

**POLICY FOR  
PRESERVATION  
AND  
MAINTENANCE OF  
MCFARLAND'S  
INDIAN MOUNDS**

*ADOPTED August 9, 2010*

## I. INTRODUCTION

Southern Wisconsin is known for its prehistoric Indian mounds. The mounds were built by people of the Effigy Mound Culture, Late Woodland Stage, from approximately 650 to 1200 CE.\* Many are burial grounds. Others may have served as man-made landmarks. The mounds are symbols/expressions of the mound builders religious faith and are considered sacred sites by Native Americans to this day. Fourteen of these rare and archaeologically significant treasures still exist on Village-owned property in McFarland. They are located in Indian Mound Conservation Park (IMCP), Siggelkow Park, the Taylor Road Conservancy, and Woodland Commons Park. Other mounds exist on private property within Village limits, and there may be others yet to be discovered on Village-owned lands. The McFarland Village Board recognizes that these few remaining mounds are of enormous historical and cultural value and has adopted and implemented this policy to ensure their protection and preservation for many generations to come.

\*Common Era

## II. CULTURAL IMPORTANCE

Over the centuries, Wisconsin's Indian mounds have disappeared in large numbers. They have been destroyed, damaged or neglected – victims of agricultural practices, the advance of urban development, indifference and/or ignorance. To halt further destruction and to raise public consciousness, the Ho Chunk Nation, cultural descendants of the mound builders, has reached out to communities where mounds exist and provided information and expertise on mound preservation and maintenance through their Department of Heritage Preservation.<sup>1</sup> Similarly, the Wisconsin Department of Natural Resources,<sup>2</sup> the Lower Wisconsin State Riverway Board,<sup>3</sup> and the Wisconsin Historical Society<sup>4</sup> have issued maintenance protocols aimed at preserving what remains of this part of Wisconsin's cultural and archaeological heritage. All of these land stewardship bodies recognize that Indian mound sites are irreplaceable and stress the responsibility of the land owner to protect these areas.

The Village of McFarland accepts this responsibility and further desires to become a role model for others to emulate. It has taken public ownership of the lands containing most of the mounds and has established conservancy uses on these lands to help protect the mounds. At one time, more than 80 Indian mounds graced the McFarland area. Prior to the Village taking ownership of what is now IMCP, two of the nine mounds that once occupied that land were destroyed by the grading of the hillside above Burma Road in the 1950's. Over the years community volunteers and school groups have done maintenance work such as removing invasive species and woody brush from some of the mounds and relocating and improving trails.

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<sup>1</sup> *Mound Preservation and Maintenance*, Ho-Chunk Department of Heritage Preservation

<sup>2</sup> *Burials, Earthworks, And Mounds Preservation Policy & Plan*, WI Dept. of Natural Resources

<sup>3</sup> *Proposed Protocols for Cultural Resources Protection and Preservation on Public and Private Lands In the Lower Wisconsin State Riverway*

<sup>4</sup> *Wisconsin Historical Society Assessment of Lewis Mound Group - October, 2007*

### III. PRESERVATION AND MAINTENANCE OF THE MOUNDS

#### A. Legal Framework

Wisconsin statutes designate the Wisconsin Historical Society as the oversight authority for Indian mound lands throughout the state. Those statutes [157.70(6m) (b) 2 and 3] which regulate burial sites that are on public lands impose certain requirements on municipalities. These regulations include: prohibiting the transfer of any burial site to any person who is not a municipality unless the transfer provides for preservation of the burial site from any disturbance by any person and unless the transfer is approved by the Wisconsin Historical Society; and requiring that the municipality shall endeavor to take positive action to preserve any burial site on land it owns through appropriate land use management, including but not limited to appropriate multiuse purposes such as nature preserves.

All of the acreage in IMCP is listed on the National Register of Historic Places which means that no ground disturbing activities are allowed anywhere within that park. Any activities that might potentially cause ground disturbance on or near the mounds in other parks require prior approval from the Wisconsin Historical Society. This approval process typically involves preparation and submittal of a plan by the Village President or Administrator for review by Wisconsin Historical Society staff. As appropriate, the Wisconsin Historical Society may circulate the proposed plan for review and comment by Native American nations in the state, with whom the agency is responsible for coordinating preservation efforts.

#### B. Approach

McFarland's mounds do not exist in isolation. All of them are in conservancies, and any maintenance activities undertaken on the mounds will inevitably have some impact on the surrounding natural and man-made environments. Managing the mounds properly and avoiding detrimental impacts to the broader environmental context within which they exist is a complex challenge. Diverse perspectives on meeting this challenge were expressed via community input at a public meeting,<sup>5</sup> within the Committee's internal discussions, and in documents submitted to the Committee by concerned residents.<sup>6</sup> There was no one-size-fits-all approach with which Committee members felt comfortable. As a result, the Committee's objective has been to determine a balanced approach to preservation and maintenance that meets McFarland's unique challenges.

The specific preservation and maintenance practices to be used will vary by mound site and from one individual mound to the next. There is, nonetheless, a systematic series of protocols that should be followed at all sites to ensure that the desired goals are achieved. That common approach recommended herein would typically involve the following steps:

1. Have a comprehensive site assessment of each mound site conducted by the State Archeologist that would include an archeological overview and appropriate mapping. A vegetation assessment and an overall risk assessment should also be conducted by a certified arborist and an ecological restoration expert. Such site assessments for the mounds in IMCP were conducted in 2006-2007 by the Wisconsin Historical Society. A forester and an ecologist from the WDNR have also reviewed

<sup>5</sup> *Indian Mounds: Cultural Resources Fact Sheet 2*, National Resource Conservation Service

<sup>6</sup> *Fact Sheet: How Trees Benefit Mounds and The Oaks in Indian Mound Conservancy*, Alan R. Lulloff, P.E. CFM

surrounding conservancy areas in IMCP and provided suggestions on approaches to managing vegetation and improving forest health.

2. Determine the optimal conditions for protection and preservation of the mound site and prepare a long term maintenance plan to establish and maintain those optimal conditions.
3. Obtain necessary approvals of this maintenance plan from the Burial Preservation Office of the Wisconsin Historical Society.
4. Stabilize the current condition of the mounds to prevent any deterioration.
5. Prepare a five year plan, to be updated annually, which identifies phased maintenance projects and practices to be undertaken at each of the four mound sites. Allocate the necessary resources in the annual budget process or pursue available grant funding to implement those plans.
6. At the completion of each phase of maintenance, photograph, monitor, and evaluate the results over the course of at least one full growing season prior to determining what maintenance activities should be undertaken in the next phase, how the activities should be prioritized, and when the next phase should commence.
7. Conduct public education/outreach activities and provide appropriate site amenities to promote greater understanding and enjoyment of the mound sites by the public in a manner that does not pose additional risk to the mounds.
8. Evaluate the potential benefits of having the Taylor Road Conservancy and Woodland Commons Park mound sites listed on the National Register of Historic Places. Pursue local "landmark" status for all four mound sites.
9. Conduct regular assessments of progress and continue these preservation and maintenance policies, plans and practices or revise them accordingly.

### **C. Goals and Objectives**

The purpose of taking the common approach to preservation and maintenance described above is to meet goals and achieve results that should apply uniformly to all four Indian mound sites. The desired outcome and end vision for all sites are defined in the following goals and would be achieved by accomplishing the following objectives.

**GOAL #1** – Ensure that the Indian mounds are protected from potential damage, stabilize the current condition of the mounds so they do not deteriorate, and improve the condition of the mounds as available resources permit.

#### **OBJECTIVES:**

1. Eliminate or minimize risks or threats that pose an unreasonable risk to the mounds.
2. If trail access to an area is deemed desirable, design or relocate trails so they do not encroach any closer than fifteen feet (15') from the mounds.
3. Direct bikers away from the mounds with appropriate signage and, if necessary, physical barriers.

**GOAL #2** – Raise public awareness about the Indian mound sites and their human and natural history by conducting an effective education and public outreach program.

#### **OBJECTIVES:**

1. Provide suitable overlook points along the trails which permit observers to appreciate visually the shape of the mound(s) from a safe distance.
2. Install non-obtrusive warning signs to protect the mounds and interpretive signs to help observers better understand the mounds and their history.

3. Offer accompanying public education activities to foster a greater understanding of the historical, archeological, and cultural significance of the mounds.

**GOAL #3** – In order to protect the mounds from potential damage and to respect the preferences of the Ho Chunk Nation regarding the presence of vegetation on their ancestral sites, achieve an eventual condition where no trees or shrubs are growing on the mounds or within a five feet (5') buffer zone and where each distinct mound shape is clearly defined and visible to an observer.

**OBJECTIVES:**

1. Remove all brush, non-native, and invasive species.
2. Remove in phases all trees except selected large, healthy, deep-rooted trees that are retained for forestry or environmental purposes, to preserve heritage trees, when significant unavoidable mound damage might occur during tree removal, or for other management purposes.
3. Remove these remaining trees as they deteriorate or die from natural causes.
4. Establish native ground cover on the mounds to protect against erosion and other potential damage and to minimize future maintenance efforts.
5. Emphasize the definition of each mound by using contrasting types of vegetation or in some other natural-looking manner.

**IV. SITE ASSESSMENTS**

Since the amount and quality of site assessment data that is currently available varies a great deal across the four mound sites, a comprehensive assessment by the Wisconsin Historical Society or other qualified professionals is required as an initial step for each Indian mound site to evaluate the existing plant community and the opportunity for restoration of the native plant community, to determine the current conditions of the mounds, to determine if there is a need for additional mapping, and to assess potential risks to the mounds. This assessment will identify those features which render each site unique and will influence the maintenance regimen selected.

**A. Archaeological Overview**

If one has not been conducted previously, an archeological overview of the site should be conducted both before and after phased maintenance work is implemented. If possible, the "before" overview should be conducted by the State Archeologist. At a minimum, the number and type of mounds should be described and surface observations should be made and recorded in narrative and in photographic forms. The condition of the mounds should be noted, such as whether the edges are well-defined or diffuse and whether the mounds are well-preserved or have been damaged. An additional walk through of the site should be conducted and updated notations made following extensive tree removal or introduction of fire to the site. To date, a proper archeological overview has been completed only for the mounds in IMCP.

**B. Mapping**

Mapping is important to assure that an accurate record of each Indian mound site is maintained. While adequate maps of the mound groups are generally available, it might be very useful if the maps contained greater detail. Village staff shall work with the Burial Sites Preservation staff in the Wisconsin Historical Society to acquire files from WHS that define the established mound protection boundaries for all Indian mounds documented to exist on Village-owned lands. Where they have not been previously documented new technologies are available that would enhance existing maps. Global Positioning System (GPS) coordinates with an accuracy level of

one foot should be taken for all mounds, although the accuracy of this data will be limited by the tree canopy and the often ill-defined nature of the mound edges. Maps of each individual mound site should be as accurate as possible and should document (as appropriate) the mound shape, dimensions, mound-mound angles, and the presence of depressions or other potential burial features. Notations regarding proximity to water features, roads, trails, property lines, and nearby development, topographical information, and other notable features of the site should be added to the maps as site assessments are completed. The most complete maps currently exist for IMCP, but these maps lack much of the recommended detail. The existing maps for the other three mound sites are even less detailed and need to be expanded.

### **C. Vegetation Assessment**

An initial survey of trees, shrubs, and ground cover should be conducted and used in determining future vegetation management practices for each site. It may be appropriate to consult with a professional qualified in ecological restoration in developing this vegetation assessment. The assessment should describe the existing plant community and species, identify endangered or threatened species as well as invasive species, evaluate relics of native plant communities and the potential for future restoration and sustainability of native species, and note existing tree canopy and ground cover. A tree inventory detailing the species, size, and a general rating of the condition of all trees growing on the mounds and within a fifteen foot (15') buffer area from the base of the mounds should be completed by a certified arborist. This inventory should identify trees for removal based on objective criteria developed by the arborist and approved by the Village. The inventory will also differentiate between native and non-native trees and between deep-rooted and shallow-rooted species. The assessment should also note whether the use of controlled burns might be an appropriate and desirable vegetation management tool for the mounds and/or adjacent areas. No surveys that fully satisfy all of these assessment criteria have been completed for any of the four mound sites.

### **D. Risk Assessment**

Using the information developed during the archeological survey, mapping, and vegetation assessment phases, each mound site should be assessed for inherent risks. Notations should be recorded regarding potential threats to the mound(s) from: erosion; proximity to neighboring development, roads, pedestrian or bicycle trails, playgrounds, and parks; non-native invasive species and tree species of concern due to disease or insects; and damage caused by humans or wildlife. Mounds associated with a "high-risk" for damage should receive immediate attention to assure protection and preservation.

Shallow – rooted trees can be a risk for windthrow. According to the National Resource Conservation Service, however, having tree cover on mounds can have both advantages and disadvantages. "The possibility of wind thrown trees is a potential area of concern. Overturned trees can pull up large chunks of soil with the root system causing damage to cultural deposits. Root penetration of trees and scrub can also have a significant impact on archeological deposits. However, removal of long established trees can be more detrimental to the mound than maintaining the existing cover."<sup>7</sup>

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<sup>7</sup> *Indian Mounds: Cultural Resources Fact Sheet 2, National Resource Conservation Service*

## V. PHASED MAINTENANCE OF THE MOUNDS

A good deal of deferred maintenance work on the mounds will be required. The phasing of maintenance is a practical reality given current limitations in available financial and labor resources. Another advantage of a phased approach is that it allows an evaluation to be conducted at the conclusion of each management phase. If any unintended or unexpected effects have occurred, future maintenance plans can be adjusted accordingly.

As each of the Indian mound sites is different, with its own unique surroundings and potential risks, the specific protection and maintenance practices to be used will vary between sites. The pace of the maintenance efforts and the timing of various phases will also differ between sites based on priorities established through the site assessment process and funding availability.

