Chapter 4 - Treatment Alternatives

Introduction

This chapter presents treatment alternatives for the repair, protection and stewardship of the archeological landscape of the Hopewell Culture NHP. These treatment alternatives were developed during the Alternatives Work Session in May 2015, and refined through a series of conference call work sessions with the park and Midwest Regional Office (MWRO) staff.

This chapter describes the alternatives considered for the study area and each park unit, beginning with the no action alternative, followed by two action alternatives. The agency preferred alternative is Action Alternative 2, presented again in Chapter 6 - Treatment Plan, with detailed treatment recommendations.

All action alternatives address the protection of resources, improvements to visitor experience and access, and provisions for future research. Treatment approaches are proposed for each park unit, based on its individual qualities and visitor needs. Treatment alternatives for each park unit vary in the extent of rehabilitation and modifications proposed.

A summary of the alternatives, organized by park unit is presented as a matrix ("TABLE 4-1. Alternatives Matrix").

No Action Alternative would provide a basis for comparison with the action alternatives, including the preferred alternative. Under the no action alternative, the present level of use, management, interpretation, maintenance and operations would continue.

Action Alternative 1 - Preserving Earthwork Complexes would focus on preserving the earthwork complexes, better delineate archeological features and spaces to make them more visible, and provide a visitor experience in sync with earthwork preservation. Vegetation management would be the primary technique in marking or depicting the archeological features, and the relationships between them. Extant below- and above-grade archeological features would be preserved and maintained.

Action Alternative 2 - Conserving and Revealing Earthwork Complexes would focus on preserving extant below- and above-grade archeological features, clearly delineate archeological features and spaces, balance removal of non-contributing features with earthwork preservation, and provide visitor experiences and management tailored to the individual character of each park unit. At Mound City Group, Hopewell Mound Group, and Seip Earthworks, this alternative would assertively delineate non-extant archeological features (mounds, earthen walls, etc.) through markings. At Hopeton Earthworks and High Bank Works, this alternative preserves the earthwork complexes, and focuses on the delineation of spaces and patterns through vegetation management to depict the archeological features, and the relationships between them.

TABLE 4-1. Alternatives Matrix

		Mound City Group				Hopeton Earthworks			
	Treatment Approach*	Walls	Mounds	Interior space	Exterior space	Walls	Circles	Interior space	Exterior space
No Action Alternative									
Preservation of extant features	**P**			**X**	**Some**				
Preservation of reconstructed features	**P**	**X**	**X**						
Continue cultivation	**P**					**X**	**X**	**X**	**X**
Timothy/orchardgrass	**P**								
Mown lawn	**P**	**X**	**X**	**X**					
Native grasslands	**P**								
Woodland	**P**				**X**				
Action Alternative 1 - Preserving Earthwork Complexes									
Preservation of extant features	**P**	**X**	**X**	**X**	**Some**	**X**	**X**	**X**	**Some**
Preservation of reconstructed features	**P**	**X**	**X**						
Low vegetation / mown lawn	**P**	**X**	**X**	**X**				**X**	
Native grasslands	**P**					**X**	**X**		
Continue cultivation	**P**								
Woodlands	**P**								
Action Alternative 2 - Conserving and Revealing Earthwork Complexes									
Preservation of extant features	**R**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Preservation of reconstructed features	**R**	**X**	**X**						
New rehabilitations or markings	**R**								
Repair (tree thinning, veg removal, etc.)	**R**	**X**		**X**					
Low vegetation / mown grasses	**R**	**X**		**X**		**X**	**X**	**X**	
Native grasslands	**R**		**X**		**X**				**X**
Native grasses and forbs	**R**				**X**				
Woodlands	**R**				**X**				
Removal of non-contributing features	**R**					**X**	**X**	**X**	**X**

* **P** is preservation; **R** is rehabilitation.

Hopewell Mound Group				**Seip Earthworks**				**High Bank Works**			
Walls	Mounds	Interior space	Exterior space	Walls	Mounds	Interior space	Exterior space	Walls	Circles	Interior space	Exterior space
North				**X**	**X**			**X**			
				X	**X**						
				X		**X**	**X**	**X**	**X**	**X**	
X	**X**	**X**	**X**								
		10 acres									
								X	**X**	**X**	**X**
X	**X**			**X**	**X**			**X**	**X**		
				X	**X**						
X	**X**	**X**		**X**	**X**			**X**	**X**		
X	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
Some		**X**				**X**					
X				**X**		**X**				**X**	
X		**X**		**X**		**X**		**X**	**X**	**X**	
	X				**X**						**X**
			X				**X**			**X**	**X**
X				**X**				**X**	**X**	**X**	**X**

Treatment Approaches

Four distinct approaches to the treatment of archeological landscapes were considered.[4-1]

Preservation is an appropriate treatment approach for an archeological landscape with a continuity of use and few modifications. This approach is suited for a property where its distinctive materials, features, and spaces are intact, and for which extensive modifications or additions are not required. The preservation treatment approach allows archeological features to be preserved, restored, or repaired.

Rehabilitation is an appropriate treatment approach for an archeological landscape with a long period of significance, that has undergone few modifications, and has integrity in one or more characteristics: location, setting, materials, workmanship, feeling, and association. Rehabilitation is appropriate for a property where new additions are contemplated. The rehabilitation treatment approach allows for features to be preserved, rehabilitated, reconstructed, or restored.

Reconstruction is an appropriate treatment approach for an archeological landscape with a vast amount of documentation that would allow, by means of new construction, the form, features, and detailing of a non-surviving archeological landscape to be replicated to its appearance at a specific period of time and in its historic location. Due to the limited information on the archeological features' form and construction methodology during the period of significance, reconstruction of the archeological landscape or specific archeological features is not recommended at this time.

Restoration is an appropriate treatment for an archeological landscape with documentation to accurately depict the form, features, and character of earthwork complexes as it appeared during a particular period of time by removing features from other periods in history and renovating missing features from the restoration period. Due to the limited information on the archeological features' form and construction methodology during the period of significance, restoration of the archeological landscape or specific archeological features is not recommended at this time.

The recommended treatment approach depends on a variety of factors, including the condition, proposed use, and historical significance of the property. The first alternative, Action Alternative 1 - Preserving Earthwork Complexes, recommends a preservation treatment approach for all earthwork complexes within the Hopewell Culture NHP. Action Alternative 2 - Conserving and Revealing Earthwork Complexes recommends a rehabilitation treatment approach for Mound City Group, Hopewell Mound Group, and Seip Earthworks; and a preservation approach for Hopeton Earthworks and High Bank Works. The marking / rehabilitation illustrated and described for Alternative 2 shows the maximum extent of change considered appropriate. Implementation recommendations included in Chapter 6 provide guidance for application of these in a gradual approach that may or may not result in application of the full extent of the recommendations.

4-1 Robert R. Page, Cathy A. Gilbert, and Susan A. Dolan. *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques.* [Washington, DC: U.S. Department of the Interior, National Park Service, Cultural Resource Stewardship and Partnerships, Park Historic Structures and Cultural Landscapes Program, 1998].

Common to All Action Alternatives

Several treatment recommendations are common to all action alternatives for all earthwork complexes within the Hopewell Culture NHP. These are summarized in this section and are not repeated in the action alternatives section.

Land Use

The park would purchase areas within the authorized park unit boundary, plus additional adjacent or related properties necessary for the protection of earthwork complexes. Alternative methods of protection, such as easement, local planning, and trust, would be explored to protect earthwork complexes outside the Hopewell Culture NHP jurisdictional boundary.[4-2]

Archeological Features

All extant below-grade features would be preserved.

- Additional research would be conducted to understand Hopewellian habitation sites in relationship to the earthwork complexes, and modes of circulation (waterways and overland routes) between earthwork complexes. Additional research would be undertaken to reveal the daily lifestyle of the Hopewell Culture including regional settlement patterns, rituals, use of earthwork complexes, trade routes, subsistence, etc.

- Additional research, investigations, and surveys would be conducted to confirm material reconstructions and to better understand the construction of the Hopewellian archeological features.[4-3]

- Additional magnetic surveys and archeological investigations would be undertaken to locate undocumented archeological resources.

- Excavation of any type within Hopewell Culture NHP would occur only with consultation with the park archeologist, the Midwest Archeological Center (MWAC), and others where appropriate (federally recognized tribes, SHPO, etc). Below-grade features include the foundations of archeological features (mounds, earthen walls, structures, etc.), and a layer of archeological scatter.

- Radiocarbon dating, pollen and phytolith analysis, soil micromorphological analysis, etc. would be undertaken to reveal historic vegetation patterns.

- Stream banks of the Scioto River, Paint Creek, and the North Fork Paint Creek would be monitored and areas of erosion that threaten archeological resources would be stabilized.

Circulation

New pedestrian connections would link the earthwork complexes and better interpret overland and waterway routes that may have been used by the Hopewell people.

- The park would work with Ross County Park District in their efforts to establish a greenway trail system to link the earthwork complexes by adding a trail on the north and main forks of Paint Creek and the Scioto River. The park would add trail connections, bicycle racks, and directional signs within park land.[4-4]

4-2 *GMP,* p 41

4-3 Sarah Sherwood and Tristram Kidder, The DaVincis of Dirt: Geoarchaeological perspectives on Native American mound building in the Mississippian River Basin. *Journal of Anthropological Archaeology 30* (2011) 69-87

4-4 *GMP*, p 24

- The park would work with Ross County Park District in their efforts to establish bike paths along roads and abandoned railways to link the earthwork complexes, and to link community, county, state, and federal park, and recreation areas to better serve local residents and visitors.[4-5]

    - Mound City Group and Hopewell Mound Group would be connected with a bike path along state road 104 to the Tri-County Triangle Trail, or a route through the Veterans Affairs Medical Center and Pleasant Valley Wildlife Area to the Tri-County Triangle Trail.[4-6]

    - The relationship of Mound City Group to Hopeton Earthworks would be depicted by adding a new bridge across the Scioto River. With assistance from adjacent land owners, a new trail would connect the two park units.

- The park would coordinate with Ross County Park District, City of Chillicothe, and Ohio Department of Natural Resources to locate, design, and construct canoe launches and access trails at each earthwork complex.[4-7]

- The park would coordinate with Chillicothe Transit Company to establish a bus route system with scheduled bus service to each earthwork complex.[4-8]

<u>Vegetation</u>

Vegetation types and management techniques would be used the protect the archeological landscape.

- Portions of the archeological landscape currently cultivated would be converted to low maintenance vegetation. Agricultural cultivation has degraded archeological features over time, leaving many features indiscernible.

- Burning would be allowed as a vegetation management tool after sufficient research is completed to demonstrate that archeological resources or archeological research including geophysical surveys would not be negatively impacted.

- Any machinery used for landscape management would be tested and evaluated to ensure that maintenance practices protect archeological features.

- Vegetation within the earthwork complexes and on archeological features would be low and periodically mown. Tall grasses and herbaceous vegetation create habitat for destructive burrowing animals such as groundhogs, and make it difficult to monitor archeological landscapes for the presence of animals. Large-scale geophysical survey instruments also perform better in areas with low vegetation.

4-5 *GMP,* p 24
4-6 *GMP,* p 26
4-7 *GMP,* p 26
4-8 *GMP,* p 26

Mound City Group

Mound City Group encompasses 25-plus mounds, borrow pits, and an earthen wall, set above the Scioto River. This earthwork complex is the primary visitor and administrative / maintenance area for Hopewell Culture NHP. Mound City Group is significant for its numerous ceremonial and burial mounds, and as the only fully reconstructed Hopewellian earthwork complex.

Two treatment approaches were considered for Mound City Group, preservation and rehabilitation. Both approaches preserve the reconstructed archeological features, introduce management techniques to better delineate the spaces and forms of the earthwork complexes, and improve visitor experience.

Action Alternative 1 follows a preservation approach using vegetation management to delineate archeological features.

Rehabilitation is the treatment approach for Alternative 2. This approach uses vegetation management as a basis for depicting archeological features and spaces to convey the scale and massing of the earthwork complex. Markings would be allowed as an additional method, using rock cobble, soil, or distinct vegetation types to depict specific archeological features.

Both treatment approaches would preserve the reconstructed mounds, earthen wall, and borrow pits. Alternative 2 would repair the extra-mural mounds and preserve the northeast borrow pit.

Mound City Group
No Action Alternative

The no action alternative provides a basis for comparison with the action alternatives. Under the no action alternative, the present level of use, management, interpretation, maintenance and operations would continue. The no action alternative would include actions identified in the GMP. The no action alternative for the Mound City Group would include the following actions.

- The North Forty would be managed as a limited access zone. The area north of the earthwork complex and along the Scioto River would be managed as a natural resource zone. The area within the earthwork complex would be managed as a pedestrian zone. The area south of the earthwork complex would be managed as a combination of development and education zones. The existing visitor center, administration/maintenance area, and shelter would remain.[4-9]

- The nature trail around the perimeter of the earthwork would remain to enable visitors to explore and experience the resources, views, and stories at the earthwork complex. An overlook at the

4-9 The GMP identifies six management zones used at the park units. Limited Access Zones are primarily for research and eduction, limiting visitation and preserving archeological resources. Natural Resource Zones restore and maintain biological diversity, while allowing for trails and interpretive overlooks/waysides. Pedestrian zones are archeological areas open to the public to walk among and interpret the earthwork complexes, with rangers present. Development Zones provide facilities for visitor use, education, orientation, and management functions. Educational Subzone (Development Zone) allows outdoor classrooms and specialized educational activities to assist in resource interpretation. Special Use Subzone (Development Zone) accommodates American Indian activities and events.

Scioto River and other wayside exhibits and other interpretive media would address interpretive themes.

- Access for visitors would be via motorized vehicles, bicycle, and foot via State Highway 104.

- The earthwork complexes would continue to be managed as mown lawn with a woodland edge. The North Forty would continue to be managed as a hay field.

Mound City Group
Common to All Action Alternatives

Several treatment recommendations are common to the action alternatives for Mound City Group.

Spatial Organization/Topography/Views
The spatial arrangement of the earthwork complex would be emphasized to depict the mass and scale of the earthwork complex and improve visitor's understanding.

- Hazardous trees and woody vegetation that impact the earthwork complex or the visitor's understanding of the spatial qualities of the earthwork complex and individual spaces would be removed. This include the vegetation impacting the northeast corner of the enclosure wall and Mound #1.

- The relationship of the earthwork complex to the river would be improved by thinning vegetation and opening up views between the earthwork complex and the river.

Land Use
The park would purchase areas within the authorized park unit boundary, plus additional adjacent or related properties necessary for the protection of earthwork complexes.[4-10]

- Parcels to link Mound City Group with Hopeton Earthworks.

Archeological Features
All extant below- and above- grade archeological features, and spaces with known or potential archeological scatter, would be preserved.

- Individual archeological features including mounds, earthen walls and borrow pits would be stabilized and repaired as needed, following standard best practices.

Circulation
The pedestrian circulation system would be improved by adding routes that assist in defining the spatial qualities of the earthwork complex.

- A universally accessible trail would be established around the outer perimeter of the earthen wall.

- The relationship of Mound City Group to Hopeton Earthworks would be depicted by adding a new bridge across the Scioto River, and a new trail to Hopeton Earthworks.

Vegetation
Vegetation that contributes to the character of the archeological landscape would be preserved. Vegetation would be managed to define the spatial organization of the earthwork complex, frame views, and screen adjacent development.

- Vegetation between the river and the earthwork complex would be thinned

4-10 *GMP*, p 41

and removed to open views. Woodland vegetation surrounding the earthwork complex and along the river bank would remain.

- Vegetative buffers to screen adjacent negative views and impacts would be added, specifically along the west and south property lines. Buildings and structures visible from the earthwork complex would be screened by vegetation.

