPLEMENTING ALTERNATIVE B

This alternative would have a long-term minor beneficial impact on the regional economy. The National Park Service would hire additional employees to handle the need for resource management and visitor contact personnel. Hiring five employees (in addition to the 13 existing employees) would benefit the local economy through an increased demand for housing, utilities, services, and goods.

If cost-effective, this alternative would also provide for some maintenance functions to be contracted out, contributing additional benefits to the local economy. Short-term benefits to a local company could be realized for the demolition/construction called for in this alternative.

The average time of visit or length of stay in the region would not likely change.

Cumulative Effects

The social and economic situation in LaRue County is affected by a combination of many factors, including an NPS presence. The livelihoods of service-related businesses in the region rely to some degree on the inflow of tourist dollars, especially restaurants and motels. Although tourism is not the driving factor in the regional economy, the national downward trend in park visitation may be adversely affecting tourism-related businesses. The town of Hodgenville is planning on developing its downtown area and bringing in new businesses including a motel. These actions could attract more tourists to the area, contributing to the local economy. The anticipated increase in visitation near the Lincoln birth bicentennial would provide a short-term minor to moderate beneficial economic impact.

This alternative, in combination with the beneficial impacts above, would result in minor beneficial cumulative effects; however, this alternative's contribution to these effects would be small and beneficial.

Conclusion

Implementing alternative B would result in short-term and long-term minor beneficial impacts on the socioeconomic environment. The overall cumulative effects would be minor and beneficial; this alternative's contribution to these effects would be small and beneficial.

IMPACTS FROM IMPLEMENTING ALTERNATIVE C

Implementing alternative C would affect the local economic situation. The National Park Service would hire three employees (in addition to the 13 existing employees) to handle the need for resource management and visitor contact personnel. Additional employment would be a long-term minor benefit on the local economy through an increased demand for housing, utilities, services, and goods.

The number of visitors, average length of visit, and length of season could increase when additional interpretive opportunities were implemented. Businesses that rely on the tourist trade would receive a long-term minor benefit. For example, if visitation were to increase by 10%, about $750,000 would be

added to the local economy through direct and indirect spending.

If cost-effective, this alternative would also provide for some maintenance functions at the Boyhood Home Unit to be contracted out, contributing additional benefits to the local economy as funds are transferred out of the federal government.

Cumulative Effects

The social and economic situation in LaRue County is affected by a combination of many factors, including an NPS presence. The livelihoods of service-related businesses in the region rely to some degree on the inflow of tourist dollars, especially restaurants and motels. Although tourism is not the driving factor in the regional economy, the national downward trend in park visitation may be adversely affecting tourism-related businesses as their customer numbers decline.

The town of Hodgenville is planning on developing its downtown area and bringing in new businesses including a motel. These actions could attract more tourists to the area, contributing to the local economy. The anticipated increase in visitation, especially near the Lincoln birth bicentennial, would provide a short-term minor to moderate beneficial economic impact.

This alternative, in combination with the beneficial impacts above, would result in minor beneficial cumulative effects; however, this alternative's contribution to these effects would be small and beneficial.

Conclusion

Implementing alternative C would result in long-term minor beneficial impacts on the socioeconomic environment. The overall cumulative effects would be minor and beneficial; this alternative's contribution to these effects would be small and beneficial.

IMPACTS FROM IMPLEMENTING ALTERNATIVE D

Implementing alternative D would have a long-term, moderate beneficial affect on the regional economic situation. The National Park Service would hire 4.5 full-time-equivalent employees (in addition to the existing 13 employees) to handle the need for resource management and visitor contact. Additional employment would benefit the local economy through an increased demand for housing, utilities, services, and goods.

The number of visitors, average length of visit, and length of season could increase when additional interpretive/education programming is implemented, including a new visitor contact facility and pioneer exhibit at the Boyhood Home Unit. Businesses that rely on the tourist trade would receive a long-term moderate benefit. For example, if national historic site visitation were to increase by 10%, about $750,000 would be added to the local economy through direct and indirect spending.

This alternative would also provide for some maintenance functions to be contracted out, contributing additional benefits to the local economy. Short-term benefits to a local company could be realized for the construction called for in this alternative.

Cumulative Effects

The social and economic situation in LaRue County is affected by a combination of many factors, including an NPS presence. The livelihoods of service-related businesses in the region rely to some degree on the inflow of tourist dollars, especially restaurants and motels. Although tourism is not the driving factor in the regional economy, the national

downward trend in park visitation may be adversely affecting tourism-related businesses.

The town of Hodgenville is planning on developing its downtown area and bringing in new businesses including a motel. These actions could attract more tourists to the area, contributing to the local economy. The anticipated increase in visitation, especially near the Lincoln birth bicentennial, would provide a short-term minor to moderate beneficial economic impact.

