



Finding of No Significant Impact

Improvements to Concession Facilities Mammoth Cave National Park

January 2014

The National Park Service (NPS) has selected Alternative B, for implementation, which is described on pages 39-46 of the EA. The selected alternative will not have a significant effect on the human environment and does not constitute an action that requires preparation of an Environmental Impact Statement (EIS). There are no significant impacts on physical resources, water resources, natural resources, cultural resources, or other unique resources within the region. No highly uncertain or controversial impacts, unique or unknown risks, or significant cumulative effects were identified. Implementation of the NPS selected alternative will not violate any federal, state, or local environmental protection law.

After careful and thorough consideration of the facts contained herein, the undersigned finds that the proposed Federal actions are consistent with existing national environmental policies and objectives as set forth in Section 101 (a) of the National Environmental Policy Act (NEPA), and that they will not significantly affect the quality of the human environment or otherwise include any condition requiring consultation pursuant to Section 102 (2) (c) of NEPA.

Recommended:

Sarah Craighead
Sarah Craighead, Superintendent
Mammoth Cave National Park

Date: 2/13/14

Approved:

Stanley Austin
Stanley Austin, Regional Director
Southeast Region, National Park Service

Date: 3/6/14

INTRODUCTION

This “finding of no significant impact” and the Improvement to Concession Facilities Environmental Assessment (EA) constitute the record of the environmental impact analysis and decision-making process for Mammoth Cave National Park (the park) project. The National Park Service (NPS) will implement the selected alternative (Alternative B: Renovate Concession Facilities). The primary focuses for concession facility improvements at Mammoth Cave National Park are food and beverage services, mechanical systems upgrades, lodging, visitor flow, and modification to the façade to complement the visitor center.

Proposed improvements to Mammoth Cave Hotel may include:

- Mechanical systems and life/safety improvements – increase efficiency and update infrastructure, lighting, and utilities to current safety standards and building code requirements, and NPS directives. Work includes installation of a sprinkler system to be compliant with current fire code. Also, work will include updated information technology and improved (IT)/security/telephone systems/internet access.
- Food service areas – improve food service space to facilitate efficient operations and easy visitor access and experience.
- Lodging – provide an in-park overnight experience with particular emphasis on the continued use of historic lodging structures and improved occupancy rates.
- Circulation – improve visitor flow in the vicinity of the hotel lodge, and circulation through and around the building.
- Exterior – enhance the exterior façade and structural design to complement the visitor center design and present a cohesive “sense of place”; improve or add sidewalks, lighting, parking areas, green spaces and outdoor dining areas.

The original Mammoth Cave Hotel predates establishment of the national park by more than 100 years; the owner of the cave and surrounding property also owned and operated the hotel, providing cave tours, basic necessities, and visitor services. The hotel’s facilities and services are intimately tied to the park’s visitor operations and are therefore necessary and appropriate within the park boundary. Visitors participating in cave tours often want a snack or meal before or after their trip and to shop for souvenirs. Overnight accommodations immerse visitors in an “in-park” experience of sights, sounds, and impressions that last a life time.

The purpose of this project is to update the current Mammoth Cave Hotel facilities and infrastructure in a manner resulting in an efficient concession operation, while protecting and conserving park resources. The updated facility will:

- provide a venue of value and quality that meets current safety standards, building codes, and NPS directives, including those for night sky protection, energy efficiency and sustainability
- protect and conserve park resources and values

- include NPS-funded improvements to existing facilities which will facilitate the execution of a 10-year concession contract
- meet the needs and expectations of the traveling public by providing a quality in-park experience

As detailed below, there is a need for a concession operation to meet existing NPS standards for utility systems, energy conservation, visitor services, and related amenities. All Mammoth Cave Hotel facilities are owned by the NPS. A Condition Assessment of park facilities was conducted to establish a baseline of current facility conditions, and develop a 20-year maintenance and repair plan. The facilities were found to be aging, yet kept clean; however, maintenance has been deferred in many instances. The updated facilities would improve the concession operation, making Mammoth Cave Hotel an attractive business prospect to the next concessioner.

Currently, the operation of the Mammoth Cave Hotel is not in full compliance with the 1998 Concessions Management Improvement Act (Public Law 105-391). The hotel has been operating under a series of one-year, short-term concession contract extensions since 2004. This short-term management arrangement is not allowed under the Concessions Management Improvement Act. In light of contemporary park visitation levels and enhanced accessibility to park areas, Congress determined that more competitive contract terms were necessary. The 1998 Act requires all previous concession contracts to be renewed with an updated contract structure as quickly as possible to foster appropriate competition. Therefore, it is imperative that Mammoth Cave National Park comes into compliance with the 1998 Act by awarding a new ten-year contract that is financially viable by offering the concessioner a reasonable opportunity for profit.

Though Mammoth Cave Hotel has the advantage of being located within the park, it must compete with other area hotels and restaurants. The 2012 Commercial Services Data Report (University of Idaho 2012) showed that, of the visitors who were surveyed, 94% of those who stayed in the hotel agreed that their overall lodging experience was satisfactory and 96% of those who ate in one of the food service areas agreed that their overall dining experience was satisfactory. Inspection of social media sites shows good and bad comments about overnight accommodations at the Mammoth Cave Hotel. A recurring concern among visitor is with the presence of odors in some areas. Also, the park regularly receives negative comments directly from visitors who state dissatisfaction with outdated furnishings, a lack of modern amenities, and aging infrastructure of concession facilities.

This document records 1) a “finding of no significant impact” as required by the National Environmental Policy Act of 1969 and 2) a determination of no impairment as required by the NPS Organic Act of 1916 (impairment finding can be found in attachment A to this “finding of no significant impact”).

NPS SELECTED ALTERNATIVE

Based on the analysis presented in the EA, the NPS has selected Alternative B (the preferred alternative) for implementation. The primary focuses for concession facility improvements at Mammoth Cave National Park are food and beverage services, mechanical systems upgrades, lodging, visitor flow, parking, and modification to the façade to complement the visitor center.

CONCESSION CONTRACT

A new 10-year concession contract will be issued for operation of the concession facilities including the hotel. The new concession contract will be in compliance with Concessions Management Improvement Act of 1998. A new contract will better ensure the continuity of concession operations and services to park visitors, and provide the concessioner a reasonable opportunity for profit.

CONCESSION FACILITIES

The NPS will undertake efforts to modernize the concession facilities and services. The hotel lodge and Sunset Terrace Lodge will be renovated. The existing main utilities, including the mechanical systems and the distribution and hot water systems, will be replaced to improve energy efficiency and to address required critical life/safety repairs and upgrades. Sprinklers will be added, and the existing lighting and electrical systems will be replaced. IT, security, internet access, and telephone systems will be addressed, as well.

Lodging facilities offered at Mammoth Cave NP will include 54 total lodging units in the hotel lodge, Sunset Terrace Lodge, Hotel Cottages, and Woodland Cottages. The Heritage Trail wing (38 units) will be removed.

The hotel lodge exterior façade will be altered to complement the “parkitecture” look of the visitor center. The loading dock, HVAC unit and dumpster at the eastern end of the building will be screened. Sidewalks, the outdoor dining area, and green space will be altered or added. The existing food and beverage facilities will be renovated. Two food and beverage areas (currently known as the Crystal Lake Coffee Shop and the TrogloBITES quick-food outlet) will be consolidated into one primary food and beverage area to provide approximately 136 seats. The Travertine Restaurant will become a flexible space, which could be used for a more formal dining area with set hours, an overflow area for dining during peak visitation periods, and as a meeting room space that could be partitioned. The plaza could be modestly expanded and reconfigured to provide additional outdoor dining areas. Modifications will be made to the two retail gift shops in the hotel lodge to improve visitor access.

The 20 Sunset Terrace Lodge rooms will undergo interior and exterior repairs and rehabilitation. The rooms will remain the same size as the existing rooms, measuring 335 square feet. The rooms will undergo remodeling to refinish surfaces, upgrade

bathroom fixtures, and upgrade other amenities. Mechanical, electrical, plumbing, and utility systems will be upgraded to provide critical life/safety required repairs. Roofs will be replaced, and windows will be repaired or replaced. The parking area associated with these rooms may be reconfigured to improve drainage. Two rooms will be rehabilitated to address accessibility issues, including Americans with Disabilities Act compliant doorways, bathrooms equipped with hand rails and other necessities. Sidewalks will be replaced to eliminate entryway steps and made wider to accommodate wheelchairs. The Sunset Terrace Lodge is considered eligible for listing on the National Register of Historic Places. All repairs and modifications are subject to *Secretary of Interior's Standards for the Treatment of Historic Places*.

VISITOR ACCESS AND CIRCULATION

Walkways will be added or altered in the vicinity of the concession facilities to improve visitor access. Pathways, sidewalks, green spaces, outdoor dining area, and/or alterations to building interiors will be constructed or modified to improve visitor circulation. Visitors who park adjacent to the hotel and wish to get to the visitor center could either walk along new pathways outside the hotel facilities or navigate through several turns within the hotel lodge.

PARKING ADJACENT TO THE HOTEL LODGE

Approximately 50 spaces will be added to increase parking from 190 to 240 spaces, improving visitor access and circulation. All lighting fixtures will comply with NPS night sky recommendations.

FUNDING AVAILABILITY

All NPS units are facing reduced funding and challenging financial circumstances. At this time, Mammoth Cave National Park has identified the available funding for improvements to its concession facility to be estimated at \$3.4 million.

Some of the actions listed in the selected alternative will be undertaken in the coming years, while some do not have a funding source at this time. Funded actions include upgrades to utilities and mechanical systems, demolition of the Heritage Trail wing, and renovation of Sunset Terrace Lodge.

As funding becomes available, the park will add approximately 50 spaces to the parking area adjacent to concession facilities, renovate the food and beverage facilities, update the exterior façade of the hotel lodge, and construct or modify walkways, outdoor dining areas, green spaces, and/or building interiors to improve visitor access and circulation.