Buildings and Structures

Mound City Group would continue to serve as the primary visitor and administrative / maintenance facility. Existing buildings and structures that assist in the visitor experience would be retained.

- Potentially historic features that assist in the visitor experience, i.e., CCC and WPA steps and walls, canal lock stones, entrance walls, and stone grill, would be retained and repaired. The historical significance of these features would be assessed.

Mound City Group
Action Alternative 1: Preserving Earthwork Complexes

The preservation treatment approach for Action Alternative 1 would repair and maintain extant archeological features; use vegetation types and management to delineate archeological features and spaces; and retain non-contributing features that do not impact the visitor's ability to interpret the archeological features.

Spatial Organization/Topography/Views

The forms and patterns of the archeological landscape would be revealed. The spatial qualities of the earthwork complex and the relationship to the earthwork complex and surrounding landscape would be depicted. The sense of scale and patterns left by the Hopewell would be revealed using simple, non-intrusive techniques that manage vegetation, circulation, and views.

- The three-dimensional form of the entire earthwork complex of earthen walls, mounds, and borrow pits would be strengthened by utilizing two distinct vegetation management techniques to reveal the forms and spaces of the earthwork complex.

Archeological Features

All extant below- and above-grade archeological features would be preserved, as would spaces with known or potential archeological scatter.

- Archeological features would be maintained as low, mown vegetation. Vegetation would be the primary method used to delineate archeological features. Vegetation outside the earthwork complex would be managed as woodland.

Circulation

The existing vehicular circulation system would remain. The pedestrian circulation system would be improved by adding routes that assist in defining the spatial qualities of the earthwork complex.

Vegetation

Vegetation would be the primary method used to delineate archeological features.

- The reconstructed mounds (1-14, 16-23, X1 and X2) would be depicted with a low mown vegetation.

- The reconstructed earthen wall would be depicted with a low mown vegetation.

- The reconstructed borrow pits (7) would be depicted with low mown vegetation.

- The spaces within the earthen walls would be depicted with a low mown vegetation.

- The non-extant mounds (24 and 25) would be depicted with a taller mown vegetation.

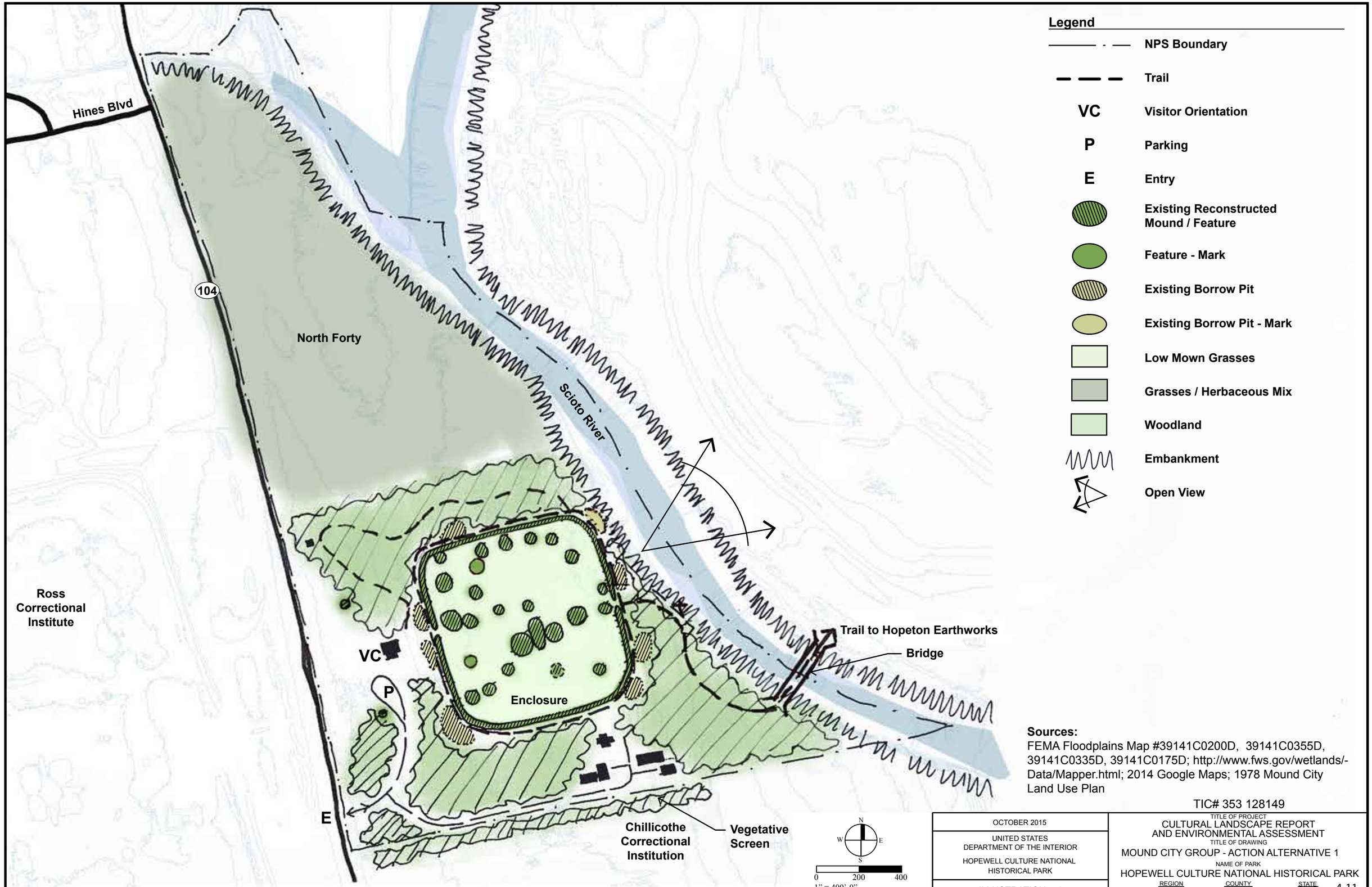
- The northeast borrow pit would be depicted with a taller mown vegetation.

Buildings and Structures

Mound City Group would continue to serve as the primary visitor, administrative and maintenance facility. The existing buildings and structures would remain for these uses. New additions would be located in areas outside the earthwork complex, and in areas that do not impact archeological scatter.

- Non-contributing features that provide visitor amenities and assist in interpretation, e.g. Mission 66-era visitor center and the wood frame shelter at the Ohio Erie canal lock stones, would be repaired.

- Curatorial and educational spaces would be expanded in areas noted for administrative or maintenance uses.



Sources:
FEMA Floodplains Map #39141C0200D, 39141C0355D, 39141C0335D, 39141C0175D; http://www.fws.gov/wetlands/-Data/Mapper.html; 2014 Google Maps; 1978 Mound City Land Use Plan

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OCTOBER 2015	TITLE OF PROJECT: CULTURAL LANDSCAPE REPORT AND ENVIRONMENTAL ASSESSMENT
UNITED STATES DEPARTMENT OF THE INTERIOR HOPEWELL CULTURE NATIONAL HISTORICAL PARK	TITLE OF DRAWING: MOUND CITY GROUP - ACTION ALTERNATIVE 1 NAME OF PARK: HOPEWELL CULTURE NATIONAL HISTORICAL PARK
ILLUSTRATION 4-1	REGION: MIDWEST · COUNTY: ROSS · STATE: OHIO · 4-11

Mound City Group
Action Alternative 2 : Conserving and Revealing Earthwork Complexes

The rehabilitation treatment approach for Action Alternative 2 would rehabilitate or mark non-extant archeological features; repair and maintain extant archeological features and spaces; remove all non-contributing features; and relocate all visitor orientation off-site or to a location away from the earthwork complex.

Spatial Organization/Topography/Views

The forms and patterns of the archeological landscape would be revealed to depict the extent and form of the earthwork complex. All archeological features would be spatially depicted, revealing the three-dimensional form of the earthwork complex and surroundings through markings and vegetation.

- The mass, scale, and form of the earthwork complex would be depicted by rehabilitating or marking non-extant above-grade archeological features, e.g. earthen walls, mounds, borrow pits, and the spaces of the earthwork.

- Where discernible topographical relief occurs, only vegetation or non-permanent or earthen markings would be used to delineate archeological features.

- Non-contributing features would be removed from the earthwork complex and immediate surroundings. These include the visitor center, park administration and maintenance facility, parking, roads, and utilities. These features and facilities would be relocated to an off-site location or located on-site further from the earthwork complex.

Archeological Features

All extant below- and above-grade archeological features would be preserved, stabilized, and repaired as needed following best practices. Non-extant archeological features would be rehabilitated to depict their mass, form, and character, allowing them to be seen above-grade.

- The three-dimensional form of the earthwork complex would be spatially depicted by utilizing vegetation types or vegetation management techniques, non-permanent markings, or by rehabilitating archeological features using soil or other construction methods to depict their original size, scale, and form.

- Vegetation, non-permanent markings or earthen markings would be used for archeological features where discernible topographical relief occurs.

- Markings and/or rehabilitations would be based on the most recent magnetic surveys and / or archeological investigations. They would consist of a non-permanent material that differs from those of the original archeological features or reconstructions, to clarify the rehabilitation as contemporary. Potential markings and/or rehabilitations include the following.

    - Mounds X1 and X2 would be archeologically located.

    - Non-extant mound 24 and 25 would be marked and/or rehabilitated.

    - Northeast borrow pit would be preserved.

- Further archeological investigations, including magnetometry would be undertaken to identify currently unknown resources.

Circulation

Mound City Group would continue to serve as a primary visitor orientation facility. As a primary visitor orientation facility, some parking and vehicular circulation would be located off-site or in a less intrusive location on-site.

Portions of the existing pedestrian circulation system that define the spatial qualities of the earthwork complex would be retained. New routes would be added to assist in defining the spatial qualities of the earthwork complex. Access to the earthwork complex via the river would be improved to reflect this circulation route that existed at the time of the Hopewell.

- A new canoe / kayak access from the Scioto River into the earthwork complex would be added.

Vegetation

Archeological features would be maintained as low, mown vegetation. Vegetation outside the earthwork complex would be managed as tall or woody vegetation.

  - The reconstructed mounds (1-14, 16-23, X1 and X2) would be planted with a low mown vegetation.

  - The reconstructed earthen wall would be planted with a low mown vegetation.

  - The reconstructed borrow pits (7) would be planted with low mown vegetation.

  - The spaces within the earthen walls would be planted with a low mown vegetation.

  - The non-extant mounds (24 and 25) would be planted with a taller mown vegetation, or marked or rehabilitated.

  - The northeast borrow pit would be maintained with a shorter mown vegetation to assist with visibility.

  - Maintain the North Forty as a mix of native herbaceous species, mown 1 to 2 times per year.

Buildings and Structures

As a primary visitor orientation facility, a visitor center would be located in a nearby off-site location or in an area less intrusive to the earthwork complex. Administrative and maintenance facilities would be relocated to an off-site location or to a less intrusive location on-site.

- All non-contributing features would be removed from the earthwork complex.

  - Further investigations into the significance and integrity of the visitor center, parking area, sidewalk and associated features as a Mission 66 would be undertaken.

  - Resource management, administrative, and maintenance buildings would be relocated to a nearby off-site location.

  - The wood framed shelter at the canal lock stones would be removed.

- A new location for visitor orientation facilities in a nearby off-site location or in a less intrusive location on-site would be identified.

- Visitor amenities for orientation, visitor comfort, and circulation would continue to be provided.

Small Scale Features

Small scale features that are found to be non-contributing and do not serve an active role in interpretation of the earthwork complex would be removed.

- Some features that may be significant in their own right, but that are non-contributing to the archeological landscape and do not detract from archeological landscape, would be evaluated and retained.
    - WPA/CCC walls at the entrance would be retained and repaired.
    - WPA/CCC walls along the river walk would be retained and repaired.
    - WPA/CCC stone grill would be retained and repaired.
- Some features that may be significant in their own right, but that are non-contributing features to the archeological landscape and detract from the archeological landscape, including the would be evaluated and removed or relocated.

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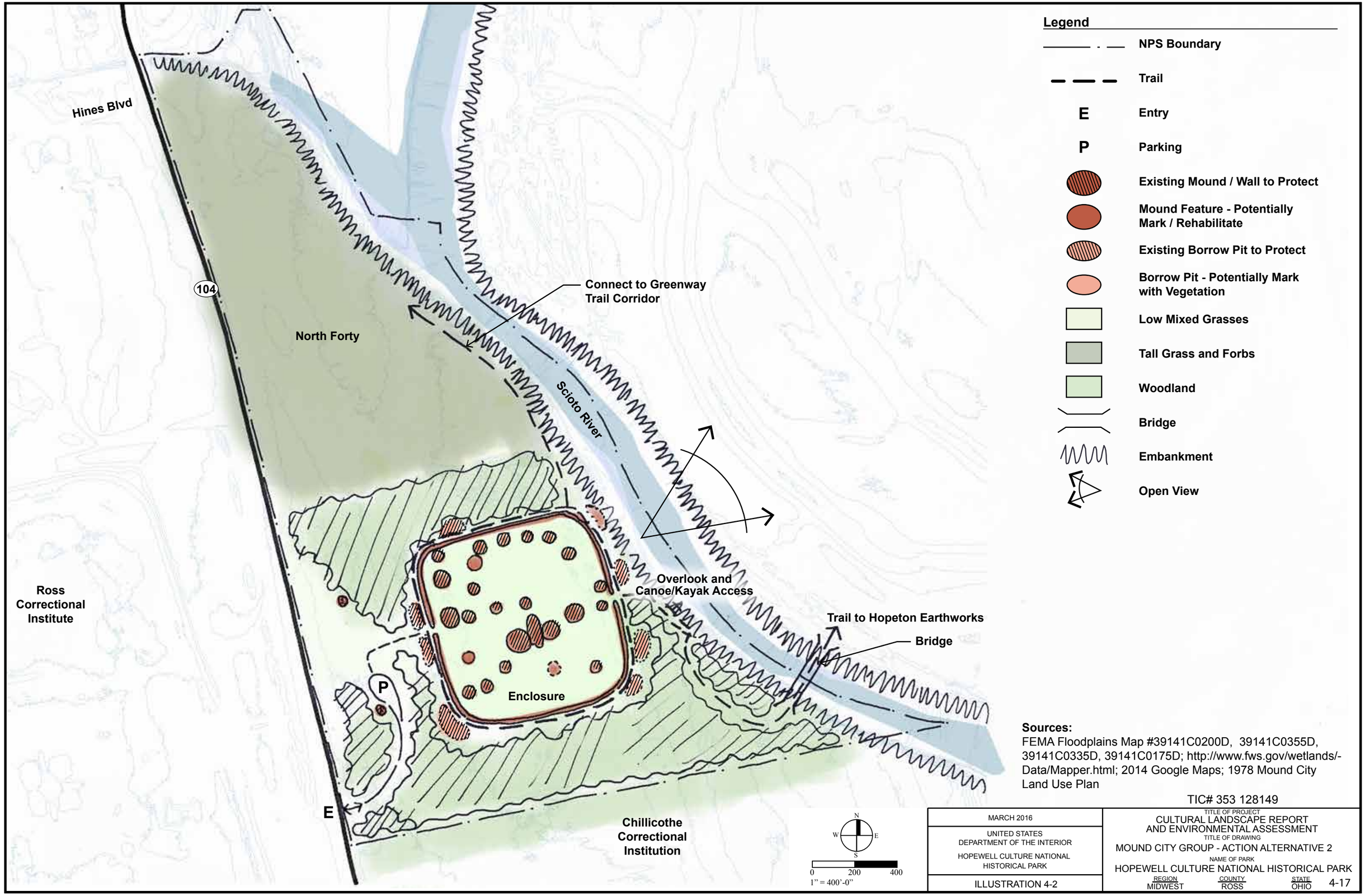

Sources:
FEMA Floodplains Map #39141C0200D, 39141C0355D, 39141C0335D, 39141C0175D; http://www.fws.gov/wetlands/-Data/Mapper.html; 2014 Google Maps; 1978 Mound City Land Use Plan

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UNITED STATES DEPARTMENT OF THE INTERIOR HOPEWELL CULTURE NATIONAL HISTORICAL PARK	TITLE OF DRAWING MOUND CITY GROUP - ACTION ALTERNATIVE 2 NAME OF PARK HOPEWELL CULTURE NATIONAL HISTORICAL PARK
ILLUSTRATION 4-2	REGION MIDWEST · COUNTY ROSS · STATE OHIO · 4-17

Hopeton Earthworks

Hopeton Earthworks is significant as one of the finest and best preserved examples of a monumental Hopewellian geometric enclosure. Hopeton Earthworks consists of a large conjoined circle and square, smaller circular enclosures, and parallel walls. The 292 acre park unit is situated within a bend of the Scioto River.