This alternative, in combination with the beneficial impacts above, would result in minor beneficial cumulative effects; however, this alternative's contribution to these effects would be small and beneficial.

Conclusion

Implementing alternative D would result in short-term and long-term moderate beneficial impacts on the socioeconomic environment. The overall cumulative effects would be minor to moderate and beneficial; this alternative's contribution to these effects would be small and beneficial.

NPS OPERATIONS

METHODOLOGY

The impact analysis evaluated the effects of the alternatives on the following aspects of NPS operations:

- staffing, infrastructure, visitor facilities, and services
- operations of non-NPS entities, including the Eastern National Park and Monument Association, partners, and volunteers

The analysis was conducted in terms of how NPS operations and facilities might vary under the different management alternatives. The analysis is more qualitative rather than quantitative because of the conceptual nature of the alternatives. Consequently professional judgment was used to reach reasonable conclusions as to the intensity, duration, and type of potential impact.

Duration of Impact. Short-term impacts would be less than one year. Long-term impacts would extend beyond one year and have a permanent effect on operations.

Intensity of Impact.

Negligible —The effects would be at or below the lower levels of detection, and would not have an appreciable effect on national historic site operations.
Minor — The effects would be detectable, but would be of a magnitude that would not have an appreciable effect on national historic site 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.

Type of Impact. Beneficial impacts would improve NPS operations and/or facilities. Adverse impacts would negatively affect NPS operations and/or facilities and could hinder the staff's ability to provide adequate services and facilities to visitors and staff. Some impacts could be beneficial for some operations or facilities and adverse or neutral for others.

IMPACTS FROM IMPLEMENTING ALTERNATIVE A — NO ACTION

Under the no-action alternative, management and operations of the national historic site would continue as it is now. The Boyhood Home unit would continue to be managed on a day-to-day basis without the guidance of a long-range plan.

Cramped office space and working conditions in the headquarters/visitor center building would continue to be a long-term minor adverse impact on NPS operations.

All maintenance facilities would remain in their current location in the national historic site. Operations staff would continue to shuttle equipment back and forth to the Boyhood Home Unit, causing wear on equipment and loss of employee efficiency. This would continue to be a long-term minor adverse impact.

Without a current general management plan in place, obtaining funding for future projects could continue to be difficult, causing long-term minor to moderate adverse impacts on NPS operations.

Cumulative Effects

In general, NPS staff is faced with a rising workload resulting from new NPS initiatives and program requirements. The addition of the Boyhood Home Unit almost tripled the size of the national historic site. Because of this, building and grounds maintenance needs also increased significantly. Even with the recent increase in staffing, additional strain on the operations staff is caused by the distance of the new unit from the Birthplace Unit where equipment and staff are located. Associated impacts would continue to be long-term, minor, and adverse.

Because this alternative would have no new impacts on NPS operations, there would be no cumulative effects

Conclusion

The no-action alternative would result in no new impacts on NPS operations at the national historic site. Because there would be no new impacts on NPS operations, there would be no cumulative effects.

IMPACTS FROM IMPLEMENTING ALTERNATIVE B

Under this alternative, the headquarters (management and administrative staff) would be moved to a location outside the national historic site. Most likely, this would be in Hodgenville, about 3 miles away. This move could cause a reduction in management efficiency at the Birthplace Unit because administrative and management staff would be removed from the resource, which would be a moderate adverse impact. However, management would be closer to the Boyhood Home Unit so management oversight could improve for that unit. A building would be leased that has adequate room for the anticipated increase in staff, resulting in long-term minor beneficial impacts on NPS staff.

In addition, the maintenance facility (garage, offices and yard) would be moved out of the national historic site. It could be relocated to an adjacent property. This action would cause a long-term, minor adverse impact on NPS operations because staff would have further to travel to work sites at the Birthplace Unit.

If cost-effective, most routine maintenance of the buildings and grounds at the Boyhood Home Unit would be contracted to an outside entity. This would save wear and tear on the equipment and would save employee time — a long-term minor beneficial impact. Leasing administrative, maintenance, and collections/ archival space would incur additional costs.

Cumulative Effects

In general, NPS staff is faced with a rising workload resulting from new NPS initiatives and program requirements. The addition of the Boyhood Home Unit almost tripled the size of the national historic site. Consequently, building and grounds maintenance needs also increased substantially. An additional adverse impact on the operations staff is caused by the distance of the new unit from the Birthplace Unit where equipment and staff are located. This causes extra wear on the equipment and time to be wasted in travel.

Because this alternative has both adverse and beneficial impacts on NPS operations, there would be no net contribution from this alternative to the overall cumulative effects and thus there would be no cumulative effects.