Vegetation management on mound sites would follow the sequential phases described below, diagrammed in flow chart form in Table 1, and summarized in Table 2. No specific time frame is established for the completion of a particular phase or the start of the following phase. It is understood that steps to establish healthy ground cover of native species, including ongoing removal of non-native and invasive species, would be continuous throughout the process as sunlight conditions change with progressive removal of tree canopy. At least one full growing season should be allowed to pass before beginning a subsequent maintenance phase. This will allow a proper period for monitoring and evaluating the results of the previous phase.

Maintaining a photographic history of the appearance of each mound before, during, and after each maintenance phase is strongly recommended. The data base of photographs should be properly indexed and catalogued by specific mound, phase, and date. Photographs should be stored in a commonly available on-line format that is searchable and from which potential users can download and print selected material.

### A. Phase 1

1. Photograph each mound from several angles, noting the date taken
2. On the mounds themselves:
  - a. Remove all brush and all non-native or invasive species of groundcover and trees
  - b. Remove all dead, down, and unhealthy trees; all shallow-rooted trees, regardless of size; and any trees recommended for removal by a certified arborist if they pose an undue risk to the mounds for other reasons.
  - c. Remove all trees less than 5" diameter at breast height (DBH) in size
  - d. Seed native vegetation in a mixture recommended by a qualified professional
3. Within a fifteen feet (15') buffer area from the base of the mounds:
  - a. Remove all dead, down, and unhealthy trees; all shallow-rooted trees, regardless of size; and any trees recommended for removal by a certified arborist if they pose an undue risk to the mounds for other reasons.
4. Photograph each mound from several angles, noting the date taken

### B. Evaluation Phase (should begin after one complete growing season)

1. Photograph each mound from several angles, noting the date taken
2. Document the specific maintenance activities performed to date
  - a. Describe any detrimental results from the work done in the previous phase (e.g., an increase in invasive species, signs of erosion)
  - b. Describe any positive results from the previous phase (e.g., increased sunlight, improved growth of native vegetation)

3. Based on the analysis of results made during this Evaluation Phase, modify as appropriate the maintenance priorities and activities planned for the next phase

### **C. Phase 2**

1. Photograph each mound from several angles, noting the date taken
2. On the mounds themselves:
  - a. Ongoing removal of all brush, small trees, and all non-native or invasive species of groundcover
  - b. Remove all trees between 5" - 12" DBH in size. Also remove those trees so recommended by a certified arborist if they pose an undue risk to the mounds
  - c. As necessary, continue seeding of native vegetation in a mixture recommended by a qualified professional
3. Within a five feet (5') buffer area from the base of the mounds:
  - a. Remove all brush and all non-native or invasive species of groundcover and trees
  - b. Remove all trees less than 5" DBH in size. Also remove those trees so recommended by a certified arborist if they pose an undue risk to the mounds
  - c. Seed native vegetation in a mixture recommended by a qualified professional
4. Photograph each mound from several angles, noting the date taken

### **D. Evaluation Phase (see above)**

### **E. Phase 3**

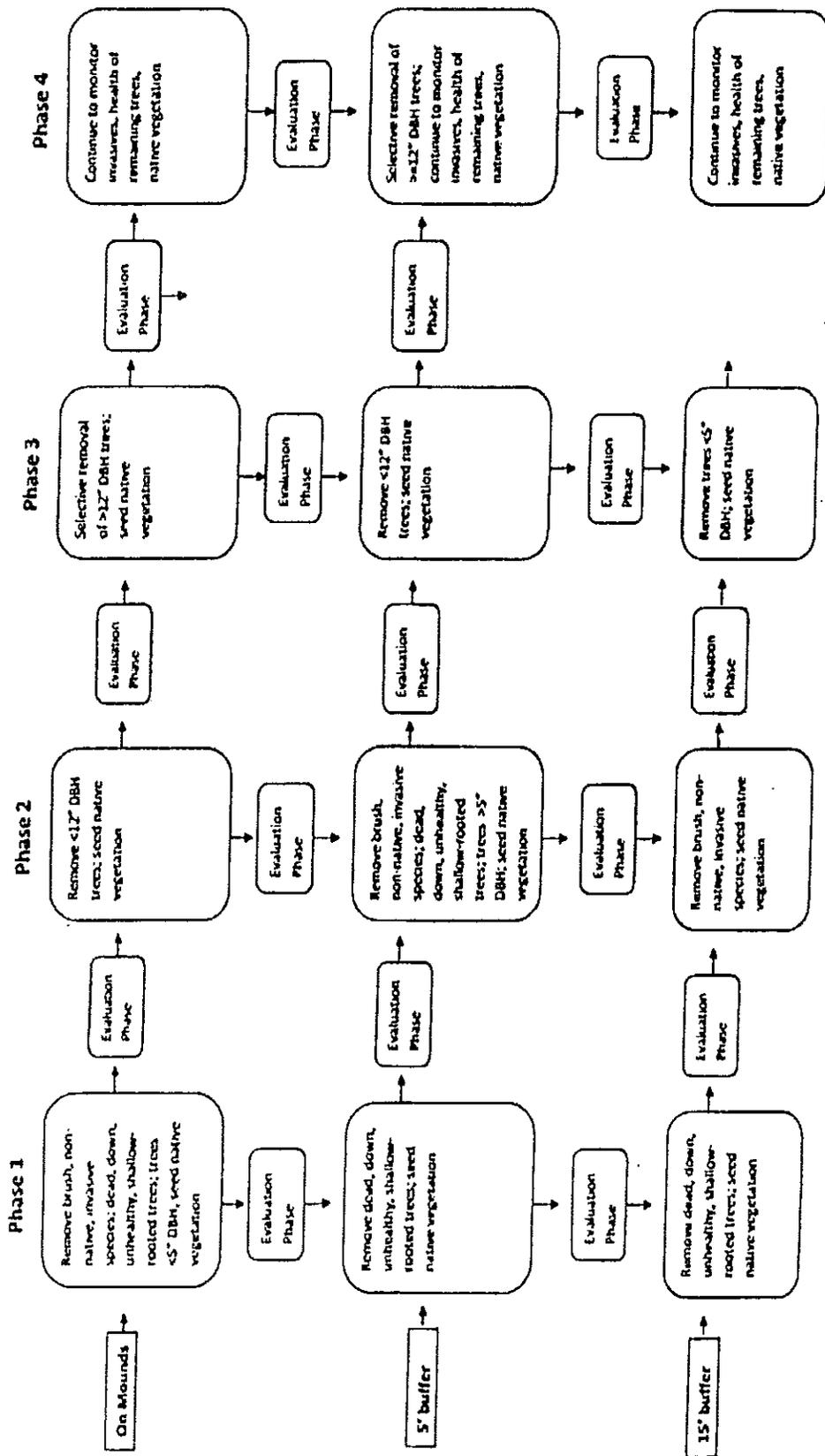
1. Photograph each mound from several angles, noting the date taken
2. On the mounds themselves:
  - a. Ongoing removal of all brush, small trees, and all non-native or invasive species of groundcover
  - b. Remove all remaining trees unless it is determined that selected large, healthy, deep-rooted trees should be retained for forestry or environmental purposes, to preserve heritage trees, when significant unavoidable mound damage would occur during tree removal, or for other management purposes
  - c. As necessary, continue seeding of native vegetation in a mixture recommended by a qualified professional
3. Within a five feet (5') buffer area from the base of the mounds:
  - a. Ongoing removal of all brush, small trees and all non-native or invasive species of groundcover
  - b. Remove all trees less than 12" DBH in size. Also remove those trees so recommended by a certified arborist if they pose an undue risk to the mounds
  - c. As necessary, continue seeding of native vegetation in a mixture recommended by a qualified professional
4. Within a fifteen feet (15') buffer area from the base of the mounds:
  - a. Remove all brush and all non-native or invasive species of groundcover and trees
  - b. Remove all trees less than 5" DBH in size. Also remove those trees so recommended by a certified arborist if they pose an undue risk to the mounds
  - c. Seed native vegetation in a mixture recommended by a qualified professional
5. Photograph each mound from several angles, noting the date taken

**F. Evaluation Phase (see above)**

**G. Phase 4**

1. Photograph each mound from several angles, noting the date taken
2. On the mounds themselves:
  - a. Ongoing removal of all brush and small trees and all non-native or invasive species of groundcover
  - b. As necessary, continue seeding of native vegetation in a mixture recommended by a qualified professional
3. Within a five feet (5') buffer area from the base of the mounds:
  - a. Ongoing removal of all brush and small trees and all non-native or invasive species of groundcover
  - b. Remove all remaining trees unless it is determined that selected large, healthy, deep-rooted trees should be retained for forestry or environmental purposes, to preserve heritage trees, when significant unavoidable mound damage would occur during tree removal, or for other management purposes
  - c. As necessary, continue seeding of native vegetation in a mixture recommended by a qualified professional
4. Photograph each mound from several angles, noting the date taken

TABLE 1



**TABLE 2  
PHASES OF VEGETATION MANAGEMENT**

	ON MOUNDS	5' BUFFER	15' BUFFER
Remove brush, non-native and invasive species	Phase 1	Phase 2	Phase 3
Remove dead, down, unhealthy, and shallow-rooted trees	Phase 1	Phase 1	Phase 1
Remove <5" DBH trees. Also remove trees so recommended by a certified arborist	Phase 1	Phase 2	Phase 3
Seed native vegetation in a mixture recommended by a qualified professional	All phases as needed	All phases as needed	All phases as needed
Remove <12" DBH trees. Also remove trees so recommended by a certified arborist	Phase 2	Phase 3	Not applicable
Selective removal of 12" DBH and larger trees. Also remove trees so recommended by a certified arborist	Phase 3	Phase 4	Not applicable

*NOTE: An evaluation phase should occur after each management phase. Evaluation should include photographing each mound noting the date, documenting specific maintenance activities that occurred in the previous management phase, and describing any positive or negative effects of those activities. This information should be used to guide appropriate modifications of the maintenance priorities and activities planned for the next management phase.*

## **VI. GENERAL MOUNDS MAINTENANCE CONSIDERATIONS**

### **A. Tree and Shrub Removal**

Removal of trees and shrubs from mounds and within a five feet (5') buffer area from the base of the mounds is generally desirable to protect them from windthrow and other damage, and to encourage growth of native groundcover that will help prevent erosion. To help mitigate the potential of windthrow, all shallow-rooted trees will be removed during Phase 1 of the maintenance. However, some selected large, healthy, deep-rooted trees may be retained for forestry or environmental purposes, to preserve heritage trees, when significant unavoidable mound damage might occur during tree removal, or for other management purposes. Heritage trees are defined in the Village's Tree and Shrub Ordinance. The condition of any large trees that are retained should be re-evaluated periodically to ensure that their health is stable and that they continue to pose no undue risk to the mounds.

No ground disturbance is allowed. All tree removal should be done when the ground is frozen hard. Trees growing on the mounds should be hand cut, or cut with a machine that can stay at least fifteen feet (15') from the mounds. No machinery is permitted to be used, however, on



slopes steeper than 12% or on lands listed on the National Register of Historic Places, unless approved by the Wisconsin Historical Society. The trees should be cut close to the ground and stumps should be left intact. The stumps can be treated to prevent regrowth. During tree removal, trees should not be dropped or dragged across the mounds, and machinery and other vehicles should not be driven across the mounds. The logs and other material should be hauled away or scattered or piled at least fifteen feet (15') from the defined burial area or mound.

Woody shrubs and invasives can be removed at any time with proper care since their removal should not require use of heavy equipment or involve ground disturbance. All vegetative waste material should be removed from the area. Replacement vegetation should be appropriate for the current use or planned restoration objectives.

## **B. Burning**

The use of fire to control woody vegetation and to enhance the native plant community in a prairie or savanna ecosystem is an important management tool, but the decision to use controlled burns should be made on an individual site basis and balanced against other factors that should be considered consistent with Village ordinances and protocols. Surveys should be conducted following any controlled burning to look for possible artifacts and to determine the response of the native plant community to fire. Installation of firebreaks and use of firefighting equipment at a site should be carefully monitored for both safety and potential ground disturbance reasons.

## **C. Chemical Treatment**



Removal of the roots of mature woody vegetation via hand-pulling is not recommended due to the ground disturbance that results. Chemical treatments to control woody vegetation or non-native invasive species can be very effective when applied properly. To minimize the use of chemicals, however, hand pulling should be used for control of small seedlings and most herbaceous plants.

## **D. Trails**

Pedestrian and wheeled traffic should never be allowed on the mounds. Trails should be established at those sites where public visitation either is likely or is encouraged. Trails should be located a minimum of fifteen feet (15') or more from the outer perimeter of the mound. Small trees and large brush stems that have been removed from the mounds in Phase I or II may be used for trail demarcation. The use of wood chips, shredded bark, or mowing may be considered for trail maintenance. In locating and designing trails, consideration should be given to the proximity of the mounds, aesthetics, view sheds and erosion control. All trails should be made as accessible to the disabled as possible.

## **E. Signage**



The Village should retain control of the wording and placement of all signage and coordinate the placement with the Wisconsin Historical Society. Signage at mound sites should be minimized but efforts should be made to educate and inform the public about the significance of the site and the people who constructed the earthworks. Maps of the mounds at specific sites or in a general context of other mound groups in the vicinity may be useful. A generic sign for selected sites that describes the effigy mound building culture and the types of mounds (effigy, linear or conical) may be appropriate. Affirmation of the sacred nature of the site to Native American peoples should be included in the signage. A strong statement about staying off the mounds and information on the burial sites preservation law should be included. Site specific signage should

include a map of the site and information regarding the unique features of the site. In some circumstances, brochures or small maps could be provided to visitors.

#### **F. Repair of Damaged Mounds**

Where appropriate, repair of mounds damaged by post Euro-Yankee settlement activities and/or natural causes may be considered. Coordination with the Wisconsin Historical Society is required.

#### **G. Use of Volunteers**

Volunteers may be enlisted to assist with mounds maintenance activities, monitoring, and education. The proximity of the mound site in IMCP to a number of local schools affords an ideal opportunity for student and parent involvement in the maintenance of the mounds. As described in Section VIII, involving community volunteers is also an effective way to expand education about the mound building culture and the sanctity of the surviving mounds to Native Americans.