A treatment approach of preservation was considered for Hopeton Earthworks. Both action alternatives preserve the archeological features, introduce management techniques to better delineate the spaces and forms of the earthwork complex, and improve the visitor experience. Action Alternative 1 follows a preservation approach and focuses on maintaining existing features and spaces.

Action Alternative 2 preserves the archeological features and places an emphasis on changing vegetation management to depict spaces and non-extant above-grade archeological features and adding visitor access opportunities.

Hopeton Earthworks
No Action Alternative

The no action alternative provides a basis for comparison with the action alternatives. Under the no action alternative, the present level of use, management, interpretation, maintenance and operations would continue. The no action alternative would include actions identified in the GMP. The no action alternative for would include the following actions.

- The majority of the park unit would be designated a limited access zone and would not be open to the general public.[4-11]

- The primary use would be research and education. Limited development would allow visitors to learn about the park unit and view the earthwork complex from a distance.

- Small development zones would be located north of the parallel walls and east of Pit Road the former location of the Cryder farmstead and along Hopetown Road.

- A natural resource zone would buffer views between the earthwork complex and development to the south.

- Vehicular access, a small parking area, and a primitive picnic area would be provided in the southeast corner of the park unit.

- A trail would provide a link from the parking area to an overlook/wayside located southeast of the Square Enclosure.

- Vegetation would continue to be managed as a combination of crops, active and fallow hay fields, shrubland, native grassland, and woodland borders.

4-11 The GMP identifies six management zones used at the park units. Limited Access Zones are primarily for research and eduction, limiting visitation and preserving archeological resources. Natural Resource Zones restore and maintain biological diversity, while allowing for trails and interpretive overlooks/waysides. Pedestrian zones are archeological areas open to the public to walk among and interpret the earthwork complexes, with rangers present. Development Zones provide facilities for visitor use, education, orientation, and management functions. Educational Subzone (Development Zone) allows outdoor classrooms and specialized educational activities to assist in resource interpretation. Special Use Subzone (Development Zone) accommodates American Indian activities and events.

- A long-term goal would be to install a pedestrian bridge across the Scioto River to provide a more direct linkage between the Hopeton Earthworks and the Mound City Group.

Hopeton Earthworks
Common to All Action Alternatives

Spatial Organization/Topography/Views

The spatial arrangement of the earthwork complex would be emphasized to depict the mass and scale of the earthwork, and improve the visitor understanding.

- Hazardous trees and woody vegetation that impact the earthwork complex or diminish the visitor's understanding of the earthwork's spatial qualities would be removed. In particular the vegetation impacting Circle A would be removed.

- The visual and physical relationship of Hopeton Earthworks to Mound City Group would be improved by adding a trail and, where possible, orchestrating views between the two sites.

Land Use

Hopeton Earthworks would continue to serve as a site for archeological research and opportunities for visitor access and interpretation would be added.

The park would purchase areas within the authorized park unit boundary, plus additional adjacent or related properties necessary for the protection of earthwork complexes.[4-12]

Archeological Features

All extant below- and above-grade archeological features, and spaces with known or potential archeological scatter, would be preserved.

- Individual archeological features including mounds, earthen walls and borrow pits would be stabilized and repaired as needed, following standard best practices.

- Interpretive information explaining the relationship between the earthwork complex and the non-contributing features that impact views to and from the earthwork complex—specifically the quarry—would be provided to help describe with narrative and illustrations the spatial extents of the earthwork complex.

Circulation

Vehicular and pedestrian circulation would be improved by adding parking and trails.

- Vehicular circulation would be improved by adding a parking area.

- Pedestrian circulation would be improved by adding paths and overlooks to assist in defining the spatial qualities of the earthwork complex (locations differ in the alternatives).

- The relationship of Mound City Group to Hopeton Earthworks would be emphasized by providing a new bridge across the Scioto River, and a new trail to Mound City Group.

Vegetation

Vegetation that contributes to the character of the archeological landscape would be preserved. Vegetation would be managed to define the spatial organization of the earthwork complex, frame views, and screen adjacent development.

- Low, mown vegetation would be maintained in the spaces of the earthwork complex to more clearly depict the mass and scale of the earthwork.

4-12 *GMP,* p 41

- Archeological features (mounds, earthen walls, borrow pits) would be maintained either as low mown vegetation or as tall/unmown to further differentiate their locations in the surrounding landscape.

- Hazardous trees and encroaching woody vegetation would be removed from archeological features unless they are helping to stabilize those features.

- Vegetation (fence row) between the Great Circle and Circle A would be removed.

- Vegetation that stabilizes steep slopes or screens views would be retained including vegetation along the stream banks of Dry Run; vegetation that screens views from the earthwork complex to the gravel quarry; and vegetation that screens views to the north and east from the earthwork complex.

Buildings and Structures
Building and structures that do not contribute to the significance of the archeological landscape and impact the archeological features would be removed.

- The quarry access road that extends over the Square Enclosure would be removed.

- Utility lines and poles adjacent to the quarry access road that extends over the Square Enclosure would be removed.

Hopeton Earthworks
Action Alternative 1: Preserving Earthwork Complexes
This alternative would preserve the earthwork complex by preserving extant below- and above-grade archeological features, increase the legibility and visibility of the earthwork complex by delineating the archeological features, and improve the visitor experience by adding a parking area, trails, and overlook.

Spatial Organization/Topography/Views
The three-dimensional form of the earthwork complex of earthen walls and mounds would be spatially depicted by utilizing three distinct vegetation types — low grasses, higher grasses / herbaceous, and woodland — to reveal the form and spaces of the earthwork complex.

Archeological Features
Vegetation would be the primary method used to delineate archeological features. Vegetation outside the earthwork complex would be managed as tall grasses or a mix of grasses and forbs vegetation. Vegetation inside the earthwork complex would be managed as low, mown vegetation. Archeological features would be maintained as low, mown vegetation.

Circulation
Vehicular and pedestrian circulation systems would be improved by adding visitor parking areas, and pedestrian routes that assist in defining the spatial qualities of the earthwork complex.

- The new parking area would be provided on Hopetown Road and a pedestrian bridge or ramp would be installed over Dry Run north of the new parking area.

- A trail would be established from the new parking area to an overlook east of Circles B and C, into and tracing the circumference of the Great Circle and the inside of the Square Enclosure, exiting at the southwest corner and continuing through the Circleville Terrace to return to the parking area.

Vegetation
Vegetation that contributes to the character of the archeological landscape would be preserved. Vegetation would be managed to define the spatial organization of the

earthwork complex, frame views, and screen adjacent development.

- Low, mown vegetation would be maintained in the spaces of the earthwork complex to more clearly depict the mass and scale of the earthwork.

- Archeological features (mounds, earthen walls, borrow pits) would be maintained either as low mown vegetation or as tall/unmown to further differentiate their locations in the surrounding landscape.

- Hazardous trees and encroaching woody vegetation would be removed from archeological features unless they are helping to stabilize those features.

- Vegetation (fence row) between the Great Circle and Circle A would be removed.

- Vegetation that stabilizes steep slopes or screens views would be retained including vegetation along the stream banks of Dry Run; vegetation that screens views from the earthwork complex to the gravel quarry; and vegetation that screens views to the north and east from the earthwork complex.

<u>Buildings and Structures</u>

Building and structures that do not contribute to the significance of the archeological landscape and impact the archeological features would be removed.

- The quarry access road that extends over the Square Enclosure would be removed.

- Utility lines and poles adjacent to the quarry access road that extends over the Square Enclosure would be removed.

Scioto River

Circle A

CSX Railroad

Overly Road

Overly Road

Great Circle

Circle B

Borrow Pits

River Road

A

Parallel Walls

Square Enclosure

Circle C

O

Vaughan Road

Borrow Pit

159

Gravel Quarry

Triangle Site

Pit Road

Borrow Pit

Historic Borrow Pit

R

P

159

Trail to Mound City Group

Hopetown Road

292

Dry Run

To Visitor's Center 5.7 miles

N

W

E

S

0 300 600

Legend

- NPS Boundary
- Road
- Trail
- P — Parking
- Existing Mound / Feature
- Mound / Feature - Potentially Mark / Rehabilitate
- Existing Borrow Pit
- Borrow Pit - Potentially Mark / Rehabilitate
- Low Mown Grasses
- Grasses / Herbaceous Mix
- Woodland
- Embankment
- Limits of low mown grasses
- A — Cryder Farmstead
- O — Overlook
- R — Barrier free pedestrian ramp or bridge over Dry Run

TIC# 353 128149

JULY 2015	TITLE OF PROJECT: CULTURAL LANDSCAPE REPORT AND ENVIRONMENTAL ASSESSMENT
UNITED STATES DEPARTMENT OF THE INTERIOR HOPEWELL CULTURE NATIONAL HISTORICAL PARK	TITLE OF DRAWING: HOPETON EARTHWORKS - ACTION ALTERNATIVE 1 NAME OF PARK: HOPEWELL CULTURE NATIONAL HISTORICAL PARK
ILLUSTRATION 4-3	REGION: MIDWEST; COUNTY: ROSS; STATE: OHIO; 4-23

Hopeton Earthworks
Action Alternative 2: Conserving and Revealing Earthwork Complexes

Action Alternative 2 would preserve the earthwork complex and all extant below- and above-grade archeological features. It would increase the legibility and visibility of the earthwork complex by better delineating the archeological features, and would improve the visitor experience by managing circulation, vegetation, and views. In addition, this alternative would remove non-contributing features.

Spatial Organization/Topography/Views

The forms and patterns of the archeological landscape would be revealed to depict the extent and form of the earthwork complex and all archeological features using assertive techniques.

- The three-dimensional form of the earthwork complex and surroundings would be spatially depicted through markings and vegetation.

- The mass, scale, and form of the earthwork complex would be delineated by marking non-extant above-grade archeological features, i.e., earthen walls, mounds, and borrow pits, and the spaces of the earthwork.

- The park would work with property owners to acquire property or easements for the land within the bend of the Scioto River surrounding the Hopeton Earthworks to enable holistic management of natural, cultural, and archeological resources at the park unit and provide expanded opportunities for visitor use.

Land Use

The park would work with property owners and local authorities to establish public ownership or easements for land between the earthwork complex and the Scioto River.

- In the long-term, the quarry operation would be discontinued and the landscape would be rehabilitated to native grasses and forbs and managed as a conservation area and buffer for the earthwork complex.

- In the long-term, agricultural use would be discontinued in locations where there is potential for archeological resources. The landscape would be rehabilitated to native grasses and forbs and managed as a conservation area and buffer for the earthwork complex.

Archeological Features

Non-extant archeological features would be rehabilitated to depict their mass, form and character, as documented by Squire and Davis in 1846, or based upon most recent archeological investigations.

- The three-dimensional form of the earthwork complex that have extant above-grade features would be spatially depicted by utilizing vegetation types or vegetation management techniques or non-permanent markings.

- Where no discernible topographical relief occurs, vegetation would be used to delineate features.

- Markings would utilize recent magnetic surveys to archeologically locate features.

Circulation

Visitor experience and understanding would be further improved by the following.

- Providing an access road and parking area on the north side of Dry Run—in the location of the former farm road.

- Providing trails that allow for understanding of the earthworks.

- Adding an interpretive wayside at the intersection of the Great Circle, Square Enclosure, and Parallel Walls.

- Improving the relationship of the earthwork complex to the river by creating an interconnected water route between all park units with new canoe / kayak access.

Vegetation

In addition to common actions, additional treatments under Alternative 2 include the following.

- Vegetative buffers would be added to screen negative views and impacts, specifically north of Circle A.

- Vegetation that impacts archeological features or visitor experience, would be removed including the following.

    - Fencerow vegetation west of the Great Circle.

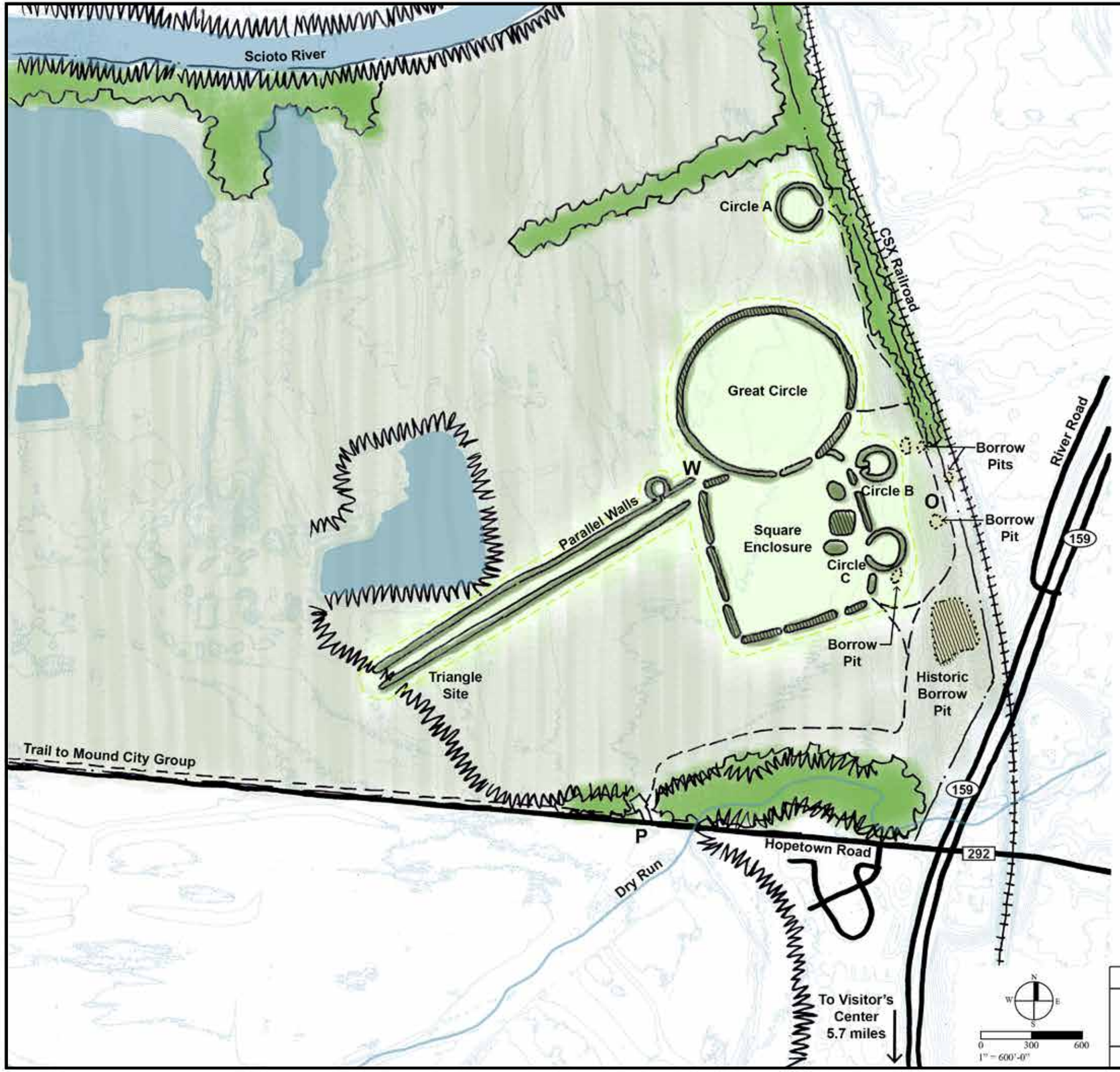
    - Selected fencerow vegetation east of the Great Circle.