Conclusion

Implementing alternative B would have both long-term minor beneficial impacts and long-term minor adverse impacts on NPS operations at the national historic site. Because this alternative has both adverse and beneficial impacts on NPS operations, there would be

no net contribution from this alternative to the overall cumulative effects and thus there would be no cumulative effects.

IMPACTS FROM IMPLEMENTING ALTERNATIVE C

Under this alternative, the headquarters (management and administrative staff) would be moved to the housing units in the national historic site (or to the house on the Nancy Lincoln Inn property if this property is acquired). This move would most likely increase the amount of room available for staff offices, resulting in long-term minor beneficial impacts on national historic site staff. Although no permanent employees now occupy the units, this action would remove the availability of NPS housing.

If cost-effective, cost routine maintenance of the buildings and grounds at the Boyhood Home Unit would be contracted to an outside entity. This would save wear and tear on the national historic site's equipment and would save employee time — a long-term minor beneficial impact.

Cumulative Effects

In general NPS staff is faced with a rising workload resulting from new NPS initiatives and program requirements. The addition of the Boyhood Home Unit almost tripled the size of the national historic site. Consequently, building and grounds maintenance needs also increased substantially, causing long-term minor adverse impacts.

When the impacts of alternative C are added to the long-term minor adverse effects of other past, present, and future actions, the cumulative effects would be negligible and beneficial. However, this alternative would contribute modest beneficial impacts to these effects on NPS operations.

Conclusion

Implementing alternative C would result in long-term minor beneficial impacts on NPS operations at the national historic site. The overall cumulative effects would be negligible and beneficial; this alternative's contribution to these effects would be modest.

IMPACTS FROM IMPLEMENTING ALTERNATIVE D

Under this alternative, the NPS staff and offices in the visitor center/headquarters building would move to the house on the Nancy Lincoln Inn property if it is acquired. This would increase the amount of room available for staff offices, resulting in long-term minor beneficial impacts on NPS staff.

NPS operations would also receive long-term minor benefits from the resource education center and office constructed near the picnic area. Those facilities would provide the space necessary for a professional resource education program.

The addition of the pioneer lifestyle exhibit would add maintenance and operations work, resulting in a long-term minor to moderate adverse impact on NPS operations.

If cost-effective, most routine maintenance of the buildings and grounds at the Boyhood Home Unit would be contracted to an outside entity. This would save wear and tear on the NPS equipment and would save employee time — a long-term, minor beneficial impact. Staff offices and a maintenance storage shed would be constructed as part of the new visitor center, resulting in long-term minor beneficial effects on NPS operations at this unit.

Cumulative Effects

In general, NPS staff is faced with a rising workload resulting from new NPS initiatives and program requirements. The addition of the Boyhood Home Unit almost tripled the size of the national historic site. Consequently, building and grounds maintenance needs also increased substantially, causing long-term minor adverse impacts.

When the impacts of alternative D are added to the long-term moderate effects of other past, present, and future actions, the cumulative effects would be negligible and adverse. However, this alternative would have a substantive contribution to the cumulative effects on NPS operations.

Conclusion

Implementing alternative D would result in long-term negligible beneficial impacts and minor adverse impacts on NPS operations at the national historic site. The overall cumulative effects would be negligible and adverse; this alternative would have a substantive contribution to these effects.

OTHER IMPACTS

UNAVOIDABLE MODERATE OR MAJOR ADVERSE IMPACTS

Under alternatives C and D, there would be a slight change in the development footprint as structures and roads are constructed or modified at the Birthplace Unit and Boyhood Home Unit. This would result in no unavoidable moderate or major adverse impacts on resources or visitor enjoyment.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Alternative B — Changes to the configuration and use of the historic tavern for adaptive reuse could change the integrity of the historic fabric. Visitor traffic and use patterns would also change within that building. These alterations could result in an irreversible loss of historic fabric.

There would be a net reduction in development under this alternative so there would not be any irreversible or irretrievable commitments of natural resources in this alternative.

Alternative C, Preferred — Changes to the configuration and use of historic buildings for purposes of adaptive reuse could change the integrity of the historic fabric. It could also change such things as the visitor traffic use patterns within them. These alterations could result in an irreversible loss of historic fabric.

There would be slight changes to the development footprint but it would not result in any irreversible or irretrievable commitments of natural resources in this alternative.

Alternative D — The tavern would be razed to build a new visitor contact station for visitor services and administrative space. The removal of the building would be an irreversible impact on a historic structure.

Moving the replica boyhood cabin from its current location to the pioneer exhibit would require its dismantling and reassembly. This action would irreversibly impact the historic structure.

