

Chapter 4 - Treatment Alternatives

Introduction

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

10
 11 This chapter describes the alternatives
 12 considered for the study area and each park
 13 unit, beginning with the no action alternative,
 14 followed by two action alternatives. The
 15 agency preferred alternative is Action
 16 Alternative 2, presented again in Chapter
 17 6 - Treatment Plan, with detailed treatment
 18 recommendations.

19
 20 All action alternatives address the protection
 21 of resources, improvements to visitor
 22 experience and access, and provisions for
 23 future research. Treatment approaches
 24 are proposed for each park unit, based on
 25 its individual qualities and visitor needs.
 26 Treatment alternatives for each park unit
 27 vary in the extent of rehabilitation and
 28 modifications proposed.

29
 30 A summary of the alternatives, organized by
 31 park unit is presented as a matrix ("TABLE
 32 4-1. Alternatives Matrix").

33
 34 *No Action Alternative* would provide a basis
 35 for comparison with the action alternatives,
 36 including the preferred alternative. Under the
 37 no action alternative, the present level of use,
 38 management, interpretation, maintenance
 39 and operations would continue.

40
 41 *Action Alternative 1 - Preserving Earthwork*
 42 *Complexes* would focus on preserving the
 43 earthwork complexes, better delineate
 44 archeological features and spaces to

1 make them more visible, and provide a
 2 visitor experience in sync with earthwork
 3 preservation. Vegetation management would
 4 be the primary technique in marking or
 5 depicting the archeological features, and the
 6 relationships between them. Extant below-
 7 and above-grade archeological features would
 8 be preserved and maintained.

9
 10 *Action Alternative 2 - Conserving and*
 11 *Revealing Earthwork Complexes* would focus
 12 on preserving extant below- and above-grade
 13 archeological features, clearly delineate
 14 archeological features and spaces, balance
 15 removal of non-contributing features with
 16 earthwork preservation, and provide visitor
 17 experiences and management tailored to
 18 the individual character of each park unit. At
 19 Mound City Group, Hopewell Mound Group,
 20 and Seip Earthworks, this alternative would
 21 assertively delineate non-extant archeological
 22 features (mounds, earthen walls, etc.) through
 23 markings. At Hopeton Earthworks and High
 24 Bank Works, this alternative preserves the
 25 earthwork complexes, and focuses on the
 26 delineation of spaces and patterns through
 27 vegetation management to depict the
 28 archeological features, and the relationships
 29 between them.

TABLE 4-1. Alternatives Matrix

	Treatment Approach*	Mound City Group				Hopeton Earthworks			
		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

1 Four distinct approaches to the treatment of
2 archeological landscapes were considered.⁴⁻¹

3
4 *Preservation* is an appropriate treatment
5 approach for an archeological landscape with
6 a continuity of use and few modifications.
7 This approach is suited for a property
8 where its distinctive materials, features, and
9 spaces are intact, and for which extensive
10 modifications or additions are not required.
11 The preservation treatment approach allows
12 archeological features to be preserved,
13 restored, or repaired.

14
15 *Rehabilitation* is an appropriate treatment
16 approach for an archeological landscape
17 with a long period of significance, that
18 has undergone few modifications, and has
19 integrity in one or more characteristics:
20 location, setting, materials, workmanship,
21 feeling, and association. Rehabilitation
22 is appropriate for a property where
23 new additions are contemplated. The
24 rehabilitation treatment approach allows
25 for features to be preserved, rehabilitated,
26 reconstructed, or restored.

27
28 *Reconstruction* is an appropriate treatment
29 approach for an archeological landscape
30 with a vast amount of documentation that
31 would allow, by means of new construction,
32 the form, features, and detailing of a
33 non-surviving archeological landscape
34 to be replicated to its appearance at a
35 specific period of time and in its historic
36 location. Due to the limited information
37 on the archeological features' form and
38 construction methodology during the
39

40 4-1 Robert R. Page, Cathy A. Gilbert, and Susan A. Dolan. *A*
41 *Guide to Cultural Landscape Reports: Contents, Process,*
42 *and Techniques.* [Washington, DC: U.S. Department of
43 the Interior, National Park Service, Cultural Resource
44 Stewardship and Partnerships, Park Historic Structures
and Cultural Landscapes Program, 1998].

1 period of significance, reconstruction of
2 the archeological landscape or specific
3 archeological features is not recommended at
4 this time.

5
6 *Restoration* is an appropriate treatment for an
7 archeological landscape with documentation
8 to accurately depict the form, features, and
9 character of earthwork complexes as it
10 appeared during a particular period of time
11 by removing features from other periods in
12 history and renovating missing features from
13 the restoration period. Due to the limited
14 information on the archeological features'
15 form and construction methodology during
16 the period of significance, restoration of
17 the archeological landscape or specific
18 archeological features is not recommended at
19 this time.

20
21 The recommended treatment approach
22 depends on a variety of factors, including
23 the condition, proposed use, and historical
24 significance of the property. The first
25 alternative, Action Alternative 1 - Preserving
26 Earthwork Complexes, recommends a
27 preservation treatment approach for
28 all earthwork complexes within the
29 Hopewell Culture NHP. Action Alternative
30 2 - Conserving and Revealing Earthwork
31 Complexes recommends a rehabilitation
32 treatment approach for Mound City
33 Group, Hopewell Mound Group, and Seip
34 Earthworks; and a preservation approach
35 for Hopeton Earthworks and High Bank
36 Works. The marking / rehabilitation
37 illustrated and described for Alternative
38 2 shows the maximum extent of change
39 considered appropriate. Implementation
40 recommendations included in Chapter 6
41 provide guidance for application of these
42 in a gradual approach that may or may not
43 result in application of the full extent of the
44 recommendations.

Common to All Action Alternatives

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

8 Land Use

9 The park would purchase areas within
10 the authorized park unit boundary, plus
11 additional adjacent or related properties
12 necessary for the protection of earthwork
13 complexes. Alternative methods of protection,
14 such as easement, local planning, and trust,
15 would be explored to protect earthwork
16 complexes outside the Hopewell Culture NHP
17 jurisdictional boundary.⁴⁻²

19 Archeological Features

20 All extant below-grade features would be
21 preserved.

22
23 • Additional research would be conducted
24 to understand Hopewellian habitation
25 sites in relationship to the earthwork
26 complexes, and modes of circulation
27 (waterways and overland routes) between
28 earthwork complexes. Additional research
29 would be undertaken to reveal the daily
30 lifestyle of the Hopewell Culture including
31 regional settlement patterns, rituals, use
32 of earthwork complexes, trade routes,
33 subsistence, etc.

34
35 • Additional research, investigations, and
36 surveys would be conducted to confirm
37 material reconstructions and to better
38 understand the construction of the
39 Hopewellian archeological features.⁴⁻³

41 4-2 GMP, p 41

42 4-3 Sarah Sherwood and Tristram Kidder, The DaVincis of
43 Dirt: Geoarchaeological perspectives on Native American
44 mound building in the Mississippian River Basin. *Journal
of Anthropological Archaeology* 30 (2011) 69-87

- 1 • Additional magnetic surveys and
2 archeological investigations would be
3 undertaken to locate undocumented
4 archeological resources.
5
6 • Excavation of any type within Hopewell
7 Culture NHP would occur only with
8 consultation with the park archeologist,
9 the Midwest Archeological Center
10 (MWAC), and others where appropriate
11 (federally recognized tribes, SHPO,
12 etc). Below-grade features include the
13 foundations of archeological features
14 (mounds, earthen walls, structures, etc.),
15 and a layer of archeological scatter.
16
17 • Radiocarbon dating, pollen and phytolith
18 analysis, soil micromorphological
19 analysis, etc. would be undertaken to
20 reveal historic vegetation patterns.
21
22 • Stream banks of the Scioto River, Paint
23 Creek, and the North Fork Paint Creek
24 would be monitored and areas of erosion
25 that threaten archeological resources
26 would be stabilized.

28 Circulation

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

- 33
34 • The park would work with Ross County
35 Park District in their efforts to establish
36 a greenway trail system to link the
37 earthwork complexes by adding a trail on
38 the north and main forks of Paint Creek
39 and the Scioto River. The park would
40 add trail connections, bicycle racks, and
41 directional signs within park land.⁴⁻⁴

44 4-4 GMP, p 24

- 1 • The park would work with Ross County
2 Park District in their efforts to establish
3 bike paths along roads and abandoned
4 railways to link the earthwork complexes,
5 and to link community, county, state,
6 and federal park, and recreation areas to
7 better serve local residents and visitors.⁴⁻⁵
8
 - 9 ◦ Mound City Group and Hopewell
10 Mound Group would be connected
11 with a bike path along state road 104
12 to the Tri-County Triangle Trail, or
13 a route through the Veterans Affairs
14 Medical Center and Pleasant Valley
15 Wildlife Area to the Tri-County
16 Triangle Trail.⁴⁻⁶
17
 - 18 ◦ The relationship of Mound City
19 Group to Hopeton Earthworks
20 would be depicted by adding a new
21 bridge across the Scioto River. With
22 assistance from adjacent land owners,
23 a new trail would connect the two
24 park units.
25
- 26 • The park would coordinate with Ross
27 County Park District, City of Chillicothe,
28 and Ohio Department of Natural
29 Resources to locate, design, and construct
30 canoe launches and access trails at each
31 earthwork complex.⁴⁻⁷
32
- 33 • The park would coordinate with
34 Chillicothe Transit Company to establish
35 a bus route system with scheduled bus
36 service to each earthwork complex.⁴⁻⁸
37

38 Vegetation

39 Vegetation types and management techniques
40 would be used to protect the archeological
41 landscape.

43 4-5 GMP, p 24

44 4-6 GMP, p 26

4-7 GMP, p 26

4-8 GMP, p 26

- 1 • Portions of the archeological landscape
2 currently cultivated would be converted
3 to low maintenance vegetation.
4 Agricultural cultivation has degraded
5 archeological features over time, leaving
6 many features indiscernible.
7
- 8 • Burning would be allowed as a vegetation
9 management tool after sufficient research
10 is completed to demonstrate that
11 archeological resources or archeological
12 research including geophysical surveys
13 would not be negatively impacted.
14
- 15 • Any machinery used for landscape
16 management would be tested and
17 evaluated to ensure that maintenance
18 practices protect archeological features.
19
- 20 • Vegetation within the earthwork
21 complexes and on archeological features
22 would be low and periodically mown. Tall
23 grasses and herbaceous vegetation create
24 habitat for destructive burrowing animals
25 such as groundhogs, and make it difficult
26 to monitor archeological landscapes
27 for the presence of animals. Large-
28 scale geophysical survey instruments
29 also perform better in areas with low
30 vegetation.
31

Mound City Group

1 Mound City Group encompasses 25-plus
 2 mounds, borrow pits, and an earthen
 3 wall, set above the Scioto River. This
 4 earthwork complex is the primary visitor
 5 and administrative / maintenance area for
 6 Hopewell Culture NHP. Mound City Group
 7 is significant for its numerous ceremonial
 8 and burial mounds, and as the only fully
 9 reconstructed Hopewellian earthwork
 10 complex.
 11
 12 Two treatment approaches were considered
 13 for Mound City Group, preservation and
 14 rehabilitation. Both approaches preserve
 15 the reconstructed archeological features,
 16 introduce management techniques to
 17 better delineate the spaces and forms of the
 18 earthwork complexes, and improve visitor
 19 experience.
 20
 21 Action Alternative 1 follows a preservation
 22 approach using vegetation management to
 23 delineate archeological features.
 24
 25 Rehabilitation is the treatment approach for
 26 Alternative 2. This approach uses vegetation
 27 management as a basis for depicting
 28 archeological features and spaces to convey
 29 the scale and massing of the earthwork
 30 complex. Markings would be allowed as an
 31 additional method, using rock cobble, soil,
 32 or distinct vegetation types to depict specific
 33 archeological features.
 34
 35 Both treatment approaches would preserve
 36 the reconstructed mounds, earthen wall,
 37 and borrow pits. Alternative 2 would repair
 38 the extra-mural mounds and preserve the
 39 northeast borrow pit.
 40
 41
 42
 43
 44

1 Mound City Group 2 No Action Alternative

3
 4 The no action alternative provides a basis
 5 for comparison with the action alternatives.
 6 Under the no action alternative, the present
 7 level of use, management, interpretation,
 8 maintenance and operations would continue.
 9 The no action alternative would include
 10 actions identified in the GMP. The no action
 11 alternative for the Mound City Group would
 12 include the following actions.
 13
 14 • The North Forty would be managed as a
 15 limited access zone. The area north of the
 16 earthwork complex and along the Scioto
 17 River would be managed as a natural
 18 resource zone. The area within the
 19 earthwork complex would be managed as
 20 a pedestrian zone. The area south of the
 21 earthwork complex would be managed
 22 as a combination of development and
 23 education zones. The existing visitor
 24 center, administration/maintenance area,
 25 and shelter would remain.⁴⁻⁹
 26
 27 • The nature trail around the perimeter of
 28 the earthwork would remain to enable
 29 visitors to explore and experience the
 30 resources, views, and stories at the
 31 earthwork complex. An overlook at the
 32
 33
 34
 35
 36
 37
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 39
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4-9 The GMP identifies six management zones used at the park units. Limited Access Zones are primarily for research and education, 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.