Buildings and Structures

Buildings and structures that do not contribute to the significance of the archeological landscape and impact the integrity of the earthwork complex would be removed. The following would be implemented.

- The park would work with property owners to develop a long-term plan to eventually remove the buildings and structures that are impacting the earthwork complex including: the quarry operation buildings, structures, roads and utilities.

- Pit Road, Overly Road, quarry service routes and Vaughn Road would be removed.



Legend

- NPS Boundary
- Road
- Trail
- P — Parking
- Existing Feature to Protect and Mark with Vegetation
- Earthen Wall / Feature to Protect and Mark with Vegetation
- Historic Borrow Pit to Protect and Mark with Vegetation
- Borrow Pit to Protect and Mark with Vegetation
- Low Mixed Vegetation
- Tall Grasses and Forbs
- Woodland
- Embankment
- Limits of low mown grasses
- O — Overlook
- W — Wayside

TIC# 353 128149

MARCH 2016	TITLE OF PROJECT: CULTURAL LANDSCAPE REPORT AND ENVIRONMENTAL ASSESSMENT
UNITED STATES DEPARTMENT OF THE INTERIOR HOPEWELL CULTURE NATIONAL HISTORICAL PARK	TITLE OF DRAWING: HOPETON EARTHWORKS - ACTION ALTERNATIVE 2 NAME OF PARK: HOPEWELL CULTURE NATIONAL HISTORICAL PARK
ILLUSTRATION 4-4	REGION: MIDWEST; COUNTY: ROSS; STATE: OHIO

Hopewell Mound Group

Hopewell Mound Group is one of the most important earthwork complexes that represent Hopewell culture. This earthwork is the "type-site" for the Hopewell culture. Excavations that took place at this location established the precedent for classification of Hopewell – the name that has come to signify a diverse range of pre-Columbian eastern woodland American Indians who shared a common mound-building culture.

Hopewell Mound Group is a 127 acre earthwork complex, consisting of two monumental conjoined earthwork enclosures, the Great Enclosure, in the general shape of a parallelogram, and the other in the shape of a square, several smaller enclosures, approximately 30 to 40 mounds, and associated ditches.

Two treatment approaches were considered for Hopewell Mound Group, preservation and rehabilitation. Both preserve the archeological features, introduce management techniques to better delineate the spaces and forms of the earthwork complex, and improve the visitor experience. Action Alternative 1 follows a preservation approach using vegetation management to delineate archeological features and spaces.

Rehabilitation is the treatment approach for Action Alternative 2. At Hopewell Mound Group, rehabilitation places an emphasis on vegetation management to depict spaces and non-extant above-grade archeological features while allowing for marking or rehabilitation of non-extant archeological features and removal of elements that impact archeological features.

Hopewell Mound Group
No Action Alternative

The no action alternative provides a basis for comparison with the action alternatives. Under the no action alternative, the present level of use, management, interpretation, maintenance, and operations would continue. As identified in the GMP, the no action alternative for the Hopewell Mound Group would include the following actions.

- The majority of the park unit would be a designated pedestrian zone. The north and west portions of the park unit beyond the earthwork complex would be managed as a natural resource zone. A development zone would be provided at the southeast corner of the property for a parking area and minimal visitor facilities including a comfort station, picnic shelter and interpretive wayside. [4-13]

- Trails of varying degrees of difficulty would enable visitors to explore and experience the resources, views, and stories at the park unit. Wayside exhibits and other interpretive media would address interpretive themes. Overlooks along trails would offer views of the earthwork complex.

4-13 The GMP identifies six management zones used at the park units. Limited Access Zones are primarily for research and eduction, limiting visitation and preserving archeological resources. Natural Resource Zones restore and maintain biological diversity, while allowing for trails and interpretive overlooks/waysides. Pedestrian zones are archeological areas open to the public to walk among and interpret the earthwork complexes, with rangers present. Development Zones provide facilities for visitor use, education, orientation, and management functions. Educational Subzone (Development Zone) allows outdoor classrooms and specialized educational activities to assist in resource interpretation. Special Use Subzone (Development Zone) accommodates American Indian activities and events.

- Access for visitors would be via motorized vehicles, bicycle, and foot via Sulphur Lick Road and the adjacent rails to trails route located at the south side of the park unit.

- A method of outlining the earthwork complex on the ground with a non-permanent material to make them more visible would be used.

- The park and county would work cooperatively to study alternatives for road and traffic management that would avoid future negative impacts on the archeological resources and local residents.

Hopewell Mound Group

Common to All Action Alternatives

Spatial Organization/Topography/Views

The spatial arrangement of the earthwork complex would be emphasized to depict the mass and scale of the earthwork, and improve the visitor's understanding.

- Hazardous trees and woody vegetation that impact the earthwork complex or diminish the visitor's understanding of the earthwork's spatial qualities would be removed. In particular vegetation along the eastern portion of the north wall of the Great Enclosure and vegetation along the alignment of the south portion of the west wall of the Great Enclosure would be removed.

Archeological Features

All extant below- and above-grade archeological features, as well as spaces with known or potential archeological scatter would be preserved.

- Individual archeological features including mounds, earthen walls and borrow pits would be stabilized and repaired as needed, following standard best practices.

- Interpretive information explaining the earthwork complex would be provided to clarify the spatial extents of the earthwork complex.

Vegetation

Vegetation that contributes to the character of the archeological landscape would be preserved. Vegetation would be managed to define the spatial organization of the earthwork complex, frame views, and screen adjacent development.

- Low, mown vegetation would be maintained in the spaces of the earthwork complex to more clearly depict the mass and scale of the earthwork.

- Archeological features (mounds, earthen walls, borrow pits) would be maintained either as low mown vegetation or as tall/unmown to further differentiate their locations in the surrounding landscape.

- Hazardous trees and encroaching woody vegetation would be removed from archeological features unless they assist in stabilizing those features.

- Vegetation that stabilizes steep slopes or protects earthwork complex from impacts would be retained including vegetation along the west portion of the north wall of the Great Enclosure and vegetation along the south wall of the Great Enclosure.

- Vegetative buffers would be added to screen negative views and impacts, specifically at the southwest portion of the property on the west side of the west wall of the Great Enclosure.

Hopewell Mound Group
Action Alternative 1: Preserving Earthwork Complexes

This alternative would preserve the earthwork complex by preserving extant below- and above-grade archeological features, increase the legibility and visibility of the earthwork complex by delineating the archeological features, and improve the visitor experience by managing circulation, vegetation, and views.

Spatial Organization/Topography/Views

The three-dimensional form of the earthwork complex of earthen walls and mounds would be spatially depicted by utilizing three distinct vegetation types to reveal the form and spaces of the earthwork complex.

Archeological Features

Vegetation would be the primary method used to delineate archeological features. Vegetation outside the earthwork complex would be managed as tall or woody vegetation. Vegetation inside the earthwork complex would be managed as low mown vegetation. Vegetation on archeological features would be maintained as low, mown vegetation.

- Interpretive information explaining the relationship between the earthwork complex and the non-contributing features that impact the earthwork complex would be provided to help clarify the spatial extents of the earthwork complex—specifically addressing Sulphur Lick Road, the transmission towers and overhead lines, and the residential property on the south side of Sulphur Lick Road.

Circulation

The existing vehicular and bicycle circulation system would remain.

The pedestrian circulation would be improved by adding routes to assist in defining the spatial qualities of the earthwork complex, and to provide access to the North Fork Paint Creek.

- A trail from the visitor parking area to the North Fork Paint Creek would be established.
- The existing overlook at the northeast corner of the Great Enclosure would be retained.
- The existing overlook on the east side of the Square Enclosure would be repaired to improve orientation to the earthwork complex.
- A path parallel to the north wall of the Great Enclosure would be added.
- The path at the Square Enclosure would be relocated to trace the inside of the earthwork walls.
- A path would be established through the inside of the Great Enclosure passing near the most visible features.

Vegetation

Vegetation that contributes to the character of the archeological landscape would be preserved. Vegetation would be managed to define the spatial organization of the earthwork complex, frame views, and screen adjacent development.

- Low, mown vegetation would be maintained in the spaces of the earthwork complex to more clearly depict the mass and scale of the earthwork.

- Archeological features (mounds, earthen walls, borrow pits) would be maintained either as low mown vegetation or as tall/ unmown to further differentiate their locations in the surrounding landscape.

- Hazardous trees and encroaching woody vegetation would be removed from archeological features unless they assist in stabilizing those features.

- Vegetation that stabilizes steep slopes or protects earthwork complex from impacts would be retained including vegetation along the west portion of the north wall of the Great Enclosure and vegetation along the south wall of the Great Enclosure.

- Vegetative buffers would be added to screen negative views and impacts, specifically at the southwest portion of the property on the west side of the west wall of the Great Enclosure.

Buildings and Structures

Non-contributing features that assist in the interpretation of the earthwork complex would be retained – specifically the Hopewell barn which could be interpreted as an element present during the time the earthwork was initially investigated.

Legend

- NPS Boundary
- Road
- Trail
- V — Visitor Orientation
- P — Parking
- Existing Mound / Feature
- Feature - Potentially Mark / Rehabilitate
- Existing Borrow Pit / Ditch
- Borrow Pit / Ditch - Potentially Mark / Rehabilitate
- Low Mown Grasses
- Grasses / Herbaceous Mix
- Woodland
- Embankment
- Limits of low mown grasses
- A — Hopewell Barn
- O — Overlook
- OE OE OE — Overhead power lines

TIC# 353 128149

JULY 2015	TITLE OF PROJECT: CULTURAL LANDSCAPE REPORT AND ENVIRONMENTAL ASSESSMENT
UNITED STATES DEPARTMENT OF THE INTERIOR HOPEWELL CULTURE NATIONAL HISTORICAL PARK	TITLE OF DRAWING: HOPEWELL MOUND GROUP - ACTION ALTERNATIVE 1 NAME OF PARK: HOPEWELL CULTURE NATIONAL HISTORICAL PARK
ILLUSTRATION 4-5	REGION: MIDWEST · COUNTY: ROSS · STATE: OHIO · 4-33

Hopewell Mound Group
Alternative 2: Conserving and Revealing Earthwork Complexes

Action Alternative 2 would preserve the earthwork complex and all extant below- and above-grade archeological features. This alternative would increase the legibility and visibility of the earthwork complex by better delineating the archeological features. The visitor experience would be improved by adding circulation route, removing select vegetation, and opening views. In addition, this alternative would remove non-contributing features.

Spatial Organization/Topography/Views

The forms and patterns of the archeological landscape would be revealed to depict the extent and form of the earthwork complex. All archeological features would be depicted using assertive techniques.

- The three-dimensional form of the earthwork complex and surroundings would be spatially depicted through markings and vegetation.

- The mass, scale and form of the earthwork complex would be delineated by rehabilitating or marking non-extant above-grade archeological features, i.e., earthen walls, mounds, and borrow pits, and the spaces of the earthwork.

Land Use

Hopewell Mound Group would continue to serve as a visitor destination with interpretive areas.

- The park would work with property owners and local authorities to remove impacting land uses from the earthwork complex and rehabilitate the landscape as part of the interpretive experience.

- The park would work the Ohio Department of Transportation (ODOT) and local community to develop a long-term plan for the removal of portions of Sulphur Lick Road and trail that impacts the earthwork complex.

Archeological Features

Archeological features would be preserved. Archeological features that lack above-ground visible aspects would be marked to depict their mass, form and character, as documented by Shetrone between 1922 and1925, and using the most recent archeological investigations.

- The three-dimensional form of the earthwork complex that have extant above-grade features would be spatially depicted by utilizing vegetation types or vegetation management techniques, or non-permanent markings.

- Where no discernible topographical relief occurs, vegetation would be used to delineate features.

- Markings would utilize the most recent archeological investigations and magnetic surveys to archeologically locate features.

- Magnetometry would be undertaken at the outlying areas to determine if additional resources are present.

Circulation

Vehicular and bicycle circulation would be altered by the removal of Sulphur Lick Road and the rails to trails route from locations where they are impacting the earthwork complex. The existing parking area would remain, and be accessed only from the east. The existing pedestrian circulation system would be improved by adding routes to assist in defining the spatial qualities of the earthwork complex. Access to the earthwork complex via the river would be improved to reflect this circulation route that existed at the time of the Hopewell.

- The park would work with The Ohio Department of Transportation (ODOT) and local community to remove portions of Sulphur Lick Road and the trail that impacts the earthwork complex. This would occur only when local access needs have been addressed.

- Trails would be established parallel to the enclosure walls including inside the four Square Enclosure walls; outside the north wall and north portion of the east wall of the Square Enclosure; inside the south wall and south portions of the east and west walls of the Great Enclosure; outside the north wall, north portion of the east wall, and west wall of the Great Enclosure.

- The existing overlook and viewshed at the northeast corner of the Great Enclosure would be retained and the wayside updated.

- A new overlook would be added to provide an overview of the earthwork complex in a location near the north wall of the Great Enclosure to the west of the existing overlook .

- The existing overlook on the east side of the Square Enclosure would be updated to provide improved orientation to the earthwork complex.

- The relationship of the earthwork complex to the river would be improved by creating pedestrian and bike links to the North Fork Paint Creek.

- The rails to trails path would be relocated south of the south wall of the Great Enclosure.

- A path would be extended from the southwest corner of the Great Enclosure to the North Fork Paint Creek.

- A new canoe / kayak access would be added in a location determined appropriate by park staff.

Vegetation

In locations where non-contributing features are removed, add vegetation consistent with the surrounding area.

Buildings and Structures

Buildings and structures that do not contribute to the significance of the archeological landscape and impact the integrity of the earthwork complex would be removed.

- The park would work with property owners to develop a long-term plan to eventually remove privately-owned buildings that impact the earthwork complex.

- The park would work with utility companies to develop a long-term plan to eventually mitigate the effects of the high-voltage transmission towers and overhead lines that are impacting the earthwork complex. Possible choices for mitigation could include:

- Transmission towers and lines would be relocated to a new location beyond the viewshed of the earthwork complex (off NPS property).

- Transmission towers and high voltage lines would be relocated within NPS property to a location where they do not impact the earthwork complex.

- Transmission towers would be replaced with substations outside the earthwork complex and high voltage lines would be relocated underground.

- Existing lattice towers would be replaced with less intrusive towers.

- The existing overlook would be moved to minimize the visual impact of the towers by orienting views to the north/south rather than east/west.