Volunteers have been very active in the removal of invasive species and promoting the growth of native vegetation within IMCP. Neighborhood groups should be recruited and encouraged to adopt a particular site. A reference manual should be provided containing information useful to volunteers and a system should be developed for tracking the time contributed and the work tasks performed by volunteers. The use of power equipment by volunteers should be monitored closely by a qualified team leader. Persons using chainsaws or mechanical brush cutters must be approved by Village staff and have appropriate safety training and equipment. The number of persons using mechanical equipment should be strictly limited to promote safety.

### **VII. RECOMMENDED MAINTENANCE PLANS FOR SPECIFIC MOUND SITES**

#### **A. Indian Mound Conservation Park (IMCP)**

IMCP contains the Lewis Mound Group which consists of nine (9) mounds, including one short tailed quadruped in the shape of a bear, four linear, one long hook-shaped linear, one oval, and two conical mounds (see map below). Portions of the linear and a portion on one of the conicals were destroyed by development but partial restoration has occurred. The site is listed on the National Register of Historic Places and the nomination covers the entire 10 acre area of IMCP. The mounds have been catalogued in small groups and as single mounds. No ground disturbing activities are permitted anywhere within IMCP.

Considerable maintenance work on the mounds in IMCP has already been completed by the Village, community volunteers, and through the McFarland School District's School Forest Program. A site assessment was completed in 2006-2007 by the Wisconsin Historical Society. On the subject of tree removal, the assessment found then that "At this point in time, all of the trees growing on the mounds seem to be healthy and they are not in immediate danger of tipping over."<sup>8</sup> Individually and in concert, these groups have completed a site assessment, relocated some segments of walking trails away from the mounds, removed invasive species (ongoing process), re-established native species (ongoing process), and erected some informational signage. The Village acknowledges these previous contributions to preserving and maintaining the mounds and thanks those who have participated.

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<sup>8</sup> *Wisconsin Historical Society Assessment of Lewis Mound Group – October, 2007*

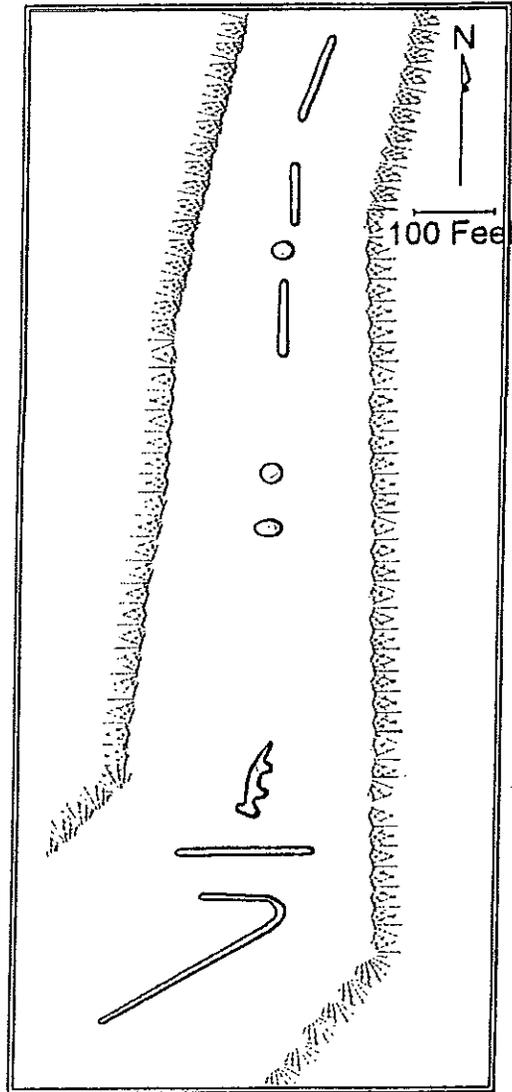


IMCP was designated in 2010 as a Community Forest. It is located adjacent to the McFarland School Forest which was established in 2006. The McFarland School Forest Stewardship Plan, which included the Indian mound area through a 2007 Land Use Agreement with the Village, was prepared in 2007 and updated in 2009 by WDNR Forester Steve Holaday. It outlines forest management objectives and recommendations throughout the School Forest. Appendix A of the Stewardship Plan, prepared by State Archeologist John Broihahn, contains an assessment of the current conditions of the mounds and a detailed set of recommendations for future maintenance of the mounds.

In view of the extensive studies that have been conducted on IMCP and the work already completed, the following maintenance priorities are established for the mounds in IMCP:

1. The June 2009 amendment to the McFarland School Forest Stewardship Plan, which splits the former "Stand 1" into two separate forest stands, should be incorporated by the WDNR forester into a new Community Forest management plan for IMCP. This would lead to re-establishment of an oak woodland or oak opening community around the mound groupings, consistent with the native vegetation believed to be present at the time the mounds were built.
2. The October 2007 Wisconsin Historical Society Assessment for the Lewis Mound Group should be followed as a guideline to prioritize maintenance practices on each individual mound.
3. Trails should be relocated further away from the mounds where necessary, erosion of the trail surfaces minimized, and views of the mounds from the trails improved. Relocation of the trail that cuts into mound #2 should be an immediate priority.
4. Tree and shrub removal on and around the mounds should be completed in accordance with Section VI of this policy. Removal of non-native and invasive species and re-establishment of native ground cover species should be ongoing.
5. Informational signage should be installed to protect the mounds and other environmentally sensitive areas, to lead visitors through the park, and to interpret the cultural significance of the mounds.
6. The misleading signage at the west entrance regarding the bike trail should be changed to clarify that the trails in IMCP are not intended for bike riding and that, if bikes are taken into the park, they should be walked and not ridden.
7. The bear mound, the linear mound at the top of the park, and the partial mound should be prioritized as the first mounds to receive Phase 1 maintenance and used as demonstration projects to assess the appropriateness and effectiveness of the recommended maintenance protocols. Once Phase 1 maintenance activities are completed on these higher priority mounds, Phase 1 work on all remaining mounds should commence as soon as time and resources permit.
8. Seek approval from Wisconsin Historical Society to remove man-made fill deposited years ago at the base area of the old water tower and along the southern edge of the access road. As an alternative, seek approval to augment and regrade these areas to create more natural looking contours.

IMCP Mound Site



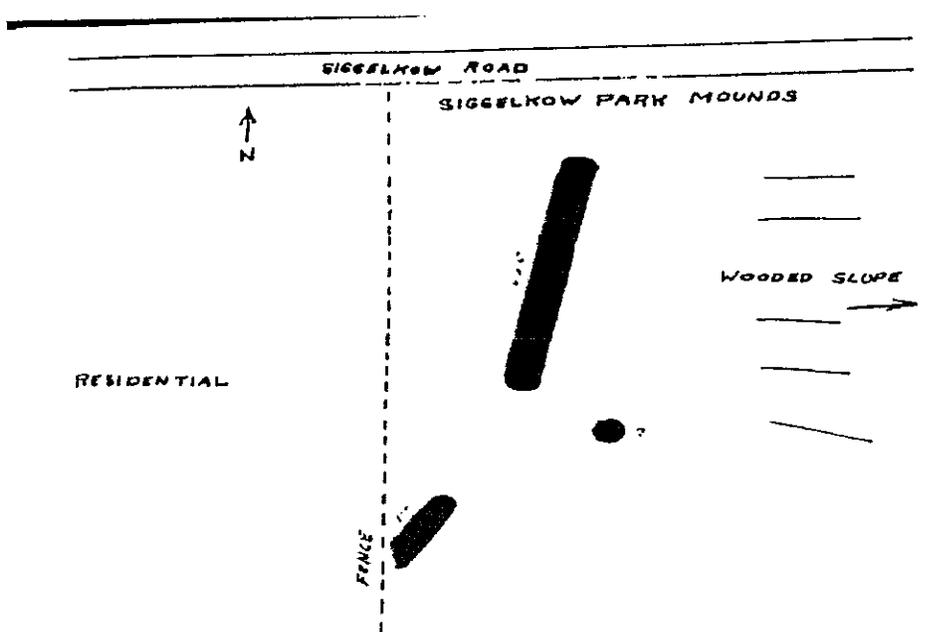
## B. Siggelkow Park

Siggelkow Park contains the Siggelkow Park Mounds Group which consists of at least two linear mounds and an unknown number of other potential mounds. The northernmost of these linears is approximately 225 feet long, ten feet (10') wide, and two feet (2') high and has been potted or looted. The second mound, which is located southwest of the first, is about 57 feet long but has been truncated by residential development. There are also faint signs of a possible conical or effigy mound remnant. These mounds have been catalogued as a group with a fifteen feet (15') no disturbance buffer. The Siggelkow Park Mound Group is eligible for listing on the National Register of Historic Places "because it is likely to contain important information on the prehistoric Late Woodland cultural stage in Wisconsin and because it is a good representative of a distinctive type and period of construction."

The Siggelkow Park mound site has been mapped and broadly evaluated by the Wisconsin Historical Society but they have not provided any specific recommendations on maintenance. The following short term maintenance priorities are established for the mounds site in Siggelkow Park:

1. Complete a comprehensive site assessment including a tree inventory, risk assessment, and a more thorough archeological evaluation of the possible remnant of a conical or effigy mound.
2. Complete Phase 1 of vegetation management consistent with Section VI of this policy.
3. Prepare a long term plan of phased maintenance.

### Siggelkow Park Mound Site



### **C. Taylor Road Conservancy**

The Taylor Road Conservancy is located on the eastern drumlin of conjoined drumlins that now straddle Lexington Street. It contains the Evans-Nelson mound site which currently consists of one linear mound. Historical records indicate the earlier presence of more linear mounds at this site but they apparently have been destroyed by a combination of cultivation and the huge cut made into the hill southwest of Taylor Road. The remaining linear mound has been truncated by a logging-style road at its southern end but is otherwise in good condition. Approximately one half of the mound is located on Village-owned park land and the other half was carved out of Lot 20 of Woodland Commons subdivision and dedicated to the Village, so the entire mound is under public ownership and protection. This mound has been catalogued with a fifteen feet (15') no disturbance buffer. As part of the subdivision platting process, the Village created a twenty feet (20') buffer and environmental corridor around the mound. (See map under "D" below.)

The Taylor Road Conservancy mound site has been privately surveyed and also located and broadly evaluated by the Wisconsin Historical Society which did not provide any specific recommendations on maintenance. The following short term maintenance priorities are established for the mound site at the Taylor Road Conservancy:

1. Relocate as soon as possible the footpath that currently crosses a portion of the mound and block off the old footpath.
2. Complete a comprehensive site assessment including mapping and a risk assessment.
3. Complete Phase 1 of vegetation management consistent with Section VI of this policy.
4. Install warning signage and notify adjacent residents about the presence of the mound and educate them on its cultural significance and the importance of protecting the integrity of the mound.
5. Prepare a long term plan of phased maintenance.

### **D. Woodlands Commons Park**

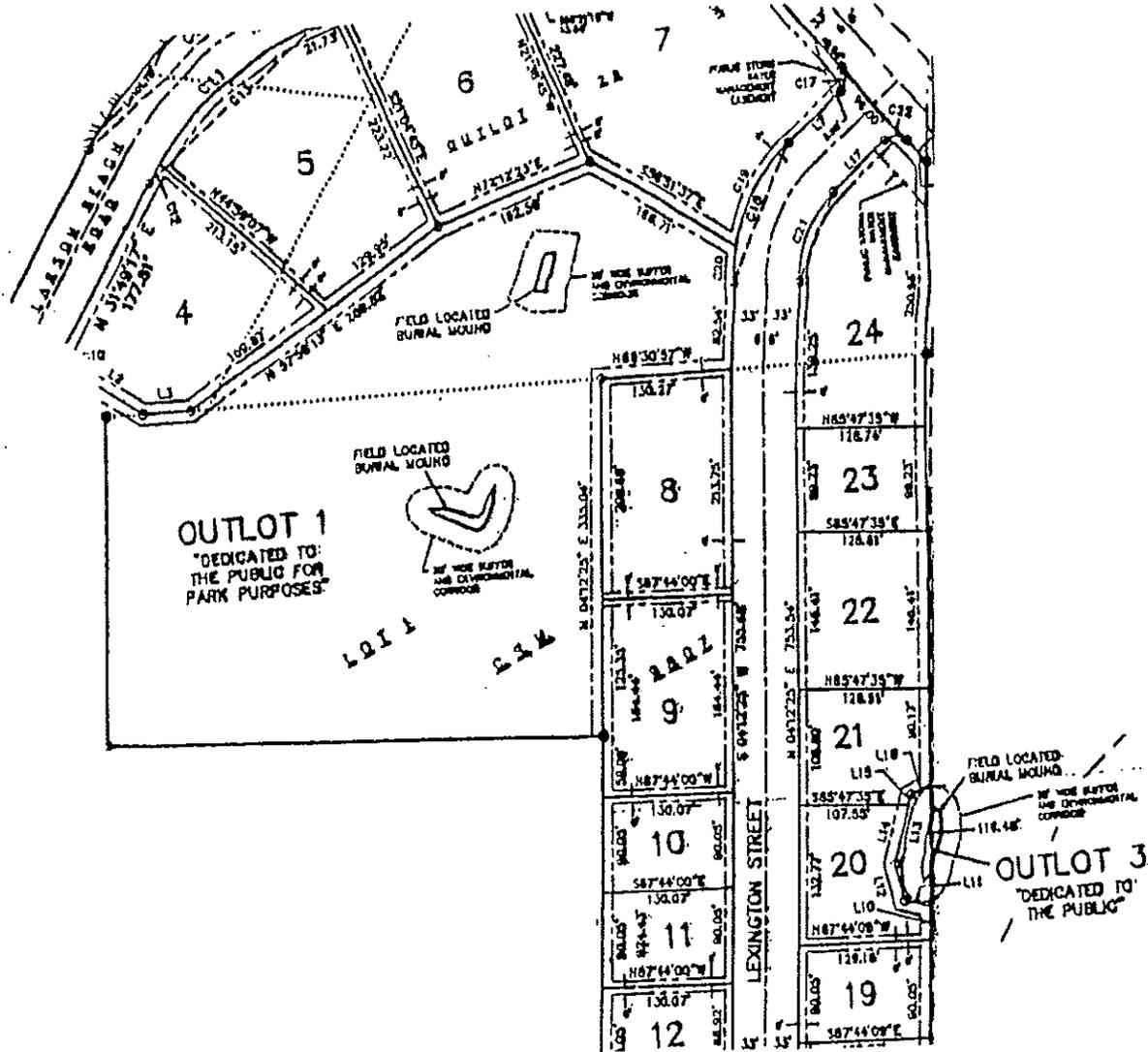
Woodland Commons Park is located on the western drumlin of conjoined drumlins that now straddle Lexington Street. It contains the Dale Mound Site which currently consists of one linear and one angular linear which is bent at right angles to itself. Historical records indicate the earlier presence of four mounds at this site but some were apparently destroyed in 1984 when the hillside was excavated for fill for reconstructing US Highway 51. The northernmost surviving linear was also truncated by this excavation process. This mound site has been catalogued as a group with a fifteen feet (15') no disturbance buffer. As part of the subdivision platting process, the Village created a twenty feet (20') buffer and environmental corridor around each mound.