1 Scioto River and other wayside exhibits
2 and other interpretive media would
3 address interpretive themes.
4
5 • Access for visitors would be via motorized
6 vehicles, bicycle, and foot via State
7 Highway 104.
8
9 • The earthwork complexes would continue
10 to be managed as mown lawn with a
11 woodland edge. The North Forty would
12 continue to be managed as a hay field.
13
14 **Mound City Group**
15 **Common to All Action Alternatives**
16
17 Several treatment recommendations are
18 common to the action alternatives for Mound
19 City Group.
20
21 Spatial Organization/Topography/Views
22 The spatial arrangement of the earthwork
23 complex would be emphasized to depict the
24 mass and scale of the earthwork complex and
25 improve visitor's understanding.
26
27 • Hazardous trees and woody vegetation
28 that impact the earthwork complex or
29 the visitor's understanding of the spatial
30 qualities of the earthwork complex and
31 individual spaces would be removed.
32 This include the vegetation impacting the
33 northeast corner of the enclosure wall
34 and Mound #1.
35
36 • The relationship of the earthwork
37 complex to the river would be improved
38 by thinning vegetation and opening up
39 views between the earthwork complex
40 and the river.
41
42 Land Use
43 The park would purchase areas within
44 the authorized park unit boundary, plus
45 additional adjacent or related properties
46

1 necessary for the protection of earthwork
2 complexes.⁴⁻¹⁰
3
4 • Parcels to link Mound City Group with
5 Hopeton Earthworks.
6
7 Archeological Features
8 All extant below- and above- grade
9 archeological features, and spaces with
10 known or potential archeological scatter,
11 would be preserved.
12
13 • Individual archeological features
14 including mounds, earthen walls and
15 borrow pits would be stabilized and
16 repaired as needed, following standard
17 best practices.
18
19 Circulation
20 The pedestrian circulation system would
21 be improved by adding routes that assist in
22 defining the spatial qualities of the earthwork
23 complex.
24
25 • A universally accessible trail would be
26 established around the outer perimeter of
27 the earthen wall.
28
29 • The relationship of Mound City Group to
30 Hopeton Earthworks would be depicted
31 by adding a new bridge across the
32 Scioto River, and a new trail to Hopeton
33 Earthworks.
34
35 Vegetation
36 Vegetation that contributes to the character
37 of the archeological landscape would be
38 preserved. Vegetation would be managed
39 to define the spatial organization of the
40 earthwork complex, frame views, and screen
41 adjacent development.
42
43 • Vegetation between the river and the
44 earthwork complex would be thinned
45
46 4-10 GMP, p 41

1 and removed to open views. Woodland
 2 vegetation surrounding the earthwork
 3 complex and along the river bank would
 4 remain.
 5
 6 • Vegetative buffers to screen adjacent
 7 negative views and impacts would be
 8 added, specifically along the west and
 9 south property lines. Buildings and
 10 structures visible from the earthwork
 11 complex would be screened by vegetation.
 12
 13 Buildings and Structures
 14 Mound City Group would continue to serve
 15 as the primary visitor and administrative /
 16 maintenance facility. Existing buildings and
 17 structures that assist in the visitor experience
 18 would be retained.
 19
 20 • Potentially historic features that assist
 21 in the visitor experience, i.e., CCC and
 22 WPA steps and walls, canal lock stones,
 23 entrance walls, and stone grill, would
 24 be retained and repaired. The historical
 25 significance of these features would be
 26 assessed.
 27
 28 **Mound City Group**
 29 **Action Alternative 1: Preserving Earthwork**
 30 **Complexes**
 31
 32 The preservation treatment approach for
 33 Action Alternative 1 would repair and
 34 maintain extant archeological features;
 35 use vegetation types and management to
 36 delineate archeological features and spaces;
 37 and retain non-contributing features that do
 38 not impact the visitor’s ability to interpret the
 39 archeological features.
 40
 41 Spatial Organization/Topography/Views
 42 The forms and patterns of the archeological
 43 landscape would be revealed. The spatial
 44 qualities of the earthwork complex and the
 45 relationship to the earthwork complex and
 46 surrounding landscape would be depicted.

1 The sense of scale and patterns left by the
 2 Hopewell would be revealed using simple,
 3 non-intrusive techniques that manage
 4 vegetation, circulation, and views.
 5
 6 • The three-dimensional form of the
 7 entire earthwork complex of earthen
 8 walls, mounds, and borrow pits would
 9 be strengthened by utilizing two distinct
 10 vegetation management techniques
 11 to reveal the forms and spaces of the
 12 earthwork complex.
 13
 14 Archeological Features
 15 All extant below- and above-grade
 16 archeological features would be preserved,
 17 as would spaces with known or potential
 18 archeological scatter.
 19
 20 • Archeological features would be
 21 maintained as low, mown vegetation.
 22 Vegetation would be the primary method
 23 used to delineate archeological features.
 24 Vegetation outside the earthwork
 25 complex would be managed as woodland.
 26
 27 Circulation
 28 The existing vehicular circulation system
 29 would remain. The pedestrian circulation
 30 system would be improved by adding routes
 31 that assist in defining the spatial qualities of
 32 the earthwork complex.
 33
 34 Vegetation
 35 Vegetation would be the primary method
 36 used to delineate archeological features.
 37
 38 • The reconstructed mounds (1-14, 16-23,
 39 X1 and X2) would be depicted with a low
 40 mown vegetation.
 41
 42 • The reconstructed earthen wall would be
 43 depicted with a low mown vegetation.
 44
 45 • The reconstructed borrow pits (7) would
 46 be depicted with low mown vegetation.

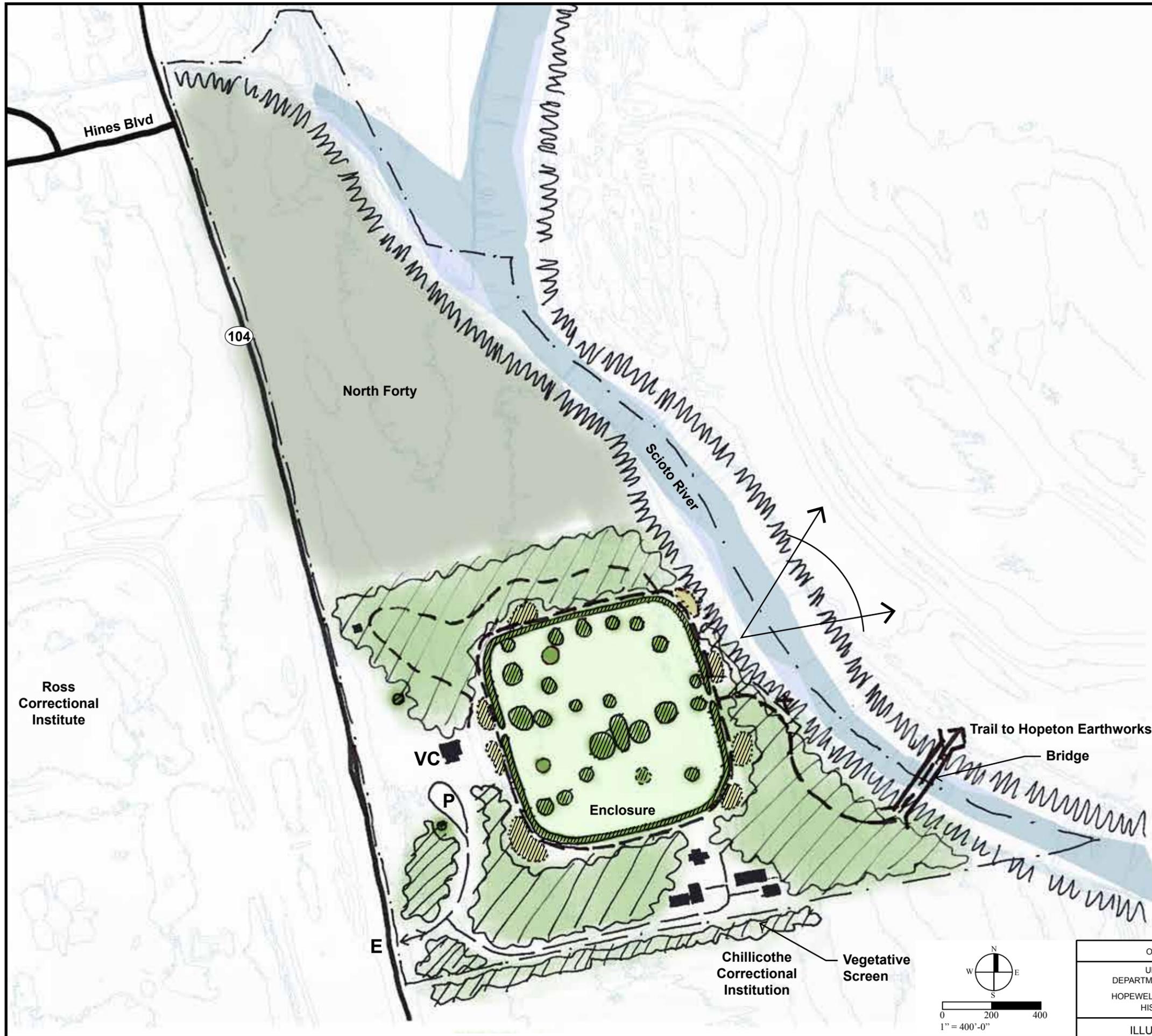
- 1 • The spaces within the earthen walls
2 would be depicted with a low mown
3 vegetation.
- 4
- 5 • The non-extant mounds (24 and 25)
6 would be depicted with a taller mown
7 vegetation.
- 8
- 9 • The northeast borrow pit would be
10 depicted with a taller mown vegetation.
- 11

12 Buildings and Structures

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

- 20
- 21 • Non-contributing features that
22 provide visitor amenities and assist in
23 interpretation, e.g. Mission 66-era visitor
24 center and the wood frame shelter at the
25 Ohio Erie canal lock stones, would be
26 repaired.
- 27
- 28 • Curatorial and educational spaces
29 would be expanded in areas noted for
30 administrative or maintenance uses.
- 31

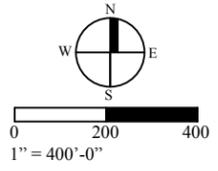
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- Legend**
- NPS Boundary
 - Trail
 - VC** Visitor Orientation
 - P** Parking
 - E** Entry
 - Existing Reconstructed Mound / Feature
 - Feature - Mark
 - Existing Borrow Pit
 - Existing Borrow Pit - Mark
 - Low Mown Grasses
 - Grasses / Herbaceous Mix
 - Woodland
 - Embankment
 - Open View

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

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 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

1 Mound City Group

2 Action Alternative 2 : Conserving and 3 Revealing Earthwork Complexes

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

12 13 Spatial Organization/Topography/Views

14 The forms and patterns of the archeological
15 landscape would be revealed to depict
16 the extent and form of the earthwork
17 complex. All archeological features would
18 be spatially depicted, revealing the three-
19 dimensional form of the earthwork complex
20 and surroundings through markings and
21 vegetation.

- 22
- 23 • The mass, scale, and form of the
24 earthwork complex would be depicted
25 by rehabilitating or marking non-extant
26 above-grade archeological features, e.g.
27 earthen walls, mounds, borrow pits, and
28 the spaces of the earthwork.
 - 29
 - 30 • Where discernible topographical relief
31 occurs, only vegetation or non-permanent
32 or earthen markings would be used to
33 delineate archeological features.
 - 34
 - 35 • Non-contributing features would be
36 removed from the earthwork complex and
37 immediate surroundings. These include
38 the visitor center, park administration
39 and maintenance facility, parking, roads,
40 and utilities. These features and facilities
41 would be relocated to an off-site location
42 or located on-site further from the
43 earthwork complex.

44
45
46

1 Archeological Features

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

9

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

18

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

23

- 24 • Markings and/or rehabilitations
25 would be based on the most recent
26 magnetic surveys and / or archeological
27 investigations. They would consist of
28 a non-permanent material that differs
29 from those of the original archeological
30 features or reconstructions, to clarify the
31 rehabilitation as contemporary. Potential
32 markings and/or rehabilitations include
33 the following.

34

- 35 ◦ Mounds X1 and X2 would be
36 archeologically located.
- 37
- 38 ◦ Non-extant mound 24 and 25 would
39 be marked and/or rehabilitated.
- 40
- 41 ◦ Northeast borrow pit would be
42 preserved.

43

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

1 Circulation

2 Mound City Group would continue to serve
3 as a primary visitor orientation facility. As
4 a primary visitor orientation facility, some
5 parking and vehicular circulation would be
6 located off-site or in a less intrusive location
7 on-site.
8
9 Portions of the existing pedestrian circulation
10 system that define the spatial qualities of
11 the earthwork complex would be retained.
12 New routes would be added to assist in
13 defining the spatial qualities of the earthwork
14 complex. Access to the earthwork complex
15 via the river would be improved to reflect this
16 circulation route that existed at the time of
17 the Hopewell.

- 18
- 19 • A new canoe / kayak access from the
20 Scioto River into the earthwork complex
21 would be added.

22

23 Vegetation

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

- 28
- 29 ° The reconstructed mounds (1-14, 16-
30 23, X1 and X2) would be planted with
31 a low mown vegetation.
- 32
- 33 ° The reconstructed earthen wall
34 would be planted with a low mown
35 vegetation.
- 36
- 37 ° The reconstructed borrow pits (7)
38 would be planted with low mown
39 vegetation.
- 40
- 41 ° The spaces within the earthen walls
42 would be planted with a low mown
43 vegetation.
- 44
- 45 ° The non-extant mounds (24 and
46 25) would be planted with a taller

1 mown vegetation, or marked or
2 rehabilitated.

- 3
- 4 ° The northeast borrow pit would be
5 maintained with a shorter mown
6 vegetation to assist with visibility.

- 7
- 8 ° Maintain the North Forty as a mix of
9 native herbaceous species, mown 1 to
10 2 times per year.

11

12 Buildings and Structures

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

- 20
- 21 • All non-contributing features would be
22 removed from the earthwork complex.

- 23
- 24 ° Further investigations into the
25 significance and integrity of the
26 visitor center, parking area, sidewalk
27 and associated features as a Mission
28 66 would be undertaken.

- 29
- 30 ° Resource management,
31 administrative, and maintenance
32 buildings would be relocated to a
33 nearby off-site location.

- 34
- 35 ° The wood framed shelter at the canal
36 lock stones would be removed.

- 37
- 38 • A new location for visitor orientation
39 facilities in a nearby off-site location or in
40 a less intrusive location on-site would be
41 identified.

- 42
- 43 • Visitor amenities for orientation, visitor
44 comfort, and circulation would continue
45 to be provided.

1 Small Scale Features

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

6

7 • Some features that may be significant
8 in their own right, but that are non-
9 contributing to the archeological
10 landscape and do not detract from
11 archeological landscape, would be
12 evaluated and retained.

13

14 ◦ WPA/CCC walls at the entrance would
15 be retained and repaired.

16

17 ◦ WPA/CCC walls along the river walk
18 would be retained and repaired.

19

20 ◦ WPA/CCC stone grill would be
21 retained and repaired.

22

23 • Some features that may be significant
24 in their own right, but that are non-
25 contributing features to the archeological
26 landscape and detract from the
27 archeological landscape, including the
28 would be evaluated and removed or
29 relocated.