Implementing this alternative would result in the irretrievable loss of about 2 acres of vegetation and soil productivity due to construction of facilities associated with an environmental education center and a pioneer lifestyle exhibit.

RELATIONSHIPS BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The purpose of Abraham Lincoln Birthplace National Historic Site is to preserve and commemorate two locations associated with Lincoln's birth and early childhood. Nonetheless, under all alternatives, most of the national historic site would be in the Discovery Zone, which does not allow development. The National Park Service would continue to manage these areas under all alternatives to maintain natural ecological processes and native biological communities. Any actions NPS staff would take would be intended to ensure that human uses do not adversely affect the productivity of existing natural biotic communities.

Alternative B would result in the removal of structures and thus would enhance long-term productivity as these areas are restored. Alternatives A and C would not result in any new development and would have a low potential for reducing long-term natural productivity. Under alternative D, there

would be a slight increase in the development footprint as new structures are constructed and existing structures expanded at both units. Even so, this would not result in a substantial loss of long-term productivity because the areas where this construction would occur are all previously disturbed and not in a natural state.

Chapter 5:
Consultation and Coordination

PUBLIC AND AGENCY INVOLVEMENT

This *Draft General Management Plan/ Environmental Impact Statement* for Abraham Lincoln Birthplace National Historic Site represents thoughts of NPS staff and the public. Consultation and coordination among the agencies and the public were vitally important throughout the planning process. The public had three primary avenues to participate during the development of the plan: participation in public meetings, responses to newsletters, and comments entered on the NPS planning website.

PUBLIC MEETINGS AND NEWSLETTERS

Public meetings and newsletters were used to keep the public informed and involved in the planning process. A mailing list was compiled that consisted of members of governmental agencies, organizations, businesses, legislators, local governments, and interested citizens.

The public involvement process began with a notice of intent to prepare the *General Management Plan / Environmental Impact Statement* that was published in the *Federal Register* on November 13, 2003.

The first newsletter, issued in October 2003, described the planning effort and solicited public input. Scoping meetings with stakeholders and the public were held during November 2003 in Hodgenville and New Haven and were attended by a total of 25 people.

The National Park Service received comments in the meetings and in response to the first newsletter. Commenters recommended that the national historic site should broaden its interpretive program to incorporate more of the Lincoln-in-Kentucky story, and included some interesting ideas for interpreting the Boyhood Home Unit. It was also recommended that the NPS staff work with the local community to promote the historical context of the region. Some people were concerned about the effects of commercial and residential development near the national historic site boundary. The staff also needs to be ready for commemorating the bicentennial of Lincoln's birth in 2009. These comments were taken into consideration when deciding on issues for the plan to address.

A second newsletter distributed in September 2004 described the draft alternative concepts for managing the national historic site. A total of 11 electronic and mailed comments were received in response to that newsletter. After the newsletter was mailed, public meetings were held in Hodgenville and New Haven, Kentucky, to obtain additional public comment on the preliminary alternatives. Eighteen people attended these meetings. Responses to the newsletter and at the meetings were mostly "votes" for one alternative or another. Some concerns were expressed about the proposed rerouting of Keith Road and the impact on landowners along that road.

CONSULTATION WITH OTHER AGENCIES/ OFFICIALS AND ORGANIZATIONS

U.S. Fish and Wildlife Service Section 7 Consultation

During the preparation of this document, NPS staff has coordinated informally with the U.S. Fish and Wildlife Service, Kentucky Field Office. The Fish and Wildlife Service provided a list of federal threatened and endangered species that might be in or near the historic site (appendix B).

In accordance with the Endangered Species Act and relevant regulations at 50 *Code of Federal Regulations* Part 402, the National Park Service determined that the management

plan is not likely to adversely affect any federally threatened or endangered species and sent a copy of this draft management plan to the U.S. Fish and Wildlife Service office with a request for written concurrence with that determination.

In addition, the National Park Service has committed to consult on future actions conducted under the framework described in this management plan to ensure that such actions are not likely to adversely affect threatened or endangered species.

Kentucky State Historic Preservation Officer, Section 106 Consultation

Agencies that have direct or indirect jurisdiction over historic properties are required by Section 106 of the National Historic Preservation Act of 1966, as amended (16 USC 270, et seq.) to take into account the effect of any undertaking on properties eligible for listing in the National Register of Historic Places. To meet the requirements of 36 CFR 800, the National Park Service sent letters to the Kentucky state historic preservation officer and the Advisory Council on Historic Preservation on October 28, 2003, inviting their participation in the planning process. Both offices were also sent copies of the newsletters.

Under the terms of stipulation VI.E of the 1995 Programmatic Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers, the National Park Service,

> in consultation with the SHPO [state historic preservation office], will make a determination about which are programmatic exclusions under IV.A and B, and all other undertakings, potential effects on those resources to seek review and comment under 36 CFR 800.4-6 during the plan review process.