MITIGATION MEASURES

To minimize environmental impacts related to the selected alternative the NPS will implement mitigation measures whenever feasible. Although the exact mitigation measures to be implemented will depend upon the final design and approval of plans by relevant agencies, the following is a list of actions that will take place:

- Appropriate erosion and siltation controls will be maintained during construction and demolition, and all exposed soil or fill material will be permanently stabilized at the earliest feasible date. To this end, erosion control devices such as silt fences will minimize associated impacts.
- Reasonable precautions will be taken to prevent particulate matter from becoming airborne. Additional requirements include the covering of open bodied trucks operating outside the work area transporting materials likely to become airborne, and that no one shall allow earth or other material being transported by truck or earth moving equipment to be deposited onto a paved street or roadway.
- Stockpile materials will only be placed in designated locations to avoid sensitive areas, visitor pathways, and natural features.
- All solid waste generated by this project must be disposed at a permitted facility. If asbestos, lead paint, and/or other contaminants are encountered during this project, they must be properly addressed.
- Where plantings or seeding are required, native plant material will be obtained and used in accordance with NPS policies and guidance. Management techniques will be implemented to foster rapid development of target native plant communities and to eliminate invasion by exotic or other undesirable species. For example, a management technique might be to develop aesthetically pleasing landscapes that create natural transitions between landscaped areas and natural areas. Tree removal will be avoided to the greatest extent feasible. If tree removal is unavoidable, each tree will be assessed for potential impacts on special status species and/or trees will be removed between November 16 and March 31 while bats are hibernating in caves or through other approved procedures/processes, and removal will conform to the park "Hazard Tree Management Plan." All buildings, trees, and other structures will be inspected for use as bat roosting habitats prior to any alterations. If any listed bats are identified, additional consultation with the USFWS will be initiated.
- Equipment will be restricted to the road corridor, parking lots, and other identified previously disturbed areas to avoid impacts on natural and cultural resources.
- Mammoth Cave National Park has not been systematically surveyed for archeological resources. In areas where surveys for archeological resources have not been conducted, archeological surveys will precede design and construction. Known archeological resources will be avoided to the greatest extent possible during all construction activities. If National Register eligible or listed archeological resources could not be avoided, an appropriate mitigation strategy (e.g. the excavation, recordation, and mapping of cultural remains prior

to disturbance, to ensure that important archeological data that otherwise could be lost is recovered and documented) will be developed in consultation with the State Historic Preservation Officer (SHPO) and, as necessary, associated American Indian tribes. If during construction previously undiscovered archeological resources are uncovered, all work in the immediate vicinity of the discovery will be halted until the resources could be identified and documented and an appropriate mitigation strategy developed in consultation with the SHPO and, as necessary, associated American Indian tribes.

- A Cultural Landscape Report is underway for the entire Mammoth Cave Core Visitor Services Area, of which the hotel and surrounding area is a part. The surveys and research necessary to determine the eligibility of a landscape, and its associated patterns and features, for listing in the National Register of Historic Places are a prerequisite for understanding the landscape's significance and the basis of informed decision-making regarding how the resource should be managed. The Cultural Landscape Report will be completed in early 2014.
- The park will continue to consult with the Kentucky SHPO in relation to the identification and evaluation of the cultural resources within the project area. During this project the park will work to avoid impacts on cultural resources. The NPS will continue consultation with the Kentucky SHPO as specific development and treatment plans are completed. As part of this continuing consultation, the park will develop a Programmatic Agreement with Kentucky SHPO to guide the implementation of the selected alternative if it is determined to be necessary and appropriate. This approach is consistent with the requirements of Section 106 of the National Historic Preservation Act (as amended).
- Due to funding restrictions, there may be demolition or construction over the next three years. The NPS will make an effort to minimize interference with special events such as the NPS centennial celebration. Project phasing may be implemented to mitigate the inconvenience and economic impacts of hotel renovation/construction activities on the concessioner, park operations, and visitors.
- Impacts from artificial lighting will be mitigated through the use of fully sustainable lighting practices. These mitigation measures will be implemented: light only where it is needed (minimize illuminated areas); light only when it is needed (timers, motion sensors, and controls); shield lights and direct them downward (fixture selection); use the minimum amount of lighting (limit illumination levels); select lamps/bulbs with warmer colors (less blue light); and select the most energy efficient lamps and fixtures.

OTHER ALTERNATIVES CONSIDERED

The EA analyzed two alternatives in detail: the no-action alternative and one action alternative, the selected alternative. The no-action alternative is summarized below.

NO-ACTION ALTERNATIVE (ALTERNATIVE A)

Under this alternative, existing hotel operations would continue under the current conditions, using the existing infrastructure and the existing concessioner contracting methods. The park and concessioner would make changes to facilities and operations as necessary and in accordance with normal park management. However, under this no-action alternative, most facilities and operations would remain unchanged for the foreseeable future. This includes the following:

- one-year concession contract extensions
- the hotel complex provides 92 lodging rooms (including the Heritage Trail wing, Sunset Terrace Lodge, Hotel Cottages and Woodland Cottages)
- existing mechanical systems and utilities (heating, air conditioning, plumbing and electric) food and beverage service areas and retail shops remain generally unchanged
- existing visitor access and circulation; and
- 190 parking spaces adjacent to the hotel

Alternative A was not selected for implementation because it does not meet the purpose and need of the proposed action. Mechanical and other utility systems in the hotel primarily date from its original construction and are at the end of their useful life. While the facilities are minimally serviceable, they are in need of critical life/safety updates. The existing food service space does not provide for efficient operations and easy visitor access to serve both the traveling public and also the hotel's local constituency.

The retail shops are separated and, as currently configured, are not universally accessible. Visitor circulation is confusing due to the lack of a direct route from the parking lot adjacent to the hotel to the visitor center. In addition, the loading dock is exposed to visitor view from the entry road, walkways, and the tour bus shelters. The current hotel façade is in need of renovation to make it compatible with the newly renovated visitor center.

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER ANALYSIS

In addition, a number of alternatives and alternative elements were considered, but eliminated from further evaluation in the EA. Those items and their reason for dismissal are described below.

MAJOR RENOVATION OF THE HOTEL BUILDING AND HERITAGE TRAIL WING

Under this alternative, the following options were considered:

- full renovation of the hotel lodge, including resizing of the Heritage Trail rooms;
- a lower-grade renovation of the building with resizing of the Heritage Trail rooms; and
- full renovation of the hotel lodge with minimal upgrades to the Heritage Trail wing.

These alternatives/elements were estimated to cost \$9+ million. These alternative/elements were determined to be cost-prohibitive, and there is presently less need for lodging. These alternative/elements were dismissed from further analysis.

CONSTRUCT NEW HOTEL

Under this alternative, the hotel lodge and Heritage Trail wing would be demolished. A new, 20-room hotel with food service and retail would be constructed on the same location. This alternative was determined to be cost prohibitive, it duplicated lodging available in the local community which would compete with local businesses, and there is presently less need for lodging in the park. This alternative was estimated to cost \$11+ million. Some members of the public advocate reconstruction of a hotel similar to the 1925 hotel and in that location; however, in addition to cost and occupancy concerns, such an endeavor would require substantial impacts on cultural resources and would have issues associated with safety, convenience, and site distance, as well. This alternative was dismissed from further analysis.

MIX OF NEW CONSTRUCTION AND RENOVATION

Under this alternative, the hotel lodge would be renovated, and the Heritage Trail wing demolished and replaced with a new, 20-room wing. Construction of the new rooms was considered on the same site in line with the lodge, or as a perpendicular structure jutting into the present parking lot. This alternative was estimated to cost \$10+ million. This alternative was determined to be cost prohibitive, it duplicated lodging available in the local community which would compete with local businesses, and there is presently less need for lodging in the park. This alternative was dismissed from further analysis.

REQUIRE A SUBSTANTIAL CONCESSIONER INVESTMENT IN RENOVATION/IMPROVEMENT OF THE HOTEL

Under this alternative, the concessioner would fund and complete a substantial portion of the renovations and improvements of the facilities. Financial analysis of the concession operation indicates a very limited potential for concessioner financing. This alternative was dismissed from further analysis because it was determined to not be

financially viable. During the concession contract development, the possibility of some concessioner financed improvements would be assessed.

MODERATE RENOVATION OF THE HOTEL AND DEMOLITION OF THE HERITAGE TRAIL WING

Under this alternative, the hotel lodge would experience modest renovations which include gift shop, entrance, and lobby renovations in addition to all other work identified under the selected alternative. The Heritage Trail wing would be removed. This alternative was estimated to cost \$4-6 million. This alternative was determined to be cost prohibitive, and was dismissed from further analysis.

NEW FOOD AND RETAIL OUTLETS WITH RETENTION OF THE 1990S BUILDINGS AND REMOVAL OF THE HERITAGE TRAIL WING

Under this alternative, the Heritage Trail wing would be demolished, the 1965-portion of the hotel lodge would be demolished, and a smaller new building would be constructed to house food service and retail areas. Several variations were considered which included different sizing of the building and outdoor spaces. Retention of the 1990s additions (TrogloBITE and accessible room/meeting room) could be renovated for new guest room/suites, offices or retail space. This alternative was estimated to cost \$6 million. This alternative was determined to be cost prohibitive, and was dismissed from further analysis.

CONSTRUCT NEW FOOD AND RETAIL OUTLETS & DEMOLISH MAIN BUILDING AND HERITAGE TRAIL WING

Under this alternative, the hotel lodge and the Heritage Trail wing would be demolished, and a new building would be constructed to house the food service and retail areas. This alternative considered several construction options: one-phase construction, two-phase construction, and one-phase construction along with keeping the TrogloBITE 1990-addition. This alternative was estimated to cost \$6-10 million. This alternative was determined to be cost prohibitive, and was dismissed from further analysis.

MAJOR RENOVATION OR NEW CONSTRUCTION OF THE MAIN HOTEL BUILDING, DEMOLITION OF THE HERITAGE TRAIL WING, AND CONSTRUCT ADDITIONAL SUNSET TERRACE LODGE UNITS

Under this alternative, the hotel lodge would be fully renovated or replaced, the Heritage Trail wing would have been removed, and the Sunset Terrace Lodge would receive additional rooms. This alternative was estimated to cost \$9+ million. This alternative was determined to be cost prohibitive, and there is presently less need for lodging in the park. This alternative was dismissed from further analysis.