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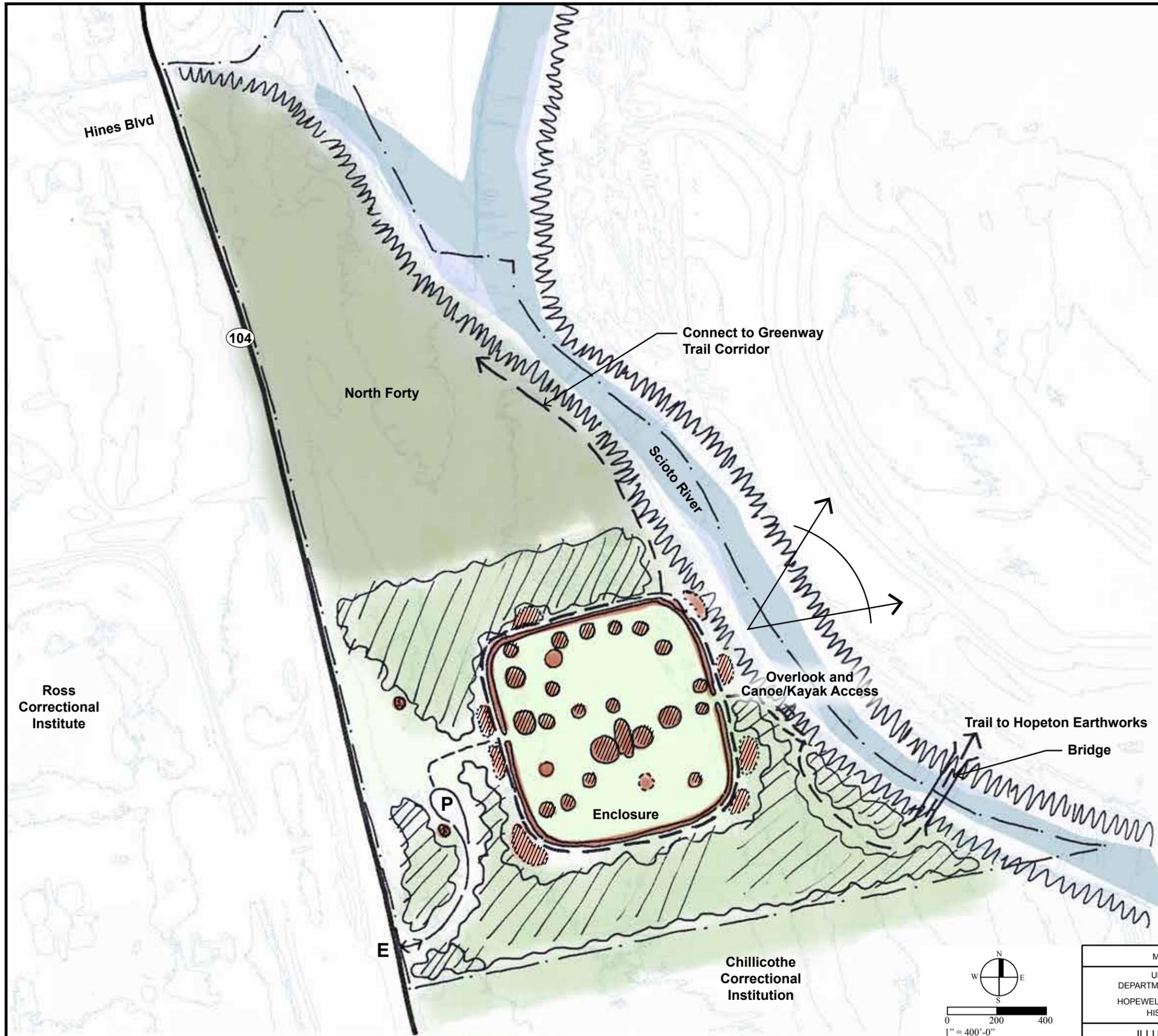
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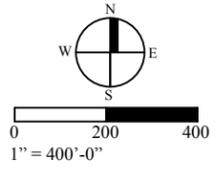


- Legend**
- NPS Boundary
 - Trail
 - E** Entry
 - P** Parking
 - Existing Mound / Wall to Protect
 - Mound Feature - Potentially Mark / Rehabilitate
 - Existing Borrow Pit to Protect
 - Borrow Pit - Potentially Mark with Vegetation
 - Low Mixed Grasses
 - Tall Grass and Forbs
 - Woodland
 - Bridge
 - Embankment
 - Open View

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

TIC# 353 128149

Chillicothe
 Correctional
 Institution



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 MOUND CITY GROUP - ACTION ALTERNATIVE 2
ILLUSTRATION 4-2	NAME OF PARK HOPEWELL CULTURE NATIONAL HISTORICAL PARK
	REGION MIDWEST
	COUNTY ROSS
	STATE OHIO
	4-17

Hopeton Earthworks

1 Hopeton Earthworks is significant as one
2 of the finest and best preserved examples
3 of a monumental Hopewellian geometric
4 enclosure. Hopeton Earthworks consists of
5 a large conjoined circle and square, smaller
6 circular enclosures, and parallel walls. The
7 292 acre park unit is situated within a bend of
8 the Scioto River.

9
10 A treatment approach of preservation was
11 considered for Hopeton Earthworks. Both
12 action alternatives preserve the archeological
13 features, introduce management techniques
14 to better delineate the spaces and forms
15 of the earthwork complex, and improve
16 the visitor experience. Action Alternative 1
17 follows a preservation approach and focuses
18 on maintaining existing features and spaces.

19
20 Action Alternative 2 preserves the
21 archeological features and places an emphasis
22 on changing vegetation management to
23 depict spaces and non-extant above-grade
24 archeological features and adding visitor
25 access opportunities.

26 27 28 **Hopeton Earthworks** 29 **No Action Alternative**

30 The no action alternative provides a basis
31 for comparison with the action alternatives.
32 Under the no action alternative, the present
33 level of use, management, interpretation,
34 maintenance and operations would continue.
35 The no action alternative would include
36 actions identified in the GMP. The no action
37 alternative for would include the following
38 actions.

39
40
41
42
43
44

- 1 • The majority of the park unit would
2 be designated a limited access zone
3 and would not be open to the general
4 public.⁴⁻¹¹
- 5
6 • The primary use would be research and
7 education. Limited development would
8 allow visitors to learn about the park unit
9 and view the earthwork complex from a
10 distance.
- 11
12 • Small development zones would be
13 located north of the parallel walls and
14 east of Pit Road the former location of the
15 Cryder farmstead and along Hopetown
16 Road.
- 17
18 • A natural resource zone would buffer
19 views between the earthwork complex
20 and development to the south.
- 21
22 • Vehicular access, a small parking area, and
23 a primitive picnic area would be provided
24 in the southeast corner of the park unit.
- 25
26 • A trail would provide a link from the
27 parking area to an overlook/wayside
28 located southeast of the Square Enclosure.
- 29
30 • Vegetation would continue to be managed
31 as a combination of crops, active and
32 fallow hay fields, shrubland, native
33 grassland, and woodland borders.

35 4-11 The GMP identifies six management zones used at
36 the park units. Limited Access Zones are primarily for
37 research and education, limiting visitation and preserving
38 archeological resources. Natural Resource Zones restore
39 and maintain biological diversity, while allowing for trails
40 and interpretive overlooks/waysides. Pedestrian zones
41 are archeological areas open to the public to walk among
42 and interpret the earthwork complexes, with rangers
43 present. Development Zones provide facilities for visitor
44 use, education, orientation, and management functions.
45 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.

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

7 Hopeton Earthworks

8 Common to All Action Alternatives

9 Spatial Organization/Topography/Views

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

- 14
15 • Hazardous trees and woody vegetation
16 that impact the earthwork complex or
17 diminish the visitor’s understanding of
18 the earthwork’s spatial qualities would
19 be removed. In particular the vegetation
20 impacting Circle A would be removed.

- 21
22 • The visual and physical relationship of
23 Hopeton Earthworks to Mound City Group
24 would be improved by adding a trail
25 and, where possible, orchestrating views
26 between the two sites.

27 Land Use

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

32
33
34 The park would purchase areas within
35 the authorized park unit boundary, plus
36 additional adjacent or related properties
37 necessary for the protection of earthwork
38 complexes.⁴⁻¹²

39 Archeological Features

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

44
45
46 4-12 GMP, p 41

- 1 • Individual archeological features
2 including mounds, earthen walls and
3 borrow pits would be stabilized and
4 repaired as needed, following standard
5 best practices.

- 6
7 • Interpretive information explaining the
8 relationship between the earthwork
9 complex and the non-contributing
10 features that impact views to and from
11 the earthwork complex—specifically
12 the quarry—would be provided to help
13 describe with narrative and illustrations
14 the spatial extents of the earthwork
15 complex.

16 Circulation

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

- 19
20
21 • Vehicular circulation would be improved
22 by adding a parking area.

- 23
24 • Pedestrian circulation would be improved
25 by adding paths and overlooks to assist
26 in defining the spatial qualities of the
27 earthwork complex (locations differ in the
28 alternatives).

- 29
30 • The relationship of Mound City Group
31 to Hopeton Earthworks would be
32 emphasized by providing a new bridge
33 across the Scioto River, and a new trail to
34 Mound City Group.

35 Vegetation

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

- 42
43
44 • Low, mown vegetation would be
45 maintained in the spaces of the earthwork
46 complex to more clearly depict the mass
and scale of the earthwork.

- 1 • Archeological features (mounds, earthen
2 walls, borrow pits) would be maintained
3 either as low mown vegetation or as tall/
4 unmown to further differentiate their
5 locations in the surrounding landscape.
6
- 7 • Hazardous trees and encroaching woody
8 vegetation would be removed from
9 archeological features unless they are
10 helping to stabilize those features.
11
- 12 • Vegetation (fence row) between the Great
13 Circle and Circle A would be removed.
14
- 15 • Vegetation that stabilizes steep slopes
16 or screens views would be retained
17 including vegetation along the stream
18 banks of Dry Run; vegetation that screens
19 views from the earthwork complex to the
20 gravel quarry; and vegetation that screens
21 views to the north and east from the
22 earthwork complex.
23

24 Buildings and Structures

25 Building and structures that do not contribute
26 to the significance of the archeological
27 landscape and impact the archeological
28 features would be removed.
29

- 30 • The quarry access road that extends over
31 the Square Enclosure would be removed.
32
- 33 • Utility lines and poles adjacent to the
34 quarry access road that extends over the
35 Square Enclosure would be removed.
36

37 **Hopeton Earthworks**

38 **Action Alternative 1: Preserving Earthwork** 39 **Complexes**

40 This alternative would preserve the
41 earthwork complex by preserving extant
42 below- and above-grade archeological
43 features, increase the legibility and visibility
44 of the earthwork complex by delineating
45 the archeological features, and improve the
47 visitor experience by adding a parking area,
48 trails, and overlook.

1 Spatial Organization/Topography/Views

2 The three-dimensional form of the earthwork
3 complex of earthen walls and mounds would
4 be spatially depicted by utilizing three distinct
5 vegetation types — low grasses, higher
6 grasses / herbaceous, and woodland — to
7 reveal the form and spaces of the earthwork
8 complex.
9

10 Archeological Features

11 Vegetation would be the primary method
12 used to delineate archeological features.
13 Vegetation outside the earthwork complex
14 would be managed as tall grasses or a mix
15 of grasses and forbs vegetation. Vegetation
16 inside the earthwork complex would
17 be managed as low, mown vegetation.
18 Archeological features would be maintained
19 as low, mown vegetation.
20

21 Circulation

22 Vehicular and pedestrian circulation systems
23 would be improved by adding visitor parking
24 areas, and pedestrian routes that assist in
25 defining the spatial qualities of the earthwork
26 complex.
27

- 28 • The new parking area would be provided
29 on Hopetown Road and a pedestrian
30 bridge or ramp would be installed over
31 Dry Run north of the new parking area.
32

- 33 • A trail would be established from the
34 new parking area to an overlook east
35 of Circles B and C, into and tracing the
36 circumference of the Great Circle and the
37 inside of the Square Enclosure, exiting
38 at the southwest corner and continuing
39 through the Circleville Terrace to return
40 to the parking area.
41

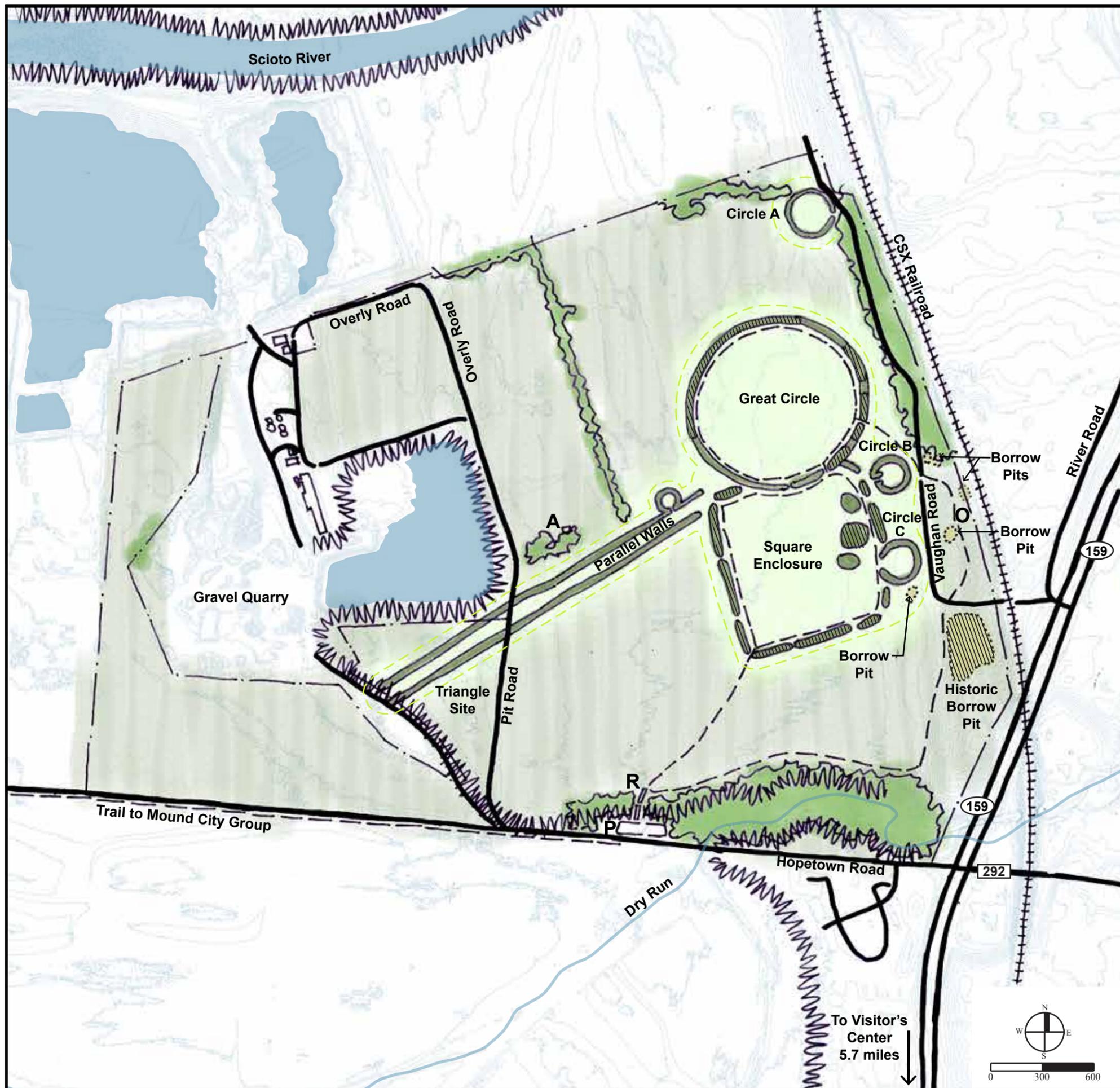
42 Vegetation

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

1 earthwork complex, frame views, and screen
2 adjacent development.
3
4 • Low, mown vegetation would be
5 maintained in the spaces of the earthwork
6 complex to more clearly depict the mass
7 and scale of the earthwork.
8
9 • Archeological features (mounds, earthen
10 walls, borrow pits) would be maintained
11 either as low mown vegetation or as tall/
12 unmown to further differentiate their
13 locations in the surrounding landscape.
14
15 • Hazardous trees and encroaching woody
16 vegetation would be removed from
17 archeological features unless they are
18 helping to stabilize those features.
19
20 • Vegetation (fence row) between the Great
21 Circle and Circle A would be removed.
22
23 • Vegetation that stabilizes steep slopes
24 or screens views would be retained
25 including vegetation along the stream
26 banks of Dry Run; vegetation that screens
27 views from the earthwork complex to the
28 gravel quarry; and vegetation that screens
29 views to the north and east from the
30 earthwork complex.
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1 Buildings and Structures

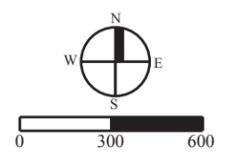
2 Building and structures that do not contribute
3 to the significance of the archeological
4 landscape and impact the archeological
5 features would be removed.
6
7 • The quarry access road that extends over
8 the Square Enclosure would be removed.
9
10 • Utility lines and poles adjacent to the
11 quarry access road that extends over the
12 Square Enclosure would be removed.
13
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46



- 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

JULY 2015 UNITED STATES DEPARTMENT OF THE INTERIOR HOPEWELL CULTURE NATIONAL HISTORICAL PARK	TIC# 353 128149 <small>TITLE OF PROJECT</small> CULTURAL LANDSCAPE REPORT AND ENVIRONMENTAL ASSESSMENT <small>TITLE OF DRAWING</small> HOPEWELL EARTHWORKS - ACTION ALTERNATIVE 1 <small>NAME OF PARK</small> HOPEWELL CULTURE NATIONAL HISTORICAL PARK
ILLUSTRATION 4-3	<small>REGION</small> MIDWEST <small>COUNTY</small> ROSS <small>STATE</small> OHIO 4-23

To Visitor's
Center
5.7 miles



1 Hopeton Earthworks

2 Action Alternative 2: Conserving and 3 Revealing Earthwork Complexes

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

14
15 Spatial Organization/Topography/Views
16 The forms and patterns of the archeological
17 landscape would be revealed to depict the
18 extent and form of the earthwork complex
19 and all archeological features using assertive
20 techniques.

- 21
- 22 • The three-dimensional form of the
23 earthwork complex and surroundings
24 would be spatially depicted through
25 markings and vegetation.
- 26
- 27 • The mass, scale, and form of the
28 earthwork complex would be delineated
29 by marking non-extant above-grade
30 archeological features, i.e., earthen walls,
31 mounds, and borrow pits, and the spaces
32 of the earthwork.
- 33
- 34 • The park would work with property
35 owners to acquire property or
36 easements for the land within the bend
37 of the Scioto River surrounding the
38 Hopeton Earthworks to enable holistic
39 management of natural, cultural, and
40 archeological resources at the park unit
41 and provide expanded opportunities for
42 visitor use.

43
44
45
46

1 Land Use

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

6

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

13

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

22 Archeological Features

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

- 28
- 29 • The three-dimensional form of the
30 earthwork complex that have extant
31 above-grade features would be spatially
32 depicted by utilizing vegetation types or
33 vegetation management techniques or
34 non-permanent markings.
- 35
- 36 • Where no discernible topographical
37 relief occurs, vegetation would be used to
38 delineate features.
- 39
- 40 • Markings would utilize recent magnetic
41 surveys to archeologically locate features.

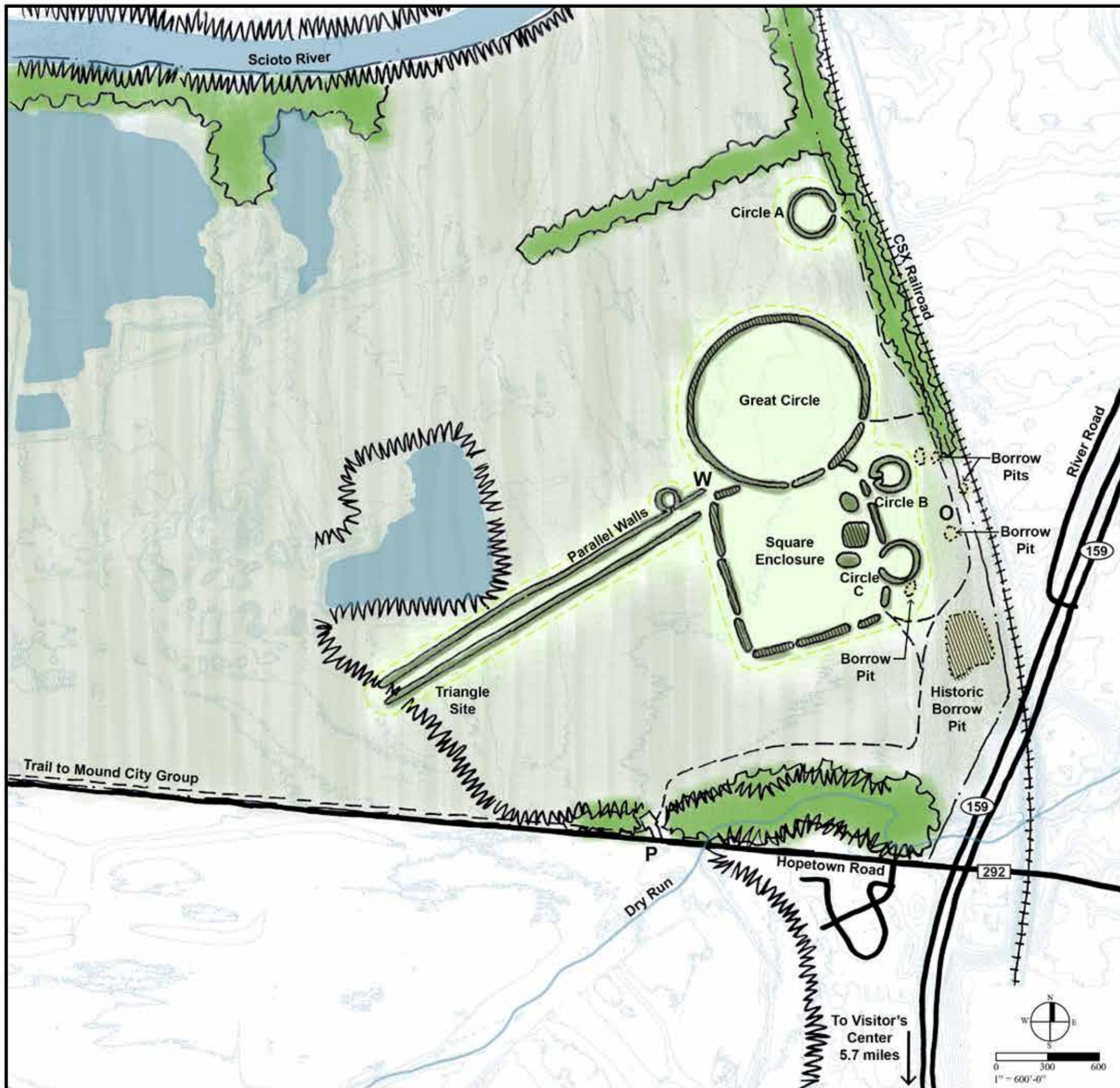
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43 Circulation

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

46

1	• Providing an access road and parking	1	and structures that are impacting the
2	area on the north side of Dry Run—in the	2	earthwork complex including: the quarry
3	location of the former farm road.	3	operation buildings, structures, roads and
4		4	utilities.
5	• Providing trails that allow for	5	
6	understanding of the earthworks.	6	• Pit Road, Overly Road, quarry service
7		7	routes and Vaughn Road would be
8	• Adding an interpretive wayside at the	8	removed.
9	intersection of the Great Circle, Square	9	
10	Enclosure, and Parallel Walls.	10	
11		11	
12	• Improving the relationship of the	12	
13	earthwork complex to the river by	13	
14	creating an interconnected water route	14	
15	between all park units with new canoe /	15	
16	kayak access.	16	
17		17	
18	<u>Vegetation</u>	18	
19	In addition to common actions, additional	19	
20	treatments under Alternative 2 include the	20	
21	following.	21	
22		22	
23	• Vegetative buffers would be added to	23	
24	screen negative views and impacts,	24	
25	specifically north of Circle A.	25	
26		26	
27	• Vegetation that impacts archeological	27	
28	features or visitor experience, would be	28	
29	removed including the following.	29	
30		30	
31	◦ Fencerow vegetation west of the Great	31	
32	Circle.	32	
33		33	
34	◦ Selected fencerow vegetation east of	34	
35	the Great Circle.	35	
36		36	
37	<u>Buildings and Structures</u>	37	
38	Buildings and structures that do not	38	
39	contribute to the significance of the	39	
40	archeological landscape and impact the	40	
41	integrity of the earthwork complex would	41	
42	be removed. The following would be	42	
43	implemented.	43	
44		44	
45	• The park would work with property	45	
46	owners to develop a long-term plan	46	
47	to eventually remove the buildings		



- Legend**
- NPS Boundary
 - Road
 - Trail
 - 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
 - Overlook
 - Wayside

MARCH 2016		TIC# 353 128149	
UNITED STATES DEPARTMENT OF THE INTERIOR HOPEWELL CULTURE NATIONAL HISTORICAL PARK		TITLE OF PROJECT CULTURAL LANDSCAPE REPORT AND ENVIRONMENTAL ASSESSMENT TITLE OF DRAWING HOPEWELL EARTHWORKS - ACTION ALTERNATIVE 2 NAME OF PARK HOPEWELL CULTURE NATIONAL HISTORICAL PARK	
ILLUSTRATION 4-4		REGION MIDWEST	COUNTY ROSS STATE OHIO 4-27

Hopewell Mound Group

1 Hopewell Mound Group is one of the most
2 important earthwork complexes that
3 represent Hopewell culture. This earthwork
4 is the “type-site” for the Hopewell culture.
5 Excavations that took place at this location
6 established the precedent for classification of
7 Hopewell – the name that has come to signify
8 a diverse range of pre-Columbian eastern
9 woodland American Indians who shared a
10 common mound-building culture.

11
12 Hopewell Mound Group is a 127 acre
13 earthwork complex, consisting of two
14 monumental conjoined earthwork enclosures,
15 the Great Enclosure, in the general shape of
16 a parallelogram, and the other in the shape
17 of a square, several smaller enclosures,
18 approximately 30 to 40 mounds, and
19 associated ditches.

20
21 Two treatment approaches were considered
22 for Hopewell Mound Group, preservation
23 and rehabilitation. Both preserve
24 the archeological features, introduce
25 management techniques to better delineate
26 the spaces and forms of the earthwork
27 complex, and improve the visitor experience.
28 Action Alternative 1 follows a preservation
29 approach using vegetation management to
30 delineate archeological features and spaces.

31
32 Rehabilitation is the treatment approach for
33 Action Alternative 2. At Hopewell Mound
34 Group, rehabilitation places an emphasis
35 on vegetation management to depict spaces
36 and non-extant above-grade archeological
37 features while allowing for marking or
38 rehabilitation of non-extant archeological
39 features and removal of elements that impact
40 archeological features.

41
42
43
44

1 Hopewell Mound Group

2 No Action Alternative

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

11

12 • The majority of the park unit would
13 be a designated pedestrian zone. The
14 north and west portions of the park unit
15 beyond the earthwork complex would be
16 managed as a natural resource zone. A
17 development zone would be provided at
18 the southeast corner of the property for a
19 parking area and minimal visitor facilities
20 including a comfort station, picnic shelter
21 and interpretive wayside.⁴⁻¹³

22

23 • Trails of varying degrees of difficulty
24 would enable visitors to explore and
25 experience the resources, views, and
26 stories at the park unit. Wayside exhibits
27 and other interpretive media would
28 address interpretive themes. Overlooks
29 along trails would offer views of the
30 earthwork complex.

31

32

33

34 4-13 The GMP identifies six management zones used at
35 the park units. Limited Access Zones are primarily for
36 research and education, limiting visitation and preserving
37 archeological resources. Natural Resource Zones restore
38 and maintain biological diversity, while allowing for trails
39 and interpretive overlooks/waysides. Pedestrian zones
40 are archeological areas open to the public to walk among
41 and interpret the earthwork complexes, with rangers
42 present. Development Zones provide facilities for visitor
43 use, education, orientation, and management functions.
44 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.

1 • Access for visitors would be via motorized
2 vehicles, bicycle, and foot via Sulphur Lick
3 Road and the adjacent rails to trails route
4 located at the south side of the park unit.
5

6 • A method of outlining the earthwork
7 complex on the ground with a non-
8 permanent material to make them more
9 visible would be used.
10

11 • The park and county would work
12 cooperatively to study alternatives
13 for road and traffic management that
14 would avoid future negative impacts on
15 the archeological resources and local
16 residents.
17

18 Hopewell Mound Group

19 Common to All Action Alternatives

20 Spatial Organization/Topography/Views

21 The spatial arrangement of the earthwork
22 complex would be emphasized to depict the
23 mass and scale of the earthwork, and improve
24 the visitor's understanding.
25

26 • Hazardous trees and woody vegetation
27 that impact the earthwork complex or
28 diminish the visitor's understanding of
29 the earthwork's spatial qualities would be
30 removed. In particular vegetation along
31 the eastern portion of the north wall of
32 the Great Enclosure and vegetation along
33 the alignment of the south portion of the
34 west wall of the Great Enclosure would be
35 removed.
36

37 Archeological Features

38 All extant below- and above-grade
39 archeological features, as well as spaces with
40 known or potential archeological scatter
41 would be preserved.
42

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

1 • Interpretive information explaining the
2 earthwork complex would be provided
3 to clarify the spatial extents of the
4 earthwork complex.
5

6 Vegetation

7 Vegetation that contributes to the character
8 of the archeological landscape would be
9 preserved. Vegetation would be managed
10 to define the spatial organization of the
11 earthwork complex, frame views, and screen
12 adjacent development.
13

14 • Low, mown vegetation would be
15 maintained in the spaces of the earthwork
16 complex to more clearly depict the mass
17 and scale of the earthwork.
18

19 • Archeological features (mounds, earthen
20 walls, borrow pits) would be maintained
21 either as low mown vegetation or as tall/
22 unmown to further differentiate their
23 locations in the surrounding landscape.
24

25 • Hazardous trees and encroaching woody
26 vegetation would be removed from
27 archeological features unless they assist
28 in stabilizing those features.
29

30 • Vegetation that stabilizes steep slopes or
31 protects earthwork complex from impacts
32 would be retained including vegetation
33 along the west portion of the north wall of
34 the Great Enclosure and vegetation along
35 the south wall of the Great Enclosure.
36

37 • Vegetative buffers would be added to
38 screen negative views and impacts,
39 specifically at the southwest portion of
40 the property on the west side of the west
41 wall of the Great Enclosure.
42

1 **Hopewell Mound Group**

2 **Action Alternative 1: Preserving Earthwork**
3 **Complexes**

4 This alternative would preserve the
5 earthwork complex by preserving extant
6 below- and above-grade archeological
7 features, increase the legibility and visibility
8 of the earthwork complex by delineating
9 the archeological features, and improve the
10 visitor experience by managing circulation,
11 vegetation, and views.

12
13 Spatial Organization/Topography/Views

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

19

20 Archeological Features

21 Vegetation would be the primary method
22 used to delineate archeological features.
23 Vegetation outside the earthwork complex
24 would be managed as tall or woody
25 vegetation. Vegetation inside the earthwork
26 complex would be managed as low mown
27 vegetation. Vegetation on archeological
28 features would be maintained as low, mown
29 vegetation.

30

- 31 • Interpretive information explaining the
32 relationship between the earthwork
33 complex and the non-contributing
34 features that impact the earthwork
35 complex would be provided to help clarify
36 the spatial extents of the earthwork
37 complex—specifically addressing Sulphur
38 Lick Road, the transmission towers
39 and overhead lines, and the residential
40 property on the south side of Sulphur Lick
41 Road.

42

43

44

45

46

1 Circulation

2 The existing vehicular and bicycle circulation
3 system would remain.

4

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

10

- 11 • A trail from the visitor parking area to
12 the North Fork Paint Creek would be
13 established.

14

- 15 • The existing overlook at the northeast
16 corner of the Great Enclosure would be
17 retained.

18

- 19 • The existing overlook on the east side of
20 the Square Enclosure would be repaired
21 to improve orientation to the earthwork
22 complex.

23

- 24 • A path parallel to the north wall of the
25 Great Enclosure would be added.

26

- 27 • The path at the Square Enclosure would
28 be relocated to trace the inside of the
29 earthwork walls.

30

- 31 • A path would be established through the
32 inside of the Great Enclosure passing near
33 the most visible features.

34

35 Vegetation

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

42

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

- 1 • Archeological features (mounds, earthen
2 walls, borrow pits) would be maintained
3 either as low mown vegetation or as tall/
4 unmown to further differentiate their
5 locations in the surrounding landscape.
6
- 7 • Hazardous trees and encroaching woody
8 vegetation would be removed from
9 archeological features unless they assist
10 in stabilizing those features.
11
- 12 • Vegetation that stabilizes steep slopes or
13 protects earthwork complex from impacts
14 would be retained including vegetation
15 along the west portion of the north wall of
16 the Great Enclosure and vegetation along
17 the south wall of the Great Enclosure.
18
- 19 • Vegetative buffers would be added to
20 screen negative views and impacts,
21 specifically at the southwest portion of
22 the property on the west side of the west
23 wall of the Great Enclosure.
24

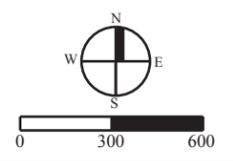
25 Buildings and Structures

26 Non-contributing features that assist in the
27 interpretation of the earthwork complex
28 would be retained – specifically the
29 Hopewell barn which could be interpreted
30 as an element present during the time the
31 earthwork was initially investigated.
32

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- 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



JULY 2015		TIC# 353 128149	
UNITED STATES DEPARTMENT OF THE INTERIOR HOPEWELL CULTURE NATIONAL HISTORICAL PARK		TITLE OF PROJECT CULTURAL LANDSCAPE REPORT AND ENVIRONMENTAL ASSESSMENT 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

1 **Hopewell Mound Group**
 2 **Alternative 2: Conserving and Revealing**
 3 **Earthwork Complexes**
 4 Action Alternative 2 would preserve the
 5 earthwork complex and all extant below- and
 6 above-grade archeological features. This
 7 alternative would increase the legibility
 8 and visibility of the earthwork complex by
 9 better delineating the archeological features.
 10 The visitor experience would be improved
 11 by adding circulation route, removing
 12 select vegetation, and opening views. In
 13 addition, this alternative would remove non-
 14 contributing features.

15
 16 Spatial Organization/Topography/Views
 17 The forms and patterns of the archeological
 18 landscape would be revealed to depict the
 19 extent and form of the earthwork complex.
 20 All archeological features would be depicted
 21 using assertive techniques.

- 22
- 23 • The three-dimensional form of the
 24 earthwork complex and surroundings
 25 would be spatially depicted through
 26 markings and vegetation.
- 27
- 28 • The mass, scale and form of the
 29 earthwork complex would be delineated
 30 by rehabilitating or marking non-extant
 31 above-grade archeological features, i.e.,
 32 earthen walls, mounds, and borrow pits,
 33 and the spaces of the earthwork.
- 34

35 Land Use

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

- 39
- 40 • The park would work with property
 41 owners and local authorities to remove
 42 impacting land uses from the earthwork
 43 complex and rehabilitate the landscape as
 44 part of the interpretive experience.
- 45
- 46

- 1 • The park would work the Ohio
 2 Department of Transportation (ODOT)
 3 and local community to develop a long-
 4 term plan for the removal of portions of
 5 Sulphur Lick Road and trail that impacts
 6 the earthwork complex.
- 7

8 Archeological Features

9 Archeological features would be preserved.
 10 Archeological features that lack above-
 11 ground visible aspects would be marked
 12 to depict their mass, form and character,
 13 as documented by Shetrone between
 14 1922 and 1925, and using the most recent
 15 archeological investigations.

- 16
- 17 • The three-dimensional form of the
 18 earthwork complex that have extant
 19 above-grade features would be spatially
 20 depicted by utilizing vegetation types or
 21 vegetation management techniques, or
 22 non-permanent markings.
- 23
- 24 • Where no discernible topographical
 25 relief occurs, vegetation would be used to
 26 delineate features.
- 27
- 28 • Markings would utilize the most recent
 29 archeological investigations and magnetic
 30 surveys to archeologically locate features.
- 31
- 32 • Magnetometry would be undertaken
 33 at the outlying areas to determine if
 34 additional resources are present.
- 35

1 Circulation

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

15
16 • The park would work with The Ohio
17 Department of Transportation (ODOT)
18 and local community to remove portions
19 of Sulphur Lick Road and the trail that
20 impacts the earthwork complex. This
21 would occur only when local access needs
22 have been addressed.

23
24 • Trails would be established parallel to the
25 enclosure walls including inside the four
26 Square Enclosure walls; outside the north
27 wall and north portion of the east wall of
28 the Square Enclosure; inside the south
29 wall and south portions of the east and
30 west walls of the Great Enclosure; outside
31 the north wall, north portion of the east
32 wall, and west wall of the Great Enclosure.

33
34 • The existing overlook and viewshed at the
35 northeast corner of the Great Enclosure
36 would be retained and the wayside
37 updated.

38
39 • A new overlook would be added to
40 provide an overview of the earthwork
41 complex in a location near the north wall
42 of the Great Enclosure to the west of the
43 existing overlook .

44
45 • The existing overlook on the east side of
46 the Square Enclosure would be updated

1 to provide improved orientation to the
2 earthwork complex.

3
4 • The relationship of the earthwork
5 complex to the river would be improved
6 by creating pedestrian and bike links to
7 the North Fork Paint Creek.

8
9 • The rails to trails path would be relocated
10 south of the south wall of the Great
11 Enclosure.

12
13 • A path would be extended from the
14 southwest corner of the Great Enclosure
15 to the North Fork Paint Creek.

16
17 • A new canoe / kayak access would
18 be added in a location determined
19 appropriate by park staff.

20
21 Vegetation

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

25
26 Buildings and Structures

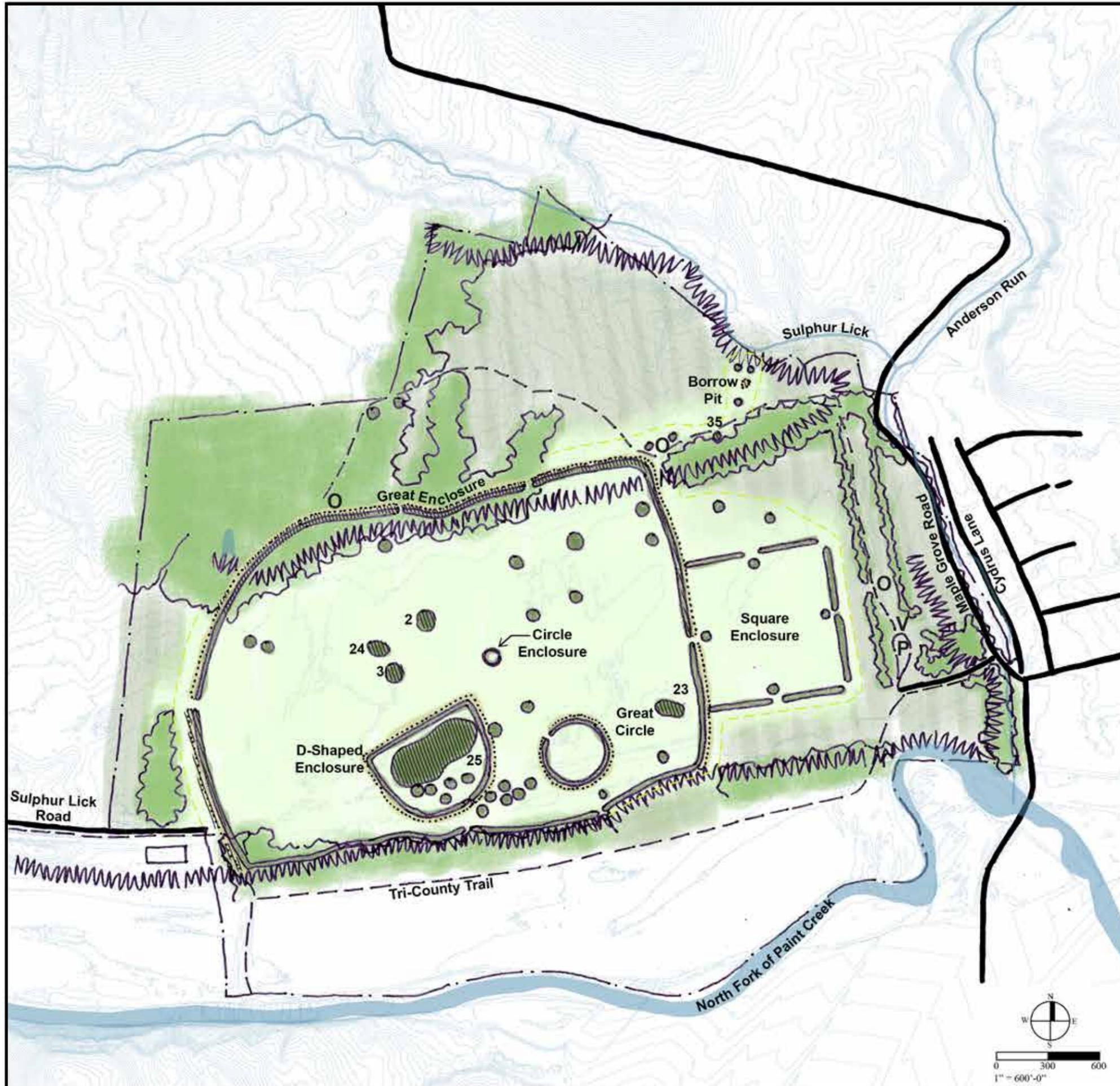
27 Buildings and structures that do not
28 contribute to the significance of the
29 archeological landscape and impact the
30 integrity of the earthwork complex would be
31 removed.

32
33 • The park would work with property
34 owners to develop a long-term plan
35 to eventually remove privately-owned
36 buildings that impact the earthwork
37 complex.

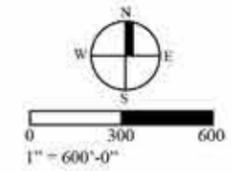
38
39 • The park would work with utility
40 companies to develop a long-term plan
41 to eventually mitigate the effects of the
42 high-voltage transmission towers and
43 overhead lines that are impacting the
44 earthwork complex. Possible choices for
45 mitigation could include:

- 1 ° Transmission towers and lines would
2 be relocated to a new location beyond
3 the viewshed of the earthwork
4 complex (off NPS property).
5
- 6 ° Transmission towers and high voltage
7 lines would be relocated within NPS
8 property to a location where they do
9 not impact the earthwork complex.
10
- 11 ° Transmission towers would be
12 replaced with substations outside
13 the earthwork complex and high
14 voltage lines would be relocated
15 underground.
16
- 17 ° Existing lattice towers would be
18 replaced with less intrusive towers.
19
- 20 ° The existing overlook would be
21 moved to minimize the visual impact
22 of the towers by orienting views to the
23 north/south rather than east/west.
24
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- Legend**
- · — NPS Boundary
 - Road
 - - - Trail
 - V Visitor Orientation
 - P Parking
 - Existing Feature to Protect and Mark with Vegetation
 - Earthen Wall / Feature to Protect and Mark with Vegetation
 - Historic Borrow Pit / Ditch to Protect and Mark with Vegetation
 - Borrow Pit / Ditch to Protect and Mark with Vegetation
 - Low Mixed Vegetation
 - Tall Grasses and Forbs
 - Woodland
 - Embankment
 - Limits of low mown grasses
 - O Overlook



MARCH 2016		TIC# 353 128149	
UNITED STATES DEPARTMENT OF THE INTERIOR HOPEWELL CULTURE NATIONAL HISTORICAL PARK		TITLE OF PROJECT CULTURAL LANDSCAPE REPORT AND ENVIRONMENTAL ASSESSMENT 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 4-39

Seip Earthworks

1 Seip Earthworks is significant for possessing
 2 the only existing example of the rare class
 3 of extremely large Hopewell burial mounds,
 4 known as a tripartite earthwork.
 5
 6 Only the reconstructed Seip-Pricer Mound
 7 and original Seip-Conjoined mound remain
 8 visible today. Seip Earthworks is composed
 9 of large archeological features, including
 10 earthen walls, mounds, and borrow pits,
 11 adjacent to Paint Creek. Several non-
 12 contributing features are adjacent to, or on
 13 top of the archaeological features including
 14 buildings, a picnic area, and roads.
 15
 16 Two treatment approaches were considered
 17 for Seip Earthworks, preservation and
 18 rehabilitation. Both approaches protect
 19 the archeological features, introduce
 20 management techniques to better delineate
 21 the spaces and forms of the earthwork
 22 complexes, and improve visitor experience.
 23
 24 Action Alternative 1 follows a preservation
 25 approach using vegetation management to
 26 delineate archeological features.
 27
 28 Rehabilitation is the treatment approach for
 29 Alternative 2. This approach uses vegetation
 30 management as a basis for depicting
 31 archeological features and spaces to convey
 32 the grand scale and massing of the earthwork
 33 complex. As an additional method, markings
 34 would be allowed as part of this approach,
 35 using new materials to depict specific
 36 archeological features.
 37
 38 Both treatment approaches would preserve
 39 the Seip-Pricer Mound and the original Seip-
 40 Conjoined Mound. Alternative 2 would repair
 41 the portion of reconstructed earthen wall to
 42 be archeologically accurate.
 43
 44

1 Seip Earthworks

2 No Action Alternative

3 The no action alternative provides a basis
 4 for comparison with the action alternatives.
 5 Under the no action alternative, the present
 6 level of use, management, interpretation,
 7 maintenance and operations would continue.
 8 The no action alternative would include the
 9 following actions.
 10
 11 • The majority of the park unit would be a
 12 designated pedestrian zone. The west and
 13 south portions, along Paint Creek, would
 14 be managed as a natural resource zone. A
 15 development zone would be provided at
 16 the north side of the property, adjacent to
 17 US 50 for parking area improvements.⁴⁻¹⁴
 18
 19 • Mown trails would enable visitors to
 20 explore and experience the resources,
 21 views, and stories at Seip Earthworks.
 22 Wayside exhibits and other interpretive
 23 media would address interpretive themes.
 24
 25 • Access for visitors would be via motorized
 26 vehicles, bicycle, and foot, from US 50.
 27
 28 • The earthwork complex would continue
 29 to be managed with a variety of
 30 vegetation management strategies. The
 31 area previously owned by the state,
 32 that includes Seip-Pricer Mound, would
 33
 34 ⁴⁻¹⁴ The GMP identifies six management zones used at
 35 the park units. Limited Access Zones are primarily for
 36 research and education, limiting visitation and preserving
 37 archeological resources. Natural Resource Zones restore
 38 and maintain biological diversity, while allowing for trails
 39 and interpretive overlooks/waysides. Pedestrian zones
 40 are archeological areas open to the public to walk among
 41 and interpret the earthwork complexes, with rangers
 42 present. Development Zones provide facilities for visitor
 43 use, education, orientation, and management functions.
 44 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.

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

8 **Seip Earthworks**

9 **Common to All Action Alternatives**

10
11 Spatial Organization/Topography/Views
12 The spatial arrangement of the earthwork
13 complex would be emphasized to depict the
14 mass and scale of the earthwork complex and
15 to improve visitor's understanding.

16
17 • Hazardous trees and woody vegetation
18 that impact the archeological features
19 or diminish the visitor's understanding
20 of the spatial qualities of the earthwork
21 complex and individual spaces would be
22 removed.

23
24 ◦ Fence row vegetation around the
25 perimeter of the previously state-
26 owned property would be removed.
27 Trees on the west half of the Small
28 Circle.

29
30 • The relationship of the earthwork
31 complex to Paint Creek would be
32 improved by thinning vegetation to open
33 views between the earthwork complex
34 and the river.

35 36 Land Use

37 The park would purchase areas within
38 the authorized park unit boundary, plus
39 additional adjacent or related properties
40 necessary for the protection of earthwork
41 complexes.⁴⁻¹⁵ Three in-holdings would be
42 purchased.

43
44 • The parcel containing the westernmost
45 portion of the Small Circle.

46

1 • The parcel on US 50, currently a private
2 residence.

3
4 • The eastern parcel of the park unit with
5 several non-extant mounds, borrow pits,
6 and potential archeological scatter.

7

8 Archeological Features

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

13

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

18

19 Vegetation

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

26

27 • A mix of grasses with some herbaceous
28 species would be maintained as a
29 consistent groundcover (mown one to
30 two times per year) in areas surrounding
31 earthwork complex and in areas of
32 archeological scatter.

33

34 • Riparian vegetation would be maintained
35 along the river bank.

36

37 • The relationship of the earthwork
38 complex to the North Fork Paint Creek
39 would be clarified by thinning vegetation
40 and opening select views.

41

42 • Vegetative buffers would be added to
43 screen negative views and impacts,
44 specifically to the east to screen the Paint
45 Valley High School and north to screen the
46 existing road.

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

10 Buildings and Structures

11 Seip Earthworks would serve as a visitor
12 orientation facility.

- 13
- 14
- 15 • The historical significance of the
16 Blackstone House and outbuildings would
17 be assessed. It's potential for adaptive
18 reuse as a structure for park use would be
19 assessed.

- 20
- 21 • The historical significance of the fish
22 camp buildings and site would be
23 assessed.

24 Seip Earthworks

25 **Action Alternative 1: Preserving Earthwork** 26 **Complexes**

27 This action alternative would build upon the
28 actions noted in the GMP. The preservation
29 treatment approach for Action Alternative 1
30 repairs and maintains extant archeological
31 features; uses vegetation types and
32 management to delineate archeological
33 features and spaces; and retains non-
34 contributing features that do not impact the
35 visitor's ability to interpret the archeological
36 features.

37 Spatial Organization/Topography/Views

38 The forms and patterns of the archeological
39 landscape would be revealed. The spatial
40 qualities of the earthwork complex and the
41 relationship of the earthwork complex to the
42 surrounding landscape would be depicted.
43 The sense of scale, patterns, and organization
44 at Seip Earthworks would be revealed
45 through management of vegetation and views.

1 The two-dimensional form of the earthwork
2 complex of earthen walls, mounds, and
3 borrow pits by utilizing two or three distinct
4 vegetation types to reveal the form and
5 spaces of the earthwork complex.

6 Archeological Features

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

- 11
- 12
- 13 • Vegetation would be the primary method
14 used to delineate archeological features.
- 15
- 16 • Vegetation outside the earthwork complex
17 would be managed as tall vegetation.

- 18
- 19 • Vegetation inside the spaces of the
20 earthwork complex would be managed as
21 low, mown vegetation.

- 22
- 23 • Archeological features would be
24 maintained as either low, mown
25 vegetation or taller, mown vegetation.

26 Circulation

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

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

- 37
- 38
- 39
- 40 • The existing parking area would be
41 removed, and one vehicular access point
42 to US 50 would be provided.

- 43
- 44 • Dill Road would be removed.

- 1 • Pedestrian circulation routes would be
2 added to reveal the spatial qualities of the
3 earthwork complex.
4
- 5 ◦ A trail along the interior of the Large
6 Circle would be added.
7
- 8 ◦ A trail to the Small Circle and Large
9 Square would be added.
10
- 11 ◦ A trail connection to the Paint Creek
12 overlook / canoe access would be
13 added.
14
- 15 ◦ A trail connection from the parking
16 area to the rehabilitated Blackstone
17 House would be added.
18

19 Vegetation

20 Archeological features would be maintained
21 as low, mown vegetation. Vegetation outside
22 the earthwork complex would be managed as
23 tall native grassland vegetation.
24

- 25 • Low/mown vegetation would be
26 maintained in spaces of earthwork
27 complex including the entire interior
28 of the Small Circle, Large Circle, Large
29 Square, and in the areas of the borrow
30 pits.
31
- 32 • Archeological features (mounds, earthen
33 walls, borrow pits) would be maintained
34 either as low mown vegetation or as tall/
35 unmown to further differentiate their
36 locations in the surrounding landscape.
37 The reconstructed Seip-Pricer Mound
38 would be planted with a low mown
39 vegetation.
40
- 41 ◦ The reconstructed earthen wall
42 would be planted with a low mown
43 vegetation.
44

- 1 ◦ The extant Seip-Conjoined Mound
2 would be planted with a taller mown
3 vegetation.
4
- 5 ◦ The non-extant mounds, earthen
6 walls, and borrow pits would
7 be planted with a taller mown
8 vegetation.
9

10 Buildings and Structures

11 Existing buildings and structures consist of
12 the Blackstone House, fish camp buildings,
13 and the picnic shelter and outbuildings. This
14 alternative would allow non-contributing
15 buildings to remain if they assist in
16 interpretation and improve the visitor
17 experience.
18

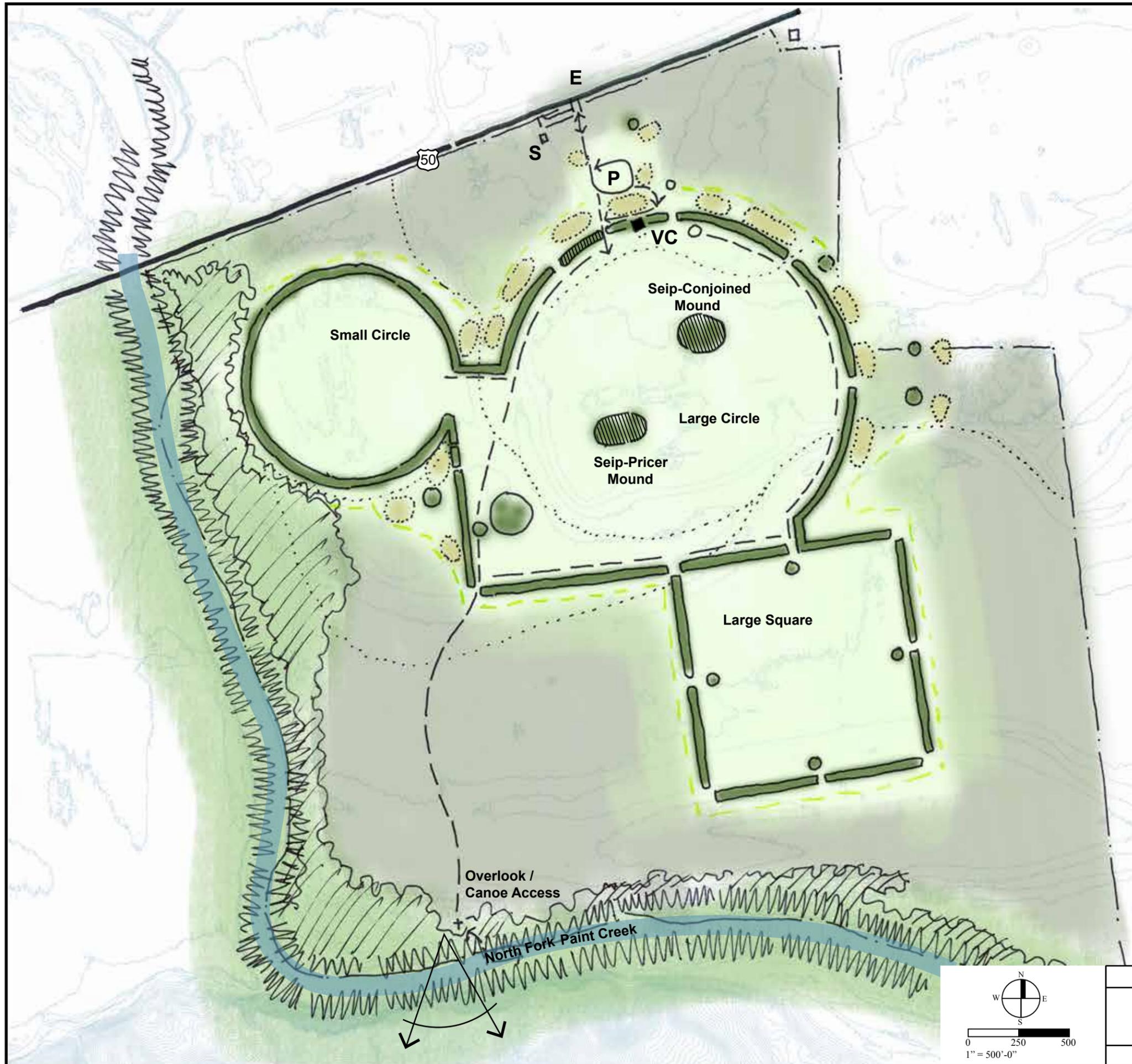
- 19 • The Blackstone House and outbuildings
20 would be further researched, and
21 if deemed appropriate, would be
22 rehabilitated for use as a visitor
23 orientation facility.
24
- 25 • A view to the earthwork complex
26 would be provided at the rehabilitated
27 Blackstone House.
28
- 29 • Non-contributing features that do
30 not assist in the interpretation of the
31 earthwork complex, specifically the fish
32 camp buildings (if deemed non-historic)
33 would be removed.
34
- 35 • The picnic shelter would be repaired for
36 park use.
37

38 Small Scale Features

39 Existing small scale features consist of signs,
40 outdoor furniture, fences, and utilities. This
41 alternative would allow non-contributing
42 small scale features to remain if they assist
43 in interpretation and improve the visitor
44 experience.
45

- 1 • Park signage, including identification,
2 wayfinding, regulatory, and waysides,
3 would be replaced with low-profile and
4 unobtrusive signs consistent with Park
5 signage family.
6
- 7 • Outdoor furniture would be replaced to
8 have consistent furnishings at all park
9 units. Picnic tables, trash and recycling
10 receptacles, and the accessible drinking
11 fountain would be replaced.
12
- 13 • The wood deck at the Paint Creek
14 overlook would be retained and repaired.
15
- 16 • The Blackstone House features, including
17 fences, power lines, propane tank, and
18 parking area bollards would be removed
19 in conjunction with the Blackstone House
20 rehabilitation.
21
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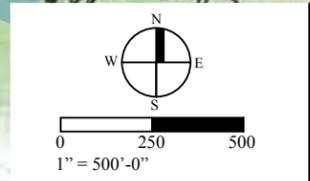
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- Legend**
- Proposed NPS Boundary
 - Trail
 - VC** Visitor Orientation
 - P** Parking
 - E** Entry
 - S** Shelter
 - Existing Mound / Feature
 - Feature - Mark
 - Borrow Pit - Mark
 - Low Mown Grasses
 - Grasses / Herbaceous Mix
 - Woodland
 - Limits 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](https://msc.fema.gov/portal/search?Address+Query=chillicothe); <http://www.fws.gov/wetlands/Data/Mapper.html>; 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 SEIP EARTHWORKS - ACTION ALTERNATIVE 1
ILLUSTRATION 4-7	NAME OF PARK HOPEWELL CULTURE NATIONAL HISTORICAL PARK
	REGION: MIDWEST COUNTY: ROSS STATE: OHIO 4-47



1 **Seip Earthworks**

2 **Action Alternative 2: Conserving and**
3 **Revealing Earthwork Complexes**

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

11
12 Spatial Organization/Topography/Views

13 The forms and patterns of the archeological
14 landscape would be revealed to depict
15 the extent and form of the earthwork
16 complex. All archeological features would
17 be spatially depicted, revealing the three-
18 dimensional form of the earthwork complex
19 and surroundings through markings and
20 vegetation.