TABLE 13: FUTURE RESOURCE COMPLIANCE REQUIRED FOR IMPLEMENTATION OF SPECIFIC ACTIONS

Action	Compliance Requirement
PARKWIDE	
Construction or other disturbing activity in potential habitat for threatened and endangered species.	Threatened and endangered species surveys and coordination with the U.S. Fish and Wildlife Service and state natural resource department.
BIRTHPLACE UNIT	
Move main parking area.	Further SHPO consultation necessary unless unknown archeological resources are discovered.
Develop new landscaped staging area at site of current parking area.	No further SHPO consultation necessary unless development goes beyond parking area footprint.
Remove Keith Road.	No further SHPO consultation necessary.
Construct environmental education storage area.	Further SHPO consultation necessary.
Enlarge picnic area parking.	Further SHPO consultation necessary.
Evaluation and possibly restore structures on Nancy Lincoln Inn property.	Further SHPO consultation necessary.
BOYHOOD HOME UNIT	
Reuse and restore tavern and site.	Further SHPO consultation necessary.
Upgrade existing trails.	Further SHPO consultation necessary.
Fields reestablished to their historic size and configuration.	No further SHPO consultation necessary.
Additional media/signs needed for trails.	No further SHPO consultation necessary.
Site improvements to parking area.	Further SHPO consultation necessary if work goes beyond existing footprint.

AGENCIES AND ORGANIZATIONS RECEIVING THIS DOCUMENT

FEDERAL AGENCIES

Advisory Council on Historic Preservation
Department of Agriculture, Natural Resources Conservation Service
Lincoln Bicentennial Commission
U.S. Fish and Wildlife Service, Ecological Services

OTHER NPS OFFICES

Lincoln Boyhood National Memorial
Lincoln Home National Monument
Mammoth Cave National Park
Harpers Ferry Center

STATE AGENCIES

Kentucky State Historical Preservation Office
Kentucky Historical Society
Kentucky Heritage Council
Kentucky Heritage Land Conservation Fund
Kentucky Department of Fish and Wildlife Resources
Kentucky Division of Conservation
Kentucky Department of Natural Resources
Kentucky Division of Water Resources
Kentucky Division of Forestry
Kentucky Nature Preserves
Kentucky Department of Tourism
Kentucky Department of Highways
Kentucky Department of Parks

LOCAL AGENCIES

Hodgenville City Council
LaRue County Farm Service Agency
Land of Lincoln Planning Commission
LaRue County Public Schools
LaRue County Chamber of Commerce
LaRue County Judge Executive and Magistrate
Mayor of Hodgenville

SENATORS AND REPRESENTATIVES

U.S. Senator Jim Bunning
U.S. Senator Mitch McConnel
U.S. Representative Ron Lewis
State Senator Dan Kelly
State Senator Virgil Moore
State Representative Dotie Sims

Appendixes, Selected References, Preparers and Consultants, and Index

APPENDIX A: LEGISLATION

16 United States Code, Chapter 1, Subchapter XXIII:

Section 211. Acceptance of title; terms and conditions; admission fees

The United States of America accepts title to the lands mentioned in the deed of gift or conveyance in possession of the Secretary of War on July 17, 1916, together with all the buildings and appurtenances thereon, especially the log cabin in which Abraham Lincoln was born and the memorial hall inclosing the same, which deed of conveyance was executed on the 11th day of April, 1916, by the Lincoln Farm Association, a corporation, to the United States of America, describing certain lands situated near the town of Hodgenville, county of Larue, State of Kentucky, which lands are more particularly identified and described in said deed or conveyance. The title to such lands, buildings, and appurtenances is accepted upon the terms and conditions stated in said deed or conveyance, namely: That the land therein described, together with the buildings and appurtenances thereon, shall be forever dedicated to the purposes of a national park or reservation, the United States of America agreeing to protect and preserve the said lands, buildings, and appurtenances, and especially the log cabin in which Abraham Lincoln was born and the memorial hall inclosing the same, from spoliation, destruction, and further disintegration, to the end that they may be preserved for all time, so far as may be; and further agreeing that there shall never be any charge or fee made to or asked from the public for admission to the said park or reservation.