The Woodland Commons Park mound site has been privately surveyed and also located and broadly evaluated by the Wisconsin Historical Society which did not provide any specific recommendations on maintenance. The following short term maintenance priorities are established for the mound site at Woodland Commons Park:

1. Remove immediately any evidence of human encroachment and inappropriate use of the area near the northernmost mound. Construct as soon as possible a low split rail fence to prevent future encroachment.

2. Complete a comprehensive site assessment including mapping, a tree inventory, and a risk assessment.
3. Complete Phase 1 of vegetation management consistent with Section VI of this policy.
4. Prepare a long term plan of phased maintenance.

### Taylor Road Conservancy Mound Site and Woodland Commons Mound Site



## VIII. MONITORING AND EVALUATION OF MOUND SITES

It is important that the Village make steady, annual progress in implementing these mound preservation and maintenance policies and goals. An example of an ongoing assessment grid has been created for potential use in keeping simultaneous track of the progress being made at all four mound sites (see Appendix A). Another example assessment grid, which is site-specific and more detailed, has also been created to monitor progress at each individual mound site (see Appendix B). Something similar to these example assessment grids should be updated annually and used by the Village Board (or a body to which it assigns the responsibility) to re-evaluate the status and current condition of all mound sites.

The Village should establish and update annually a five-year plan which sets forth clear goals for preservation, maintenance, and possible restoration of the mounds in each of the four sites. The annual update should be completed in time to set priorities and establish funding needs as part of the Village's budget process.

This policy should be reviewed at least every five years with an eye to evaluating its continued applicability to the various mound sites. As appropriate, the policy should be updated to reflect changes in community thinking or approach, new discoveries, methods, or technological applications, unexpected field results, or changes in available funding or labor resources.

## IX. EDUCATION AND PUBLIC OUTREACH

Indian Mound Conservation Park (IMCP) is managed by the Village and is registered as a Community Forest. The McFarland School Forest occupies 6.9 acres adjacent to the mound site and is currently used for field trips and classes including Native American History and the mound building culture. The potential exists for developing cooperative educational activities due to the proximity of the mound site to the schools. These entities share not only contiguous boundaries, but a strong commitment to fostering an informed and engaged citizenry. Their cooperative efforts provide a foundation for achieving the very desirable goal of education and public outreach. Effective education and public outreach at IMCP may encourage other Village civic or interest groups to become involved with the preservation and maintenance of the mounds.

Recommended objectives of an effective education and public outreach program would include:

1. To inform visitors about the human and natural history of the sites
2. To enhance existing cultural and historical resources with complementary educational activities (e.g. joint activities with the McFarland Historical Museum or the McFarland School District)
3. To foster teaching and learning related to Native American culture and history
4. To develop awareness, appreciation, knowledge, and skills related to sustainable care of the environment and the Indian mounds
5. To engage residents and students in experiential learning through field experiences

Desirable components of an education and public outreach program that would help achieve the above objectives might include trails and informational signage, classes/workshops, speakers, and perhaps an interpretive center. Because of the natural settings in which most of the mounds are located, it would be possible to easily integrate educational objectives related to the environment on such topics as ecology, forest management, native and invasive species, wildlife, birding,

nature writing, storm water management, and water quality. The environmental education objectives for the McFarland School District, which incorporate all of these suggested topics, have been developed and are outlined in the School Forest Education Plan.

## **X. CONCLUSION**

The Village Board believes that the recommendations contained in this policy document will advance McFarland a long way toward meeting desirable goals for preserving, maintaining, and restoring McFarland's Indian mounds. The Board is confident that, as interim goals are reached, ongoing evaluations completed, and new goals established, the Village will make continuous progress in establishing the optimum environment for protecting and preserving the mounds at all four of the sites.

In adopting these policies, the Village Board has been guided by several over-arching principles. These are the enormous sense of responsibility engendered by the presence of the Indian mounds, the profound desire to protect and preserve the mounds for future generations, and the recognition that McFarland, though restricted by small size and fiscal limitations, can and must increase its efforts to do what must be done in the interests of the Indian mounds.

## APPENDICES

Appendix A – General Assessment Grid (example) for all Four Mound Sites

Appendix B – Specific Assessment Grids (example) for Each Mound Site

Appendix C – *Assessment of Current Conditions and Recommendations for the Lewis Mound Group in Indian Mound Conservation Park* – John Broihahn, State Archeologist

Appendix D – *Restatement of the Lewis Mound Group Assessment* – Alan Lulloff

Appendix E – *Mound Preservation and Maintenance*, Ho-Chunk Department of Heritage Preservation

Appendix F – *Burials, Earthworks, and Mounds Preservation Policy & Plan*, WI Dept. of Natural Resources

Appendix G – *Proposed Protocols for Cultural Resources Protection and Preservation on Public and Private Lands In the Lower Wisconsin State Riverway*

Appendix H – *Indian Mounds: Cultural Resources Fact Sheet 2*, National Resource Conservation Service

Appendix I – *Fact Sheet: How Trees Benefit Mounds and The Oaks in Indian Mound Conservancy*, Alan R. Lulloff, P.E. CFM

August, 2010

Sample All-Sites Assessment Grid

McFarland Indian Mounds - All Sites Assessment Grid				
Long-term Goals	Indian Mound Conservation Park 9	Siggeikow Group 3	Taylor Road Conservancy 1	Woodland Commons 2
Number of recognized mounds				
Maintenance and Preservation				
Completed archaeological & risk assessment				
Completed tree inventory				
Optimal conditions determined				
Optimal conditions established				
Assessment and Evaluation				
Annual				
Five-Year				
Public Education/Information Activities				
Speakers				
Interpretive trails				
Signs/maps				
Recruitment/training of volunteers				
Official Status				
Registered as National Landmark				
Registered as local landmark				
Grants applied for/received				













Preliminary Assessment Grid - Siggelkow Park

Siggelkow Park	Northern linear	SW linear	Remnant
<b>Maintenance &amp; Preservation Goals - 2010-11</b>			
Photograph mounds prior to beginning work			
Archaeological and risk assessment including mapping	Priority	Priority	Priority
Tree inventory	Priority	Priority	Priority
Begin Phase 1 tree removal			
<b>Long Term Goals</b>			
All mounds clearly visible with well defined shapes			
Trails provide views of mounds and prevent undesirable foot traffic			
Invasive species are under control			
Undesirable woody brush is under control			
Desirable native species are thriving			
Mounds are covered with desirable native species			
Erosion is controlled			
Hazardous, unhealthy, trees have been removed along with those designated for removal by a qualified arborist			
<b>Official Status</b>			
Archaeological/Historical Soc. Survey	Priority	Priority	Priority
Registered as National Landmark			
Registered as a Local Landmark			
Grants applied for/received			
<b>Education/Public Outreach Goals 2010-11</b>			
Begin education/public outreach activities			

1  
**Evaluation Phase 1**  
**Siggelkow Park**

Siggelkow Park	Northern Linear	SW Linear	Remnant
<b>Evaluation Phase #1</b> photograph each mound where Phase 1 work has been completed			
record specific maintenance activities performed to date			
record any detrimental results of Phase 1 work			
record any positive results of Phase 1 work			
recommend maintenance priorities for Phase 2 work			

**Lewis Mound Group (47 DA74)  
McFarland Indian Mounds Park**

**Assessment of Current Conditions and Recommendations**

This site was listed on the National Register of Historic Places in 1984. The National Register boundary includes the entire hill ending near the base, or just above the private parcels with houses that surround the bluff. Because the site is listed on the National Register and is publicly owned, all projects occurring on the parcel must be reviewed by the Wisconsin Historical Society.

The site was cataloged as a cemetery under 157.70 in 1998. The mounds were cataloged individually with a 5.0 ft. buffer. Any ground disturbing activities, or potential ground disturbing activities, that occur on the mounds or within the 5.0 ft. buffer must be reviewed by the Wisconsin Historical Society.

We have been asked to provide information for long term planning associated with this site. The school is now managing the forest and they want to make sure the mounds are appropriately treated and I hope incorporated in the curriculum.

These comments are based upon on a 21 August 2007 and 26-27 September 2007 site visits.

Area A. Southwest Entrance - The two existing paths (east and northwest) come within 5.0 ft. and/or are cutting into the base of Mound #1 (the Hook Mound).

Recommendation: We suggest that the entrance be pushed west and that the two paths diverge further to the west. The East path should be moved south and the Northeast path should be moved northwest. Both paths should be at least 15.0 ft. away from the mound.

Area B. A volunteer path crossed Mound #1 at this point. It is now blocked on both sides by brush. No recent use or the re-development of the path was noted. The main path that runs on the north side of the mound has developed some alluvial fans that threatened to encroach on the mound.

Recommendation: Additional brush should be piled in this area to deter any re-routing of the path. The volunteer path will disappear over time. The main path should be stabilized to stop erosion and moved away from the mound so that it is at least 15.0 ft. distant. The existing paths should be obliterated and seeded.

Mound #1 (The Hook Mound). It is presently covered primarily with a light understory and ground vegetation. Several trees are growing along the east-west portion of the mound. There are some dead trees on the mound.

Recommendation: The dead trees and the trees growing on the mound should be removed. The area should be re-seeded with appropriate vegetation, or vegetation that will stabilize the surface of the mound and keep woody vegetation from returning. The visible outline of the mound should be preserved as part of the vegetation management plan.

Area C. The main path at this point cuts across the end of the linear mound (Mound #2).

Recommendation: The entire path should be pushed west and the east-west sections of the path around the mound should be moved north and south so that the path is at least 15.0 ft. away from the mound. The existing paths should be obliterated and seeded.

Area D. A volunteer path crossed Mound #2 at this point. It included both foot and probably bicycle travel. It is now blocked on both sides by brush. The brush is occasionally moved and the path used for foot and bike traffic. The main path that runs on the north side of the mound at this point has developed some alluvial fans.

Recommendation: The main path should be moved north and west so that it is at least 15.0 ft. from the mound. The path on the north side of the mound should be stabilized to prevent erosion. This may help prevent use of the volunteer path. This path should be obliterated and the area seeded. The volunteer path should be blocked with large logs and brush.

Mound #2 (Linear). There is an obvious depression in the mound caused by the volunteer path. No trees were observed on this mound. There are some dead trees on the mound.

Recommendation: The obvious depression in the mound should be repaired with clean soil—in this case clean soil means that the source and the soil have been checked for the presence of artifacts. The dead trees on the mound should be removed. This area and the remainder of the mound should be re-seeded with appropriate vegetation, or vegetation that will stabilize the surface of the mound and keep woody vegetation from returning. The visible outline of the mound should be preserved as part of the vegetation management plan.

Area E. The current path cuts into the back of the bear (Mound #3).

Recommendation: This path needs to be moved to the west and configured in such a way that erosion is controlled and it is at least 15.0 ft. from the mound.

Mound #3 (The Bear). Trees are growing near the head and feet of the bear. There are also trees growing along the edge of the mound

Recommendation: Trees growing near the head and feet of the bear should be removed as should the trees growing adjacent to the mound. This area and the remainder of the mound should be re-seeded with appropriate vegetation, or vegetation that will stabilize

the surface of the mound and keep woody vegetation from returning. The visible outline of the mound should be preserved as part of the vegetation management plan.

Area F. The main trail runs within 5.0 ft. of the mound.

Recommendation: This trail should be re-routed to the west to go around the mounds and not through the mounds. It should be at least 15.0 ft. from the mounds. The existing trail should be blocked and obliterated.

Mound #4. This conical mound is covered with low grassy and sedge vegetation. There are two trees growing near the base of the mound.

Recommendation: The trees near the base of the mound should be removed.

Area G. The main trail runs within 5.0 ft. of the mound.

Recommendation: This trail should be re-routed to the west to go around the mounds and not through the mounds. It should be at least 15.0 ft. from the mounds. The existing trail should be blocked and obliterated.

Mound #5. This conical mound is covered with low grassy and sedge vegetation.

Area H. Area H is the disturbance associated with the building of the earlier water tower. This concrete circular (22.0 ft dia.) base has a pile of soil on top of it.

Mound #6. This linear mound is covered with low grassy and sedge vegetation. A few small trees are present. Much larger trees are present along both longer sides of the mound.

Recommendation: The small trees on the mound and those lining the mound should be removed.

Area I. The main trail runs within 5.0 ft. of the mound.

Recommendation: This trail should be re-routed to the east so that it is at least 15.0 ft. away from the mounds. The existing trail should be blocked and obliterated.

Mound #7. One small tree is growing on the mound and woody plants are present.

Recommendation: The tree should be removed. The mound should be re-seeded with appropriate vegetation, or vegetation that will stabilize the surface of the mound and keep woody vegetation from returning. The visible outline of the mound should be preserved as part of the vegetation management plan.

Mound #8. Trees are present near the base of the mound. The current path is 7.0 ft. from the mound.

Recommendation: The trees near the base of the mound should be removed.

Other Burials. During pipeline work for the water tower in 1996, one human burial was unearthed. It was not associated with a mound, or mound remnant. The remains were removed and reburied. The reburial area is marked on the attached map. A minimum 15.0 ft. buffer should be maintained on all sides of the reburial.