DISCONTINUE HOTEL CONCESSION AND REMOVE HOTEL FACILITIES

Under this alternative, visitors would have no lodging, food/beverage, or retail options within the park. This option would not meet the needs of park visitors; concession operations are deemed necessary and appropriate to the park. Because this alternative does not meet the identified purpose and need of this project, it was dismissed from further analysis.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The environmentally preferable alternative is defined by the Council on Environmental Quality as “the alternative that will promote the national environmental policy as expressed in the National Environmental Policy Act [Section 101 (b)].” Generally, the environmentally preferable alternative is defined as the alternative that causes the least damage to the biological and physical environment and that best protects, preserves, and enhances historic, cultural, and natural resources. The selected alternative surpasses the no-action alternative in fulfilling the criteria outlined in NEPA Section 101(b). The selected alternative may result in an adverse impact on archeological resources and will require some clearing and grading of the site to implement the project but will otherwise benefit park resources. Improvements to Mammoth Cave Hotel would update the hotel facilities and infrastructure in a manner resulting in an efficient concessions operation while protecting and conserving park resources and values. The improvements would provide a quality facility that improves visitor services and meets current safety standards, building codes and NPS directives including energy efficiency and sustainability. Short-term beneficial impacts would be expected for historic structures and socioeconomic resources. Over the long-term beneficial effects would be expected from partially restoring the cultural landscape and natural views from the Historic Entrance to a more natural setting; and in the immediate vicinity of the hotel. The selected alternative best meets the criteria for the environmentally preferable alternative.

PUBLIC INVOLVEMENT AND AGENCY COORDINATION

A summary of public concerns and the NPS responses are contained in Attachment B to this “Finding of No Significant Impact,” and where necessary, errata to the EA are included in Attachment C.

PUBLIC INVOLVEMENT

As described in the EA, the March 2010 edition of the park’s newsletter, *The Flashlight*, the NPS issued a press release announcing a public scoping meeting on March 16th to discuss potential improvements to the Mammoth Cave Hotel. On March 16, 2010, the NPS hosted a public scoping meeting in the Rotunda Room in the Mammoth Cave Hotel. Thirty-seven members of the public attended. The meeting, formatted as an open house, included a tour of the hotel. Throughout the meeting, NPS staff introduced potential concepts for improving the hotel and solicited written input from the public. This meeting

began the 30-day period during which the park received written comments, both online and by mail, ending on April 16, 2010. In addition, the NPS sent out a letter on March 22, 2010 to 68 randomly selected hotel guests who visited the park in 2009. The letter informed them of the current planning efforts and opportunity to comment.

A total of 29 comments were received, mostly on the park's comment form, which contained a summary of the issues of concern identified by park staff. The public was asked to rank services, amenities, and facilities from most important to least important in terms of their visits to Mammoth Cave Hotel. Lodging and room amenities were ranked as the most important entity. Food and beverage services and upgraded utilities, heating/cooling systems were ranked 2 and 3, respectively. The last ranked service was conference and event facilities.

The park held a public review period for the EA from November 26, 2013 until December 28, 2013. During this time, the public was encouraged to submit written comments through the NPS's Planning, Environment, and Public Comment (PEPC) web site. Comments were also accepted by postal mail, email, and in person at the park. Thirty-two unique pieces of correspondence were received during the public review period for the EA. The park also hosted a public meeting at the hotel's Rotunda Room on December 12, 2013 from 5 to 7pm. Approximately 70 people attended this meeting, and six public comment forms and two other written pieces of correspondence were submitted during that meeting. Comments on the environmental assessment centered on visitor use and experience, visitor services, concessionaire operations, and socioeconomic concerns. Most are addressed in public comment sheets attached to this document. A summary of concerns and NPS responses to the concerns are outlined in Attachment B to this "finding of no significant impact", and where necessary, errata to the EA are included in Attachment C.

AGENCY COORDINATION AND CONSULTATION

The NPS initiated scoping with multiple relevant agencies early in the planning process. The park sent agency consultation letters to the Kentucky Division for Environmental Protection, the Kentucky SHPO, the Advisory Council on Historic Preservation, and the U.S. Fish and Wildlife Service (USFWS). These letters were sent on May 19, 2010. These agencies were contacted again when the EA was released on November 26, 2013.

A formal scoping response was received from the USFWS on July 20, 2010 citing the potential impacts on the Indiana bat (*Myotis sodalis*), gray bat (*Myotis grisescens*) and one candidate species the Rafinesque's big-eared bat (*Corynorhinus rafinesquii*). In response, the USFWS sent an e-mail dated January 14, 2014, confirming there are no known roosting sites for these bat species within the project footprint. The USFWS concurred with the NPS determination that the selected alternative may affect, but not likely to adversely affect the Indiana bat, gray bat, or Rafinesque's big-eared bat. The USFWS also noted that the northern long-eared bat (*Myotis septentrionalis*) is currently

proposed for listing (decision pending October 2014). The park will keep abreast of this development and will coordinate further with the USFWS should the species be listed.

There has only been a partial assessment to date of the National Register eligibility of the buildings and structures, as well as the cultural landscape within the project area. A previous letter from the Kentucky SHPO (dated May 7, 2002) was used in development of the EA. In this letter the KY SHPO concurred with the park determination that the Mammoth Cave Hotel was not eligible for listing on the National Register. In response to the release of the EA, the SHPO sent another letter dated December 23, 2013, in which the SHPO indicated that the continuing discussions on the Hotel and Heritage Trail wing have reaffirmed their position that these resources do not appear to be eligible. The SHPO further expressed their position that the Sunset Terrace Lodge buildings and the Woodland Cottages are eligible and that the proposed action has potential for both direct and indirect effects to historic properties. The park is completing a Cultural Landscape Report of the Mammoth Cave Core Visitor Services Area, which includes the entire project area. The NPS will continue consultation with the Kentucky SHPO as specific development and treatment plans are completed. As part of this continuing consultation, the park will develop a Programmatic Agreement with Kentucky SHPO to guide the implementation of the selected alternative if it is determined to be necessary and appropriate. This approach is consistent with the requirements of Section 106 of the National Historic Preservation Act (as amended).

Lastly, the Kentucky State Clearinghouse advised in a letter dated December 18, 2013, that clearing house review of the selected alternative indicated that there are no identifiable conflicts with any state or local plan, goal, or objective.

TRIBAL CONSULTATION

The park sent letters to representatives of the seven tribes who are affiliated with the park. These tribes include the Shawnee Tribe, Cherokee Nation, Chickasaw Nation, the East Shawnee Tribe of Oklahoma, the Eastern Band of Cherokee, and the United Keetoowah Band of Cherokee, and the Absentee-Shawnee Tribe of Oklahoma. The letters were sent on May 19, 2010. The park also provided the tribes with a copy of the EA when it was released on November 26, 2013. Responses were received from the United Keetoowah Band of Cherokee Indians in Oklahoma on December 20, 2013, and from the Chickasaw Nation on January 7, 2014. The United Keetoowah Band of Cherokee Indians in Oklahoma "have no comments or objections," and the Chickasaw Nation was "in agreement with the assessment and have no objections to the proposed undertaking." No other responses were received. In the unlikely event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001) will be followed; all work will cease, and consultation with the tribes will resume.

LOCAL GOVERNMENT

The Policy and Review Committee of the Barren River Area Development District Board of Directors reviewed this project and voted to approve it at their meeting on December 16, 2013, as documented in the meeting's minutes.

WHY THE PREFERRED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT

As defined in 40 CFR § 1508.27, significance is determined by examining the following criteria:

Impacts that may be both beneficial and adverse. A significant effect may exist even if the agency believes that on balance the effect will be beneficial. The selected alternative will not result in major or significant impacts that will require analysis in an EIS. As described in the EA, implementation of the selected alternative will result in indirect, short-term, minor adverse impacts on geologic resources due to the possibility of runoff during construction and demolition. Best management practices will minimize runoff. Similarly, indirect, long-term, minor to moderate, adverse impacts on geologic resources from stormwater runoff from the project area will be minimized through use of the existing oil and grit separator/filter systems.

There will be direct, short-term and long-term, minor adverse impacts on soils and topography. Construction and demolition will expose soils, and expansion of the parking lot will result in a net increase in impervious surface and soil compaction. Similarly, direct, long-term, minor, adverse impacts on vegetation will result from the removal of some lawn and a few trees to accommodate improvements. Revegetation of the area currently occupied by the Heritage Trail wing will be a direct, long-term, beneficial impact on vegetation. Tree removal could affect foraging and roosting habitat for special status species; however, mitigation measures will be implemented to avoid impacts to the extent possible. The NPS preferred alternative has the potential to have indirect, long-term, minor, adverse impacts on special status species.

There will be direct, short-term, minor, adverse impacts on cultural landscapes during construction; however, removal of the Heritage Trail wing will partially restore the cultural landscape, which will be a direct, long-term, beneficial impact on the cultural landscape. Rehabilitation of the Sunset Terrace Lodge will comply with the *Secretary of the Interior Standards for the Treatment of Historic Properties*, a direct, long-term, beneficial impact on historic structures. The integrity of the setting of the pedestrian bridge could be adversely impacted, an indirect, long-term, minor, adverse impact on historic structures. There will be the potential for direct, long-term, and negligible to minor, adverse impacts on archeological resources due to construction/demolition activities in or near areas of known archeological sites. There will be indirect, long-term, beneficial impacts on archeological resources because expanded parking will reduce the need to use grassy areas in or near areas of known archeological sites for overflow parking.

There will be direct, long-term, beneficial impacts on visual resources due to improvements to the viewsheds into and out of the project area. There will be direct, long-term, beneficial impacts on lightscapes due to the replacement of lights that are not currently night-sky compliant fixtures.

There will be direct, long-term and short-term, beneficial impacts on socioeconomic resources. There will be temporary employment opportunities due to construction/demolition activities, and in the long term, a 10-year concession contract and other improvements may increase the attractiveness of the hotel. Similarly, there will be direct, long-term, beneficial impacts on visitor use and experience. There will be direct, short-term, moderate, adverse impacts on visitor use and experience during construction/demolition, although activities will be timed and phased to avoid disruption of visitor services. Ultimately, through streamlined operations and improved facilities, there will be direct, long-term, beneficial impacts on operations and infrastructure. Due to removal of the Heritage Trail wing, new high efficiency utility systems, and use of energy-efficient building materials, there will be a direct, long-term, beneficial impact on energy conservation and conservation potential, although there will be direct, short-term, negligible, adverse impact on energy conservation and conservation potential during construction/demolition.

Overall, the selected alternative will have both beneficial and adverse impacts. However, as described in chapter 4 of the EA, the selected alternative will not have significant impacts on the human environment.