Section 212. Endowment fund; protection and preservation

The United States of America also accepts title to the endowment fund of $50,000 mentioned in the assignment and transfer, in the possession of the Secretary of War, on July 17, 1916, which assignment and transfer was executed on the 11th day of April, 1916, by the Lincoln Farm Association, a corporation, to the United States of America, transferring and turning over all its right, title, and interest in and to said endowment fund, heretofore invested in certain stocks, bonds, and securities held and owned by the Lincoln Farm Association, and more particularly identified and described in said assignment and transfer. The title to said endowment fund is accepted upon the terms and conditions stated in said assignment and transfer, namely, that the United States of America shall forever keep the said tract of land described in said deed, together with the buildings and appurtenances thereunto belonging, dedicated to the purpose of a national park or reservation, and that there shall never be any charge or fee made to or asked from the public for admission to the said park or reservation; and further, shall forever protect, preserve, and maintain said land, buildings, and appurtenances, and especially

the log cabin in which Abraham Lincoln was born and the memorial hall inclosing the same, from spoliation, destruction, and further disintegration, to the end that they may be preserved for all time, as far as may be, as a national park or reservation.

Section 214. Rules and regulations

Abraham Lincoln Birthplace National Historic Site shall be under the control of the National Park Service and administered under such regulations not inconsistent with law as it may from time to time prescribed.

Section 215. Improvements and preservation of lands and buildings

For the purpose of protecting from disintegration and of improving, beautifying, and preserving the Abraham Lincoln Birthplace National Historic Site or Reservation established under sections 211 to 214 of this title, the National Park Service is authorized and directed to provide for (1) the improvement of such existing roadways, walks, and buildings in such park or reservation; and (2) the planting of such trees, plants, and shrubbery; the construction of such additional roadways, walks, and buildings, and of such fences, parking spaces, drainage structures, culverts, and bridges; and the making of such other improvements, as in his judgment may be necessary for the preservation, beautification, and protection from disintegration of such park or reservation, including the log cabin in which Abraham Lincoln was born and the memorial hall inclosing the same, and which may serve to render such park or reservation convenient for the appropriate use and enjoyment by the public:

Section 216. Authorization of appropriation

There is authorized to be appropriated the sum of $100,000, or so much thereof as may be necessary, to carry out the provisions of section 215 of this title; and authorization is also given for such appropriations as may, in the future, be deemed necessary for the proper protection, preservation, care, maintenance, and operation of the said national park or reservation, including the salaries and compensation of a superintendent and other needed employees.

Section 217. Change in name of Abraham Lincoln National Park

The Abraham Lincoln National Park, in the State of Kentucky, authorized by sections 211 to 214 of this title, shall hereafter be called and known as the ''Abraham Lincoln National Historical Park'', and all moneys heretofore or hereafter appropriated for this area under previous designations may be used in this area as redesignated.

Section 217a. Change in name of Abraham Lincoln National Historical Park

The Abraham Lincoln National Historical Park at Hodgenville, Kentucky, shall on and after September 8, 1959, be known as Abraham Lincoln Birthplace National Historic Site, and any law, regulation, document, or record of the United States in which such historical park is designated or referred to under the name of Abraham Lincoln National Historic Park shall be held to refer to such historical park under and by the name of Abraham Lincoln Birthplace National Historic Site.

Section 218a. Abraham Lincoln Birthplace National Historic Site, Kentucky

(a) In general

Upon acquisition of the land known as Knob Creek Farm pursuant to subsection (b) of this section, the boundary of the Abraham Lincoln Birthplace National Historic Site, established by sections 211 to 214 of this title, is revised to include such land. Lands acquired pursuant to this section shall be administered by the Secretary of the Interior as part of the historic site.

(b) Acquisition of Knob Creek Farm

The Secretary of the Interior may acquire, by donation only, the approximately 228 acres of land known as Knob Creek Farm in Larue County, Kentucky, as generally depicted on a map entitled ''Knob Creek Farm Unit, Abraham Lincoln National Historic Site'', numbered 338/80,077, and dated October 1998. Such map shall be on file and available for public inspection in the appropriate offices of the National Park Service.

(c) Study and report

The Secretary of the Interior shall study the Knob Creek Farm in Larue County, Kentucky, and not later than 1 year after November 6, 1998, submit a report to the Congress containing the results of the study. The purpose of the study shall be to:

(1) Identify significant resources associated with the Knob Creek Farm and the early boyhood of Abraham Lincoln.

(2) Evaluate the threats to the long-term protection of the Knob Creek Farm's cultural, recreational, and natural resources.

(3) Examine the incorporation of the Knob Creek Farm into the operations of the Abraham Lincoln Birthplace National Historic Site and establish a strategic management plan for implementing such incorporation. In developing the plan, the Secretary shall

(A) determine infrastructure requirements and property improvements needed at Knob Creek Farm to meet National Park Service standards;

(B) identify current and potential uses of Knob Creek Farm for recreational, interpretive, and educational opportunities; and

(C) project costs and potential revenues associated with acquisition, development, and operation of Knob Creek Farm.

(d) Authorization

There are authorized to be appropriated such sums as may be necessary to carry out subsection (c) of this section.