Recommendation: A 15.0 ft. buffer should be established around the reburial.

Signage. We suggest that signage that introduces people to the Native history of the area, the importance of the mounds, and the protections provided under 157.70 be present at all entrances to the area. Marking each mound with a small sign may prevent disturbances and inappropriate use.

Tree removal. At this point in time, all of the trees growing on the mounds seem to be healthy and they are not in immediate danger of tipping over.

Removal of trees and shrubs from mounds and immediately adjacent areas (ca. 15.0 ft.) is generally desirable to protect them from windthrow and other damage, and to encourage growth of ground cover that prevents erosion. However, in some instances selected trees may be retained for forestry purposes or when significant, unavoidable mound damage might occur during tree removal; or for other management purposes.

All tree removal should be done during frozen ground. Trees growing on the mounds should be hand cut, or cut with a machine that can stay at least 15.0 ft. from the mounds. The trees should be cut close to the ground and stumps should be left intact. The stumps can be treated to prevent regrowth. During tree removal, trees should not be dropped or drag across the mounds, and machinery and other vehicles should not be driven across the mounds. The logs and other material should be hauled away or scattered or piled at least 15 ft. from the defined burial area or mound.

Vegetation. Vegetation replacement should be appropriate for the current use, or planned restoration.

Trails. All trails should be moved back at least 15.0 ft. from the mounds. The trails should be stabilized to prevent erosion. It may be desirable to cover the new trails with material that helps not only stabilize them but also clearly marks them as the "official" routes. When existing trails are removed, they need to be obliterated and/or blocked and vegetated.



APPENDIX D

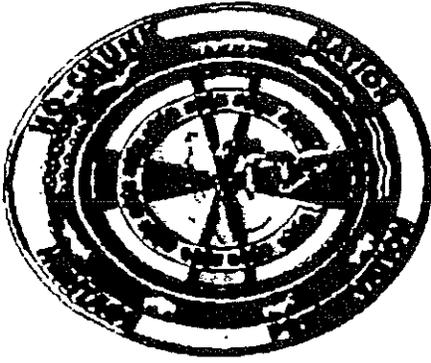
Lewis Mound Group (47 DA74) - McFarland Indian Mound Conservation Park  
 Assessment of Current Conditions and Recommendations  
 John Broihan - State Archaeologist - October 2007

Area	Recommendations	WHS Indicates "Desirable"	Issues
<p><b>Area A.</b> Southwest Entrance - The two existing paths (east and northwest) come within 5.0 ft. and/or are cutting into the base of Mound #1 (the Hook Mound).</p>	<p><b>Recommendation:</b> We suggest that the entrance be pushed west and that the two paths diverge further to the west. The East path should be moved south and the Northeast path should be moved northwest. Both paths should be at least 15.0 ft. away from the mound.</p>		None
<p><b>Area B.</b> A volunteer path crossed Mound #1 at this point. It is now blocked on both sides by brush. No recent use or the re-development of the path was noted. The main path that runs on the north side of the mound has developed some alluvial fans that threatened to encroach on the mound.</p>	<p><b>Recommendation:</b> Additional brush should be piled in this area to deter any re-routing of the path. The volunteer path will disappear over time. The main path should be stabilized to stop erosion and moved away from the mound so that it is at least 15.0 ft. distant. The existing paths should be obliterated and seeded.</p>		None
<p><b>Mound #1</b> (The Hook Mound). It is presently covered primarily with a light understory and ground vegetation. Several trees are growing along the east-west portion of the mound. There are some dead trees on the mound.</p>	<p><b>Recommendation:</b> The dead trees and the trees growing on the mound should be removed. The area should be re-seeded with appropriate vegetation, or vegetation that will stabilize the surface of the mound and keep woody vegetation from returning. The visible outline of the mound should be preserved as part of the vegetation management plan.</p>		4 large oaks
<p><b>Area C.</b> The main path at this point cuts across the end of the linear mound (Mound #2).</p>	<p><b>Recommendation:</b> The entire path should be pushed west and the east-west sections of the path around the mound should be moved north and south so that the path is at least 15.0 ft. away from the mound. The existing paths should be obliterated and seeded.</p>		None
<p><b>Area D.</b> A volunteer path crossed Mound #2 at this point. It included both foot and probably bicycle travel. It is now blocked on both sides by brush. The brush is occasionally moved and the path used for foot and bike traffic. The main path that runs on the north side of the mound at this point has developed some alluvial fans.</p>	<p><b>Recommendation:</b> The main path should be moved north and west so that it is at least 15.0 ft. from the mound. The path on the north side of the mound should be stabilized to prevent erosion. This may help prevent use of the volunteer path. This path should be obliterated and the area seeded. The volunteer path should be blocked with large logs and brush.</p>		None
<p><b>Mound #2 (Linear).</b> There is an obvious depression in the mound caused by the volunteer path. No trees were observed on this mound. There are some dead trees on the mound.</p>	<p><b>Recommendation:</b> The obvious depression in the mound should be repaired with clean soil—in this case clean soil means that the source and the soil have been checked for the presence of artifacts. The dead trees on the mound should be removed. This area and the remainder of the mound should be re-seeded with appropriate vegetation, or vegetation that will stabilize the surface of the mound and keep woody vegetation from returning. The visible outline of the mound should be preserved as part of the vegetation management plan.</p>		Bicycles using mounds as jump ramps has been reoccurring problem. Note: WHS does not recommend removing any live oak trees near this mound

Area	Recommendations	WHS Indicators "Desirable"	Issues
<p><b>Area E.</b> The current path cuts into the back of the bear (Mound #3).</p>	<p><b>Recommendation:</b> This path needs to be moved to the west and configured in such a way that erosion is controlled and it is at least 15.0 ft. from the mound.</p>		<p>Proper routing to manage stormwater runoff needed before trail route can be finalized.</p>
<p><b>Mound #3 (The Bear).</b> Trees are growing near the head and feet of the bear. There are also trees growing along the edge of the mound.</p>	<p><b>Recommendation:</b> Trees growing near the head and feet of the bear should be removed as should the trees growing adjacent to the mound. This area and the remainder of the mound should be re-seeded with appropriate vegetation, or vegetation that will stabilize the surface of the mound and keep woody vegetation from returning. The visible outline of the mound should be preserved as part of the vegetation management plan.</p>		<p>None</p>
<p><b>Area F.</b> The main trail runs within 5.0 ft. of the mound.</p>	<p><b>Recommendation:</b> This trail should be re-routed to the west to go around the mounds and not through the mounds. It should be at least 15.0 ft. from the mounds. The existing trail should be blocked and obliterated.</p>		<p>None</p>
<p><b>Mound #4.</b> This conical mound is covered with low grassy and sedge vegetation. There are two trees growing near the base of the mound.</p>	<p><b>Recommendation:</b> The trees near the base of the mound should be removed.</p>		<p>1 Burr Oak</p>
<p><b>Area G.</b> The main trail runs within 5.0 ft. of the mound.</p>	<p><b>Recommendation:</b> This trail should be re-routed to the west to go around the mounds and not through the mounds. It should be at least 15.0 ft. from the mounds. The existing trail should be blocked and obliterated.</p>		<p>None</p>
<p><b>Mound #5.</b> This conical mound is covered with low grassy and sedge vegetation.</p>			
<p><b>Area H.</b> Area H is the disturbance associated with the building of the earlier water tower. This concrete circular (22.0 ft dia.) base has a pile of soil on top of it.</p>			
<p><b>Mound #6.</b> This linear mound is covered with low grassy and sedge vegetation. A few small trees are present. Much larger trees are present along both longer sides of the mound.</p>	<p><b>Recommendation:</b> The small trees on the mound and those lining the mound should be removed.</p>		<p>1 Oak - North End 3 Oaks - South End</p>
<p><b>Area I.</b> The main trail runs within 5.0 ft. of the mound.</p>	<p><b>Recommendation:</b> This trail should be re-routed to the east so that it is at least 15.0 ft. away from the mounds. The existing trail should be blocked and obliterated.</p>		<p>Trail relocated off top of mound in late '80s Moving trail down the slope to the east may prompt people to ignore trail and instead walk along top of linear mound as they had in the past.</p>

Area	Recommendation	WHS Indicates "Desirable"	Issues
<p><b>Mound #7.</b> One small tree is growing on the mound and woody plants are present.</p>	<p><b>Recommendation:</b> The tree should be removed. The mound should be re-seeded with appropriate vegetation, or vegetation that will stabilize the surface of the mound and keep woody vegetation from returning. The visible outline of the mound should be preserved as part of the vegetation management plan.</p>		<p>Note: WHS does not recommend removing large oak tree near mound</p>
<p><b>Mound #8.</b> Trees are present near the base of the mound. The current path is 7.0 ft. from the mound.</p> <p><b>Other Burials.</b> During pipeline work for the water tower in 1996, one human burial was unearthed. It was not associated with a mound, or mound remnant. The remains were removed and reburied. The reburial area is marked on the attached map. A minimum 15.0 ft. buffer should be maintained on all sides of the reburial.</p>	<p><b>Recommendation:</b> The trees near the base of the mound should be removed.</p> <p><b>Recommendation:</b> A 15.0 ft. buffer should be established around the reburial.</p>		<p>None</p> <p>WHS needs to mark burial site so that buffer can be established</p>
<p><b>Tree removal.</b> At this point in time, all of the trees growing on the mounds seem to be healthy and they are not in immediate danger of tipping over.</p>		<p>Signage. We suggest that signage that introduces people to the Native history of the area, the importance of the mounds, and the protections provided under 157.70 be present at all entrances to the area. Marking each mound with a small sign may prevent disturbances and inappropriate use.</p>	<p>Sign locations near mounds need to be approved by WHS.</p>
	<p>All tree removal should be done during frozen ground. Trees growing on the mounds should be hand cut, or cut with a machine that can stay at least 15.0 ft. from the mounds. The trees should be cut close to the ground and stumps should be left intact. The stumps can be treated to prevent regrowth. During tree removal, trees should not be dropped or drag across the mounds, and machinery and other vehicles should not be driven across the mounds. The logs and other material should be hauled away or scattered or piled at least 15 ft. from the defined burial area or mound.</p>	<p>Removal of trees and shrubs from mounds and immediately adjacent areas (ca. 15.0 ft.) is generally desirable to protect them from windthrow and other damage, and to encourage growth of ground cover that prevents erosion. However, in some instances selected trees may be retained for forestry purposes or when significant, unavoidable mound damage might occur during tree removal, or for other management purposes.</p>	<p>What process will be used to evaluate which trees should be retained? There appears to be 8 to 10 oaks that should be evaluated for retention.</p>

Area	Recommendations	WHIS indicates "Desirable"	Issues
		<p><u>Vegetation</u>. Vegetation replacement should be appropriate for the current use, or planned restoration.</p>	
		<p><u>Trails</u>. All trails should be moved back at least 15.0 ft. from the mounds. The trails should be stabilized to prevent erosion. It may be desirable to cover the new trails with material that helps not only stabilize them but also clearly marks them as the "official" routes. When existing trails are removed, they need to be obliterated and/or blocked and vegetated.</p>	



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### Mound Preservation and Maintenance

Mound builders took great care in construction and maintaining their expressions of their religious faith. The most intimate human emotions were shared with the creator at these symbolic expressions of religion from birth to death.

It is through this intense faith that these mounds have endured nature's wrath for 1,000 years. Many were lost not to time, but to a new and indifferent people with religious intolerants that came and occupied this land. After the last 150 years, only a fraction remains of these sacred sites. The remaining mounds yet continue to endure and reflect the passion of faith that those who stood before them a thousand years ago.

The existing mounds continue to be threatened today by indifference. This lack of connection and respect for other religions is seen in how protected mounds are cared for. It is not uncommon to run power mowers over them that hack, and mutilate the delicate contours that were so patiently applied, or to allow trees and brush to grow that threatens the integrity and promotes deterioration of the mounds. Yet the caretakers of today would not plant trees in their house of worship or deface their family or church cemetery. It is with this concern to insure that these sacred sites remain for the next seven generations that the following educational guidelines are used in caring for these most sacred ancient sites.

#### Tree Maintenance

Tree removal: benefit: (1) promote light for growth of protective grass; (2) prevent tree falls and loss of integrity of mound.

Phase I. Remove all hazard dead leaning trees, decayed trees, trees with excessive branch loss.

Phase II. Remove all trees on mounds.

Phase III. Remove all trees within five feet of mounds.

Phase IV. Create an Oak savannah/White Pine grove or native grassland area.

1. Alternative: remove all low land trees that have surface roots and no taproots.

Note: 1. All cutting is done when ground is frozen to minimize ground disturbance.

2. No removal of stumps.

A new growth/suckers from stumps to be treated with herbicide, such as garlon, to limit growth of woody vegetation. Recommend painting or swabbing application method to reduce amount to herbicide used.

### Ground Maintenance

The best method applied by mound builders.

Natural means: Prescribe burn – setting the area to fire.

Benefit: reduces the woody plants;

Lowers the ph;

Promotes growth of protective grasses;

Low cost.

Negative: not always possible due to fire hazards.

### Mechanical

Mowing alternatives: (1) hand mow at a high setting to minimize ground disturbance; (2) mow around the mounds regularly and push mow mounds only in early spring to promote grasses and to remove emergent seedlings.

Benefit: high grass on mounds – discourages pedestrian traffic and provides a protective cover.

Negative: labor costs.

Prepared by: Ho-Chunk Nation Heritage Preservation Department, Jay Toth, Archeologist, Randy Polema, Aquatic Biologist, and David Olson, Forestry Tech.

## WISCONSIN DEPARTMENT OF NATURAL RESOURCES BURIALS, EARTHWORKS, AND MOUNDS PRESERVATION POLICY & PLAN

*People have settled here, raised families here, worked here, and died here for thousands of years. Common people built this land, this place we call Wisconsin. They hunted mammoth along the edges of continental glaciers. They cleared the land and they raised crops. They built towns and cities. And they buried their dead ...*

The Department of Natural Resources (DNR) is the State's single largest owner of archaeological sites, historic structures, and other important cultural resources, including burial areas. The DNR *manages* these important cultural resources - physical records of our common past - on behalf of the people of Wisconsin.

Burial sites are universally considered sacred, and it is DNR policy that all such areas on DNR properties will be appropriately cared for, and will be treated with the respect they deserve.

Indian earthworks or "mounds" are by far the most conspicuous and numerous of burial features occurring within DNR properties. More mounds were built by American Indian communities in Wisconsin than in any other region of North America. Prior to EuroAmerican settlement, there may have been 15,000 to 20,000 mounds in the state - perhaps 4,000 of these remain today. The earliest mounds, dating as far back as 500 BC were round or "conical" in shape. At about AD 800, people began to build mounds in other forms as well, including linear-shaped, and "effigy" mounds made in the shape of birds, turtles, bears, panthers and other animals (more effigy mounds occur in Wisconsin than anywhere else in the world). Still later, a small number of platform or pyramidal mounds were constructed. Mounds may exist singly, or as "mound groups" of several to over 100 individual mounds, sometimes clustered as "sub-groups" within a larger group. Additionally, both Indian (prehistoric as well as historic) and non-Indian peoples (EuroAmerican settlers and others) have been buried in *non-mound* settings.

All of these sites are protected from disturbance under the State's burial sites law (Wisconsin Statutes s.157.70). An important feature of WS 157.70 stipulates that there may be no disturbance of the burial or within (a minimum of) five feet from the perimeter or base of a mound or other defined burial area. A buffer greater of 15 feet or greater is preferred, and is the DNR standard (exceptions considered in consultation with the Wisconsin Historical Society).

The DNR recognizes that it has a responsibility for the proper stewardship of all burial areas occurring on DNR properties, and has developed these standards to better care for these important places. The following standards apply to human burial sites of all forms - including non-mound burials; conical, linear, effigy and platform mounds; and other types of burial sites. This policy and standards do not apply to areas where cremated human remains have been recently deposited or dispersed. The policy and plan components apply to all DNR properties. Submerged burials require additional considerations; please consult with the Departmental Archaeologist for further guidance.

This policy and plan recognizes that the pace of implementation will reflect the availability of needed resources, including both staffing and funding. That noted, implementation of this policy is a priority for the Department, and should be realized sooner rather than later.

*For management purposes, it may be useful to think of burial areas as "preserves" which occur within a larger setting, and which have different management needs than other areas of the DNR property within which they occur.*

## DNR BURIAL SITE MAINTENANCE PLAN

### General Considerations

Each burial site is unique and should be assessed according to the condition of the burial area proper, general conditions of the site, location (including public accessibility/remoteness), and risk of damage. Features of this Burial Site Maintenance Plan can generally be applied to all burial sites (non-mound and mound), but may need tailoring to better accommodate the unique characteristics of specific burial sites.

Individual Bureaus and Property Managers should consider prioritizing which sites first need attention, and will generally be those considered to be "at risk" (e.g., due to erosion caused by pedestrian or vehicular traffic, or by natural forces), burial sites which are relatively accessible, and burial sites which occur in developed areas of State Parks and other high traffic or high profile areas.

As noted above, state law requires that there may be no disturbance of a burial or within (a minimum of) five feet from the perimeter or base of a mound or other defined burial area, and without a permit from the Director of the Wisconsin Historical Society (WHS). A **buffer** greater than fifteen feet is always preferred (as noted previously, and in consultation with WHS, fifteen feet is the DNR standard). However, *when they occur in "groups" or "sub-groups" (e.g., distinct clusters of burial features [e.g., mounds] which form a larger "group"), burial features should generally be maintained as a group or sub-group, with the buffer area extending out from a perimeter line which circumscribes the group or sub-group, rather than out from individual burial features.* Trails through such areas should be carefully planned to avoid impacts to burial features (see below also). Existing trails running through mound groups or other burial areas should be evaluated and re-routed, if necessary, to avoid adverse impacts to the burial area.

At this time, burial sites located in more remote areas and/or away from public use areas should not be signed and should remain in a more natural condition than described below – as appropriate, you may consider removing dead or diseased trees (to ground surface only – no stump removal), deadfall, brush, and small trees (≈10 inch diameter or less) occurring on or within ≈15 feet of the perimeter of defined non-mound burial sites or mound bases on such remote sites.

It may be desirable and efficient to organize **regional work teams** to implement vegetation control measures, especially for wooded areas. Development of such teams would be useful both for establishing local "experts" better able to recognize burial sites, as well as for creating capable and efficient functional units that can more expeditiously implement woody vegetation control and other maintenance measures.

The Departmental Archaeologist is available to provide training in the recognition of burial mounds and other burial sites.

### Archaeological Assessment

The first steps in the development of a maintenance plan for a mound or non-mound burial site are: (1) contact the Departmental Archaeologist to discuss the proposal and to determine if the site has been previously recorded with the Office of the State Archaeologist at the WHS; and (2) identify associated, extant records which may include detailed maps, descriptions, photographs of the burial area, and records of previous investigations. At the end of this process, copies of newly-developed, maps, photos, etc. should be provided to the Departmental Archaeologist.

After identifying and reviewing such information, it may be desirable to conduct an archaeological survey via pedestrian reconnaissance to identify extant mounds or other burial features. If one is not already available, an *accurate* map of the burial area should then be made, including (as appropriate) mound shapes, dimensions, mound-mound angle(s), presence of "spirit houses", depressions or other burial features, general condition (e.g., obvious looters pits, animal burrows, other actual/potential impacts), and relationship to nearby (relatively) prominent topographic features. DNR personnel, DNR-approved hired consultants, or DNR-approved cooperative partners may complete this mapping. Include GPS coordinates and elevations for each mound/burial feature as able (or at least first and last mounds in the group). All notes, maps and photos should include dates. *Any observed artifacts or bone materials observed at-surface should be immediately reported to the Departmental Archaeologist – do not attempt to remove them!*

### **Vegetation Assessment**

After completing the archaeological survey, conduct a vegetation assessment – if wooded, consult with the area DNR forester or plant ecologist at the outset of this assessment component. Include a description of the existing plant community, including endangered and threatened species and invasives, and a discussion of forest health (especially impacts of tree removal on mounds) if the area is wooded. Also identify the probable pre-modern vegetation, address suitable methods for restoration of the native plant community, and evaluate the sustainability of future vegetation. Note whether the use of fire is an appropriate and desirable vegetation management tool for mounds and adjacent areas.

### **Vegetation Control / Tree Removal**

Removal of trees and shrubs from mounds and immediately adjacent areas (within  $\approx 15$  feet of mound base) is generally desirable to protect them from windthrow and other damage, and to encourage growth of ground cover that helps prevent erosion. However, at some locations, selected trees may be retained for forestry purposes; when significant, unavoidable mound damage would occur during tree removal; or for other management purposes.

*During tree removal, avoid disturbing the burial site in any way. Do not drop trees on or drag them across the burial areas, drive machinery over the areas, or stage vehicles or material on them. Remove trees only when the ground is frozen. Stumps are to be left in place or cut to ground level (see below). Remove vegetative material by hauling it away or scattering or piling it at least 15 feet from the defined burial area or mound (consider trail development issues!). Ideally, volunteers must be supervised by a person with experience in the recognition of early burial sites, especially in the case of mound sites (also consult with the Departmental Archaeologist).*

**For burial areas that are overgrown with WOODY VEGETATION**, as needed (due to personnel, budget, or other constraints), scheduling of tree removal on burial sites can be done in phases (refer also to DNR "Chain Saw" policy), and would reasonably progress from more heavily visited areas to less visited areas. Using a phased approach:

**Phase I** involves the removal of trees that are dead, leaners, damaged, diseased, or insect infested; brush; trees less than  $\approx 5$  inches in diameter; herbaceous plants; and invasive species on or within  $\approx 15$  feet of a defined burial area or mound base.

**Phase II** involves removal of all trees that are less than  $\approx 10$  inches in diameter from the mounds, and the removal of all dead, down and hazardous trees on or within  $\approx 15$  feet of a defined burial area or mound base.

**Phase III** involves the removal of all remaining trees on or within ≈15 feet of a defined burial area or mound base.

**Stump removal** is prohibited; stumps may only be cut or ground only to ground level and, if needed, one should only utilize smaller equipment to grind/cut the stump, and should not penetrate below the "natural" surface and into the soil of a burial area/mound or adjacent areas (remember, per state law, there is to be no soil disturbance within at least five feet of a burial site/mound base).

**Chemical treatment** may be a necessary component of invasives and/or woody (including stumps) vegetation control. Ideally, herbicide application is selective and targeted rather than broadcast type (although broadcast spraying may be required to control or eradicate certain undesirable species).

**Grassy vegetation** (ideally no- or low-maintenance, preferably with native species) should be established to stabilize area soils and inhibit woody plant succession. Mowing and/or periodic, controlled burning may be useful in maintaining such cover (see also below).

**For burial areas covered by TURF-TYPE VEGETATION**, vegetation control typically consists of mowing, augmented, as needed, by periodic controlled burning. Be careful to AVOID having mowing equipment blades or deck "clip" or otherwise cut into the burial area, especially when cutting on or over mounds. Consider that mounds do not need to be mowed with every mowing; indeed, it is desirable to not mow mounds routinely or cut the grass as short – this can help to minimize inadvertent impacts to mounds, as well as "highlight" mound shape and so make them more evident to the public (see also below). Mowing of mounds should not occur when soils are water-saturated. Hand-mowing of mounds is preferable.

## LONG TERM MAINTENANCE CONSIDERATIONS

Long term maintenance of burial areas focuses on developing and maintaining appropriate ground cover to prevent erosion and limit growth of new invasive and/or woody vegetation, and to prevent inadvertent impacts due to poor trail design or other unintentional or intentional damage. Species selection depends on soil and canopy conditions and should consist of native species commonly found in the area. Issues of public accessibility, the relative remoteness of the burial site, and the ability (or inability) to periodically monitor it must also be considered when contemplating selective revegetation. Ideally, vegetation suppression and subsequent revegetation efforts will result in an area plant mix which requires little or no routine maintenance.

All trail development proposals adjacent or proximal to burial sites on DNR properties must be reviewed by the Departmental Archaeologist prior to implementation (see also below).

Chemical treatment should be limited, but may be necessary in some circumstances, especially to control re-growth of invasives or woody vegetation. While broadcast spraying is generally discouraged on burial sites, it may be needed in order to control invasives or other undesirable species on or adjacent to burial areas.

As above, limit or avoid mowing on mounds because it can damage mound contours, cause soil compaction, result in edge diffusion, and encourage people to walk on the mounds. In some cases mowing may be necessary to promote a thick ground cover and control growth of woody plants and invasives. Mow once in the spring and once again in the fall, with the mower deck set

high to avoid ground disturbance. When mowing with a lawn tractor rather than a push mower, the use of a four wheel drive vehicle with low impact tires is recommended. An alternative to mowing mounds is to mow around them; again, this serves to highlight their shapes and reduce negative impacts. The equipment operator should be well trained and use extra caution to avoid cutting into the edges of the mounds.

In a prairie or oak savanna setting, **prescribed burns** may be conducted to control invasives and woody vegetation, as well as to enhance the growth of native plants. The use of fire will depend on local circumstances. Consult plant resource management professionals to determine if fire is appropriate and how frequently it should be used as a control measure. During burns, monitor installation of firebreaks and use of firefighting equipment to ensure that mounds are not disturbed.

## MOUND/BURIAL SITE RESTORATION

In some cases, the repair of damaged mounds or other burial areas may be appropriate, and requires consultation with a number of parties. The Departmental Archaeologist will coordinate restoration requests with the WHS, interested tribal governments, and other interested parties. A recommended general procedure is to: (1) record the nature and extent of the damage and current condition of the mound (include sketch map and photographs); (2) remove leaf litter from the damaged area; (3) lay geotextile fabric on the ground surface in the area of the damage, (4) scatter current year coins (year of restoration; nickel preferred) on the fabric to indicate the time of restoration, and (5) use hand tools to place new soil from an off-site location on the fabric to replace missing soil. The restored section will likely require seeding to inhibit erosion. Photographs should be taken once the restoration has been completed.

The "restoration" or "reconstruction" of burial sites/mounds that appear to have been completely destroyed requires similar consultation. Work may involve complete reconstruction of the site if its original location and configuration can be accurately established. *Note: even though the above-ground portion of a burial site (e.g., a "mound") may appear to be destroyed, associated sub-surface pit burials may remain intact – do not assume that a burial is completely destroyed just because the above-ground component is gone!*

Neither chalk nor lime should be applied to the ground surface to outline extant or destroyed mounds (among other things, this changes soils chemistry, and may adversely impact revegetation efforts).

## PUBLIC USE, TRAILS, SIGNS, AND FENCES

Burial/mound sites located in more **remote areas**, away from more readily monitored, higher traffic public use areas, should not be signed and should remain in a more natural condition. Such sites should not have trails built to, around, or proximal to them.

Except for maintenance, **pedestrian (or other) traffic should not be allowed on burial sites/mounds**. Do not locate signs, fence posts, picnic tables, or public events on them. For sites located in public use areas, erect signage indicating that the site is protected from disturbance by State law and, when appropriate, affirming the sacred nature of burial sites/mounds to Indian or other related communities, and directing people to stay on the trail and off the mounds or other burial site. **Signs** may also inform the public about the significance of mounds and the people who built them, and may include maps of a specific mound group or mound groups in the vicinity. Interpretive signage should be developed in consultation with the

Departmental Archaeologist, in cooperation with respective Bureau interpretive staff (e.g., for Parks, this would be the Chief Naturalist). Signs must be located a minimum of 15 feet away from the burial sites perimeter or mound base.

**Trails** may be established in the vicinity of burial sites, especially mounds, both to encourage public visitation and to direct associated traffic, but they must be located a minimum of five feet from the defined burial site perimeter or mound base (more than five feet is preferable). A trail does not need to be built to provide access to every mound in a group of mounds – too often, that kind of approach unnecessarily complicates trail design and compromises the long-term integrity of the mounds. The trunks of small diameter trees that have been removed from the burial areas/mounds may be used to mark the edges of trails. Use wood chips, shredded bark, or mowing for trail maintenance. Trail design should also take into account aesthetics, viewsheds, and erosion control; however, *avoiding impacts to the burial area is a primary consideration in any trail design proposal*. Developing trails in and around mound groups requires having an accurate map of mound(s) and mound groups!

**Fencing** may be considered to help direct and limit traffic flow, and to prevent the development of informal trails which may result in adverse burial site impacts. If needed, fencing should ideally be a "low-profile" type, such as a waist or mid-thigh high, split-rail fence. In some instances, barrier-type vegetation may be a desirable alternative or adjunct to fencing; selection of plant type(s) should be made in consultation with a DNR Forester or other plant specialist.

## APPROVALS AND RELATED ISSUES

The Departmental Archaeologist will review and approve all related signage, burial site de-vegetation, maintenance, restoration, or trail development and relocation proposals and, as indicated, will consult with interested third parties (e.g., individual families, tribal governments) when such burial areas are known to be associated with such parties.

Copies of all pertinent documentation, including maps, photos, etc., should be retained by the respective property manager, and two copies of these documents should be forwarded to the Departmental Archaeologist.

## LOWER WISCONSIN STATE RIVERWAY BOARD

### PROPOSED PROTOCOLS FOR CULTURAL RESOURCES PROTECTION AND PRESERVATION ON PUBLIC AND PRIVATE LANDS IN THE LOWER WISCONSIN STATE RIVERWAY

#### Introduction

The Lower Wisconsin State Riverway (Riverway) encompasses nearly 80,000 acres along the final 92 miles of the Wisconsin River, beginning below the dam at Prairie du Sac and extending to the confluence with the Mississippi River near Prairie du Chien. The project encompasses bluffs, bottomlands, islands, sandbars, swamps, prairies and woods within the lower Wisconsin River valley. The project was created in 1989 to protect the scenic beauty and natural character of the valley, to provide a quality public use recreational area and to manage the corridor's resources for the long term benefit of the citizens of the State of Wisconsin. The Wisconsin Department of Natural Resources (WDNR) was charged with acquisition of lands within the project boundary from willing sellers, either fee title acquisition or scenic easement. Currently (April - 2006), over 46,000 acres within the project boundary are owned or controlled by WDNR.

#### Cultural Resources

The Riverway and surrounding lands contain an abundance of archeological and historical resources, many of which are located on state owned or managed lands. These resources include rock art, earthworks (effigy, conical and linear mounds), Native American habitation sites and agricultural fields, historic sites associated with Euro-Yankee exploration (missionaries, fur traders, etc.) as well as post-settlement farmsteads, cemeteries and ghost towns.

Of special note, the Riverway contains a high concentration of effigy mounds and numerous conical and linear mounds. The Town of Eagle, Richland County, is believed to have the highest concentration of bird forms (thunderbird, eagle, hawk, falcon, etc.) within the effigy mound region. Due to the mapping and surveying of earthworks by T.H. Lewis, C.E. Brown, S. Taylor and others in the mid to late 19<sup>th</sup> century and early 20<sup>th</sup> century, the previous existence of thousands of mounds is known. As we view the landscape in the early 21<sup>st</sup> century, there remain mounds in the Riverway but the once rich tapestry of tumuli that covered the prairies and hills has dwindled substantially and the extant earthworks created by the hand of a once thriving culture over 1000 years ago now are numbered in the dozens. Some of these mounds are on privately owned lands, some are on tribal lands and many are located on public lands. The Ho-Chunk Nation has stated that the effigy mound builders were their ancestors and the mound sites are sacred. The religious or spiritual aspects of these sites to the Ho-Chunk Nation and other Native Americans are important considerations in any discussion of protection or preservation.

With land ownership, there is an ethical responsibility for proper stewardship and, in the case of known archeological or historical sites; the burden of responsibility for stewardship is greater to assure proper protection of these unique features. The State of Wisconsin should be a leader in protecting and preserving these sites and should offer a model for other units of government and private citizens to emulate. Therefore, the following maintenance protocol is provided as a general guideline for proper stewardship of archeological sites containing effigy, conical and/or linear mounds.

## MOUNDS MAINTENANCE PROTOCOL

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### Site Assessment

A comprehensive site assessment is required at each site to evaluate the existing plant community and opportunity for restoration of the native plant community, to determine the conditions of the mounds, to determine the need for mapping, and to assess risks to the mounds. The assessment will identify those features which render each site unique and will influence the maintenance regimen selected.

### Vegetative Survey

An initial survey of trees, shrubs and herbaceous is required to create an inventory to be used in management decisions. Notations should be made regarding listed species. An assessment of native plant community relicts should be recorded and an evaluation of the treatment necessary to restore the native plant community should be detailed. Tree canopy and ground cover should be noted. Comments regarding tree species and potential for adverse impact from disease or insect infestation should be included. The potential for use of fire at the site should be recorded. Following implementation of Phases I-III at the site, which may include the use of fire, another survey should be conducted to evaluate the response of the native plant community at the site.

### Archeological Survey

An archeological survey of the site should be conducted both before and after phased work is implemented. At minimum, the number and type of mounds should be recorded and surface observations should be conducted. The condition of the mounds should be noted, such as whether the edges are well-defined or diffuse and whether the mounds are well-preserved or have been damaged. An additional walk through the site should be conducted following extensive tree removal or introduction of fire to the site. Artifacts found should be left at the site and not moved and should be reported to the DNR archeologist or Wisconsin Historical Society. **Artifacts may not be removed from the site!**

### Mapping

While adequate maps of some mound groups are available, the vast majority of mound groups require mapping. New technologies are available that would enhance existing maps. Global Positioning System (GPS) coordinates for the mounds should be taken. Mapping is important to assure an accurate record of the site is maintained. Site assessment should include notations regarding proximity to water features, proximity to roads and other notable features of the site.

Mapping of sites on state owned lands also is important for fire control personnel. Heavy equipment operating in thick smoke or under night conditions may have difficulty seeing a mound or mound group. GPS coordinates for mounds will assist fire control personnel in avoiding disturbance of important cultural resources when engaged in firefighting.

Cooperative efforts between federal and state agencies, local units of government, the university or technical school system, the Ho-Chunk Nation or other tribal entities, or 501c(3) organizations should be encouraged. Funding for mapping of mound sites should be sought through agency budgets, local governmental budgets, grant resources and private donations.

### Risk Assessment

Each mound site should be assessed for inherent risks. Notations should be recorded regarding potential threats to the mound(s) from erosion (destabilized river banks, encroaching gullies); proximity to residential/commercial/industrial development, roads, agriculture, pedestrian or bicycle trails, playgrounds and parks; non-native invasive species and tree species of concern due to disease or insects. For example, property managers may wish to evaluate the number of ash trees at a site due to the potential for infestation by the emerald ash borer and the subsequent treatment recommended for infested areas (removal of all ash trees within ½ mile and removal of stumps and roots). Removal of all ash trees from the mounds or within 5 feet of the mounds may be considered a priority in areas where EAB infestation is incipient. Other species may come with a different suite of potential calamitous diseases or insect problems (Dutch elm, gypsy moth, oak wilt, etc.) Mounds associated with a "high risk" for damage should receive immediate attention to assure protection and preservation.

### Mounds maintenance: A Phased Approach

The phased approach to mounds maintenance in the Riverway was developed by the Ho-Chunk Nation and Lower Wisconsin State Riverway Board (LWSRB) in regard to a project to maintain the mound group identified as McClary #4 in the Town of Eagle, Richland County. The site was purchased by the Ho-Chunk Nation in 1994. Because the site is located within the Riverway boundary, a permit for vegetative removal from the LWSRB was required. The phased approach was developed in order to assess visual impacts when viewed from the river, as required by the Riverway law. The Ho-Chunk Nation successfully has implemented Phases I & II and is in the process of implementing Phase III. The phased approach (Phases I/II) has been utilized at state owned sites in the Riverway including the Dingman, Hamilton, Jonas and Bloyer mound groups. (NOTE: An LWSRB permit is required for maintenance of a known archeological site pursuant to RB 2.06, Wisconsin Administrative Code.)

The phased approach is designed for sites that have not been managed or maintained and are generally overgrown with trees and/or woody vegetation. Activities should occur when the ground is frozen or dry and the leaves are off the deciduous trees. Frozen ground conditions are preferred. Ground disturbance should be minimized at all times. (NOTE: Each mound or mound group is unique and should be assessed according to the condition of the mound(s), condition of the site and risk of damage.)

#### Phase I

Phase I involves removal of dead or down trees, trees which represent an imminent hazard to the mounds (leaners in danger of uprooting, storm damaged, diseased or insect infested), woody vegetation - trees and brush less than 5" diameter at breast height (DBH) - and non-native invasive species. Healthy trees larger than 5" DBH remain. Material should be taken off the mounds and scattered or piled 25 feet or more from the mound wherever possible. A minimum of 15 feet should be maintained between brush piles and the mound. Pole size material may be utilized for trail demarcation or material may be chipped and used on trails. In some cases, material may be removed and transported to a compost area or burn pile.

## **MOUNDS MAINTENANCE PROTOCOL**

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### **Phase II**

Phase II involves removal of all trees <14" DBH from the mound as well as continuing with brush removal efforts. Within 5 feet of the mound, all dead, down and hazard trees are removed.

### **Phase III**

Phase III involves removal of all trees, healthy or not and regardless of size, from the mound and from within 5 feet of the mound.

### **Phase IV**

Phase IV represents the long term maintenance of the site including establishment of appropriate ground cover to prevent or minimize erosion. Control of woody vegetation continues. Where feasible, restoration of the native plant community is encouraged. Seed should be collected from the adjacent area. Local genotype seed also may be purchased and planted. Ideally, seed would be hand broadcast planted following a fall prescribed burn. Attention should be paid to species selection when considering trees to be retained at a site in regard to long term canopy cover, suitability for the site, susceptibility to disease and/or insect infestation and longevity. Stump removal, if done at all, should only utilize small equipment to grind the stump and should not penetrate the soil of the mound.

## **Mounds maintenance: Other considerations**

### **Mowing**

Mowing should be limited or avoided. The use of native plants to establish ground cover is preferred. In some cases, occasional mowing may be appropriate. Where mowing does occur, the mower deck should be set at a high level to avoid ground disturbance, enhance vegetative growth and avoid erosion. Hand mowing (push mower) or mechanical mowing (lawn tractors) should be evaluated carefully. Compaction and exacerbation of edge diffusion should be avoided. If lawn tractors are used, 4WD or AWD vehicles with low impact tires are recommended to minimize compaction and ground disturbance. An alternative to mowing over the mounds is to mow around the mounds, preferably, maintaining a minimum 5-foot buffer area. Careful consideration should be given to mowing around the mounds to avoid ground disturbance and adverse impact to the mound edges. Any equipment operator should be trained thoroughly and should have extensive knowledge of the equipment being used at the site. An alternative to mowing is to use a hand held motorized brush cutter. As with any activity related to mounds maintenance, assessment of soil conditions is critical. Again, activities should only occur when the ground is frozen or dry to avoid compaction.

## MOUNDS MAINTENANCE PROTOCOL

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### Burning

The use of fire to control woody vegetation and to enhance the native plant community in a prairie or savanna ecosystem is a viable tool for the property manager. The use of fire as a tool should be made on an individual site basis. While restoration of the native plant community at each mound site is the ultimate goal, other factors may preclude the restoration effort, including the re-introduction of fire. Surveys of the site should be conducted prior to burning to assess the native plant community and to determine if artifacts are present on the surface. Additional surveys should be conducted following the controlled burning to look for artifacts and to determine the response of the native plant community to fire. The frequency of fire at a site should be determined following consultation with appropriate resource management professionals. Installation of firebreaks and use of firefighting equipment at a site should be carefully monitored.

### Chemicals

The use of chemical treatments to control woody vegetation or non-native invasive species should be limited but may be required in some circumstances. Removal of woody vegetation by hand, both initially and on a routine maintenance basis, is preferred. However, herbicide use may be required to control some species. The use of chemicals is an important decision for a site. The type of herbicide used is a critical component of the decision making process as is the application. In general, stump treatment of trees or woody vegetation with a small brush is preferred. Again, generally speaking, the broadcasting of chemicals is discouraged. A distinction should be made between chemical use on the mounds versus chemical use on the land adjacent to the mounds.

### Trails

Pedestrian traffic should not be allowed on the mounds! Trails should be established at those sites where public visitation either is likely or is encouraged. Trails should be located 10 feet or more from the mound where possible (a minimum of 5 feet). Small trees and large brush stems that have been removed from the mounds in phase I or II successfully have been used for trail demarcation. The use of wood chips, shredded bark or mowing may be considered for trail maintenance. Location and design of trails should consider proximity to mounds, aesthetics, viewsheds and erosion control.

### Signage

Signage at mound sites should be minimized but efforts should be made to educate and inform the public about the significance of the site and the people who constructed the earthworks. Maps of the mounds at specific sites or in a general context of other mound groups in the vicinity may be useful. A generic sign for selected sites that describes the effigy mound building culture and the types of mounds (effigy, linear or conical) may be appropriate. Affirmation of the sacred nature of the site to Native American peoples should be included in the signage. A strong statement about staying off the mounds and information on the burial sites preservation law should be included. Site specific signage should include a map of the site and information regarding the unique features of the site. In some circumstances, brochures or small maps could be provided to visitors.

### Repair of damaged mounds

Where appropriate, repair of mounds damaged by post Euro-Yankee settlement activities and/or natural causes may be considered. Coordination with the Wisconsin Historical Society (WHS), WDNR archeologist and Ho-Chunk Nation is required.

At the Dingman mound group in the Town of Eagle, Richland County, repair of three conical mounds was accomplished in May of 2005. The mounds were damaged by looters at an unknown point in time within the previous 150 years. Permission to execute the repairs was secured from the WHS, WDNR and Ho-Chunk Nation. The project was undertaken with supervision from the WDNR archeologist. Leaf litter was removed from the damaged area. Geotextile fabric was placed in the excavated area to present a barrier from the original soil and the new soil. Coins minted in 2005 (in this case, buffalo nickels) were placed on the fabric at points throughout the bottom of the disturbed area to indicate the time of introduction of the new soil. Soil was then placed in the damaged area by hand (bucket by bucket) until the mound was restored. The soil was obtained off-site to provide distinction between the original soils and the newly introduced soil. Ground cover was quickly established during the late spring and summer months. No erosion was evident during periodic monitoring. Significant canopy cover was present which may have assisted with erosion control during the time immediately following repairs.

### Restoration of destroyed mounds

Restoration of destroyed mounds (as opposed to repair of damaged mounds) should be discussed with WHS, the DNR archeologist, the Ho-Chunk Nation and other interested tribal governments. In some locations, establishment of chalk or lime outlines of destroyed mounds may enhance educational opportunities. In other cases, the actual reconstruction of a destroyed mound may be appropriate. Restoration of the Panther Spirit Mound near Mauston involved cooperative efforts by the Ho-Chunk Nation and students from the Mauston School District.

### Volunteers

Volunteers often are enlisted to assist with mounds maintenance activities, monitoring and education. In the Riverway, volunteer groups have provided hundreds of labor hours to protect significant archeological sites on state owned lands. Two prominent groups include Cultural Landscape Legacies, Inc. (CLL) and the Friends of the Lower Wisconsin (FLOW). CLL & FLOW volunteers provided equipment and labor to remove brush and trees and create trails at sites near Muscoda. In addition, one building was razed utilizing the CLL and FLOW labor force.

Volunteers require supervision and instruction. CLL has used the opportunity for education and sets aside time for volunteers to be instructed on the sanctity of the mounds to Native Americans and to discuss the effigy mound building culture. Use of volunteers requires a qualified team leader, either a person with an archeological/anthropological background or with experience in maintenance of archeological sites. The use of equipment by volunteers should be monitored closely. While well-meaning, most volunteers are not "expert" operators of mechanical equipment. Persons using chainsaws or mechanical brush cutters should have appropriate safety equipment and the number of persons using mechanical equipment should be limited to avoid safety issues.

## MOUNDS MAINTENANCE PROTOCOL

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### Conclusions

State officials and private landowners both have a tremendous responsibility to properly maintain the known archeological sites on lands within or adjacent to the Riverway (and elsewhere). The Lower Wisconsin State Riverway Board and Cultural Landscape Legacies recognized a unique opportunity exists to create a model of mound protection to be emulated statewide by other governmental units and by private landowners. This document is a result of efforts spearheaded by Riverway Board staff with the cooperation of many people on the mounds maintenance protocol committee.

The Riverway Board and Cultural Landscape Legacies also recognizes great potential exists for education of the general public on the mound building culture, the sacred aspects of the mounds and the importance of the mounds to contemporary Native Americans, including the Ho-Chunk Nation. A synergistic approach to the mounds protection and preservation effort with involvement of federal and state agencies, local governments, the educational system, tribal governments, nonprofit organizations and private landowners could result in a truly magnificent outcome, not only for the current generation but also for future generations.

*Proposal prepared by  
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Original draft and revisions reviewed by the Lower Wisconsin State Riverway Mound Maintenance Protocol Ad Hoc Committee (membership list attached)

**LOWER WISCONSIN STATE RIVERWAY  
MOUNDS MAINTENANCE PROTOCOL AD HOC COMMITTEE**

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CULTURAL LANDSCAPE LEGACIES, INC.

Robert Salzer, President  
William G. Gartner, Board of Directors  
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Jay Toth, HCN Archeologist

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# Indian Mounds



Large Flat-Topped Mounds in Cultivated Field

## What Are Indian Mounds?

Indian mounds are the visible testament of the first Mississippians. Mounds are planned earthen architecture made by Native American people for a variety of reasons including ceremonial and domestic uses.

Many people today believe that any elevated area with artifacts is an Indian mound, but actual mounds only make up a small fraction of the known archaeological sites in Mississippi.

## How Were Mounds Made?

Construction of mounds was accomplished by heaping basket loads of soil and other materials onto natural land surfaces. Some mounds were built in multiple construction stages over long periods of time and others were built quickly in single episodes.

## Where Are Mounds Found?

Mounds are found in nearly every county in Mississippi, but they are most common in the Delta counties and along major waterways. Mounds tend to be located on high natural levees or on terraces adjacent to floodplains, but can also be found in upland areas—especially in the Loess Bluffs region.

Nearly all mounds are located on private land. Therefore, landowner cooperation is crucial for their long-term preservation.

## How Old are Mounds?

Indians first built mounds in the Lower Mississippi Valley by about 4000 B.C. Widespread construction of mounds, however, began around 100 B.C. Mounds continued to be built for another 1,800 years until around A.D. 1700.

## Characteristics:

- ◆ Conical Mounds
  - Rounded top
  - Usually small, 3-10 feet tall, 50-100 feet diameter
  - Burial often primary purpose
  - Built during most time periods
- ◆ Rectangular Platform Mounds
  - Flat-topped pyramid
  - Often large, 15-60 feet tall, covering 0.1 to several acres
  - Platform for buildings, primary purpose
  - Often burial location of important individuals
  - 100 B.C. - A.D. 1700
- ◆ Mounds can stand alone or be in groups of 20 or more.
- ◆ Mounds can be associated with large villages, or have little evidence of habitation.
- ◆ About 1,100 mound sites are recorded in Mississippi (There are about 26,000 archaeological sites.)



Conical Mound in Grass Cover

### How Were Mounds Used?

The purpose of some of the most ancient mounds is still shrouded in mystery, although it has been proposed that they possibly functioned as territorial markers.

People buried their dead in some of the mounds, while at other sites great temples were built atop the mounds.

The shape and size of the mound can give clues to its intended purpose. Conical mounds were frequently constructed primarily for mortuary purposes. Rectangular, flat-topped mounds were primarily built as a platform for a building such as a temple or residence for a chief. Many later mounds were used to bury important people.

Mounds are often believed to have been used to escape flooding. However, mounds are typically located on high natural levees or terraces above the flood plains, and many mounds were constructed in upland areas where flooding would not be a concern.

### Why Are Mounds Important?

Mounds are irreplaceable resources. Indian mounds and the archaeological deposits they contain are the only evidence we have for most of Mississippi's human history.

Each mound has a story to tell. Careful archaeological investigations at mounds provide valuable information about how people lived in the past.

Mounds provide many Native American people today with an important link to their culture and their past. Mounds that contain burials are particularly significant.

### Threats To Mounds

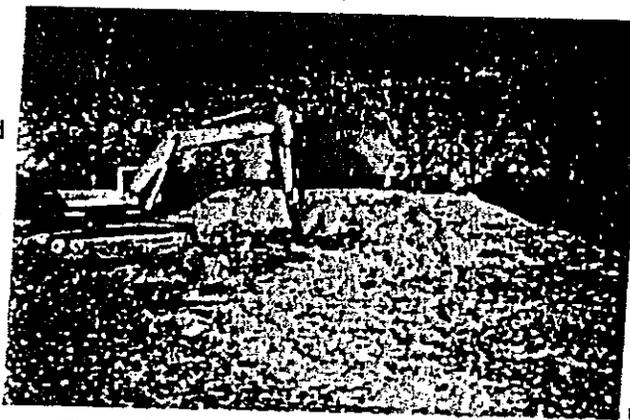
Development spreading into rural areas and some agricultural practices are the main threats to mounds. Deliberate destruction by looting is also a serious problem.

However, a lack of awareness is perhaps the most serious threat to the survival of many mounds. Because mounds lack the visual impact of other historic monuments, such as the cliff dwellings in the Southwest or antebellum homes, many people are unaware of why they are important.

### Are Indian Mounds Protected?

Protection of Indian mounds in Mississippi primarily relies on voluntary stewardship. State burial laws do provide some protection for mounds on private land by making it illegal to desecrate a cemetery or open graves.

Mounds on State and Federal property are protected by a number of laws and regulations. Severe penalties are imposed for illegal digging or removal of artifacts on public lands.



Destruction of the Blaine Mound, Hinds County

### Best Management Practices

Effective resource management comes from understanding the values of the mounds and ensuring that any decision tries to balance the effects of any management action so that negative effects are minimized and positive effects are maximized.

### Some recommended Best Management Practices for mounds:

- Document mounds located on your property in the State Archaeological Site File.
- Check the mound condition on a regular basis, and take action to stop destabilizing actions such as erosion.
- Contact professionals for help in dealing with your mound.
- Avoid ground disturbing activities and frequent traffic (pedestrian, vehicles and livestock) on mounds.
- Remove mounds from cultivation. Consider establishing permanent grass cover on the mound, and create a 30 foot buffer zone around the base of the mound.
- Mounds with tree cover: The possibility of wind thrown trees is a potential concern. Overturned trees can pull up large chunks of soil with the root system causing damage to cultural deposits. Root penetration of trees and scrub can also have a significant impact on archaeological deposits. However, removal of long established trees can be more detrimental to the mound than maintaining the existing cover.
- Clear small underbrush from mounds. As needed, removal and reduction of scrub growth should be carried out with hand tools during the winter and concentrate on scrub with stems over 1 inch in diameter cutting as near the base as possible.
- Scrub growth and brush piles can also attract burrowing animals which damage cultural deposits.

### For more information contact:

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Natural Resources Conservation Service  
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100 W. Capitol Street  
Jackson, MS 39269  
(601)965-4139  
[www.ms.nrcs.usda.gov](http://www.ms.nrcs.usda.gov)



## Fact Sheet How Trees Benefit Mounds

This document is a summary of research on the relationship of trees and mounds. The information was compiled to provide information for the Village of McFarland policy on preservation and maintenance of mounds in the village.

**Trees Provide Erosion Protection** - The book Native American Mounds in Madison and Dane County makes the following statement regarding the mounds built by the Woodland mound builders in McFarland's Indian Mound Conservancy: "Situated on the ridge of a glacial drumlin, this group overlooks Lake Waubesa and Mud Lake to the west and south ...These mounds are in very good condition..." (Birmingham and Rankin, 1994)

This is consistent with a 1998 assessment of earthworks in the United Kingdom that states: "Many sites now under grass cover have been wooded at some stage in their land management history and they have better overall surface condition from this stabilizing cover of former woodland. Today we admire the condition of a particular earthwork but fail to recognize that this is historically due to a former woodland". (Jones, 1998)

Rain is one of the most efficient causal forces of erosion. Several studies have looked at the kinetic forces of rain drops and how they can physically dislodge soil particles (Evans, 1980; Imeson, 1984; Allen, 1991; Tamm, 1991). When rainfall occurs on a slope, a downward movement of any exposed soil particles will result, producing a slow but steady form of erosion. (Evans, 1980)

A woodland canopy with its increased evapotranspiration and interception, reduces the quantity of rainfall that reaches the soil compared with open ground or grassland. Where rain does reach the forest soil it has a reduced kinetic energy resulting from impacts with vegetation on its way through the canopy, and understory thus minimizing any soil movements from rain splash. (Wilson and Cooke, 1980)

The removal of trees from raised earthworks such as banks or burial mounds can have an adverse effect on the stability of the remaining soil. Soil consists of particles capable of moving past each other and allowing larger scale migration, especially on slopes. Shear strength is a function of the friction created between adjacent particles. A wet soil will have an increased volume that expands the spaces between particles thus reducing their friction and the soil shear strength (Biddle, 1998). The presence of roots within soil significantly increases its resistance to shearing (Waldron and Dakessian, 1981) by providing a lattice to support it. [Note: A good example of this is on the linear mound just south of the Bear Mound. The trail is cutting into the west end of the mound. The roots from two trees are helping minimize the damage by keeping the trail from cutting further into the mound.]

**Adverse Impacts of Tree Removal** - A US Dept of Agriculture – National Resource Conservation Service publication states: "The possibly of wind thrown trees is a concern. However, removal of long established trees can be more detrimental to the mound than maintaining the existing cover." [www.ms.nrcs.usda.gov/technical/IndianMounds\\_2.pdf](http://www.ms.nrcs.usda.gov/technical/IndianMounds_2.pdf)

The author of the NRCS publication indicates that the physical process of removing long established trees causes substantial damage to the mounds and the surrounding environment. In addition to rutting which is very visible, soil compaction is a common problem. (Cliff Jenkins, 2010). This is consistent with damage that occurred in Indian Mound Conservation Park during some tree removal associated with oak wilt in 2005 and again in January 2010.

While the SHS does indicate that "Removal of trees from mounds and immediately adjacent areas is generally desirable to protect them from windthrow" ... At the same time, the SHS recognizes the potential risks associated with tree removal when it states: "However, at some locations, selected trees may be retained ... when significant, unavoidable mound damage would occur during tree removal ..."

Where the decision has been made to remove trees from sensitive sites, they are usually felled and the stumps left in the ground to rot, thus minimizing below ground disturbance. Tree removal and subsequent root death on a sloping soil ... may lead to a higher risk of soil erosion. Once a root has decayed, voids may be left within the soil. Water can drain through these channels and the surrounding soil will creep in from the sides. (Richardson, 1995; Biddle, 1998)

**Mitigating windthrow risk:** The Wisconsin State Historical Society risk assessment of the mounds in Indian Mound Conservancy states "all of the trees growing on the mounds seem to be healthy and not in immediate danger of tipping over."

While the SHS risk assessment indicates there is no immediate danger, there are ways to further minimize windthrow risks. Jones (1998) suggested that "the use of species that favor a more vertical root system, such as oak, may be beneficial in the stabilization of earth banks". Research conducted after a major storm in England in 1987 states: "Trees with a tap root (e.g. oaks) have a strong main root that descends vertically from the underside of the trunk. Tap root trees are much less susceptible to windthrow". Of the 4511 wind thrown trees surveyed, only 2.4 % were found to have tap roots (Cutler, Gasson and Farmer 1990).

This is consistent with the published Ho Chunk protocol on mound maintenance (p. 33 of the draft policy) which states that as an alternative to removing all trees: "remove all low land trees that have surface roots".

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