Degree of effect on public health or safety. As described in chapter 1 of the EA, an objective for the proposed action is to “provide a venue of value and quality that meets current safety standards, building codes, and NPS directives.” The selected alternative will update facilities through modernization of concession facilities. The existing main utilities and mechanical systems and distribution and hot water system will be replaced to improve energy efficiency and to address required critical life/safety repairs and upgrades. Sprinklers will be added, and the existing lighting and electrical systems will be replaced. IT, security, internet access, and telephone systems may be addressed, as well. The degree to which the selected alternative will improve public health and safety will be noticeable but not significant.

The selected alternative has some risk to public safety during the time that construction/demolition activities are occurring; however, this risk is considered to be very low and will be further minimized during construction/demolition by implementing measures such as fencing and monitoring to block visitor access to the site.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas. As described in the environmental assessment and summarized below, there may be some changes in unique characteristics of the study area.

The proposed action will take place within the Mammoth Cave Core Visitor Services Area, an area evaluated in a Cultural Landscape Report that is nearly completed. As described in the EA, the Heritage Trail wing is not considered eligible for listing on the National Register of Historic Places; however, its removal may have indirect impacts on the setting of other nearby structures. The Sunset Terrace Lodge is considered eligible for listing in the National Register; accordingly the Sunset Terrace Lodge rooms will be rehabilitated consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. The SHPO agreed with this evaluation in a letter dated December 23, 2013. The park will continue to consult with the Kentucky SHPO in relation to the identification and evaluation of the cultural resources within the project area.

Although archeological resources are known to exist within the project area, the NPS will conduct additional testing, where needed, and avoid resources to the extent possible. Where avoidance is not possible, appropriate mitigation measures will be coordinated with the SHPO. The NPS will continue consultation with the Kentucky SHPO as the results of the archeological testing become available and development and treatment plans are completed. As part of this continuing consultation, the park will develop a Programmatic Agreement with Kentucky SHPO to guide the implementation of the selected alternative if it is determined to be necessary and appropriate. This approach is consistent with the requirements of Section 106 of the National Historic Preservation Act (as amended).

The selected alternative is not expected to result in any direct impacts on federally listed threatened and endangered species. Tree removal could have an indirect impact by affecting foraging and roosting habitat for special status species; however, mitigation measures (e.g., tree evaluation and limiting removal to hibernation season) will be implemented to avoid adverse impacts to the extent possible. The NPS determined that the selected alternative may affect, but not likely to adversely affect federally listed species. The USFWS concurred with the not likely to adversely affect the Indiana bat, gray bat, or Rafinesque's big-eared bat. The USFWS also noted that the northern long-eared bat is currently proposed for listing (decision pending October 2014). The park will keep abreast of this development and will coordinate further with the USFWS to should the species be listed.

No other impacts are anticipated on unique characteristics of the geographic area.

Degree to which effects on the quality of the human environment are likely to be highly controversial. There were no highly controversial effects identified during preparation for the environmental assessment or the public review period.

Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks. There were no highly uncertain, unique, or unknown risks identified during preparation of the environmental assessment or the public review period.

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration. The proposed action neither established a precedent for future actions with significant effects nor represents a decision in principle about a future consideration.

Whether the action is related to other actions with individually insignificant, but cumulatively significant, impacts. As described in chapter 4 of the environmental assessment, cumulative impacts were analyzed by combining the impacts of the selected alternative with the impacts of ten other projects that were identified as contributing to cumulative impacts on the resources addressed by the environmental assessment: visitor center improvements, rehabilitation of the amphitheater, Mammoth Cave National Park Business Plan, the Rehabilitate Cave Tour Trails Plan/EA, cave elevator repair, improvements to the cave infrastructure, the Comprehensive Trail Management Plan/EA, the Mammoth Cave Railroad Hike and Bike Trail, the Rehabilitate Green River Crossing EA/Assessment of Effect (AoE), and the White-Nose Syndrome Response Plan. The beneficial and adverse impacts of these other past, present, and reasonably foreseeable future actions on resources, in conjunction with the impacts of the selected alternative, will result in both beneficial and adverse cumulative impacts on geologic resources, soils and topography, vegetation, special status species, cultural landscapes, historic structures, archeological resources, visual resources, lightscapes, socioeconomic resources, visitor use and experience, operations and infrastructure, and energy conservation and conservation potential; however, the project has the potential to contribute a noticeable beneficial increment to long-term minor to moderate adverse cumulative impacts.

The degree to which the action may adversely affect items listed or eligible for listing in the National Register of Historic Places, or other significant scientific, cultural or historic resources. As described above, the proposed action will take place within the Mammoth Cave Core Visitor Services Area, an area evaluated in a Cultural Landscape Report that is nearing completion. As described in the EA, the Heritage Trail wing is not considered eligible for listing on the National Register of Historic Places; however, its removal may have indirect impacts on the setting of other nearby structures. The Sunset Terrace Lodge is considered eligible for listing in the National Register; accordingly the Sunset Terrace Lodge rooms will be rehabilitated consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. The SHPO agreed with this evaluation in a letter dated December 23, 2013. The park will continue to consult with the Kentucky SHPO in relation to the identification and evaluation of the cultural resources within the project area.

Archeological resources are known to exist in the project area. However, due to the lack of site-specific design at this time, the NPS cannot yet fully assess the potential effects of the proposed action on archeological resources. As site-specific design becomes available, the NPS shall conduct archeological testing as appropriate to avoid impacting archeological resources to the greatest extent possible. Where avoidance is not possible, appropriate mitigation measures shall be coordinated with the SHPO.

In their letter dated December 23, 2013 the SHPO stated that “[i]t will be important to understand potential for impacts to archaeological resources before any plans are developed if avoidance is to be given full consideration. Our office would be pleased to coordinate with park staff on the best approach for this” The SHPO also noted that “[t]his approach is consistent with the requirements of Section 106 of the National Historic Preservation Act (as amended).” The NPS commits, in consultation with the SHPO, to complete the necessary archeological survey work to avoid, minimize or mitigate impacts to archeological resources.

The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973. As described above, the selected alternative is not expected to result in any direct impacts on federally listed threatened and endangered species. Tree removal could have an indirect impact by affecting foraging habitat for special status species; however, mitigation will be implemented to avoid adverse impacts to the extent possible. The National Park Service determined that the selected alternative may affect, but is not likely to adversely affect federally listed species. The USFWS concurred with the not likely to adversely affect the Indiana bat, gray bat, or Rafinesque’s big-eared bat. The USFWS also noted that the northern long-eared bat is currently proposed for listing (decision pending October 2014). The park will keep abreast of this development and will coordinate further with the USFWS to should the species be listed.

Whether the action threatens a violation of federal, state, or local environmental protection law. The proposed action violates no federal, state, or local environmental protection laws.

REFERENCES

National Park Service (NPS)

- 1998 *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. National Park Service, U.S. Department of the Interior.
- 2006 *Management Policies 2006*. National Park Service, U.S. Department of the Interior.
- 2000 *Hazard Tree Management Plan 2000*. Mammoth Cave National park. National Park Service, U.S. Department of the Interior.
- 2014 *Core Visitor Services Area Cultural Landscape Report*. Mammoth Cave National park. National Park Service, U.S. Department of the Interior.

National Parks Omnibus Management Act of 1998

- 1998 Public Law 105-391, 105th Congress. November 13, 1998.

State Historic Preservation Office (SHPO)

- 2002 Letter to Mammoth Cave National Park. May 7, 2002.
- 2013 Letter to Mammoth Cave National Park, RE: Improvements to the Mammoth Cave Hotel and Concession Facilities, Environmental Assessment, Mammoth Cave National Park. December 23, 2013.

University of Idaho Park Studies Unit

- 1998-2012c *Mammoth Cave National Park Visitor Survey Card Data Reports*. University of Idaho Park Studies Unit Visitor Survey Card Project.
- 2006 *Mammoth Cave National Park Visitor Study*. University of Idaho Park Studies Unit Visitor Services Project Report 177.
- 2012a *Mammoth Cave National Park Dining Experience. 2012 Commercial Services Data Report*.
- 2012b *Mammoth Cave National Park Lodging Experience. 2012 Commercial Services Data Report*.

United States Fish and Wildlife Service (USFWS)

- 2014 Email to Mammoth Cave National Park RE: FWS 2010-B-0648; Improvements to the Mammoth Cave Hotel and Concession Facilities, Environmental Assessment, Mammoth Cave National Park. January 14, 2014.

ATTACHMENT A

NON-IMPAIRMENT DETERMINATION

By enacting the NPS Organic Act of 1916 (Organic Act), Congress directed the U.S. Department of the Interior and the NPS to manage units “to conserve the scenery and the natural and historic objects and wild life therein and to provide for the enjoyment of the same in such a manner and by such a means as will leave them unimpaired for the enjoyment of future generations” (16 USC section 1). Congress reiterated this mandate in the Redwood National Park Expansion Act of 1978 by stating that NPS must conduct its actions in a manner that will ensure no “derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress” (16 USC 1a-1).

NPS *Management Policies 2006*, Section 1.4.4, explains the prohibition on impairment of park resources and values:

While Congress has given the Service the management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the Nation Park Service. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them.

The NPS has discretion to allow impacts on park resources and values when necessary and appropriate to fulfill the purposes of a park (NPS 2006, sec. 1.4.3). However, the NPS cannot allow an adverse impact that would constitute impairment of the affected resources and values (NPS 2006, sec 1.4.3). An action constitutes an impairment when its impacts “harm the integrity of Park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values” (NPS 2006, sec 1.4.5). To determine impairment, the NPS must evaluate “the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts” (NPS 2006, sec 1.4.5).

This determination on impairment has been prepared for the selected alternative described in this “finding of no significant impact.” An impairment determination is made for resource impact topics (geologic resources, soils and topography, vegetation, special status species, cultural landscapes, historic structures, archeological resources, visual resources, and lightscapes) analyzed in the environmental assessment for the selected alternative. An impairment determination is not made for socioeconomic

resources, visitor use and experience, park operations and infrastructure, or energy conservation and conservation potential because impairment findings relate back to park resources and values, and these impact topics are not generally considered to be park resources or values according to the Organic Act, and cannot be impaired in the same way that an action can impair park resources and values.

GEOLOGIC RESOURCES

The selected alternative will result in an estimated maximum net increase of 7,500 square feet of impervious surface. During construction, a maximum of 12,000 to 22,000 square feet will be disturbed. Surface runoff from the project area generally drains towards the Historic Entrance, and changes in water quality from surface runoff has the potential to impact geologic resources; however, the stormwater from the parking adjacent to the hotel will continue to flow into the existing oil and grit separator/filter systems near the parking lots. Any construction/demolition activities will be carried out using best management practices and in accordance with an approved erosion and sediment control plan.

The selected alternative will not result in impairment of geologic resources because construction impacts will be temporary and mitigated, because long-term impacts could be detectable but small, and because alterations of the site will not impede the ability of the park to fulfill the specific purposes identified in the establishing legislation.

SOILS AND TOPOGRAPHY

The selected alternative will result in an estimated maximum net increase of 7,500 square feet of impervious surface. During construction, a maximum of 12,000 to 22,000 square feet will be disturbed. Any construction/demolition activities will be carried out using best management practices and in accordance with an approved erosion and sediment control plan. Most of this development will fall in areas of previous soil and topography disturbance from the construction of the existing hotel and other nearby facilities. Overall ground disturbance will be minimized as much as feasible. It is expected that the selected alternative will have a net balance of cut and fill, and major changes to land form are not expected.

Because construction impacts will be temporary and mitigated, because increased compacted impervious surfaces will be limited to a net 7,500 square feet, and because alterations of the site will not impede the ability of the park to fulfill the specific purposes identified in the establishing legislation, the selected alternative will not result in impairment of soils and topography.

VEGETATION

The proposed development within the selected alternative will result in the maximum disturbance of 12,000-22,000 square feet of land and the loss of maintained lawn in the project area, potentially including several trees, but the loss will not represent a critical

impact to vegetation (10,000 square feet accounted for the possible parking lot reconfiguration). An approximate net balance of 7,500 square feet of vegetation will be covered by park infrastructure, resulting in a long-term adverse impact under this alternative. Approximately 5,500 square feet will become available for revegetation.

Because a majority of vegetation impacted will be non-native lawn, because the Heritage Trail wing area will become available for revegetation, because removal of trees will be limited, and because alterations of the site will not impede the ability of the park to fulfill the specific purposes identified in the establishing legislation, the selected alternative will not result in impairment of vegetation.

SPECIAL STATUS SPECIES

The selected alternative is not expected to have any direct impacts on special status species; however, there is the possibility of indirect impacts resulting from activity within habitat for some bat species. Indirect impacts for the selected alternative may include disturbances to trees used for roosting and foraging habitat by listed bats during daylight hours while construction activities and normal operations are ongoing. It is unlikely that the mature deciduous trees in the project area are used by roosting bats due to the level of human activity and disturbance by visitors and maintenance crews. Nevertheless, the indirect impacts on bat roosting habitat resulting from the continued operation and maintenance of the hotel facilities and grounds will continue at current levels. Disturbances to gray bats, which roost in caves, are not likely to occur. Indirect impacts on listed bats will also include potential changes in water quality from the project area. Any contaminants within runoff from the project area will be likely removed by stormwater management measures and/or the oil and grit separation/filtration systems before reaching the cave.

The selected alternative will not result in impairment of special status species due to the unlikely and indirect nature of potential impacts. Additionally, the park will implement mitigation strategies such as examination of buildings for roosting bats prior to demolition and limitation of tree clearing to times during which bats will be most likely to be hibernating in the caves or through other approved procedures/processes. Alterations of the site will not impede the ability of the park to fulfill the specific purposes identified in the establishing legislation.

CULTURAL LANDSCAPES

The selected alternative will include modifications to the parking adjacent to the hotel, sidewalks, lawn areas, and buildings as part of this alternative. While the landscape uses remain largely the same, there are changes to the circulation patterns, especially with regard to the parking lots and the paths around the buildings. However the continuity of the landscape's distinctive characteristics will be retained. The landscape will still exhibit overall continuity of form, order, use, features, and materials. Construction activities associated with the hotel improvements will temporarily introduce non-historic visual, audible, and atmospheric elements into the setting of the hotel.

Because construction impacts will be short-term and temporary, because the landscape will retain its overall integrity, and because alterations of the site will not impede the ability of the park to fulfill the specific purposes identified in the establishing legislation, the selected alternative will not constitute an impairment of cultural landscapes.

HISTORIC STRUCTURES

The Sunset Terrace Lodge rooms are considered eligible for listing in the National Register by the SHPO, and the rehabilitation will be undertaken in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. Care will be taken to ensure that the rehabilitation will minimally affect character defining spaces, materials, features, and finishes. Any materials removed during rehabilitation efforts will be evaluated to determine their value to the park's museum collections and/or for their comparative use in future preservation work at the sites. The Heritage Trail wing will be removed, the hotel lodge will undergo utility and critical life/safety system upgrades, sidewalks may be added or modified, the outdoor dining area could be modestly expanded, the hotel façade could be updated, and parking adjacent to the hotel lodge could be expanded and reconfigured. A previous letter from the Kentucky SHPO regarding the eligibility of the Mammoth Cave Hotel for the National Register (dated May 7, 2002) stated that the SHPO indicated that the Mammoth Cave Hotel, Gift Shop, and Restaurant are not eligible for the National Register. In response to the release of the EA, the SHPO sent a letter dated December 23, 2013, in which the SHPO indicated that the continuing discussions with the park on the Hotel and Heritage Trail wing have reaffirmed their position that these resources do not appear to be eligible. The SHPO further expressed their position that the Sunset Terrace Lodge buildings are eligible.

Because the overall integrity of the resources within the project area will not be diminished and because alterations of the site will not impede the ability of the park to fulfill the specific purposes identified in the establishing legislation, the selected alternative will not constitute an impairment of historic structures.

ARCHEOLOGICAL RESOURCES

The selected alternative has the potential to impact known archeological sites. Full boundary definition has not been completed on these sites because parts of sites are under existing parking lots or roads. Systematic survey has not been completed of the area between the existing parking area adjacent to the hotel and the Hotel Cottages. Additional archeological surveys or Phase Two testing will be conducted as necessary prior to construction/soil disturbance in order to determine the presence and significance of archeological resources in proposed impact areas. While, at present, none of the sites have been fully evaluated for significance, some sites may be eligible for the National Register based on their roles in the early development of the area and of the park. The park will continue to consult with the Kentucky SHPO in relation to the identification and evaluation of the archeological resources within the project area. During this project the park will work to avoid impacts on archeological resources. If

avoidance is not feasible the park will develop mitigations in consultation with the SHPO to reduce the impacts. The NPS will continue consultation with the Kentucky SHPO as the results of the archeological testing become available and development and treatment plans are completed. As part of this continuing consultation, the park will develop a Programmatic Agreement with Kentucky SHPO to guide the implementation of the selected alternative if it is determined to be necessary and appropriate. This approach is consistent with the requirements of Section 106 of the National Historic Preservation Act (as amended).

Because impacts on archeological resources will be avoided and/or minimized through adjustment of the site features where practicable and because alterations of the site will not impede the ability of the park to fulfill the specific purposes identified in the establishing legislation, the selected alternative will not constitute an impairment of archeological resources.

VISUAL RESOURCES

The selected alternative will improve views into and through the project area by improving visual screening of the loading dock, providing a clearer line of sight between the visitor parking and the visitor center, and providing an exterior façade that would complement the design of the new visitor center. Both additional pavement and additional green space will be added to views within the project area. The addition of more green space in place of the Heritage Trail wing may be considered an improvement in visual quality by contributing to a general park-like setting.

Because most changes to the visual resources of the area will improve visitor orientation and contribute to the park-like setting and because alterations of the site will not impede the ability of the park to fulfill the specific purposes identified in the establishing legislation, the selected alternative will not constitute an impairment of visual resources.

LIGHTSCAPES

Under the selected alternative, the removal of the Heritage Trail wing will decrease the amount of light that distracts and/or diminishes the visitor's view of the night sky, but the expansions of the parking adjacent to the hotel will increase the amount of impacting light. Currently, the hotel and adjacent facilities have a variety of lighting fixtures, some that are night-sky compliant and some that are not. Under this alternative, all non-compliant light fixtures will be replaced. All outdoor lighting within the project area will be night-sky compliant.

Because visitors will have an improved opportunity to view the night sky and because alterations of the site will not impede the ability of the park to fulfill the specific purposes identified in the establishing legislation, the selected alternative will not constitute an impairment of lightscapes.

REFERENCES

National Park Service (NPS)

- 1998 *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. National Park Service, U.S. Department of the Interior.
- 2006 *Management Policies 2006*. Sections 1.4.3-1.4.5. National Park Service, U.S. Department of the Interior.
- 2000 *Hazard Tree Management Plan 2000*. Mammoth Cave National park. National Park Service, U.S. Department of the Interior.
- 2014 *Core Visitor Services Area Cultural Landscape Report*. Mammoth Cave National park. National Park Service, U.S. Department of the Interior.

National Park Service Organic Act

- 1916 39 Stat. 535, 16 U.S.C. 1.

State Historic Preservation Office (SHPO)

- 2002 Letter to Mammoth Cave National Park. May 7, 2002.
- 2013 Letter to mammoth Cave National Park, RE: Improvements to the Mammoth Cave Hotel and Concession Facilities, Environmental Assessment, Mammoth Cave National Park. December 23, 2013.

ATTACHMENT B

PUBLIC COMMENT SUMMARY

SUMMARY OF PUBLIC INVOLVEMENT

The park held a public review period for the draft environmental assessment from November 26, 2013 until December 28, 2013. During this time, the public was encouraged to submit comments through the NPS's Planning, Environment, and Public Comment (PEPC) web site. Comments were also accepted by postal mail, email, and in person at the park. Thirty-two unique pieces of correspondence were received during the public review period for the environmental assessment, including responses from federal and state agencies, local government, and tribes. Specifically, correspondences were received from the following federal and state agencies, local government, and tribes:

- U.S. Fish and Wildlife Service
- Kentucky State Historic Preservation Officer
- Kentucky Clearinghouse
- Kentucky Department for Environmental Protection (Energy and Environment Cabinet)
- United Keetoowah Band of Cherokee Indians in Oklahoma.
- Chickasaw Nation
- Barren River Area Development District Board of Directors

The park also hosted a public meeting at the hotel's Rotunda Room on December 12, 2013 from 5 to 7pm. Approximately 70 people attended this meeting, and six public comment forms and two other written pieces of correspondence were submitted during that meeting.

CONCERNS AND RESPONSES

The following concerns were identified, and the NPS response to each respective concern follows.

Concern 1:

Commenters suggested the following items be incorporated/modified in the proposed action alternative:

- Wayfinding by the entrance road
- A playground
- Work should be scheduled outside any NPS centennial celebration activities

Response 1:

The park was already planning to install a wayfinding sign by the entrance road in 2014. Although Alternative B does not include a discovery play area, the park may consider adding this facility at a later date to further enhance visitor experience. The other items are addressed through the addition of language via the errata.

Concern 2:

One commenter requested that the park consider rebuilding a hotel similar to the historic hotel in the same location as the historic hotel.

Response 2:

Language was added in the errata to describe why this alternative was dismissed.

Concern 3:

Commenters state that the following items would adversely impact financial viability of the concessions contract under the NPS preferred alternative:

- Decreasing the available lodging units would reduce revenue
- Concessioners bid for contracting opportunities with the hope and intent that they will be able to expand use of the facilities they will operate and, therefore, increase their revenue. By significantly limiting the ability of a new concessioner to expand visitation and use of its facilities, the park substantially reduces the attractiveness of the business opportunity, the financial viability and profitability of the contract, and ultimately franchise fees collected by the park.

Response 3:

Several reviews by both an independent consultant (Capital Hotel Management) and by the NPS indicated that the concession operation had more lodging units than what is presently desirable and necessary. Subsequently, the NPS has completed several financial analyses of the park's concession operation as it would operate under the preferred alternative. Each analysis indicated that a concession operation with 54 rooms was projected to be sufficient to provide ample in-park lodging and to be financially viable. The proposed removal of 38 Heritage Trail Rooms will result in some reduction in lodging revenue and a reduction in the portion of food revenue that is derived from visitors in park lodging. However, it is projected that a significant portion of the existing Heritage Trail clientele will, in the future, instead stay in other lodging units in the park. This projected change in visitor use is described in part on Page 110 of the draft environmental assessment.

Concern 4:

Commenters requested that the EA describe additional aspects of visitor use and experience at the hotel including the following:

- the difference in proximity to visitor services between the Heritage Trail wing and the Sunset Terrace Lodge

- the Heritage Trail wing

Response 4:

Additional information was added to this section via the errata.

Concern 5:

Commenters request additional impacts on visitor use and experience be acknowledged in the EA. Specific impacts requested include a longer walk from lodging options to the hotel lodge and/or visitor center, having less selection in room type, some groups may be less likely to host their events there, and potentially being turned away from the hotel if it were to be at capacity during peak season.

Response 5:

Additional information was added to this section via the errata.

Concern 6:

Commenters stated the draft environmental assessment lacked statistical documentation.

Response 6:

Some statistical data is protected from release because it could give prospective concession companies an unfair advantage in bidding on the next contract to operate the Mammoth Cave Hotel, and it could compromise the ability of the government to negotiate a new contract. Statistical information is provided (pages 6-8) on occupancy, lodging trends, park visitation, room sizes, and existing lodging units. The reasoning that led to the decision to demolish the Heritage Trail wing is itemized on page 40. Pages 6 and 110 indicate that the Mammoth Cave Hotel has experienced a 25 percent decrease in occupied room-nights in the last 10 years, and less than six percent of park visitors overnight in the park. Additional statistical information that may have been useful to include would be the fact that occupancy rates at the Mammoth cave Hotel continue to be substantially lower than area hotels in both Cave City and the cave region, as well as the industry average.

Concern 7:

Commenter stated that the estimated 50 percent reduction in energy use is disingenuous and misleading since this would be partially achieved with the removal of the Heritage Trail wing.

Response 7:

Removal of the Heritage Trail wing was clearly identified as a component of the overall estimated reduction of energy use regarding the impacts of Alternative B. It is stated in the draft EA that removal of the Heritage Trail wing, combined with upgrades to the utilities at both the Hotel Lodge and Sunset Terrace Lodge, is projected to reduce the

concession operation's heating fuel, propane, electricity, and water usage by 50 percent (pages 62 and 115).

Concern 8:

Commenter stated a concern about the possibility of park visitation decreasing because of a reduction of lodging in the park.

Response 8:

As described on page 7 of the draft environmental assessment, park visitation has increased in the past five years while lodging use in the park has decreased. Less than six percent of park visitors stay overnight, and most park visitors will continue to use nearby lodging outside the park.

Concern 9:

Commenters stated that the NPS bears some responsibility for the current state of the concessions facilities because the NPS purchased the leasehold surrender interest from the existing concessioner.

Response 9:

Purchase of the leasehold surrender from the existing concessioner in 2010 did not change the terms and contractual requirements of the existing concession contract. The existing concessioner continues to be responsible for repairs and maintenance to concession facilities. The NPS is responsible for major upgrades and renovations of the structures, and is working through the planning process with this draft environmental assessment to make upgrades and updates to the park concession facilities.

Concern 10:

Commenter stated the park did not consider a range of reasonable alternatives.

Response 10:

As documented on pages 46-48, a number of alternatives were considered and dismissed from further consideration, including one similar to the 1925-Mammoth Cave Hotel. These alternatives were dismissed because they were cost prohibitive, duplicated or competed with lodging that is available nearby, and because there is a decreased demand for in-park lodging. The 1925-hotel scenario was problematic for additional reasons: the location (for food/beverage and retail) is not close enough to the park visitor center; there would be a safety conflict with pedestrians and cars; and there would likely be adverse impacts on archeological and cultural landscape resources.

Concern 11:

Commenters concerned that the current concessioner was not allowed an opportunity to provide input.

Response 11:

The existing concessioner has had a number of opportunities to provide input and identify needs and issues with hotel facilities. In particular, the existing concessioner assisted with the condition assessment of all concession facilities and was interviewed by the consultant, Capital Hotel Management. The existing concessioner, and all concessioner employees, were encouraged to participate in both the 2010 public scoping comment period and the draft environmental assessment comment period. A number of concessioner employees attended the public meetings and provided comments. The existing concessioner is prohibited from attending the confidential meetings related to the rebidding of the concessions contract.

Concern 12:

Commenter expresses concern that renovation work would likely have a negative impact on concession facility daily operations.

Response 12:

As stated on page 47 of the draft environmental assessment, renovation work will be planned and phased over the next three years in a manner that will minimize inconvenience and negative impacts on the concessioner and park visitors. Contracting work and schedules will be established to either have work performed in the off-season or performed in a way that minimizes negative impacts.

Concern 13:

Commenters express concern that employment for concessioner employees may be negatively impacted.

Response 13:

Socioeconomic impacts are evaluated in detail on pages 104-107 of the draft environmental assessment. Note that under Alternative A, the employment of concessioner employees is not stable in light of the one-year contract extensions now in use. While there would be some increases and decreases with the Alternative B, the overall employment impacts are projected to be beneficial, both short term and long term.

Concern 14:

Commenters stated that the park has misrepresented the requirements of the 1998 Concessions Management Improvement Act.

Response 14:

Numerous alternatives were considered, all of which would have complied with the CMIA requirements, however, these alternatives were dismissed from further consideration for the reasons provided on pages 47-48. On page 5, some of the key requirements of the 1998 Concessions Management Improvement Act are described.

Concern 15:

Commenters stated park proposals for outside funding have not been successful.

Response 15:

The park made two attempts to attain outside funding, which were not approved. The park will continue to pursue private donor funding.

Concern 16:

Commenters stated interest in gathering spaces and continuation of a formal dining space for visitors, local patrons, and groups for various events.

Response 16:

On page 6 of the draft environmental assessment, the importance of the food and beverage service is emphasized for both the travelling public and also the hotel's local constituency. Under Alternative B, meeting space and the Travertine Room will still be readily available. Renovation of food service areas listed under Alternative B might include consolidating the fast food area and the coffee shop, and expanding the outdoor dining area.

ATTACHMENT B

ERRATA

The Mammoth Cave National Park Improvements to Concession Facilities Environmental Assessment (EA) was released for public review from November 26, 2013 until December 28, 2013. An Errata sheet is necessary to address substantive comments, errors, omissions or factual corrections. These errata (Part 1) document minor edits and corrections to the text of the EA. These changes correct, clarify, or modify original text based on public comment.

Part 2 includes the methodology used to evaluate the effects of Lightscapes that should be used to replace the methodology provided in the EA. Due to the value of night skies in the vicinity of the Mammoth Cave Hotel; the preservation of natural ambient lightscapes is a project objective. In addition fully sustainable lighting. A number of clarifications were needed regarding information and the potential affects to lightscapes. The corrections in this Errata sheet do not increase the degree of an adverse impact described in the EA or change the determination that the project would not have significant impacts.

Part 1 of the errata provides text changes in Chapters 1 and 2 of the EA. They are intended to correct or clarify statements in the EA. These corrections in this erratum do not change the project activities or increase the degree of impact in the EA.

Page 24 Lightscapes Section—

The paragraph introducing the “Lightscapes” impact topic should be revised to read as follows:

“In accordance with *NPS Management Policies 2006*, NPS strives to preserve natural ambient lightscapes, which are natural resources and values that exist in the absence of human caused light. Changes to the Mammoth Cave Hotel footprint and possible changes to visitor parking adjacent to the hotel would alter the use of lighting in and around the hotel with the potential to detract from the night sky, cause glare, and disrupt night adapted vision in humans and wildlife. The park would continue to strive to limit the use of artificial outdoor lighting to that which is fully sustainable. Fully sustainable lighting is lighting that is used only where it is needed, used only when it is needed, shielded and directed downward, the minimum amount of light necessary, warmer in color (less blue light), and energy efficient. However, due to the value of night skies, the preservation of natural ambient lightscapes would be a project objective. Therefore, the impact topic of lightscape management is addressed.”

Page 27 Soundscapes Section—

Delete the second paragraph under “Soundscapes.”

Add the following text before the last sentence in the “Soundscapes” section:

“The project will mitigate noise through actions such as enclosures, noise barriers for construction activities as well as mufflers and silencers on all equipment. As a result impacts to soundscapes are likely to be negligible.”

Page 32 Alternative A: No-Action Lodging Facilities Section —

Add “lighting” to the parenthetical statement regarding utilities under the “Lodging Facilities” heading.

Page 39 Alternative A: No-Action Parking Adjacent to the Hotel Section —

Add the following text at the end of the “Parking Adjacent to the Hotel” section:

“Lighting would not change.”

Page 40 Heritage Trail Wing Section —

At the end of the bullet on “Declining Occupancy,” insert the following text:

“Occupancy rates at the Mammoth Cave Hotel continue to be substantially lower than area hotels in both Cave City and the cave region, as well as compared to the industry average.”

Page 45 Visitor Access and Circulation Section —

At the bottom of the first column on page 45, add the following text:

“Additional and/or modified wayfinding signs to and through the hotel would be added.”

Page 46 Mitigation Measures Section —

The fourth and fifth bullets under “Mitigation” should be combined as follows:

- Tree removal will be avoided to the greatest extent feasible. If tree removal is unavoidable, each tree will be assessed for potential impacts on special status species and/or trees will be removed between November 16 and March 31 while bats are hibernating in caves or through other approved procedures/processes, and removal will conform to the park “Hazard Tree Management Plan.” All buildings, trees, and other structures will be inspected for bat roosting habitats prior to any alterations. If any listed bats are identified, additional consultation with the USFWS will be initiated.

Page 47 Mitigation Measures Section —

The first full bullet should be revised to read as follows:

- The park will continue to consult with the Kentucky SHPO in relation to the identification and evaluation of the cultural resources within the project area. During this project the park will work to avoid impacts on cultural resources. The NPS will continue consultation with the Kentucky SHPO as specific development and treatment plans are completed. As part of this continuing consultation, the park will develop a Programmatic Agreement with Kentucky SHPO to guide the

implementation of the selected alternative if it is determined to be necessary and appropriate. This approach is consistent with the requirements of Section 106 of the National Historic Preservation Act (as amended).

Add the following text to the last bullet under the "Mitigation" header:

"Due to funding restrictions, there may be demolition or construction over the next three years. The NPS will make an effort to minimize interference with special events such as the NPS centennial celebration."

Insert after the bullets in the section entitled "Major Renovation of the Hotel Building and Heritage Trail Wing":

"These alternatives/elements were estimated to cost \$9+ million."

Insert after the second sentence in the section entitled "Mix of New Construction and Renovation":

"This alternative was estimated to cost \$10+ million."

Insert the following text before the last sentence in the "Construct New Hotel" section:

"This alternative was estimated to cost \$11+ million. Some members of the public advocate reconstruction of a hotel similar to the 1925 hotel and in that location; however, in addition to cost and occupancy concerns, such an endeavor would require substantial impacts on cultural resources and would have issues associated with safety, convenience, and site distance, as well."

Page 47 Mitigation Measure Section —

Add the following text at the end of the Mitigation Section:

"Impacts from artificial lighting will be mitigated through the use of fully sustainable lighting practices. This suite of steps is designed to reduce impacts to negligible levels, even resulting in a net improvement to the surrounding resource condition. These mitigation measures would be implemented .

- Light only where it is needed (minimize illuminated areas).
- Light only when it is needed (timers, motion sensors, and controls).
- Shield lights and direct them downward (fixture selection).
- Use the minimum amount of lighting (limit illumination levels).
- Select lamps/bulbs with warmer colors (less blue light).
- Select the most energy efficient lamps and fixtures."

Page 48 Alternatives Considered But Dismissed From Further Analysis Section—

Insert after the second sentence in the section entitled "Moderate Renovation of the Hotel and Demolition of the Heritage Trail Wing":

"This alternative was estimated to cost \$4-6 million."

Insert after the third sentence in the section entitled "New Food and Retail Outlets with Retention of the 1990s Building and Removal of the Heritage Trail Wing":

"This alternative **was** estimated to cost \$6 million."

Insert after the second sentence in the section entitled “Construct New Food and Retail Outlets & Demolish Main Building and Heritage Trail Wing”:
“This alternative was estimated to cost \$6-10 million.”

Insert after the first sentence in the section entitled “Major Renovation or New Construction of the Main Hotel Building, Demolition of the Heritage Trail Wing, and Construct Additional Sunset Terrace Lodge Units”:
“This alternative was estimated to cost \$9+ million.”

Page 58 Table 2 Summary of Environmental Consequences (Con’t) Lightscares —
The first sentence of direct impacts of Alternative B under the topic of “Lightscares” should read:
“All non-compliant lighting fixtures would be replaced with fully sustainable lighting options.”

Part 2 provides text changes in Chapters 3 Affected Environment and 4 Environmental Consequences of the EA. This section of the errata clarifies information on clarifies information on the effects in Chapter 4 Environmental Consequences of the EA. This section of the errata provides the correct methodology used to evaluate Lightscares. These corrections do not change the project activities or increase the degree of impact described in the EA.

Page 76 Visitor Use and Experience Section —
Add the following sentence at the end of the first column:
“These last four rooms are the most convenient to the amenities offered in the hotel lodge, and the 38 Heritage Trail wing rooms are the next closest rooms (via an outdoor stairway). Due to their proximity, the Heritage Trail rooms tend to be rented most often, and may reach capacity during peak season.”

Add text to the end of the last sentence of the first paragraph of the second column so that it reads as follows:
“The hotel lodge is approximately 600 feet away from Sunset Terrace Lodge, and visitors can reach the hotel lodge by walking along the Heritage Trail, or by walking or driving through the parking lot.”

Page 109 Impacts of Alternative B: Renovate Concession Facilities (NPS Preferred) Section —
After the second sentence of the second paragraph under the “Impacts” section, add the following text:
“Additional and/or modified wayfinding signs to and through the hotel would be added.”

Page 110 Impacts of Alternative B: Renovate Concession Facilities (NPS Preferred) Section —
Add the following text after the first sentence in the second paragraph of the first column:

“Rooms with immediate access to the hotel lodge would be limited to the four rooms within the lodge buildings. Some visitors, especially larger groups, may be inconvenienced by the reduction in rooms adjacent to the hotel lodge. Additionally, the Heritage Trail wing currently is the only lodging option that offers king beds. Some visitors would be inconvenienced by the reduction in room type.”

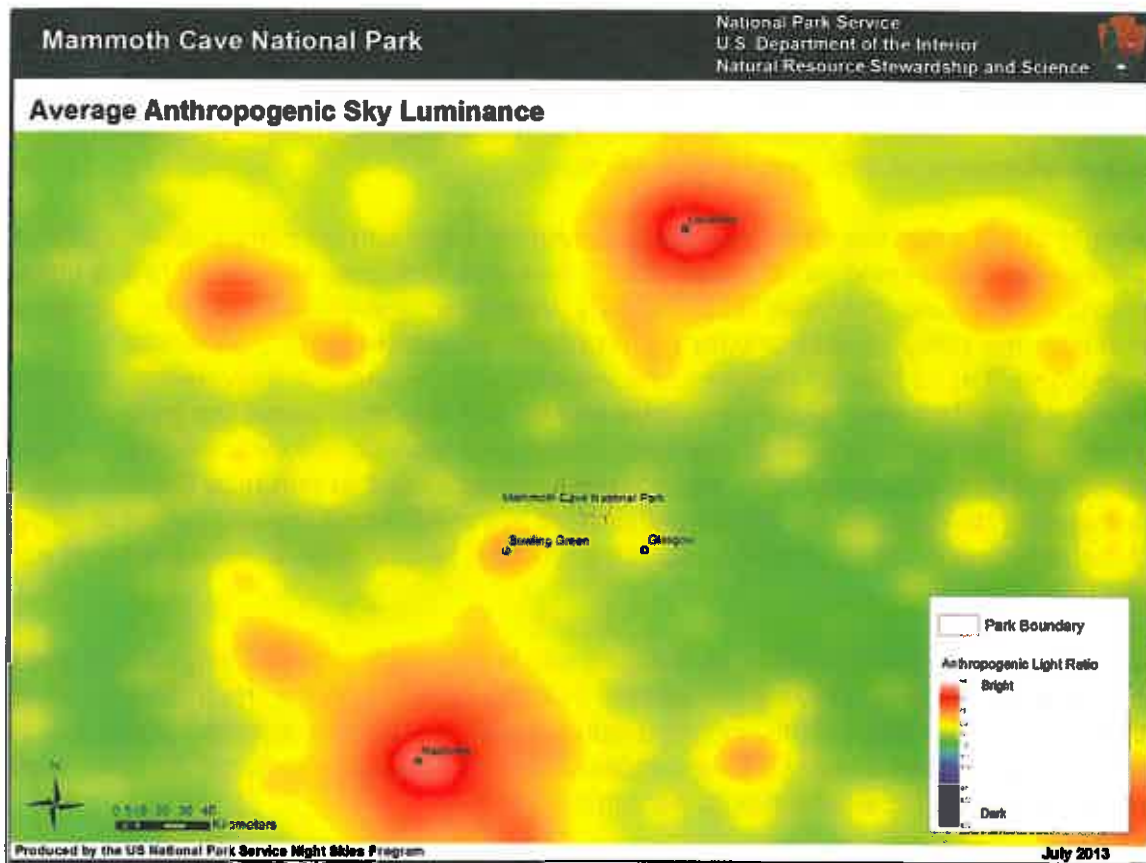
Chapter 3 Affected Environment Page 74 of the Lightscares Section The “Lightscares” section should read as follows:

“When managing the nighttime environment, a distinction is made between the photic environment and the lightscape. The *photic environment* represents the totality of the pattern of light at night at all wavelengths. It is a natural physical process that affects a broad range of species and is important for ecosystem function. *Lightscares* include the human perception of the nighttime scene, including the night sky and the localized illuminated terrain. Lightscares are aesthetic, experiential, and physical qualities that are integral to visitor experience, natural resources and cultural resources. Impacts to the night time environment can occur regionally through contribution to skyglow or locally through glare and light trespass. Changes to the lighting scheme in the park could impact nearby wildlife as well as human nighttime visibility.