APPENDIX B: LETTER FROM THE U. S. FISH AND WILDLIFE SERVICE

United States Department of the Interior
FISH AND WILDLIFE SERVICE
3761 GEORGETOWN ROAD
FRANKFORT, KY 40601

March 18, 2003

Mr. Matthew Safford
National Park Service (DSC-PSD)
P.O. Box 25287
Denver, Colorado 80225-0287

Subject: FWS #03-0848; Species list for Abraham Lincoln Birthplace NHS, Larue County, Kentucky

Dear Mr. Safford:

Thank you for your correspondence of February 7, 2003, requesting a list of federally listed species that could occur in the vicinity of the Abraham Lincoln Birthplace National Historic Site (NHS) in Larue County, Kentucky. Fish and Wildlife Service (Service) personnel have reviewed the information submitted by the National Park Service (NPS) and the available records for listed species that are known to occur in Larue County and counties that border Larue County. Based on our review of this information, we have identified seven federally listed species that occur in the vicinity of the proposed project. These species are:

Common Name	Scientific Name	Federal Status
clubshell (mussel)	*Pleurobema clava*	endangered
Eggert's sunflower	*Helianthus eggertii*	threatened
fanshell (mussel)	*Cyprogenia stegaria*	endangered
gray bat	*Myotis grisescens*	endangered
Indiana bat	*Myotis sodalis*	endangered
Kentucky cave shrimp	*Palaemonias ganteri*	endangered
northern riffleshell (mussel)	*Epioblasma torulosa rangiana*	endangered

The specific endangered species collection records available to the Service do not indicate that federally listed or proposed endangered or threatened species are known occur within the NHS. We note, however, that collection records available to the Service may not be all-inclusive. Our data base is a compilation of collection records made available by various individuals and resource agencies. This information is seldom based on comprehensive surveys of all potential habitat and thus does not necessarily provide conclusive evidence that protected species are present or absent at a specific locality.

Habitat and life history information on each of these species is available on the Service's national website at www.fws.gov. If, after reviewing this information, you determine that suitable or

potentially-suitable habitat exists on the NHS for any of the federally listed species identified above, we recommend that the NPS conduct surveys for those species to determine their presence or absence and population levels on the NHS. If any federally listed species are identified, we request written notification of such occurrence(s) and further coordination and consultation with the NPS.

You had also requested information on critical habitat areas that were in the vicinity of the NHS. No designated critical habitat exists in Larue County. However, there are two critical habitat areas south of Larue County, both of which are in Edmonson County and are listed below:

Common Name	**Scientific Name**	**Federal Status**	**Critical Habitat**
Indiana bat	*Myotis sodalis*	endangered	Coach Cave
Kentucky cave shrimp	*Palaemonias ganteri*	endangered	Mammoth Cave

Additional information on critical habitat for these species is also available on the Service's website identified above.