21
22 • Non-contributing features would
23 be removed from the immediate
24 surroundings of the earthwork complex.
25 These include the Blackstone House,
26 outbuildings, roads, and utilities.

27
28 • The earthwork complex would be
29 delineated by allowing markings or
30 rehabilitations of earthen walls, mounds,
31 and borrow pits when no discernible
32 topographical relief occurs.

33
34 • Vegetation would also be used to spatially
35 depict the earthwork complex.

36
37 Archeological Features

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

45
46

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

8
9 • Where discernible topographical relief
10 occurs, only vegetation or non-permanent
11 markings would be used to delineate
12 features.

13
14 • Markings and/or rehabilitations will
15 utilize recent magnetic surveys to
16 archeologically locate features and will
17 have a non-permanent material, different
18 from original earthwork complex, to
19 clarify the archeological feature as
20 contemporary.

21
22 Circulation

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

28
29 • The existing parking area, vehicular
30 access, and roads would be removed.

31
32 • The parking area and visitor orientation
33 facility would be moved off-site to
34 adjacent property.

35
36 • Trails would be added to follow the
37 perimeter of the earthwork complex.

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1 Vegetation

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

7

- 8 • Low/mown vegetation would be
9 maintained in spaces of earthwork
10 complex including the entire interior
11 of the Small Circle, Large Circle, Large
12 Square, and in the areas of the borrow
13 pits.
- 14
- 15 • Use a mix of native herbaceous species
16 maintained consistently (mow 1-2 times
17 per year) in areas surrounding earthwork
18 complex.

19

- 20 • Archeological features (mounds, earthen
21 walls, borrow pits) would be maintained
22 either as low mown vegetation or as tall/
23 unmown to further differentiate their
24 locations in the surrounding landscape.
- 25
 - 26 ◦ The reconstructed Seip-Pricer Mound
27 would be planted with a low mown
28 vegetation.
 - 29
 - 30 ◦ The earthen wall would be planted
31 with a taller mown vegetation, or
32 marked with a non-permanent
33 material.
 - 34
 - 35 ◦ The extant Seip-Conjoined Mound
36 would be planted with a taller mown
37 vegetation, or marked with a non-
38 permanent material.
 - 39
 - 40 ◦ The non-extant mounds, earthen
41 walls, and borrow pits would
42 be planted with a taller mown
43 vegetation, or marked with a non-
44 permanent material.

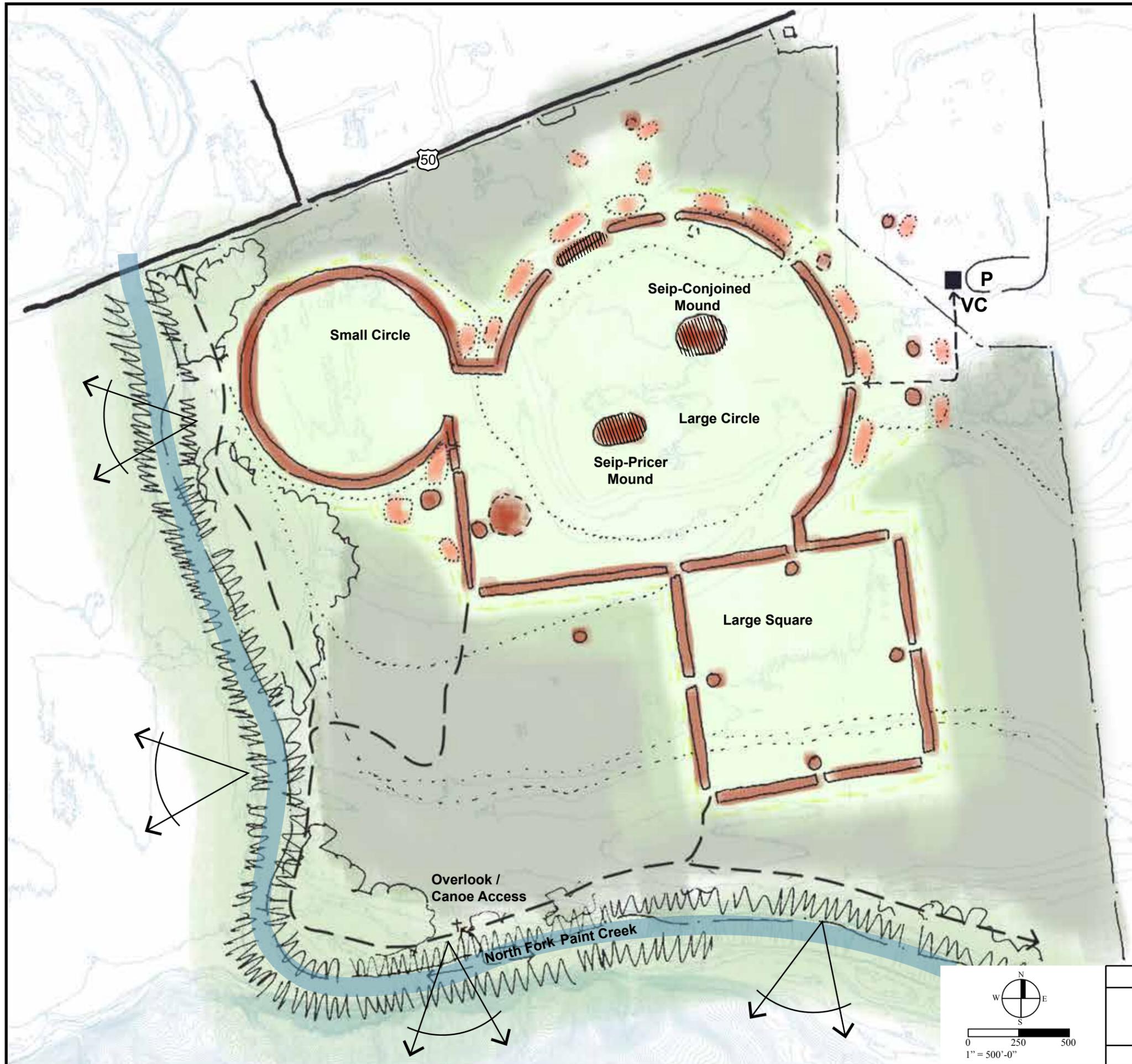
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Buildings and Structures

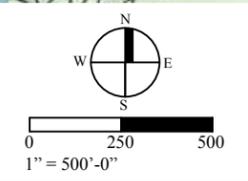
Existing buildings and structures would be removed. New facilities for visitor orientation would be relocated onto the adjacent property, away from the earthwork complex.

- 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](https://msc.fema.gov/portal/search?Address+Query=chillicothe); <http://www.fws.gov/wetlands/Data/Mapper.html>; 2014 Google Maps
 TIC# 353 128149



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 COUNTY STATE
 MIDWEST ROSS OHIO 4-51

High Bank Works

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

7
8 High Bank Works is composed of earthen
9 walls that span several acres, set on a high
10 bank above the Scioto River. The park unit
11 is divided by private property and roads,
12 making the scale of the earthwork complex is
13 difficult to discern.

14
15 A treatment approach of preservation was
16 considered for High Bank Works. Both action
17 alternatives preserve the archeological
18 features, introduce management techniques
19 to better delineate the spaces and forms
20 of the earthwork complexes, and improve
21 the visitor experience. Action Alternative 1
22 follows a preservation approach and focuses
23 on maintaining existing features.

24
25 Action Alternative 2 preserves the
26 archeological features and utilizes vegetation
27 management to depict spaces and non-extant
28 above-grade archeological features, and limits
29 visitor access.

30 High Bank Works

31 No Action Alternative

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

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- 1 • The majority of the park unit would
2 be designated a limited access zone
3 and would not be open to the general
4 public.⁴⁻¹⁶
- 5
6 • The primary use of the park unit would be
7 research and education.
- 8
9 • Visitor experiences would be limited to
10 guided tours, specifically when visitors
11 could watch archeological fieldwork in
12 progress.
- 13
14 • Temporary facilities for research, such
15 as portable toilets and sun/rain shelters,
16 would be allowed.

17 High Bank Works

18 Common to All Action Alternatives

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

22 Spatial Organization/Topography/Views

23
24 The spatial arrangement of the earthwork
25 complex would be emphasized to depict the
26 mass and scale of the earthwork complex and
27 to improve visitor's understanding.

- 28
29
30 • Hazardous trees and woody vegetation
31 that impact the earthwork complex or
32 diminish the visitor's understanding of

33
34 4-16 The GMP identifies six management zones used at
35 the park units. Limited Access Zones are primarily for
36 research and education, limiting visitation and preserving
37 archeological resources. Natural Resource Zones restore
38 and maintain biological diversity, while allowing for trails
39 and interpretive overlooks/waysides. Pedestrian zones
40 are archeological areas open to the public to walk among
41 and interpret the earthwork complexes, with rangers
42 present. Development Zones provide facilities for visitor
43 use, education, orientation, and management functions.
44 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.

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

- 5
6 • The relationship of the earthwork
7 complex to the Scioto River, Paint Creek
8 Confluence, and Scioto River / Paint
9 Creek would be improved by thinning
10 vegetation to open views between the
11 earthwork complex and the river.

12 Land Use

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

- 19
20
21 • The parcel containing the westernmost
22 portion of the Great Circle, currently a
23 private residence.
- 24
25 • The parcel containing most of the parallel
26 walls, currently a private residence.

27 Archeological Features

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

32
33
34 Individual archeological features including
35 mounds, earthen walls and borrow pits
36 would be stabilized and repaired as needed,
37 following standard best practices.

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46 ⁴⁻¹⁷ GMP, p 41

1 **High Bank Works**

2 **Action Alternative 1: Preserving Earthwork** 3 **Complexes**

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

10 Spatial Organization/Topography/Views

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

15
16
17 The sense of scale, patterns, and orientation
18 of the earthwork complex would be revealed
19 through management of vegetation and views.

- 20
21 • The two-dimensional form of the
22 earthwork complex of earthen walls,
23 mounds, and borrow pits would be
24 clarified by utilizing two or three
25 distinct vegetation types / management
26 techniques to reveal the form and spaces
27 of the earthwork complex.

28 Archeological Features

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

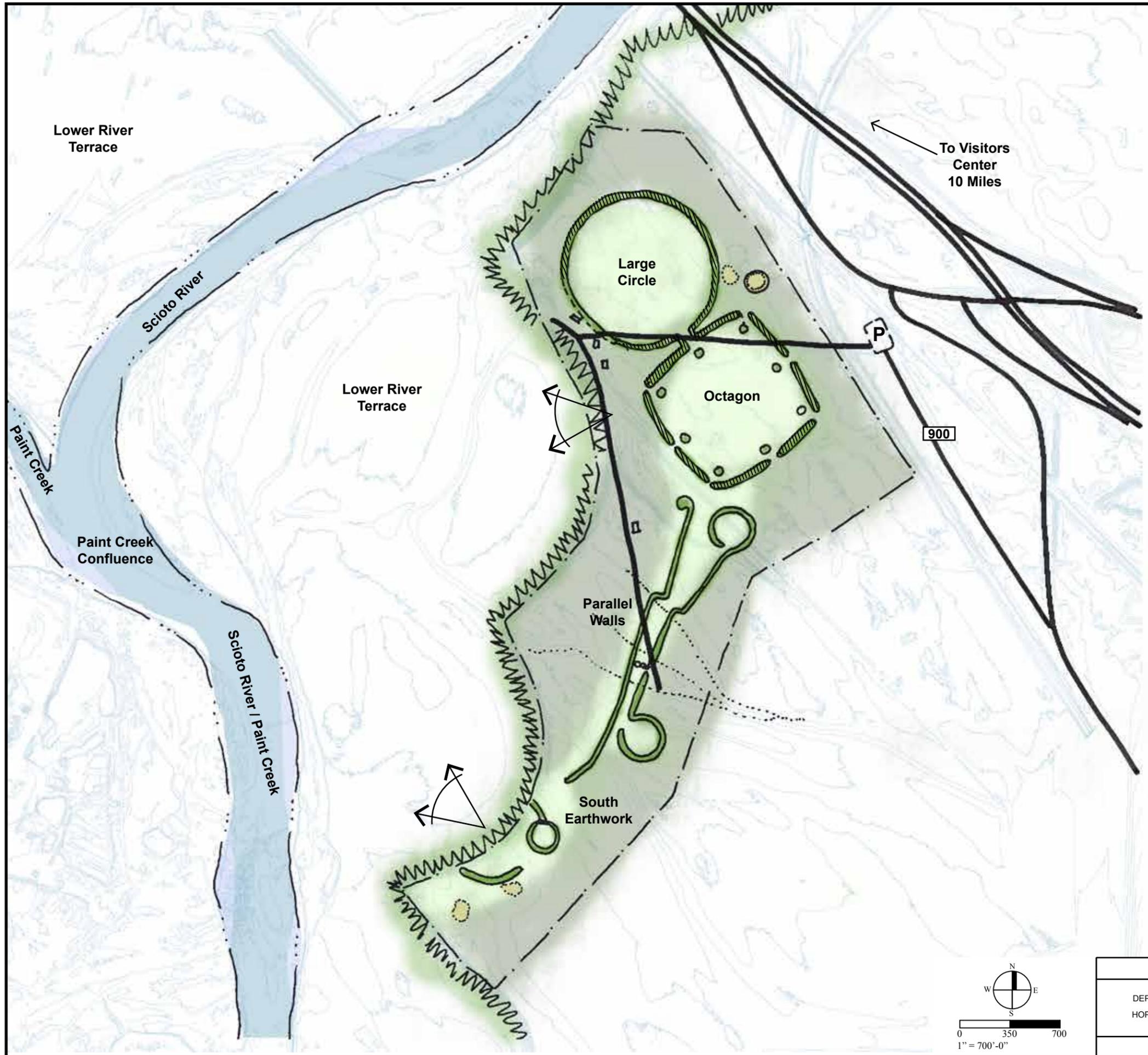
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34
35 Vegetation would be the primary method
36 used to delineate archeological features and
37 spaces.

- 38
39 • Vegetation outside the earthwork
40 complex would be managed as grasses
41 and herbaceous vegetation (mown
42 seasonally).
- 43
44 • Vegetation inside the earthwork complex
45 would be managed as low, mown
46 vegetation.

- 1 • Vegetation on archeological features
 2 would be maintained as grasses
 3 and herbaceous vegetation (mown
 4 seasonally).
 5
 6 Circulation
 7 The existing circulation system would remain
 8 in the existing location. Improvements would
 9 be made to facilitate archeological research
 10 and for limited pedestrian access.
 11
 12 • Non-contributing features that assist in
 13 facilitating circulation would remain and
 14 be improved (parking area).
 15
 16 • Non-contributing features that impact
 17 archeological features (gravel and service
 18 roads). would remain until acquisition of
 19 privately owned inholdings.
 20
 21 Vegetation
 22 Vegetation that contributes to the character
 23 of the archeological landscape would be
 24 preserved. Vegetation would be managed
 25 to define the spatial organization of the
 26 earthwork complex, frame views, and screen
 27 adjacent development.
 28
 29 • Low mown vegetation would be
 30 maintained within spaces of earthwork
 31 complex including the interior of the
 32 Great Circle, Octagon, Parallel Walls, and
 33 South Earthwork. Cultivation would be
 34 discontinued, and areas of tall native
 35 grasslands (Octagon) would be replaced
 36 with low mown vegetation.
 37
 38 • Archeological features (mounds, earthen
 39 walls, borrow pits) would be maintained
 40 either as low mown vegetation or as
 41 tall/unmown vegetation to further
 42 differentiate between features and spaces.
 43
 44 • A medium diversity mix of grasses and
 45 herbaceous species would be maintained
 46 (mown one or two times per year) in

- 1 areas surrounding the earthwork complex
 2 and in areas of archeological scatter.
 3
 4 • Riparian vegetation along the
 5 embankments would be maintained.
 6
 7 • Vegetation on the Lower River Terrace
 8 would be maintained.
 9
 10 • Clarify the relationship of the earthwork
 11 complex to the Scioto River and Paint
 12 Creek by thinning vegetation, opening up
 13 select views.
 14
 15 • Hazardous trees and woody vegetation
 16 that impact contributing archeological
 17 features or diminish the spatial qualities
 18 of the earthwork complex, specifically the
 19 area southwest of the Octagon and on the
 20 parallel walls would be removed.
 21
 22 Buildings and Structures
 23 Existing buildings and structures would
 24 remain until acquisition of privately owned
 25 inholdings.
 26
 27 Small Scale Features
 28 Features that do not serve as interpretation
 29 or visitation, or support existing buildings or
 30 structures, would be removed.
 31
 32 • Non-contributing features that impact
 33 archeological features to remain,
 34 including overhead utility lines and poles,
 35 and fences would remain.
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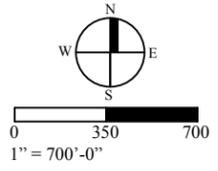
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- Legend**
- NPS Boundary
 - Trail
 - Parking
 - Existing Mound / Feature
 - Feature - Mark
 - Borrow Pit - Mark
 - Low Mown Grasses
 - Grasses / Herbaceous Mix
 - Woodland
 - Embankment
 - Open View

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
ILLUSTRATION 4-9	NAME OF PARK HOPEWELL CULTURE NATIONAL HISTORICAL PARK
	REGION MIDWEST
	COUNTY ROSS
	STATE OHIO
	4-57

1 **High Bank Works**

2 **Action Alternative 2: Conserving and**
 3 **Revealing Earthwork Complexes**

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

10

11 Spatial Organization/Topography/Views

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

19

20 • The mass, scale, and form of the
 21 earthwork complex would be depicted
 22 using vegetation types and management
 23 (earthen walls, mounds, borrow pits, and
 24 the spaces of the earthwork). This would
 25 assist in facilitating archeological research
 26 throughout the earthwork complex.

27

28 • Non-contributing features would be
 29 removed from the earthwork complex,
 30 and the immediate surroundings.
 31 These include the existing buildings
 32 and structures on private property, and
 33 associated roads and utilities. Removals
 34 would only occur once property
 35 acquisition was complete.

36

37 Archeological Features

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

42

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

47

1 • Prior to adding vegetation markings,
 2 further archeological investigations,
 3 including magnetic surveys, would be
 4 undertaken to archeologically locate
 5 features.

6

7 Circulation

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

11

12 • Vehicular access would be modified
 13 by improving the north parking area.
 14 A second vehicular route to the south
 15 earthwork would be added.

16

17 • The gravel road across the Octagon and
 18 Large Circle would be removed.

19

20 • Pedestrian circulation routes would be
 21 added that reveal the spatial qualities of
 22 the earthworks.

23

24 • A new canoe / kayak access and river
 25 overlook would be added at the South
 26 Earthwork.

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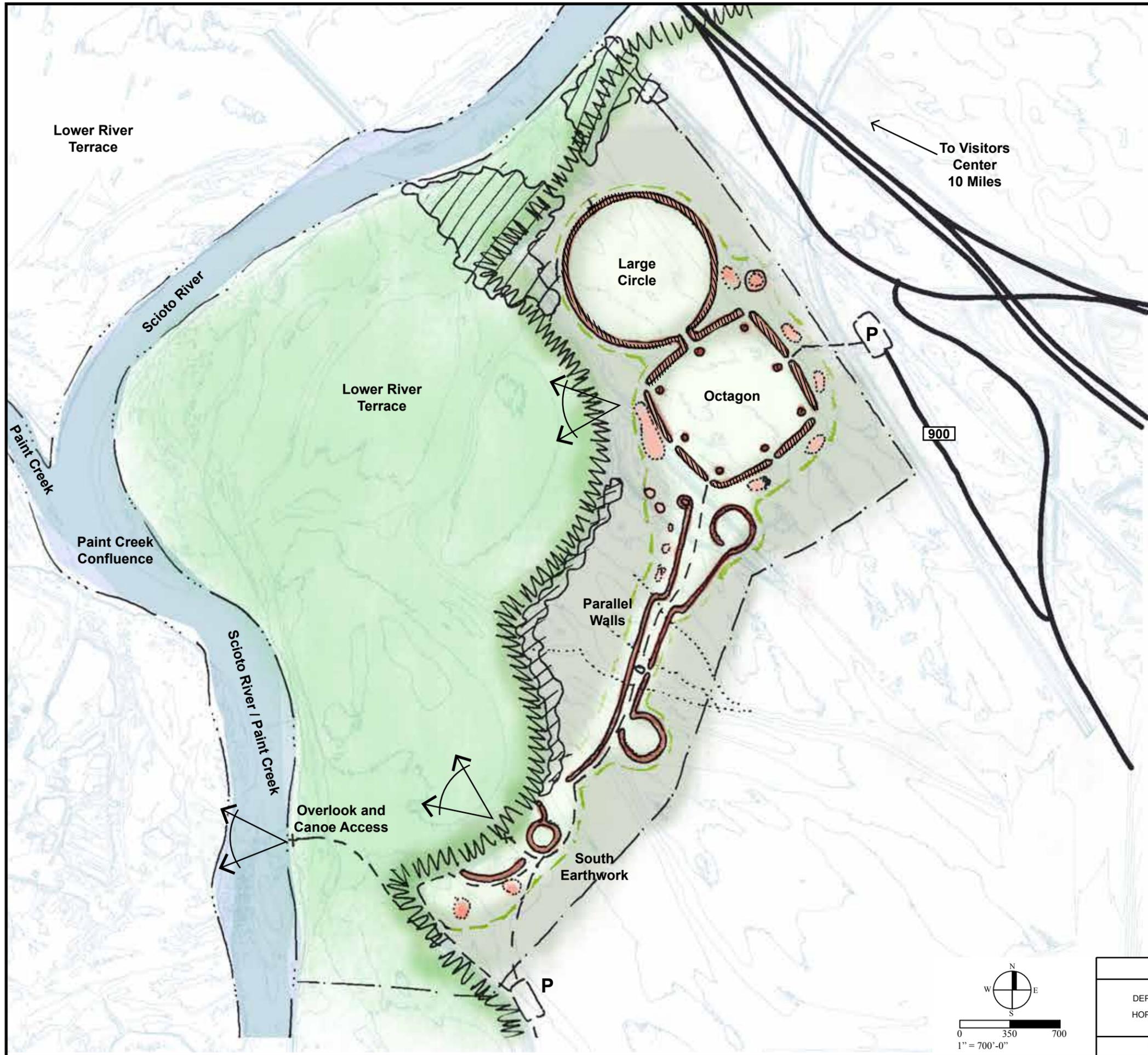
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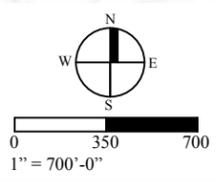
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- Legend**
- Proposed NPS Boundary
 - Trail
 - Parking
 - Existing Feature to Protect and Mark with Vegetation
 - Unverified Feature to Protect and Mark with Vegetation
 - Borrow Pit to Protect and Mark with Vegetation
 - Low Mixed Vegetation
 - Tall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

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
 UNITED STATES
 DEPARTMENT OF THE INTERIOR
 HOPEWELL CULTURE NATIONAL
 HISTORICAL PARK
 ILLUSTRATION 4-10

TITLE OF PROJECT
 CULTURAL LANDSCAPE REPORT
 AND ENVIRONMENTAL ASSESSMENT
 TITLE OF DRAWING
 HIGH BANK WORKS - ACTION ALTERNATIVE 2
 NAME OF PARK
 HOPEWELL CULTURE NATIONAL HISTORICAL PARK
 REGION COUNTY STATE
 MIDWEST ROSS OHIO 4-61

Alternatives Comparison

1 **Mitigation and Best Management Practices**
 2 The National Park Service places strong
 3 emphasis on avoiding, minimizing, and
 4 mitigating potentially adverse environmental
 5 impacts. To help ensure the protection of
 6 natural, cultural, and archeological resources
 7 and the quality of the visitor experience, the
 8 following Best Management Practice (BMP)
 9 protective measures would be implemented
 10 as part of all of the action alternatives (TABLE
 11 4-2). The National Park Service would
 12 implement an appropriate level of monitoring
 13 throughout the construction and maintenance
 14 process to help ensure that protective
 15 measures are being properly implemented
 16 and are achieving their intended results.
 17 These mitigation measures are applicable for
 18 contractors and park staff.

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1 **Environmentally Preferable Alternative**
 2 The environmentally preferable alternative
 3 is the alternative required by 40 CFR
 4 1505.2(b), to be identified in a record of
 5 decision, that causes the least damage to
 6 the biological and physical environment
 7 and best protects, preserves, and enhances
 8 historic, cultural, and natural resources. The
 9 “Environmentally Preferable Alternative” is
 10 identified upon consideration and weighing
 11 by the responsible official of long-term
 12 environmental impacts against short-term
 13 impacts in evaluating what is the best
 14 protection of these resources (43 CFR 46.30).
 15 Although an environmentally preferable
 16 alternative is identified, it may not be the
 17 NPS preferred alternative. The preferred
 18 alternative is the alternative the National
 19 Park Service believes would best fulfill its
 20 statutory mission and responsibilities, giving
 21 consideration to economic, environmental,
 22 technical, and other factors.

23

24 Alternative 2 is the environmentally
 25 preferable alternative for several reasons.
 26 Compared with the other action alternative,
 27 Alternative 2 would result in greater long-
 28 term beneficial effects to archeological
 29 resources by removing noncontributing
 30 features from the archeological landscape,
 31 improving vegetation management for
 32 preservation of the earthworks, and
 33 rehabilitating the earthworks. In addition,
 34 Alternative 2 would result in restoration
 35 of native vegetation communities through
 36 vegetation management and removal of
 37 noncontributing features. Overall, Alternative
 38 2 would provide the best balance between
 39 the preservation of historic and archeological
 40 resources and the protection of the natural
 41 resources within the park.

42
43
44

TABLE 4-2. Mitigation Measures and Best Management Practices

General Measures
<ul style="list-style-type: none">• 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:<ul style="list-style-type: none">◦ Keeping disturbed areas as small as practicable to minimize exposed soil and the potential for erosion◦ Locating waste and excess excavated materials outside of drainages to avoid sedimentation◦ 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◦ Conducting regular inspections during the construction period to ensure erosion-control measures were properly installed and are functioning effectively◦ 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	<p>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.</p>	<p>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.</p> <p>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.</p> <p>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.</p>	<p>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.</p>

Impact Topic	No Action Alternative	Action Alternative 1	Action Alternative 2
Vegetation	<p>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.</p>	<p>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.</p>	<p>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.</p>
Wildlife	<p>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</p>	<p>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.</p>	<p>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.</p>
Visitor Use and Experience	<p>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.</p>	<p>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.</p>	<p>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 canoeing 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.</p>

Impact Topic	No Action Alternative	Action Alternative 1	Action Alternative 2
Park Operations	<p>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.</p>	<p>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.</p>	<p>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.</p>
Visual Resources	<p>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.</p>	<p>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.</p>	<p>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.</p>