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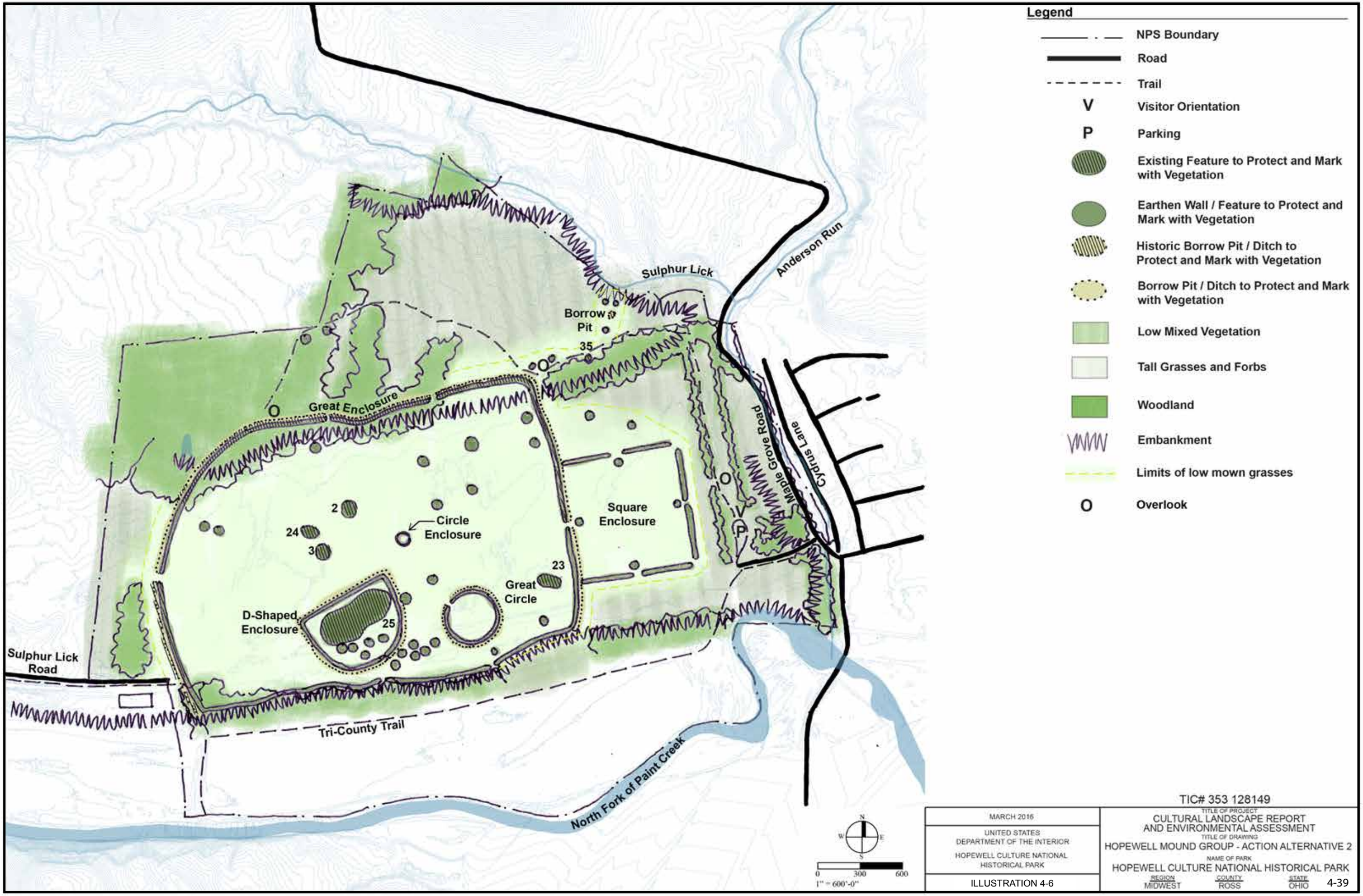

TIC# 353 128149

MARCH 2016	TITLE OF PROJECT: CULTURAL LANDSCAPE REPORT AND ENVIRONMENTAL ASSESSMENT
UNITED STATES DEPARTMENT OF THE INTERIOR HOPEWELL CULTURE NATIONAL HISTORICAL PARK	TITLE OF DRAWING: HOPEWELL MOUND GROUP - ACTION ALTERNATIVE 2 NAME OF PARK: HOPEWELL CULTURE NATIONAL HISTORICAL PARK
ILLUSTRATION 4-6	REGION: MIDWEST; COUNTY: ROSS; STATE: OHIO

Seip Earthworks

Seip Earthworks is significant for possessing the only existing example of the rare class of extremely large Hopewell burial mounds, known as a tripartite earthwork.

Only the reconstructed Seip-Pricer Mound and original Seip-Conjoined mound remain visible today. Seip Earthworks is composed of large archeological features, including earthen walls, mounds, and borrow pits, adjacent to Paint Creek. Several non-contributing features are adjacent to, or on top of the archaeological features including buildings, a picnic area, and roads.

Two treatment approaches were considered for Seip Earthworks, preservation and rehabilitation. Both approaches protect the archeological features, introduce management techniques to better delineate the spaces and forms of the earthwork complexes, and improve visitor experience.

Action Alternative 1 follows a preservation approach using vegetation management to delineate archeological features.

Rehabilitation is the treatment approach for Alternative 2. This approach uses vegetation management as a basis for depicting archeological features and spaces to convey the grand scale and massing of the earthwork complex. As an additional method, markings would be allowed as part of this approach, using new materials to depict specific archeological features.

Both treatment approaches would preserve the Seip-Pricer Mound and the original Seip-Conjoined Mound. Alternative 2 would repair the portion of reconstructed earthen wall to be archeologically accurate.

Seip Earthworks
No Action Alternative

The no action alternative provides a basis for comparison with the action alternatives. Under the no action alternative, the present level of use, management, interpretation, maintenance and operations would continue. The no action alternative would include the following actions.

- The majority of the park unit would be a designated pedestrian zone. The west and south portions, along Paint Creek, would be managed as a natural resource zone. A development zone would be provided at the north side of the property, adjacent to US 50 for parking area improvements.[4-14]

- Mown trails would enable visitors to explore and experience the resources, views, and stories at Seip Earthworks. Wayside exhibits and other interpretive media would address interpretive themes.

- Access for visitors would be via motorized vehicles, bicycle, and foot, from US 50.

- The earthwork complex would continue to be managed with a variety of vegetation management strategies. The area previously owned by the state, that includes Seip-Pricer Mound, would

4-14 The GMP identifies six management zones used at the park units. Limited Access Zones are primarily for research and eduction, limiting visitation and preserving archeological resources. Natural Resource Zones restore and maintain biological diversity, while allowing for trails and interpretive overlooks/waysides. Pedestrian zones are archeological areas open to the public to walk among and interpret the earthwork complexes, with rangers present. Development Zones provide facilities for visitor use, education, orientation, and management functions. Educational Subzone (Development Zone) allows outdoor classrooms and specialized educational activities to assist in resource interpretation. Special Use Subzone (Development Zone) accommodates American Indian activities and events.

continue to be managed as mown lawn. The large circle would be managed as grasses and forbs and mown monthly. The remainder of the park unit would be planted as timothy and orchard grass and mown every other year.

Seip Earthworks
Common to All Action Alternatives

Spatial Organization/Topography/Views
The spatial arrangement of the earthwork complex would be emphasized to depict the mass and scale of the earthwork complex and to improve visitor's understanding.

- Hazardous trees and woody vegetation that impact the archeological features or diminish the visitor's understanding of the spatial qualities of the earthwork complex and individual spaces would be removed.
    - Fence row vegetation around the perimeter of the previously state-owned property would be removed. Trees on the west half of the Small Circle.
- The relationship of the earthwork complex to Paint Creek would be improved by thinning vegetation to open views between the earthwork complex and the river.

Land Use
The park would purchase areas within the authorized park unit boundary, plus additional adjacent or related properties necessary for the protection of earthwork complexes.[4-15] Three in-holdings would be purchased.

- The parcel containing the westernmost portion of the Small Circle.
- The parcel on US 50, currently a private residence.
- The eastern parcel of the park unit with several non-extant mounds, borrow pits, and potential archeological scatter.

Archeological Features
All extant below- and above- grade archeological features, and spaces with known or potential archeological scatter would be preserved.

Individual archeological features including mounds, earthen walls and borrow pits would be stabilized and repaired as needed, following standard best practices.

Vegetation
Vegetation that contributes to the character of the archeological landscape would be preserved. Vegetation would be managed to define the spatial organization of the earthwork complex, frame views, and screen adjacent development.

- A mix of grasses with some herbaceous species would be maintained as a consistent groundcover (mown one to two times per year) in areas surrounding earthwork complex and in areas of archeological scatter.
- Riparian vegetation would be maintained along the river bank.
- The relationship of the earthwork complex to the North Fork Paint Creek would be clarified by thinning vegetation and opening select views.
- Vegetative buffers would be added to screen negative views and impacts, specifically to the east to screen the Paint Valley High School and north to screen the existing road.

4-15 *GMP*, p 41

- Hazardous trees and woody vegetation that impact contributing archeological features or diminish the earthwork's spatial qualities would be selectively removed. Specifically, the fence row vegetation around the perimeter of the previously state-owned property, and the trees at the west half of the Small Circle would be removed.

Buildings and Structures
Seip Earthworks would serve as a visitor orientation facility.

- The historical significance of the Blackstone House and outbuildings would be assessed. It's potential for adaptive reuse as a structure for park use would be assessed.

- The historical significance of the fish camp buildings and site would be assessed.

Seip Earthworks
Action Alternative 1: Preserving Earthwork Complexes
This action alternative would build upon the actions noted in the GMP. The preservation treatment approach for Action Alternative 1 repairs and maintains extant archeological features; uses vegetation types and management to delineate archeological features and spaces; and retains non-contributing features that do not impact the visitor's ability to interpret the archeological features.

Spatial Organization/Topography/Views
The forms and patterns of the archeological landscape would be revealed. The spatial qualities of the earthwork complex and the relationship of the earthwork complex to the surrounding landscape would be depicted. The sense of scale, patterns, and organization at Seip Earthworks would be revealed through management of vegetation and views. The two-dimensional form of the earthwork complex of earthen walls, mounds, and borrow pits by utilizing two or three distinct vegetation types to reveal the form and spaces of the earthwork complex.

Archeological Features
All extant below- and above-grade archeological features would be preserved, as would spaces with known or potential archeological scatter.

- Vegetation would be the primary method used to delineate archeological features.

- Vegetation outside the earthwork complex would be managed as tall vegetation.

- Vegetation inside the spaces of the earthwork complex would be managed as low, mown vegetation.

- Archeological features would be maintained as either low, mown vegetation or taller, mown vegetation.

Circulation
The existing circulation system would be modified to create one primary vehicular access point from the highway, and new pedestrian routes would be added to connect archeological features.

Visitor orientation would be provided in the rehabilitated Blackstone House with a new parking area, drop-off, and trail access. An additional orientation point may be offered off-site (Bainbridge or another location).

- The existing parking area would be removed, and one vehicular access point to US 50 would be provided.

- Dill Road would be removed.

- Pedestrian circulation routes would be added to reveal the spatial qualities of the earthwork complex.
    - A trail along the interior of the Large Circle would be added.
    - A trail to the Small Circle and Large Square would be added.
    - A trail connection to the Paint Creek overlook / canoe access would be added.
    - A trail connection from the parking area to the rehabilitated Blackstone House would be added.

Vegetation

Archeological features would be maintained as low, mown vegetation. Vegetation outside the earthwork complex would be managed as tall native grassland vegetation.

- Low/mown vegetation would be maintained in spaces of earthwork complex including the entire interior of the Small Circle, Large Circle, Large Square, and in the areas of the borrow pits.
- Archeological features (mounds, earthen walls, borrow pits) would be maintained either as low mown vegetation or as tall/unmown to further differentiate their locations in the surrounding landscape. The reconstructed Seip-Pricer Mound would be planted with a low mown vegetation.
    - The reconstructed earthen wall would be planted with a low mown vegetation.
    - The extant Seip-Conjoined Mound would be planted with a taller mown vegetation.
    - The non-extant mounds, earthen walls, and borrow pits would be planted with a taller mown vegetation.

Buildings and Structures

Existing buildings and structures consist of the Blackstone House, fish camp buildings, and the picnic shelter and outbuildings. This alternative would allow non-contributing buildings to remain if they assist in interpretation and improve the visitor experience.

- The Blackstone House and outbuildings would be further researched, and if deemed appropriate, would be rehabilitated for use as a visitor orientation facility.
- A view to the earthwork complex would be provided at the rehabilitated Blackstone House.
- Non-contributing features that do not assist in the interpretation of the earthwork complex, specifically the fish camp buildings (if deemed non-historic) would be removed.
- The picnic shelter would be repaired for park use.

Small Scale Features

Existing small scale features consist of signs, outdoor furniture, fences, and utilities. This alternative would allow non-contributing small scale features to remain if they assist in interpretation and improve the visitor experience.

- Park signage, including identification, wayfinding, regulatory, and waysides, would be replaced with low-profile and unobtrusive signs consistent with Park signage family.

- Outdoor furniture would be replaced to have consistent furnishings at all park units. Picnic tables, trash and recycling receptacles, and the accessible drinking fountain would be replaced.

- The wood deck at the Paint Creek overlook would be retained and repaired.

- The Blackstone House features, including fences, power lines, propane tank, and parking area bollards would be removed in conjunction with the Blackstone House rehabilitation.

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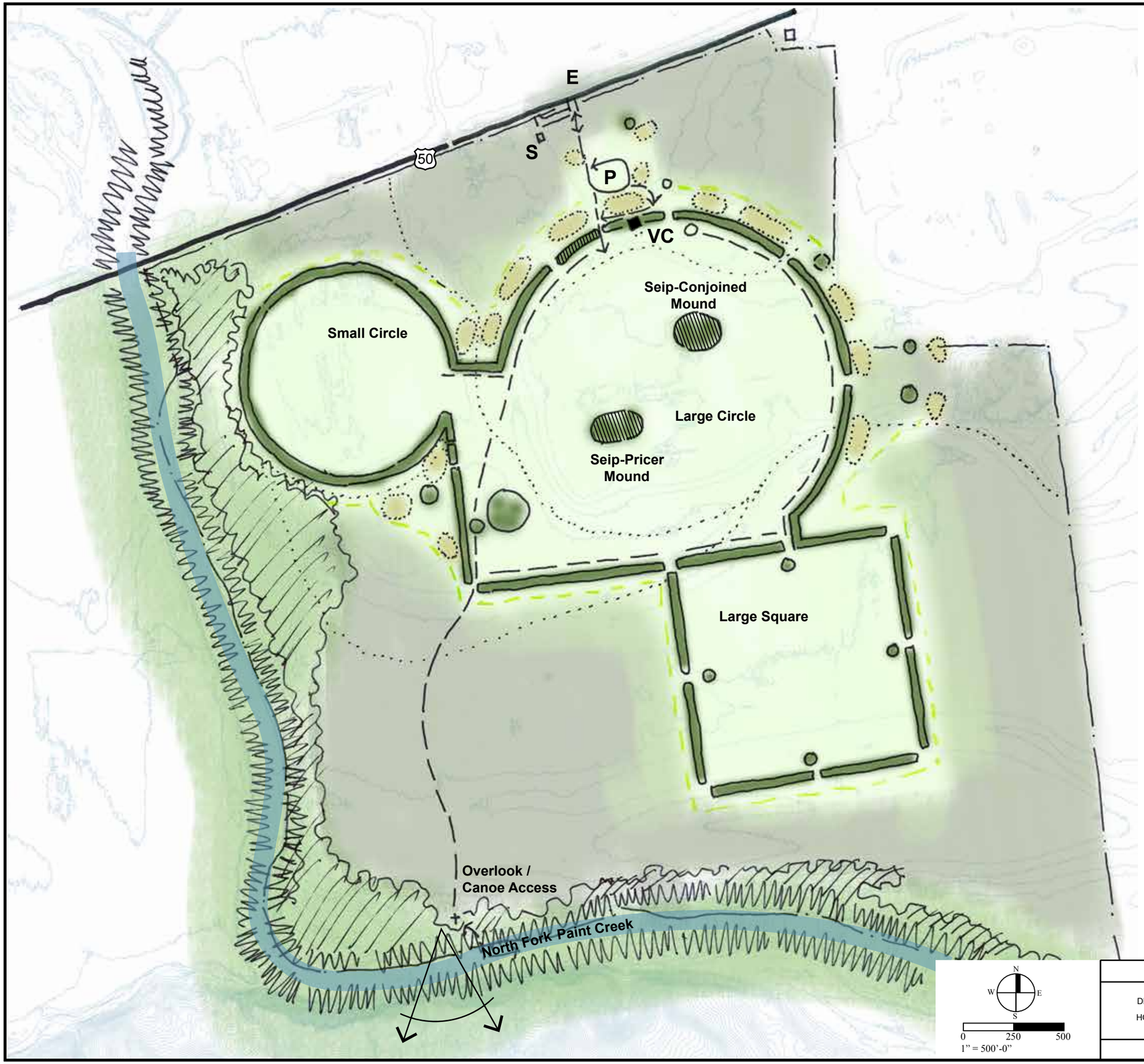

Legend

- Proposed NPS Boundary
- Trail
- VC — Visitor Orientation
- P — Parking
- E — Entry
- S — Shelter
- Existing Mound / Feature
- Feature - Mark
- Borrow Pit - Mark
- Low Mown Grasses
- Grasses / Herbaceous Mix
- Woodland
- Limits of Low Mown Grasses
- Embankment
- Open View

Sources:
Magnetic Survey 2015, GIS HOCU 2012 LiDAR; 1848, High Bank Works, Davis and Squire; Seip Marshall NAD83; https://msc.fema.gov/portal/search?Address Query=chillicothe; http://www.fws.gov/wetlands/Data/Mapper.html; 2014 Google Maps

TIC# 353 128149

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1" = 500'-0"

OCTOBER 2015

UNITED STATES
DEPARTMENT OF THE INTERIOR

HOPEWELL CULTURE NATIONAL HISTORICAL PARK

ILLUSTRATION 4-7

TITLE OF PROJECT
CULTURAL LANDSCAPE REPORT AND ENVIRONMENTAL ASSESSMENT

TITLE OF DRAWING
SEIP EARTHWORKS - ACTION ALTERNATIVE 1

NAME OF PARK
HOPEWELL CULTURE NATIONAL HISTORICAL PARK

REGION: MIDWEST | COUNTY: ROSS | STATE: OHIO

Seip Earthworks
Action Alternative 2: Conserving and Revealing Earthwork Complexes

The rehabilitation treatment approach for Action Alternative 2 rehabilitates or marks non-extant archeological features and spaces; removes all non-contributing features; and relocates all visitor orientation facilities off-site or to a location away from the earthwork complex.

Spatial Organization/Topography/Views

The forms and patterns of the archeological landscape would be revealed to depict the extent and form of the earthwork complex. All archeological features would be spatially depicted, revealing the three-dimensional form of the earthwork complex and surroundings through markings and vegetation.

- Non-contributing features would be removed from the immediate surroundings of the earthwork complex. These include the Blackstone House, outbuildings, roads, and utilities.

- The earthwork complex would be delineated by allowing markings or rehabilitations of earthen walls, mounds, and borrow pits when no discernible topographical relief occurs.

- Vegetation would also be used to spatially depict the earthwork complex.

Archeological Features

All extant below- and above-grade archeological features would be preserved, stabilized and repaired as needed, following best practices. Non-extant archeological features would be vegetated or rehabilitated to depict their mass, form, and character, allowing them to be seen above-grade.

- The three-dimensional form of the earthwork complex would be spatially depicted by utilizing vegetation types or management techniques, or by utilizing markings or rehabilitating features with soil or other construction methods to reflect their original size, mass, and scale.

- Where discernible topographical relief occurs, only vegetation or non-permanent markings would be used to delineate features.

- Markings and/or rehabilitations will utilize recent magnetic surveys to archeologically locate features and will have a non-permanent material, different from original earthwork complex, to clarify the archeological feature as contemporary.

Circulation

The existing circulation system would be modified to move visitor orientation facilities off-site, and to provide additional connections within the earthwork complex and to the other park units.

- The existing parking area, vehicular access, and roads would be removed.

- The parking area and visitor orientation facility would be moved off-site to adjacent property.

- Trails would be added to follow the perimeter of the earthwork complex.

Vegetation

Archeological features would be maintained as low mown vegetation or as a taller mown vegetation. Vegetation outside the earthwork complex would be managed as tall native grassland vegetation.

- Low/mown vegetation would be maintained in spaces of earthwork complex including the entire interior of the Small Circle, Large Circle, Large Square, and in the areas of the borrow pits.

- Use a mix of native herbaceous species maintained consistently (mow 1-2 times per year) in areas surrounding earthwork complex.

- Archeological features (mounds, earthen walls, borrow pits) would be maintained either as low mown vegetation or as tall/unmown to further differentiate their locations in the surrounding landscape.

    - The reconstructed Seip-Pricer Mound would be planted with a low mown vegetation.

    - The earthen wall would be planted with a taller mown vegetation, or marked with a non-permanent material.

    - The extant Seip-Conjoined Mound would be planted with a taller mown vegetation, or marked with a non-permanent material.

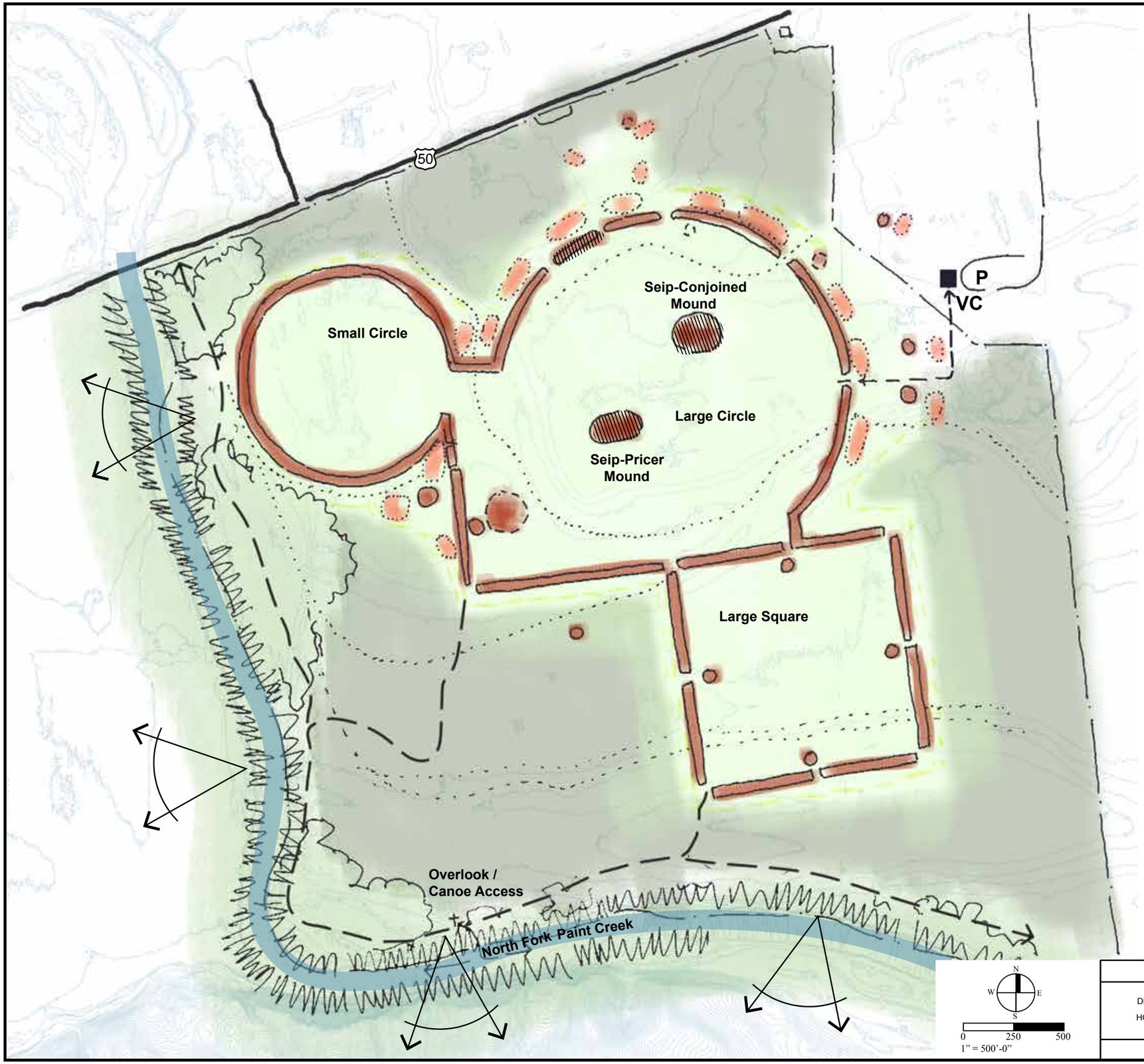
    - The non-extant mounds, earthen walls, and borrow pits would be planted with a taller mown vegetation, or marked with a non-permanent material.

Buildings and Structures

Existing buildings and structures would be removed. New facilities for visitor orientation would be relocated onto the adjacent property, away from the earthwork complex.

- New buildings and features for visitor orientation would be added to assist in the interpretation of the earthwork complex on the Paint Valley High School property.

- All non-contributing buildings that impact contributing archeological features, including the Blackstone House, outbuildings, and the picnic shelter would be removed.



Legend

- Proposed NPS Boundary
- Trail
- VC — Visitor Orientation
- P — Parking
- Existing Mound / Feature
- Mound Feature - Potentially Mark / Rehabilitate
- Borrow Pit - Potentially Mark / Rehabilitate
- Low Mown Grasses
- Tall Grass and Forbs
- Woodland
- Limits of Low Mown Grasses
- Embankment
- Open View

Sources:
Magnetic Survey 2015, GIS HOCU 2012 LiDAR; 1848, High Bank Works, Davis and Squire; Seip Marshall NAD83; https://msc.fema.gov/portal/search?Address Query=chillicothe; http://www.fws.gov/wetlands/Data/Mapper.html; 2014 Google Maps

TIC# 353 128149

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1" = 500'-0"

MARCH 2016

UNITED STATES DEPARTMENT OF THE INTERIOR

HOPEWELL CULTURE NATIONAL HISTORICAL PARK

ILLUSTRATION 4-8

TITLE OF PROJECT
CULTURAL LANDSCAPE REPORT AND ENVIRONMENTAL ASSESSMENT

TITLE OF DRAWING
SEIP EARTHWORKS - ACTION ALTERNATIVE 2

NAME OF PARK
HOPEWELL CULTURE NATIONAL HISTORICAL PARK

REGION MIDWEST | COUNTY ROSS | STATE OHIO

High Bank Works

High Bank Works is significant for being among the largest and most intricate earthwork complexes in Hopewell Culture NHP. It is remarkable for its monumental scale, geometric complexity, precision, and complicated astronomical alignments.

High Bank Works is composed of earthen walls that span several acres, set on a high bank above the Scioto River. The park unit is divided by private property and roads, making the scale of the earthwork complex is difficult to discern.

A treatment approach of preservation was considered for High Bank Works. Both action alternatives preserve the archeological features, introduce management techniques to better delineate the spaces and forms of the earthwork complexes, and improve the visitor experience. Action Alternative 1 follows a preservation approach and focuses on maintaining existing features.

Action Alternative 2 preserves the archeological features and utilizes vegetation management to depict spaces and non-extant above-grade archeological features, and limits visitor access.

High Bank Works
No Action Alternative

The no action alternative provides a basis for comparison with the action alternatives. Under the no action alternative, the present level of use, management, interpretation, maintenance and operations would continue. The no action alternative would include the following actions.

- The majority of the park unit would be designated a limited access zone and would not be open to the general public.[4-16]

- The primary use of the park unit would be research and education.

- Visitor experiences would be limited to guided tours, specifically when visitors could watch archeological fieldwork in progress.

- Temporary facilities for research, such as portable toilets and sun/rain shelters, would be allowed.

High Bank Works
Common to All Action Alternatives

Several treatment recommendations are common to both action alternatives for High Bank Works.

Spatial Organization/Topography/Views

The spatial arrangement of the earthwork complex would be emphasized to depict the mass and scale of the earthwork complex and to improve visitor's understanding.

- Hazardous trees and woody vegetation that impact the earthwork complex or diminish the visitor's understanding of

4-16 The GMP identifies six management zones used at the park units. Limited Access Zones are primarily for research and eduction, limiting visitation and preserving archeological resources. Natural Resource Zones restore and maintain biological diversity, while allowing for trails and interpretive overlooks/waysides. Pedestrian zones are archeological areas open to the public to walk among and interpret the earthwork complexes, with rangers present. Development Zones provide facilities for visitor use, education, orientation, and management functions. Educational Subzone (Development Zone) allows outdoor classrooms and specialized educational activities to assist in resource interpretation. Special Use Subzone (Development Zone) accommodates American Indian activities and events.

the spatial qualities of the earthwork complex and individual spaces would be removed. Specifically, the area southwest of the Octagon and on the parallel walls.

- The relationship of the earthwork complex to the Scioto River, Paint Creek Confluence, and Scioto River / Paint Creek would be improved by thinning vegetation to open views between the earthwork complex and the river.

Land Use

The park would purchase areas within the authorized park unit boundary, plus additional adjacent or related properties necessary for the protection of earthwork complexes.[4-17] Two in-holding would be purchased.

- The parcel containing the westernmost portion of the Great Circle, currently a private residence.

- The parcel containing most of the parallel walls, currently a private residence.

Archeological Features

All extant below- and above- grade archeological features, and spaces with known or potential archeological scatter would be preserved.

Individual archeological features including mounds, earthen walls and borrow pits would be stabilized and repaired as needed, following standard best practices.

4-17 *GMP,* p 41

High Bank Works

Action Alternative 1: Preserving Earthwork Complexes

Alternative 1 would preserve all extant below- and above-grade archeological features, reveal the mass and scale of the earthwork complex, and improve the visitor experience through greater interpretation of the earthwork complex and cosmology.

Spatial Organization/Topography/Views

The forms and patterns of the archeological landscape would be revealed by thinning vegetation and removing non-contributing features that disrupt the spatial arrangement.

The sense of scale, patterns, and orientation of the earthwork complex would be revealed through management of vegetation and views.

- The two-dimensional form of the earthwork complex of earthen walls, mounds, and borrow pits would be clarified by utilizing two or three distinct vegetation types / management techniques to reveal the form and spaces of the earthwork complex.

Archeological Features

This alternative would preserve all extant below- and above-grade archeological features, and spaces with known or potential archeological scatter.

Vegetation would be the primary method used to delineate archeological features and spaces.

- Vegetation outside the earthwork complex would be managed as grasses and herbaceous vegetation (mown seasonally).

- Vegetation inside the earthwork complex would be managed as low, mown vegetation.

- Vegetation on archeological features would be maintained as grasses and herbaceous vegetation (mown seasonally).

Circulation

The existing circulation system would remain in the existing location. Improvements would be made to facilitate archeological research and for limited pedestrian access.

- Non-contributing features that assist in facilitating circulation would remain and be improved (parking area).

- Non-contributing features that impact archeological features (gravel and service roads). would remain until acquisition of privately owned inholdings.

Vegetation

Vegetation that contributes to the character of the archeological landscape would be preserved. Vegetation would be managed to define the spatial organization of the earthwork complex, frame views, and screen adjacent development.

- Low mown vegetation would be maintained within spaces of earthwork complex including the interior of the Great Circle, Octagon, Parallel Walls, and South Earthwork. Cultivation would be discontinued, and areas of tall native grasslands (Octagon) would be replaced with low mown vegetation.

- Archeological features (mounds, earthen walls, borrow pits) would be maintained either as low mown vegetation or as tall/unmown vegetation to further differentiate between features and spaces.

- A medium diversity mix of grasses and herbaceous species would be maintained (mown one or two times per year) in areas surrounding the earthwork complex and in areas of archeological scatter.

- Riparian vegetation along the embankments would be maintained.

- Vegetation on the Lower River Terrace would be maintained.

- Clarify the relationship of the earthwork complex to the Scioto River and Paint Creek by thinning vegetation, opening up select views.

- Hazardous trees and woody vegetation that impact contributing archeological features or diminish the spatial qualities of the earthwork complex, specifically the area southwest of the Octagon and on the parallel walls would be removed.

Buildings and Structures

Existing buildings and structures would remain until acquisition of privately owned inholdings.

Small Scale Features

Features that do not serve as interpretation or visitation, or support existing buildings or structures, would be removed.

- Non-contributing features that impact archeological features to remain, including overhead utility lines and poles, and fences would remain.

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Lower River Terrace

Scioto River

Paint Creek

Paint Creek Confluence

Scioto River / Paint Creek

Lower River Terrace

To Visitors Center 10 Miles

Large Circle

Octagon

P

900

Parallel Walls

South Earthwork

Legend

- NPS Boundary
- Trail
- P — Parking
- Existing Mound / Feature
- Feature - Mark
- Borrow Pit - Mark
- Low Mown Grasses
- Grasses / Herbaceous Mix
- Woodland
- Embankment
- Open View

N W E S

0 350 700

1" = 700'-0"

Sources:
Burks 2013 High Bank Works Magnetic Survey; Burks 2013 Turpen Tract-High Bank Works Magnetic Survey; GIS HOCU 2012 LiDAR; 1848, High Bank Works, Davis and Squire; http://www.fws.gov/wetlands/Data/Mapper.html; https://m-sc.fema.gov/portal; 2014 Google Maps

TIC# 353 128149

OCTOBER 2015	TITLE OF PROJECT: CULTURAL LANDSCAPE REPORT AND ENVIRONMENTAL ASSESSMENT
UNITED STATES DEPARTMENT OF THE INTERIOR HOPEWELL CULTURE NATIONAL HISTORICAL PARK	TITLE OF DRAWING: HIGH BANK WORKS - ACTION ALTERNATIVE 1 NAME OF PARK: HOPEWELL CULTURE NATIONAL HISTORICAL PARK
ILLUSTRATION 4-9	REGION: MIDWEST; COUNTY: ROSS; STATE: OHIO; 4-57

High Bank Works
Action Alternative 2: Conserving and Revealing Earthwork Complexes

Alternative 2 would preserve the earthwork complex and all extant below- and above-grade archeological features. It would improve access and allow visitors to the park unit, and would allow marking of the archeological features.

Spatial Organization/Topography/Views

The forms and patterns of the archeological landscape would be revealed to depict the extent and form of the earthwork complex. All archeological features would be spatially depicted, revealing the three-dimensional form of the earthwork complex and surroundings, utilizing vegetation.

- The mass, scale, and form of the earthwork complex would be depicted using vegetation types and management (earthen walls, mounds, borrow pits, and the spaces of the earthwork). This would assist in facilitating archeological research throughout the earthwork complex.

- Non-contributing features would be removed from the earthwork complex, and the immediate surroundings. These include the existing buildings and structures on private property, and associated roads and utilities. Removals would only occur once property acquisition was complete.

Archeological Features

All extant below- and above-grade archeological features would be preserved, stabilized and repaired as needed, following best practices.

- The three-dimensional form of the earthwork complex would be spatially depicted, by utilizing vegetation types / management techniques.

- Prior to adding vegetation markings, further archeological investigations, including magnetic surveys, would be undertaken to archeologically locate features.

Circulation

The existing circulation system would be modified with new pedestrian routes, and access to the south earthwork.

- Vehicular access would be modified by improving the north parking area. A second vehicular route to the south earthwork would be added.

- The gravel road across the Octagon and Large Circle would be removed.

- Pedestrian circulation routes would be added that reveal the spatial qualities of the earthworks.

- A new canoe / kayak access and river overlook would be added at the South Earthwork.

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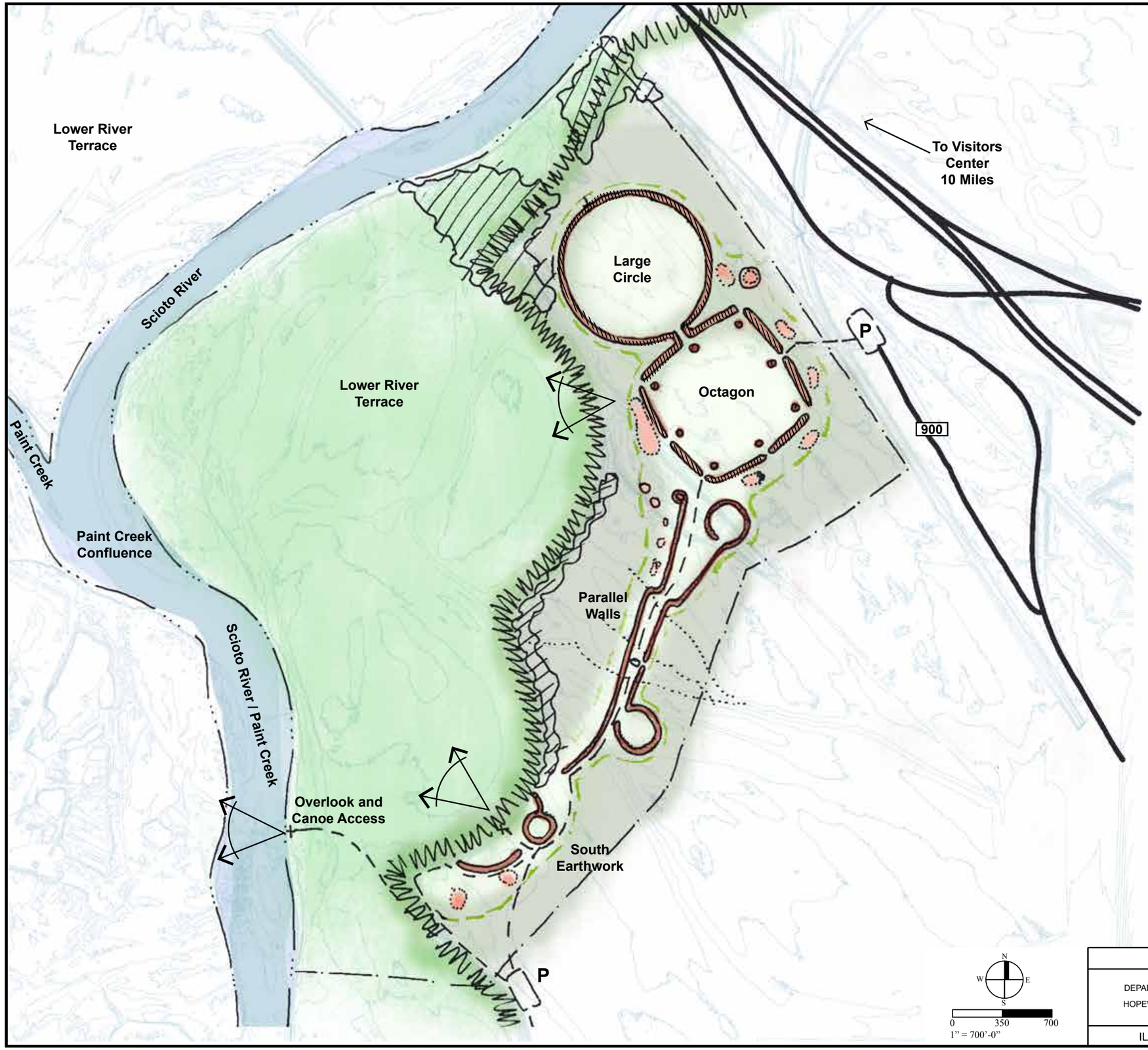

Legend

- Proposed NPS Boundary
- Trail
- P — Parking
- Existing Feature to Protect and Mark with Vegetation
- Unverified Feature to Protect and Mark with Vegetation
- Borrow Pit to Protect and Mark with Vegetation
- Low Mixed Vegetation
- Tall Grass and Forbs
- Woodland
- Floodplain Mix
- Limits of Low Mown Grasses
- Embankment
- Open View

N W E S

0 350 700

1" = 700'-0"

Sources:
Burks 2013 High Bank Works Magnetic Survey; Burks 2013 Turpen Tract-High Bank Works Magnetic Survey; GIS HOCU 2012 LiDAR; 1848, High Bank Works, Davis and Squire; http://www.fws.gov/wetlands/Data/Mapper.html; https://m-sc.fema.gov/portal; 2014 Google Maps

TIC# 353 128149

MARCH 2016	TITLE OF PROJECT: CULTURAL LANDSCAPE REPORT AND ENVIRONMENTAL ASSESSMENT
UNITED STATES DEPARTMENT OF THE INTERIOR HOPEWELL CULTURE NATIONAL HISTORICAL PARK	TITLE OF DRAWING: HIGH BANK WORKS - ACTION ALTERNATIVE 2 NAME OF PARK: HOPEWELL CULTURE NATIONAL HISTORICAL PARK
ILLUSTRATION 4-10	REGION: MIDWEST; COUNTY: ROSS; STATE: OHIO

Alternatives Comparison

Mitigation and Best Management Practices

The National Park Service places strong emphasis on avoiding, minimizing, and mitigating potentially adverse environmental impacts. To help ensure the protection of natural, cultural, and archeological resources and the quality of the visitor experience, the following Best Management Practice (BMP) protective measures would be implemented as part of all of the action alternatives (TABLE 4-2). The National Park Service would implement an appropriate level of monitoring throughout the construction and maintenance process to help ensure that protective measures are being properly implemented and are achieving their intended results. These mitigation measures are applicable for contractors and park staff.

Environmentally Preferable Alternative

The environmentally preferable alternative is the alternative required by 40 CFR 1505.2(b), to be identified in a record of decision, that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historic, cultural, and natural resources. The "Environmentally Preferable Alternative" is identified upon consideration and weighing by the responsible official of long-term environmental impacts against short-term impacts in evaluating what is the best protection of these resources (43 CFR 46.30). Although an environmentally preferable alternative is identified, it may not be the NPS preferred alternative. The preferred alternative is the alternative the National Park Service believes would best fulfill its statutory mission and responsibilities, giving consideration to economic, environmental, technical, and other factors.

Alternative 2 is the environmentally preferable alternative for several reasons. Compared with the other action alternative, Alternative 2 would result in greater long-term beneficial effects to archeological resources by removing noncontributing features from the archeological landscape, improving vegetation management for preservation of the earthworks, and rehabilitating the earthworks. In addition, Alternative 2 would result in restoration of native vegetation communities through vegetation management and removal of noncontributing features. Overall, Alternative 2 would provide the best balance between the preservation of historic and archeological resources and the protection of the natural resources within the park.

TABLE 4-2. Mitigation Measures and Best Management Practices

General Measures
• The park would ensure proposed projects remain within the construction limits, parameters are established in the compliance documents, and mitigation measures are properly implemented. • Construction zones would be signed at approach points. No construction activities would be permitted outside the construction limits. • All protection measures would be clearly stated in the project specifications/special project requirements, and workers would be instructed to avoid conducting activities beyond the project area limits as defined by construction plans or marked limits. • Garbage, trash, and other solid waste associated with project operations would be disposed of weekly, or sooner if warranted, outside the park. • All tools, equipment, barricades, signs, surplus materials, and rubbish would be removed from the project area work limits upon project completion. • Contractors would be required to properly maintain equipment used on the project (e.g., mufflers) to minimize noise from equipment use. • A hazardous spill plan would be in place, stating what actions would be taken in the case of a spill, notification measures, and preventive measures to be implemented, such as the placement of refueling facilities, storage, and handling of hazardous materials. • All equipment used on the project would be maintained in a clean and well-functioning state to avoid or minimize contamination from mechanical fluids. All equipment would be checked daily. • BMPs for drainage and sediment control, per a Stormwater Erosion and Sediment Control Plan, would be implemented to prevent or reduce nonpoint source pollution and minimize soil loss and sedimentation in drainage areas, when needed. Use of BMPs in the project area for drainage area protection would include all or some of the following actions, depending on specific requirements: º Keeping disturbed areas as small as practicable to minimize exposed soil and the potential for erosion º Locating waste and excess excavated materials outside of drainages to avoid sedimentation º Installing silt fences, temporary earthen berms, temporary water bars, sediment traps, stone check dams, or other equivalent measures (including installing erosion-control measures around the perimeter of stockpiled fill material) prior to construction º Conducting regular inspections during the construction period to ensure erosion-control measures were properly installed and are functioning effectively º Storing, using, and disposing of chemicals, fuels, and other toxic materials in a proper manner

Soils

- Erosion and sediment control would be required (see the "General Measures" section above).
- If applicable, topsoil or native soil would be removed from areas of construction and stored for later reclamation use. The topsoil would be redistributed as close to the original location as possible and supplemented with scarification, mulching, seeding, and/or planting with native genotypes.

Wetlands

- Impacts on wetlands would be avoided and minimized to the extent practicable. No wetland fill would occur without authorization from the Corps and appropriate permitting under the Clean Water Act.
- Appropriate permits (404 permit and 401 certification) would be acquired should there be any impacts on wetlands.

Water Quality

- Sediment traps, erosion checks, and/or filters would be constructed above or below all culvert drains (if such drains are required) and in all other ditches before the water (runoff) leaves the project area limits.
- At all cut and fill areas, erosion and sediment control would be implemented to minimize impacts on water quality.
- Surface restoration and revegetation of disturbed soils would be implemented to minimize long-term soil erosion.
- Water needed for construction and dust control would come from sources outside the park.

Vegetation

- Orange construction fencing would be used around large and/or historic trees and special status plant species and their habitat within construction limits to minimize the potential for inadvertent impacts from heavy equipment during construction. Large and/or historic trees and special status plant species would be avoided to the extent possible during construction.

- Ground surface treatment would include grading to natural contours, conserving and replacing topsoil, and, where necessary, hand seeding or planting. In some locations, topsoil placement and mulching with litter and duff would be the primary treatment. If insufficient litter and duff is salvaged from the project area, additional litter and duff may be gathered from adjacent areas on a small scale where approved by the National Park Service.

- Remedial actions would include installing erosion-control structures, reseeding, conserving and replacing topsoil and/or replanting the area, and controlling nonnative plant species.

- Introduction of nonnative/noxious plant species would be minimized by implementing several BMPs, including:
  - Minimizing soil disturbance
  - Ensuring project personnel make daily checks of clothing, boots, laces, and gear to ensure no invasive plant propagates and no off-site soil is transported to the worksite
  - Pressure washing and/or steam cleaning all equipment to ensure all equipment and machinery are cleaned and weed free before entering the park; equipment used on the project would be inspected by park staff prior to entering the park to ensure compliance with cleanliness requirements; and inadequately cleaned equipment would be rejected
  - Covering all haul trucks bringing fill materials from outside the park to prevent seed transport and dust deposition along the road corridor
  - Limiting vehicle parking turnouts to existing roads, parking areas, or access routes
  - Limiting project staging to existing roads, parking turnouts, and other designated areas; no machinery or equipment should access areas outside the project area limits
  - Obtaining all fill, rock, and other earth materials from the project area, if possible
  - Restricting hay bales from being used during revegetation or for temporary erosion control
  - Initiating revegetation of disturbed areas immediately following construction activities

- To maximize vegetation restoration efforts after completion of construction activities, the following measures would be applied:
  - Salvaging available topsoil or the top several inches of native soil from project areas for reuse during restoration of disturbed areas
  - Incorporating a native litter and duff layer in forested areas for replacement over salvaged topsoil
  - Ensuring the National Park Service surveys for, and treats, invasive plants prior to and for three years after construction

Wildlife

- To reduce noise disturbance and limit impacts on breeding avian and mammalian species, all tree removal would be conducted from October 1 to March 1, where feasible. If trees need to be removed outside of this time frame, they would be identified for removal and evaluated for nesting or roosting use.
- Project personnel are prohibited from feeding or approaching wildlife.
- Project personnel would report to park personnel any wildlife collisions within 24 hours of an incident.
- The clearing limits (project area limits) outside of the existing road prism would be clearly marked or flagged prior to construction. All construction activities, including staging areas, would be located within previously disturbed areas, is possible.
- The following measures would be taken to limit noise and disturbance from vehicles and equipment used on the project:
  - Ensure all motor vehicles and equipment have mufflers conforming to original manufacturer specifications that are in good working order and are in constant operation to prevent excessive or unusual noise, fumes, or smoke
  - Limit the use of air horns within the park to emergencies only

Air Quality

- Dust control would occur on active work areas where dirt or fine particles are exposed, as needed, using water sources outside the park.
- Workers would not leave vehicles idling.
- Debris resulting from construction would be hauled from the park to an appropriate disposal location.

Cultural

- All activities would comply with the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 Federal Register 44716, revised).
- Archeological resources in the vicinity of the project area would be identified and delineated for avoidance prior to project work.
- Project areas affected by ground disturbing activities under the action alternatives will be evaluated for significant subsurface archaeological deposits prior to work, including remote sensing/geophysical methods and/ or exploratory shovel testing.
- Tree and vegetation removal would be conducted in a manner that would not affect above and below-grade archaeological deposits. Root removal would not occur and tree felling would not occur on top of above-grade archeological features.
- Removal of non-contributing eligible resources will result in an adverse effect. To resolve potential effects, Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) should be conducted on any eligible historic structures.
- Should any archeological resources be uncovered during construction of new facilities and removal of non-contributing features, as appropriate, work would be halted in the area and a NPS archeologist, SHPO, and appropriate American Indian tribes would be contacted for further consultation. Plans for treatment of unanticipated discoveries would be prepared as needed.
- NPS cultural resources staff would be available during construction to advise or take appropriate actions should any archeological resources be uncovered during construction. In the unlikely event that human remains are discovered during proposed project activities, provisions outlined in the American Indian Graves Protection and Repatriation Act (NAGPRA) (1990) would be followed.
- The National Park Service would ensure that all contractors and subcontractors are informed of the penalties for illegally collecting artifacts or intentionally damaging archeological sites or historic properties. Contractors and subcontractors also would be instructed on procedures to follow in case previously unknown archeological resources are uncovered during construction.
- Equipment and material staging areas would avoid known archeological resources.
- An archeologist who meets the guidelines and standards identified by the secretary of the interior would be on-site during any ground-disturbance activities that occur from implementation of the preferred alternative. As a result, work may be temporarily stopped in the immediate area until the discovery is resolved.

Cultural

- Action alternatives are not expected to uncover, disturb, or remove American Indian human remains, funerary objects, sacred objects, or objects of cultural patrimony. In the event any of these items are unintentionally exposed by some aspect of this project, procedures identified in "Guidance for National Park Service Compliance with the American Indian Graves Protection and Repatriation Act, NPS Cultural Resource Management Guideline, Appendix R" would be followed. If this occurs, the project archeologist would stop work until NAGPRA guidelines and associated regulations [43 CFR 10.6] are satisfied.

- All action alternatives would result in an adverse impact on the earthwork complexes and below-grade extant features. To resolve potential adverse impacts, survey and data recovery measures should be taken to identify and salvage significant archeological deposits. Further research should be conducted on the impacts of delineation and rehabilitation techniques on below-grade archeological features.

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TABLE 4-3. Impact Summary

Impact Topic	No Action Alternative	Action Alternative 1	Action Alternative 2
Cultural Resources – Cultural Landscapes and Archeological Sites	Under the no action alternative, there would be minimal impacts on archeological resources at all five park units. The present level of use, management, maintenance, and operations would continue, including continued use of the existing visitor center, administrative/maintenance area, and shelter at the Mound City Group; and maintenance of the earthworks as mown lawn with woodland perimeter. Failure to remove hazardous trees and woody vegetation may affect the integrity of buried archeological deposits through bioturbation from the root systems. Haying would continue in the northern portion of the Mound City Group which may also affect the integrity of buried archeological deposits. The no action alternative would have a local long-term minor adverse impact on archeological resources.	Under action alternative 1 at all five park units, preservation measures of above- and below-ground archeological features would be implemented. Removal of trees and other woody vegetation would occur to diminish impacts on the earthworks from bioturbation from the root systems. Tree removal could have direct impacts on buried archeological features. New circulation including trails, bridges, overlooks, and parking areas would be constructed. Vegetation would be removed and shallow subsurface disturbance would occur during construction of circulation features, which could affect subsurface cultural deposits. The removal of noncontributing features, trails, utility lines, or buildings would improve the setting and feeling of the archeological landscape. Action alternative 1 includes specific activities at three park units. At the Mound City Group, areas currently not owned by the park but within and adjacent to the authorized park unit boundary would be purchased; further evaluation would occur at three noncontributing, but potentially significant, features; noncontributing features to the archeological landscape would be preserved; and expansion of curatorial and educational spaces are proposed. Preservation of the Mission 66 Visitor Center, CCC/WPA features, and the remains of Camp Sherman would result in a long-term beneficial impact on historic resources within the park unit by expanding knowledge of the use of the park unit outside of its period of significance but could result in long-term minor adverse impacts to the earthwork complexes and archeological landscape. The continued and expanded use of noncontributing features would have no effect on archeological resources. Purchasing areas within or adjacent to the park unit boundary would result in a long term beneficial impact to cultural resources. Action alternative 1 at the Hopewell Mound Group includes the conversion of a historic barn for a new park use. Preservation of the barn would have a beneficial impact, but modern upgrades may result in an adverse impact on archeological resources. Action alternative 1 also considers the evaluation of two noncontributing features at Seip Earthworks, the Blackstone House, and the Fish Camp buildings. Evaluation of the buildings, if found to be significant, would have a beneficial impact through long-term preservation and by expanding knowledge of the use of the park unit outside of its period of significance, but could have a long-term minor adverse impact on the earthwork complexes and archeological landscape.	Activities under action alternative 2 that would differ from action alternative 1 includes enhancing the archeological features through vegetation management, nonpermanent markings, and rehabilitating earthen walls or mounds; creation of an interconnected water route between the park units; construction of additional trails, roads, parking areas, and interpretive waysides; and removal of additional noncontributing features that adversely affect the setting and feeling of the archeological landscape. Action alternative 2 would have the same direct and indirect adverse and beneficial impacts on archeological resources as action alternative 1, with the exception that there would be the potential for additional local adverse impacts from the removal of additional vegetation for marking the earthworks, removal of all noncontributing resources that impact the contributing archaeological resources regardless of eligibility; rehabilitation of the earthworks, construction of additional visitor facilities, and creation of an interconnected water route between the park units. These actions have the potential to alter above- and below-ground features at the park units and would have a local short-term minor adverse impact on archeological resources. Action alternative 2 would also include the removal of noncontributing features including buildings, roads, and parking areas. Removing potentially eligible but noncontributing historic resources that impact the contributing resources would have an adverse effect to the noncontributing resources but a beneficial effect to the contributing resources by improving the setting and feeling of the archeological landscape. Retaining significant features that are noncontributing but do not detract from the archeological landscape would have a beneficial effect to these resources. Removing buildings and structures that are not significant nor contributing to the archeological landscape would have a long term beneficial effect by improving the setting and feeling. The restoration of these areas to native vegetation communities would have a local short-term minor adverse impact on below-ground archeological deposits and a long-term beneficial effect on archeological resources from improving the setting and feeling of the archeological landscape. Rehabilitating original earthworks could be a potential adverse effect as the addition of fill to the mounds could impact buried cultural features through compaction. Rehabilitating the earthwork complex at Mound City Group would result in a long-term negligible impact; all but one of the existing features has been previously reconstructed and restoration would not result in new impacts. The treatment approach of preservation instead of rehabilitation at Hopeton Earthworks and High Bank Works will have a long term beneficial impact. Any facilities constructed for the interconnected water route may have the potential to impact below-grade archeological features. Overall, action alternative 2 would have a long-term beneficial effect and a local short-term minor adverse impact on archeological resources.

Impact Topic	No Action Alternative	Action Alternative 1	Action Alternative 2
Vegetation	The no action alternative would have minimal impacts on vegetation at the park units. The present level of use, management, maintenance, and operations would continue, including removal of nonnative species and restoration of native species, resulting in a beneficial effect on vegetation. Mowing operations would also continue, resulting in a minor adverse impact on vegetation from the reduction in native species and mature growth. Overall, the no action alternative would have a long-term beneficial and long-term minor adverse impact on vegetation.	Under action alternative 1, the vegetation at the park units would be altered to allow for improved interpretation of the archeological landscape. Removal of trees and other woody vegetation would occur in certain locations to enhance the visitor's understanding, provide trails to the river, and open the views. Other vegetation would be removed for the establishment of trails and parking areas at the park units. These actions would alter the vegetation communities at the park units and reduce overall vegetative cover in localized areas. Removal of invasive species would improve vegetation communities at the park units. Removal of noncontributing features such as roads, trails, or utility lines would allow for an increase in vegetation communities after the areas are revegetated. Overall, action alternative 1 would have local long-term minor adverse impacts on vegetation from construction of trails and parking areas. Restoration actions that increase vegetation cover at the park units would have long-term beneficial effects on vegetation.	Action alternative 2 would have the same direct and indirect adverse and beneficial impacts on vegetation as action alternative 1, except there would be slight additional adverse impacts from constructing additional trails and creating an interconnected water route between the park units. These actions would have a local short-term and long-term minor adverse impact on vegetation. Action alternative 2 would also include removal of noncontributing features including buildings, roads, and parking areas. The restoration of these areas with native vegetation communities would have a long-term beneficial effect on vegetation. Overall, action alternative 2 would have a long-term beneficial effect and a local long-term minor adverse impact on vegetation.
Wildlife	The present level of use, management, maintenance, and operations would continue. Parking areas and minimal visitor facilities would be developed at the Hopewell Mound Group and Hopeton Earthworks, which may decrease overall habitat for wildlife, although wildlife would likely find food sources and nesting cover from nearby habitat in the park. Overall, the no action alternative would have a long-term negligible impact on wildlife because of the surrounding habitat present and minimal disturbance	Under action alternative 1, the vegetation at the park units would be altered to allow for improved interpretation of the archeological features. Removal of trees and other woody vegetation would occur in certain locations to enhance the visitor's understanding, provide trails to the river, and open the views. Other vegetation would be removed for the establishment of trails or parking areas at the park units. These actions would reduce the overall wildlife habitat in the project area. Thinning or removing vegetation would directly reduce the food source for birds and mammals in the park and reduce nesting and roosting cover for birds. Since these actions would occur in only certain locations, the birds and mammals would likely find food sources and nesting cover from nearby trees in the park. Removal of noncontributing features such as roads, trails, and utility lines and restoration with native vegetation would increase the amount of wildlife habitat and reduce hazards to wildlife. Overall, action alternative 1 would have a long-term beneficial effect and a local long-term direct minor adverse impact on wildlife and wildlife habitat.	Action alternative 2 would have similar direct and indirect impacts on wildlife as action alternative 1, but potentially could include removal of additional vegetation for marking the earthwork complexes, constructing additional trails, and creating an interconnected water route between the park units and may result in a net increase in visitor use, which could increase disturbance to wildlife. Action alternative 2 would also include removal of other noncontributing features including buildings, roads, and parking areas, which would increase the amount of wildlife habitat in the park. Overall, action alternative 2 would have a long-term beneficial effect and a local long-term minor adverse impact on wildlife and wildlife habitat.
Visitor Use and Experience	There would be no change in the fundamental nature and quality of the visitor use and experience within the park under the no action alternative. Access to the park units would remain the same, with Hopeton Earthworks and High Bank Works remaining closed to the public. Visitors would continue to use the existing trails at the park units. Noncontributing features would remain in the archeological landscape, potentially compromising the interpretive goals of the park units, but in ways visitors would not likely notice. For these reasons, the no action alternative would have a local long-term negligible adverse impact on visitor use and experience.	Visitor use and experience would improve from action alternative 1 by allowing limited access to the Hopeton Earthworks and High Bank Works, creating more trails and parking areas at the park units, improving the interpretation of the archeological landscape, and removing noncontributing features. Visitor use and experience may be temporarily impacted by implementation of these measures and temporary trail closures. The impacts on visitor use and experience during construction would be local, short-term, minor, and adverse. Action alternative 1 would result in long-term beneficial effects on visitor use and experience because of increased access to the park units, more accurate representation of the archeological landscape, improved interpretation, and increase in trails, overlooks, and parking areas.	The activities and impacts of action alternative 2 would be similar to those of action alternative 1, except there would be additional beneficial effects from marking the earthwork complexes for improved interpretation, constructing additional trails, and creating an interconnected water route open to kayaking and canoing between the park units. There would be local short-term minor adverse impacts on visitor use and experience during implementation of these activities and long-term beneficial effects.

Impact Topic	No Action Alternative	Action Alternative 1	Action Alternative 2
Park Operations	There would be no change in the fundamental nature of park operations within the park under the no action alternative. Vegetation management would remain the same as well as the amount of trails, parking areas, and other recreation facilities that would continue to require maintenance. The Hopeton Earthworks and High Bank Works would remain closed to the public. For these reasons, the no action alternative would have no impact on park operations.	Increasing the interpretation of the archeological landscapes in the park units through vegetation management, increased trails through the park units, and removal of noncontributing features would increase the park staff's ability to relay interpretive information about the park units to visitors. Additional trails would increase maintenance activities required by park staff. Removal of noncontributing features would have a short-term adverse impact on park operations by displacing facilities. Implementation of these activities would have a short-term minor adverse impact on park operations for managing and overseeing the installation of trails and other features and removal of other features. For these reasons, action alternative 1 would have parkwide long-term and short-term minor adverse impacts and parkwide long-term beneficial effects on park operations.	Action Alternative 2 would include relocation of the administration, visitor center, and other facilities off-site or to a new location within the park. This would result in short-term moderate adverse effects to park operations and long-term beneficial effects to park operations.
Visual Resources	Minimal changes in the visual character of the park or individual park units are anticipated under the no action alternative. Various zones would be established within each park unit to direct management within those zones. The visual aspects of each park unit would remain the same under the no action alternative. The no action alternative would have a local long-term minor adverse impact on visual quality by reducing the visual interpretation of the archeological landscapes over time.	The visual quality of the park units from action alternative 1 would be improved by allowing limited access to the Hopeton Earthworks and High Bank Works and creating more trails at the park units, which would increase visitor access to visual features at each park unit. Improving the visual interpretation of the earthwork complexes through vegetation management and removing non-contributing features would also have beneficial effects on visual resources at each park unit. Because of these reasons, action alternative 1 would result in local long-term beneficial effects on visual resources.	The activities and impacts of action alternative 2 would be similar to those of action alternative 1, except there would be additional beneficial effects on visual resources and access to visual features from marking the earthwork complexes for improved interpretation, constructing additional trails, and creating an interconnected water route between the park units. These actions would improve the visual quality of the park units by enhancing the ability to interpret the archeological landscapes and surrounding area. Because of these reasons, action alternative 2 would result in local long-term beneficial effects on visual resources.