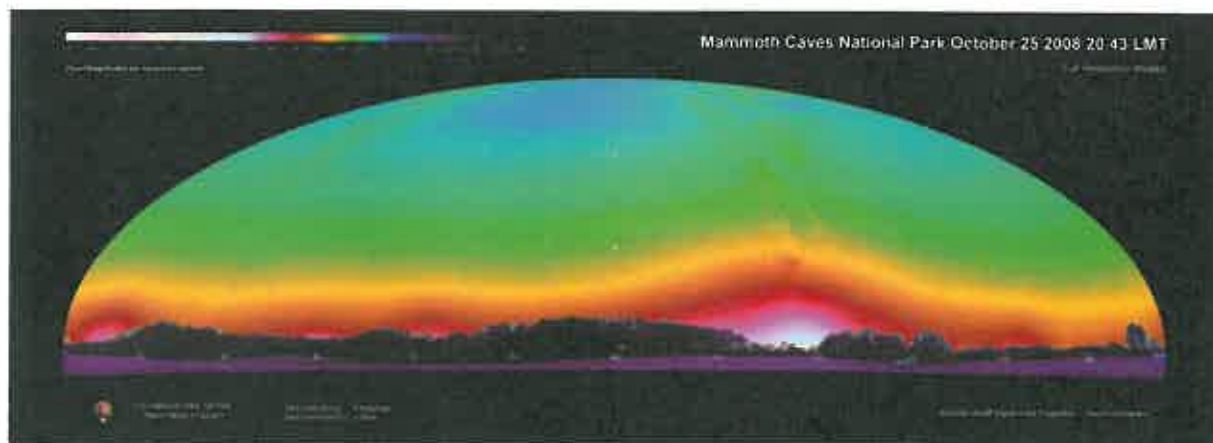
Although the existing photic environment and lightscape are partially degraded due to the proximity to population centers, Mammoth Cave NP provides important forest, riparian and karst habitat for nocturnal wildlife. Mammoth Cave NP has a relatively good quality lightscape that offers unique opportunities for people to enjoy the night sky and good quality habitat for nocturnal species. By providing overnight camping, leading night-time programs, and conducting night sky quality monitoring, the park has demonstrated that it is dedicated to protecting the night time environment and night time recreation activities.

Currently, the lodging areas and surrounding infrastructure contribute artificial light to the lightscape. Interior lights in the Mammoth Cave Hotel rooms and Sunset Terrace Lodge units, exterior lighting along pedestrian walkways, parking lot lighting, and other visitor safety lights all constitute artificial sources of light within the project area.

One measure of the quality of the park’s lightscares is the anthropogenic light ratio (ALR), which is the measurement of total sky brightness averaged across the entire sky compared to natural nighttime light levels. Lower ALR levels reflect higher quality night sky conditions. The first image below shows the ALR for the park and the surrounding areas and demonstrates that the night sky in Mammoth Cave NP has relatively better quality than the majority of the region. The second image is a 360-degree panorama captured at the park in 2008 that depicts sky brightness in false colors, and is intended provide information on nearby light domes and other sources of anthropogenic light.



Regional ALR near Mammoth Cave NP



Panoramic image of Anthropogenic Light

The condition of the photic environment can affect wildlife interactions and other vital ecological processes including predator/prey relationships, reproduction, navigation and migration. The absence of light, natural or otherwise, is often a key element of nocturnal habitat. Adding artificial light to the environment may result in substantial impact to certain species. For example, migrating passerine birds fly at night with reference to the stars and can be disoriented by lights from nearby cities, towers, and

some park facilities. Amphibians, with vision far more sensitive than that of humans, are apt to be disoriented by light. Even when night skies may not be valued for their human aesthetic appeal, natural darkness may still be essential to wildlife. Research into the ecological consequences of artificial night lighting is revealing numerous connections between artificial light and species disruption.

The night sky is a timeless and boundless resource important to many people, cultures, and religions. The scenic value of the night sky is also culturally significant to the current generation of visitors. With friends and family, visitors may enjoy viewing of a star-filled sky, seeing the Milky Way clearly for the first time, or searching for a particular constellation. These human traditions are important to our cultural experience in parks. A park's natural features take on a unique and compelling glow under the powerful light of a full moon or the faint glow of starlight. Those who experience the park at night are often treated to a dramatic scene that provides opportunities to enhance the richness their overall park experience. Additionally, there are many nighttime recreation activities, such as camping, fishing, or wildlife observation, that benefit from a natural pattern and intensity of light.

The nighttime environment plays an integral role in human health and physiology. Dark nights (and bright days) serve a critical role in keeping our circadian rhythm in sync. It is well documented that without the restorative power of consistent restful sleep, serious health consequences can arise. Chronic disruption in circadian rhythms has even been associated with an increased risk of certain cancers.”

Pages 102-104 of the Lightscapes Section —

The “Lightscapes” section should be replaced with the following text:

METHODOLOGY

Artificial light can impact visitors and wildlife through two primary processes: direct glare from light fixtures can affect vision and nighttime recreation experiences; and sky glow from collective sources of artificial light scattered in the atmosphere can reduce the ability to view the night sky. Both aspects of artificial light can unnaturally illuminate the ground and diminish animals and visitors’ ability to dark-adapt their vision. The impacts to the resource are defined below, considering both the entirety of the photic environment and the human perceived natural and cultural lightscape. These thresholds are developed for this project based on the purpose and mission of the park, the management objectives of the site and surrounding landscape, visitor expectations, and are appropriate for the level of nighttime activity and characteristics of the area (lighting zone) that project the resides within.

Negligible: No net increase in overall light output averaged over the night, vertical illumination at project boundary, or radiant energy in the blue spectrum. For a human observer in an adjacent natural area, no measurable/perceptible increase in skyglow (scattered light) or perceptible

impact to dark-adaptation. Nocturnal fauna are not more likely to be disoriented, attracted to, or repelled by artificial light as they move through adjacent areas.

Minor: There are some increases in overall lumens averaged over the night, measurable increases in vertical illumination at the project boundary, or calculated increases in radiant energy in the blue spectrum; however human observers in adjacent areas have a similar perception of the night sky (same Bortle Class), dark-adaptation is only affected when looking in the direction of the project or in close proximity, and impacts to nocturnal fauna are small enough as to not impact survival, reproduction, or migration.

Moderate: There are measurable and clearly perceptible increases to the artificial light footprint of the project that impact human observers and nocturnal fauna. There are notable impacts to either the human perception of the night sky (increase scattered light affecting Bortle Class), the ability to dark-adapt is compromised, or deleterious impacts to the survival, reproduction, or migration of nocturnal fauna in adjacent areas.

Major: There are measurable and clearly perceptible increases to the artificial light footprint of the project that impact human observers and nocturnal fauna. There are notable impacts to either the human perception of the night sky (increase scattered light affecting Bortle Class), the ability to dark-adapt is compromised, or deleterious impacts to the survival, reproduction, or migration of nocturnal fauna across wide areas. Surrounding areas intended to be naturally dark, primeval in character, or represent a historic cultural landscape have substantially altered light regimes.

IMPACTS OF ALTERNATIVE A: NO-ACTION

Impacts

Under the no-action alternative, no changes would be made within the project area that would impact existing lightscapes. Visitors would continue to experience the relatively dark night skies that are characteristic of the park's undeveloped areas; however, lighting fixtures in and around the hotel lodge, Sunset Terrace Lodge, pedestrian walkways, and parking lots would all contribute to the light that distracts and/or diminishes the visitor's view of the lightscapes, especially those that are not fully sustainable. Fully sustainable lighting is lighting that is used only where it is needed, used only when it is needed, shielded and directed downward, the minimum amount of light necessary, warmer in color (less blue light), and energy efficient. Currently, the hotel and adjacent facilities have a variety of lighting fixtures, some that are fully sustainable and some that are not. Although impacts due to light from the infrastructure

in the project area would be readily detectable, with consequences to the lightscape, Alternative A would not result in an increase in lighting. As a result Alternative A would result in a direct long-term negligible, impact on lightscapes.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have a cumulative impact on lightscapes within the project area. These actions include routine visitor center improvements and maintenance including an increase in the use of fully sustainable lighting. The visitor center improvements would result in a gradual shift toward fully sustainable lighting. The negligible impact described above for alternative A when combined with the long term beneficial effects of these reasonably foreseeable future actions, would not result in cumulative impacts to lightscapes.

Conclusion

Although impacts due to light from the infrastructure in the project area would be readily detectable, with consequences to the lightscape, Alternative A would not result in an increase in lighting. As a result Alternative A would result in a direct long-term negligible, impact on lightscapes. Other past, present, and reasonably foreseeable future actions described above would result in a long-term, beneficial impacts on lightscapes. Alternative A would not result in a cumulative impact to lightscapes.

IMPACTS OF ALTERNATIVE B: RENOVATE CONCESSION FACILITIES (NPS PREFERRED)

Impacts

Under Alternative B, the removal of the Heritage Trail wing and expansion of the visitor parking adjacent to the hotel would impact lightscapes by permanently removing some sources of artificial light and retrofitting existing lighting fixtures and lamps with fully sustainable options as described in Chapter 2 - Alternatives. Fully sustainable lighting fixtures in and around the hotel lodge, Sunset Terrace Lodge, pedestrian walkways, and parking lots would all contribute to a reduction in light currently affects the park lightscape. The impacts from current lighting include disruption of dark adjusted (scotopic) vision, glare, and light trespass to other areas of the park, and the potential for disruption to wildlife. The expansions of the visitor parking adjacent to the hotel could increase the amount of impacting light however, removal of the Heritage Trail wing would decrease the amount of light from the area. Currently, the hotel and adjacent facilities have a variety of lighting fixtures, some that are fully sustainable and some that are not. Under this alternative, all light fixtures would be made fully sustainable. Fully sustainable lighting is lighting that is used only where it is needed, used only when it is needed, shielded and directed downward, the minimum amount of light necessary, warmer in color (less blue light), and energy efficient.

Because the Heritage Trail wing would be removed and the recommended fully sustainable approaches would be implemented, Alternative B would have negligible adverse impacts and would result in overall beneficial effects on night sky resources.

Cumulative Impacts

Past, present, and reasonably foreseeable future actions have a cumulative impact on lightscapes within the project area. The impacts of these other past, present, and reasonably foreseeable future actions, when combined with the long-term, beneficial impact described above for Alternative B, would result in a long term, beneficial cumulative impact on lightscapes.

Conclusion

Alternative B would have negligible adverse impacts and would result in overall beneficial effects on night sky resources. Alternative B would contribute to a long term, beneficial cumulative impact on lightscapes.