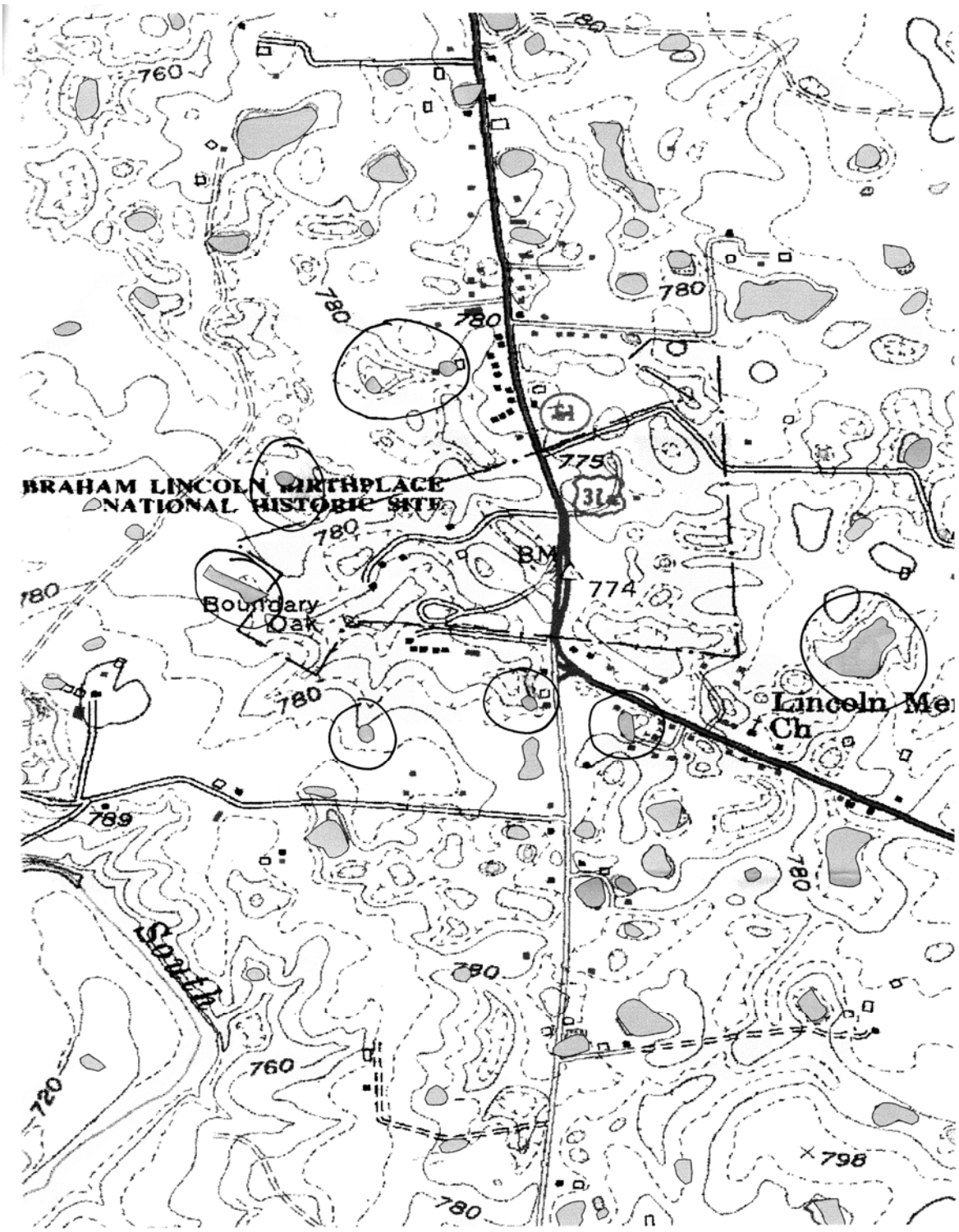
In addition, information available to the Service indicates that wetlands exist in the vicinity of the proposed project. Attached is a copy of a portion of the Hodgenville quadrangle with the referenced wetlands highlighted. This information is provided for your convenience. Our wetlands determination has been made in the absence of a field inspection and does not constitute a wetlands delineation for the purposes of Section 404 of the Clean Water Act. The Corps of Engineers, Louisville District, should be contacted regarding the presence of regulatory wetlands and the requirements of wetlands protection statutes.

Thank you for the opportunity to provide the requested information. If you have any questions regarding the information which we have provided or if you need additional information on the species that occur in the vicinity of the NHS, please contact me at (502) 695-0468 (ext.221) or Mindi Brady at (502) 695-0468 (ext.229).

Sincerely,

Virgil Lee Andrews, Jr.
Field Supervisor

xc: Lee Barclay, FWS, Cookeville, TN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APPPENDIX C: LETTER FROM THE KENTUCKY DEPARTMENT OF FISH AND WILDLIFE RESOURCES

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF FISH AND WILDLIFE RESOURCES
C. THOMAS BENNETT, COMMISSIONER

September 11, 2003

Matthew Stafford
National Park Service
P.O. Box 25287
Denver, CO 80225-0287

Re: Threatened/endangered species review: General Management Plan for Abraham Lincoln Birthplace National Historic Site, Larue County, Kentucky

Dear Mr. Stafford:

The Kentucky Department of Fish and Wildlife Resources (KDFWR) has received your request for the above-referenced information. The Kentucky Fish and Wildlife Information System indicates that no state listed or federally threatened or endangered species are known to occur in the Hodgenville 7.5 minute USGS quadrangle(s). Please be aware that our database system is a dynamic one that only represents our current knowledge of the various species distributions.

Due to the nature of the project, KDFWR does not anticipate impacts to fish and wildlife.

I hope this information will be helpful to you. Should you require additional information, please contact me at (502) 564-7109, ext. 367.

Sincerely,

Marla Barbour Callaghan

Marla Barbour Callaghan
Fisheries Biologist III

cc: Environmental Section File

Arnold L. Mitchell Bldg. #1 Game Farm Road Frankfort, Ky 40601
An Equal Opportunity Employer M/F/D

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Denver Service Center

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Eric Petersen, Cultural Resource Specialist — Analysis of cultural resources; 5 years with the Department of the Interior; M.A. in anthropology

Harpers Ferry Center

Keith Morgan, Park Ranger-Planner—Visitor use and visitor experience analysis; 38 years with the National Park Service; B.A. in history

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Christy Fischer, Writer-Editor, Denver Service Center

INDEX

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.

NPS D-33 February 2006 Printed on recycled paper

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE