Master Plan for the Dr. J.S. Garman Nature Preserve

Prepared For:

Jefferson County Parks Committee

March 2007

LANDESIGN
by
Margaret Burlingham, llc

Acknowledgements

A special thanks goes to Mrs. Theo Garman for her dedication to preserving this extraordinary place and donating the Preserve to the people of Jefferson County.

The Ho-Chunk Nation has graciously given the public the chance to learn about their culture and visit the Indian Mounds at the Preserve and is continuing to provide invaluable planning and management expertise for this culturally and naturally significant Preserve.

Many other individuals have given their talents and time in the development of this Master Plan. Those most directly involved with the process are listed below.

Jefferson County Board of Supervisors

Sharon Schmeling, Chairperson
Steve Nass, Vice Chairperson

Jefferson County Parks Committee

Glen Borland, Chairperson
Kathleen Groskopf
John Molinaro
Rick Kuhlman
Paul Babcock

Jefferson County Parks Department

Joe Nehmer, Director
Steve Hoeft, Park Supervisor
Peggy Sundquist, Volunteer Coordinator

Special Expertise

Jay Toth, Ho-Chunk Nation Archaeologist
Brian Nicholls, Historic Resource Management Services-UWM,
Wisconsin Archaeology Society
Leslie Eisenberg, Burial Sites Preservation Program, Wisconsin Historical Society
Kira Kaufmann, Department of Anthropology, UWM
John Broihahn, State Archaeologist
Joe O'Hearn, Rock River Archaeology Society
Mark Martin, WDNR Bureau of Endangered Resources
Steve Grabow, Professor and Community Development Educator, UW-Extension
LanDesign by Margaret Burlingham LLC, Planning Consultant and Photography
Jefferson County Land Information Department

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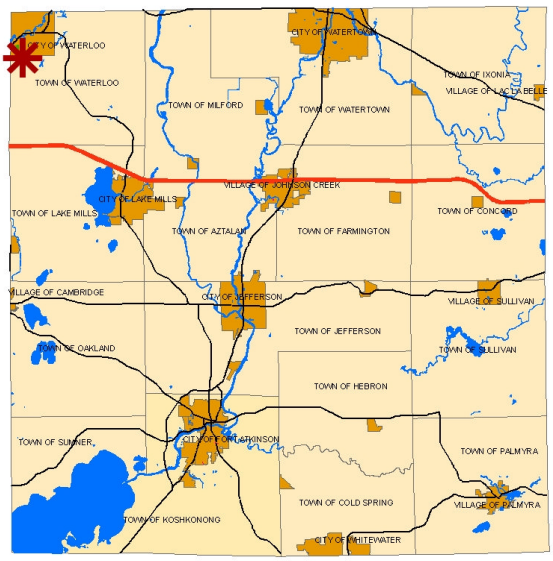
I. Background and Context

Mrs. Theo Garman, wishing to preserve this 40-acre wooded hillside as a memorial to her late husband, donated the Dr. J.S. Garman Nature Preserve to Jefferson County in 2003. The Preserve is located in far northwestern Jefferson County within the City limits of Waterloo in T8N R13E, Section 7.

The Preserve is accessible from Fox Lane on the far west side of Waterloo. The DeYoung Farm subdivision is under construction immediately to the east of the Preserve.

The Jefferson County Parks Department manages and maintains the Preserve. Deed restrictions placed on the property by Mrs. Garman require it to remain in a natural state with minimal development (see Deed Restrictions on page 44). Preserve uses and amenities are limited to walking paths and picnic areas with related structures. Public camping and hunting are prohibited and motorized vehicles are restricted to the designated parking area.



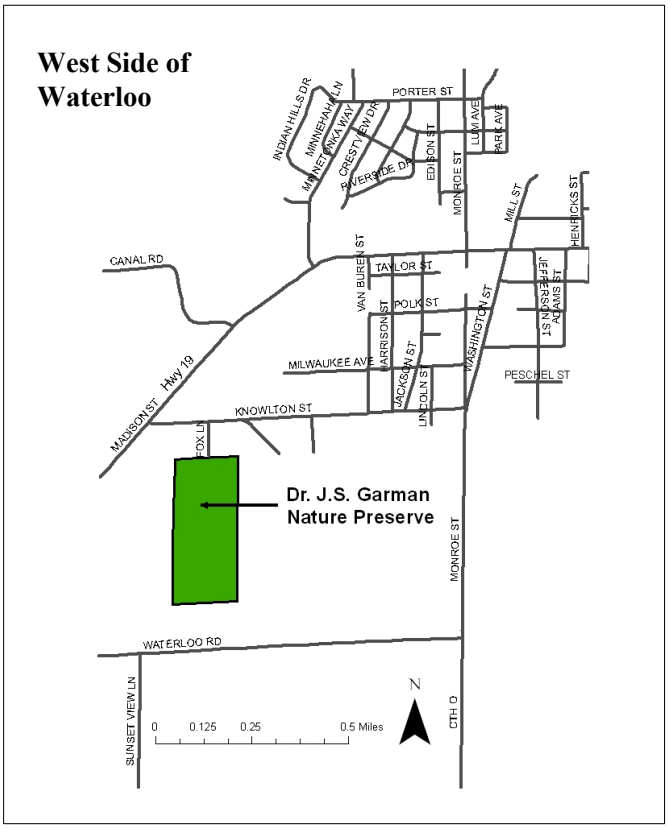
The Dr. J.S. Garman Nature Preserve is located at the red star in the City of Waterloo on this map of Jefferson County.

According to the deed restrictions, Jefferson County may reduce overabundant species and authorized personnel may use motor vehicles for trail construction, forest management or general maintenance. These restrictions are binding on all future owners.

The Preserve has two very unique features that shape the master plan design, those being more twenty Indian mounds and the yellow giant hyssop (*Agastache nepetoides*), a plant species on the Wisconsin State Threatened list.

The Indian mounds are located along the eastern ridgeline of the drumlin within the Preserve. The mounds are a sacred site for Native Americans and may contain burials. Indian mounds are protected by the Wisconsin Burial Sites Law. Jefferson County intends to stabilize and preserve the mounds and create educational opportunities on Native American culture and the Indian mounds.

Jefferson County is required by law to protect the yellow giant hyssop and cannot destroy plants through construction or activities in the Preserve. The yellow giant hyssop is a savanna indicator species, which means that it is usually found in areas that at one time supported a savanna ecosystem. Remnant savanna communities are extremely rare today. Many parts of Jefferson County were covered with savanna or oak openings prior to the mid 1800's.



1.1 Garman Nature Preserve Planning Process

The Jefferson County Parks Committee lead the planning process for the Garman Nature Preserve with extensive input and expertise from the Ho Chunk Nation, several archaeologists, the City of Waterloo, interested citizens, and the planning consultant LanDesign. Public interest and comment is very important to the Jefferson County Parks Department and citizens were given opportunities to tour the Preserve and Indian mounds, speak with Parks officials and archaeologists, and comment on a conceptual plan. The Garman Nature Preserve was on the Parks Committee's agenda throughout the planning process and the Committee received monthly progress reports from LanDesign. All Parks Committee meetings are open to the public.

Several planning meetings and site visits were held with the Parks Committee and archaeological experts. The neighbors to the Preserve were invited to express their ideas and concerns at the beginning of the process. Two public open house meetings were held at the Preserve to acquaint the public with the park, give tours of the Indian Mounds, and gather comments on park activities and conceptual plans. A management plan for the Indian mounds was produced and approved by the Ho Chunk Nation and the archaeologists. The final master plan for the Preserve shows trail locations, important preservation areas, park amenities, and provides an implementation and phasing plan.

Public Meetings

Parks Committee Kick-Off Meeting May 23, 2006
The Jefferson County Parks Committee met to discuss the planning process for the Dr. J.S. Garman Nature Preserve. Background and inventory information was presented to the group. The Indian Mounds, connections with the City of Waterloo, trail connections to the adjacent DeYoung Farm development, and public input opportunities were discussed. Several experts were invited to the meeting and consulted throughout the planning process. They are listed below:

Jay Toth, Ho-Chunk Nation Archaeologist
Brian Nicholls, Historic Resource Management Services, UWM, Wisconsin Archaeology Society
Leslie Eisenberg, Burial Sites Preservation Program, Wisconsin Historical Society
Kira Kaufmann, Department of Anthropology, UWM
John Broihahn, State Archaeologist
Joe O'Hearn, Rock River Archaeology Society
Mark Martin, WDNR Bureau of Endangered Resources
Mo Hanson, City of Waterloo Administrator
John DeWitt, Real Estate Development Attorney for DeYoung Farm Development
Diane Hills, Waterloo resident and landscape architect
Richard Jones, County Supervisor
Mary Peschel, former County Supervisor

Neighbors Meeting June 27, 2006
A meeting for just the neighbors of the Garman Nature Preserve was held at the Waterloo Library to explain the intent of the master plan and to answer questions about the preserve and its management. Six families, two businesses, and the City of Waterloo were invited by letter. Three neighbors attended. The attendees expressed their ideas and concerns for the Preserve and talked about the history and nature of the property. Some neighbors who did not attend this meeting attended the open house at the Preserve the next day or were contacted at other times.

Garman Nature Preserve Open House June 28, 2006
About 40 people attended the open house. Inventory maps were on display and hikes to the Indian Mounds were offered by John Broihahn, Wisconsin State Archaeologist, and local resident and landscape architect Diane Hills. The purpose of the open house was to acquaint people with the Preserve, the vegetation, topography, Native American history, and deed restrictions in preparation for park design input meetings. Visitors were invited to suggest park uses and elements.

Joe Nehmer, Parks Director, tells visitors about the Garman Nature Preserve at the June Open House.

Friends of Aztalan Bus Tour of Jefferson County Indian Mounds July 22, 2006
Bob Birmingham, retired State Archaeologist, lead a bus tour of the Garman Mounds and other Indian Mounds in Jefferson County. Margaret Burlingham of LanDesign met the group of about 40 people at the Preserve and briefly told them about the master plan process and collected comments about the Preserve. The group hiked up to the mounds where Mr. Birmingham talked about the history of the mounds.

Site Visit with Archaeologists August 15, 2006
The Indian Mounds Management Plan was discussed during this site visit to the Preserve. Attending the meeting were Jay Toth, Ho-Chunk archaeologist; John Broihahn, Wisconsin State archaeologist; Brian Nicholls, UW-Milwaukee and Wisconsin Archaeology Society; John Nehmer, Parks Director; John Molinaro, County Supervisor; Steve Hoeft, Parks Superintendent; and Margaret Burlingham, LanDesign. A plan for stabilizing the mounds, managing the vegetation on and around the mounds, and providing public access and education in a respectful way was developed from this meeting.

November Open House November 11, 2006
The public was invited to take a fall hike and learn about the natural and cultural history of the Preserve. The rolling topography and the Indian mounds were much easier to see with no leaves on the trees. Concept maps and comment forms were provided to participants to list their ideas for potential activities and uses in different areas of the Preserve. Visitors experienced the Preserve right after a fresh snowfall.

Master Plan Approval January 9, 2007
The Master Plan for the Dr. J.S. Garman Nature Preserve was approved unanimously at the regular Parks Committee meeting.

Planning Context

The Jefferson County Parks Committee and the Parks Department have conducted numerous park planning efforts in recent years. This section summarizes the plans that may impact and set a precedent for the Dr. J.S. Garman Nature Preserve Master Plan.

Jefferson County Parks, Recreation, and Open Space Plan 2005-2010
The purpose of the *Jefferson County Parks, Recreation, and Open Space Plan* is to identify countywide recreational needs and new opportunities, to guide the development of outdoor recreational facilities, to identify potential park acquisition areas, and to qualify for federal, state, and local grants and funding. This plan provides planning guidance and a fresh vision for the years 2005-2010 and beyond.

Long-range mission and vision statements and values were developed to guide the Parks Department. The plan also suggests improvements for all of the parks and lands in the system and future acquisitions.

Jefferson County Parks Department Mission Statement
The mission of the Jefferson County Parks Department is to preserve natural resources for public use and conservation, to operate and maintain a parks system with resource oriented recreation, trails, and specialty parks; and to expand the parks system for environmental and land use benefits and the health and enjoyment of Jefferson County residents.

Parks Department Values
- Pride in our accomplishments.
- Respect by and for others.
- Reputation for excellence.
- Teamwork to reach goals.

Park System Visions
Vision I: Jefferson County Parks provide multiple recreational facilities and activities for all ages and abilities in a way that balances recreation and conservation values.

Vision II: Jefferson County continues to acquire unique recreational lands and natural resource areas for public use.

Vision III: Jefferson County's system of large parks, extensive trails, and natural areas gives form to our community and rural landscapes. As part of this landscape, the Parks System is fundamental in creating special places to live with nature-based rural character, vital and distinctive communities, and working farms.

Vision IV: Jefferson County sustains a high standard in the design, construction, accessibility, maintenance, safety, and management of the Parks.

Vision V: Jefferson County promotes an awareness of parks and the benefits of outdoor recreation and preservation of natural resources.

Suggested Garman Nature Preserve Improvements
- Install Dr. J.S. Garman Memorial sign at entrance – completed by Mrs. Garman
- Install entrance sign
- Develop parking – a gravel parking lot is available at the end of Fox Lane
- Develop hiking/cross-country ski and snowshoe trails
- Install interpretive signs, particularly about the Indian Mounds
- Remove shed – the shed has been removed
- Remove invasive and non-native species
- The Dr. J.S. Garman Nature Preserve was also identified as a park with significant natural resources and potential for expansion or additional amenities.

2005-2010 Wisconsin Statewide Comprehensive Outdoor Recreation Plan (SCORP)
Since the Jefferson County Comprehensive Park, Recreation, and Open Space Plan was completed in 2005, the WDNR has prepared a new statewide recreation plan that identifies essential issues that affect the future of outdoor recreation and makes appropriate recommendations. The Garman Nature Preserve is located in the Southern Gateways region for this report, which includes Dodge, Jefferson, Rock, Green, Dane, Columbia, Sauk, Lafayette, Richland, and Iowa Counties.

Surveys were conducted at State Parks to gauge the demand for recreational activities. Many of the most popular activities will be or could be provided at the Preserve (those activities are starred (*) below).

The top fifteen Wisconsin recreational activities by participants age 16 and over are:

- *Walking for pleasure 86%
- *Family gathering 79%
- *View/photograph natural scenery 68%
- Gardening or landscaping for pleasure 65%
- Visit nature centers, etc. 65%
- Driving for pleasure 60%
- *View/photograph wildlife 57%
- Attend outdoor sports events 57%
- *Picnicking 57%
- Sightseeing 55%
- *View/photograph wildflowers, trees, etc. 50%
- Bicycling 49%
- Visit a beach 47%
- Swimming in lakes, streams, etc. 46%
- *Visit historic sites 45%

Glacial Heritage Area Feasibility Study

The Wisconsin Natural Resources Board has designated the Glacial Heritage Area (called the Crawfish River-Waterloo Drumlins and Rock River Corridors in the Land Legacy Report) in western Jefferson County, southwestern Dodge County, and far eastern Dane County as a priority area for implementation of the Wisconsin Land Legacy Report. The Report states "This area provides one of the best remaining chances in the southern part of the state to provide much needed recreation opportunities easily accessible to many people." The Dr. J.S. Garman Nature Preserve is within the boundaries of a feasibility study area.

The Wisconsin Department of Natural Resources in undertaking the feasibility study to determine whether it is practicable for the Department to establish, acquire, develop, and manage a new property such as a State Park, Wildlife Area, Forest, or Natural Area within the Glacial Heritage Area. If the study finds that the project is feasible, it will be submitted to the Natural Resources Board and Governor for their review and potential approval. Public input will be gathered throughout the process.[1] The Glacial Heritage Area designation may provide funding opportunities to improve the natural and cultural resources and visitor experiences and may assist in acquisition of bordering properties and natural areas. The feasibility study is also exploring the potential for trails connecting communities to parks and natural areas, particularly on the west side of Jefferson County.

Objectives for the Glacial Heritage Area include[2]:

- Establish a coordinated network in a "strings and pearls" layout of conservation lands and recreation trails and facilities.
- Meet the growing demand for a wide range of outdoor, nature-based, land and water recreation activities.
- Protect and restore native grassland, forest and wetland habitats.
- Help improve water quality in lakes, wetlands and rivers.
- Work to maintain the open, agricultural landscape in collaboration with working farms.
- Incorporate the area's significant cultural and historical elements.
- Integrate the Glacial Heritage Area project with the planned future growth of local communities.

Jefferson County Bikeway/Pedestrianway Plan, 1996
The Bikeway/Pedestrianway Plan identifies non-motorized corridors between communities and to work, school, and recreation areas. Garman Nature Preserve can be reached by County Road O from the south, a designated County bike route, and by City streets.

Bike and pedestrian routes near the Garman Nature Preserve listed in the plan:

- Intra-community bicycle route and City of Waterloo bike path through historic Firemen's Park.
- STH 89 and County Road O within the City are identified as lightly traveled, shared use streets that make connections with the countywide bicycle system.
- STH 89 east connects with Island Road in the Town of Waterloo, which is a designated bicycle route between Waterloo and Watertown.
- County Road O in the Town of Waterloo south to Hwy V is a designated bicycle route between Waterloo and Lake Mills.
- County Road O, outside of the City limits, is a more difficult segment due to higher traffic volumes.

Jefferson County Agricultural Preservation and Land Use Plan, 1999
The *Agricultural Preservation and Land Use Plan* provides a vision and guidelines for growth, development, and land preservation for 20 years with an emphasis on preserving the agricultural lands in Jefferson County. The plan defines and maps environmental corridors. All County parks are in the environmental corridor designation. These corridors often have significant natural resources, rugged topography, and good views. Dr. J.S. Garman Nature Preserve also has contiguous upland woods over 10 acres in size and slopes over 20 percent, both of which are environmental corridor features.

The environmental corridor goals applicable to park planning at the Garman Nature Preserve include:

- Protect and preserve an environmental corridor system consisting of wetlands, floodplains, and steeply sloped glacial features.
- Protect groundwater and surface water quality.
- Discourage development in areas that possess valuable natural resource characteristics and wildlife habitats.

Dorothy Carnes County Park Master Plan and Korth County Park Master Plan, 2001
Master plans have been developed for Dorothy Carnes County Park and Korth County Park, setting a precedent for large natural resource-based park master planning in Jefferson County. Both plans emphasize the importance of natural resources in these parks and provide walking, hiking, cross-country skiing and snowshoeing trails; nature study and enjoyment; bicycle trails or connections; overlooks, shelters; and prairie, savanna, wetland, and woodland restoration.

1.2 Background Information and Resource Analysis

The Dr. J.S. Garman Nature Preserve is a special place that provides public access to a 40 acre wooded tract within the City of Waterloo. The woodlands extend to the west and south of the property for a total wooded area of 54.2 acres. The Preserve is located on one of the highest hills in northwestern Jefferson County at over 980 feet in elevation. The northwest hillside is particularly steep with slopes of over 35 percent for short distances.

The following sections describe and analyze the cultural and natural resources of Dr. J.S. Garman Nature Preserve and include descriptions of:

- Population Demographics
- Indian Mounds
- Local History
- Geology
- Glacial Features and Topography
- Soils
- Vegetation and Wildlife
- Adjacent Land Use and Transportation

This resource and background information forms the basis for a site analysis that identifies the unique characteristics of this Preserve and the design opportunities and challenges for public use.

Demographics

The Dr. J.S. Garman Nature Preserve is located within the Waterloo City limits, less than a mile east of the Dane County line. Dane County is one of the most populated and fastest growing areas of the state. Waterloo had a 2006 population of 3,308 persons[3] and is poised for growth. By 2025 the population is projected to grow by 21.5% to 4,021 persons. [4] By comparison, the population of Jefferson County is expected to grow by 14.2% from 80,092 to 91,464 during the same time period. The chart below summarizes the past and future population projections. The City of Waterloo is currently undertaking comprehensive land use planning for the first time.

Population by Year	1980	1990	2000	Estimated 2006	Projected 2010	Projected 2015	Projected 2020	Projected 2025
City of Waterloo	2,393	2,712	3,259	3,308	3,569	3,716	3,868	4,021
Jefferson County	66,152	67,783	75,767	80,092	82,161	85,178	88,302	91,464

A growing population will bring a higher demand for public parks and open space. The Garman Nature Preserve is easy to reach by bike or walking from the City of Waterloo and by car from Jefferson, Dane, and Dodge Counties.

The first phase of the DeYoung Farm subdivision, directly to the east of the Preserve, is under construction. Thirty-nine single-family lots are planned for Phase I with a total build out of 173 single-family and multi-family lots. A 150-foot wide buffer is planned along the east side of the Garman Nature Preserve to create separation between the Preserve and the residential lots. A trail in the buffer strip will eventually provide access to the northeast corner of the Preserve. The master plan includes design suggestions for this buffer area.

Cultural and Natural Resources

Indian Mounds and Native American History

More Indian mounds were built in the Wisconsin territory than in any other area of like size in midwestern North America[5]. Over 3000 mound sites have been identified throughout the state. Native Americans built groups of a few mounds to several hundred in various configurations throughout the

state. Farming, development, and looting have destroyed most of the mounds but those on this steep wooded hill survive, though damaged. Vandals digging for artifacts created craters in the center of each mound. Some of the mounds have also been damaged by past human activities on the property.

The mounds are an expression of religious faith and the Mound Builders took great care in their placement and construction. They were built by various societies between 800 B.C and A.D. 1200. Today the mounds are a sacred site for the Ho Chunk Nation.

Over twenty mounds, including one 'tadpole' mound, one oval or short linear mound, one double-conical mound, and nineteen conical mounds are found in the Nature Preserve[6]. The shapes of the mounds suggest that the site dates to the 'Initial Late Woodland Stage' between A.D. 550 and A.D. 800. Conical mounds almost always contain human burials.

The Indian Mounds in November 2006

The people who built the mounds probably lived in small, mobile villages. Membership in each community would have been fluid with families coming and going as they pleased. Families sustained themselves by hunting, fishing, collecting wild plants and growing native crops like squash and sunflower. Trade was conducted hand-to-hand, and tools made of copper and attractive types of stone were moved over considerable distances.

On rare occasions a small ceramic pipe, a few copper beads or an arrow point or two were included in a grave. Looters probably found few artifacts in the mounds of the Garman Nature Preserve.

The Burial Sites Preservation Law protects Indian mounds as burial sites and prohibits any disturbance to the mounds without special permission by the Wisconsin Historical Society. The Jefferson County Parks Department will treat the mounds with respect and will work with the Ho-Chunk Nation and archaeologists and anthropologists from UW-Milwaukee and the Wisconsin Historical Society to maintain the integrity of the mounds and to educate the public on their history and importance.

A detailed Indian Mound Management Plan was developed during the master plan process; please see page 26.

Recent History

The first white man to settle in the Town of Waterloo was Joseph Edwards in 1838. The Town of Waterloo was formed on May 8, 1847. The Bradford Hill family is thought to be the first family to settle within what became the City of Waterloo, arriving from Waukesha in 1842. The Village of Waterloo was organized on April 5, 1859.

The river that passes through Waterloo was called the Nauneesha River on maps during the 1830's and 1840's, an Indian word that may mean "divided several times", like a river having parallel channels separated by islands. The word Mauneesha appeared on maps in 1847 and the village was called Maunesha at one time[7]. Today the name of the river is listed as either the Maunesha River or Waterloo Creek.

James W. Ostrander, an early white settler, once wrote about the landscape around Waterloo in this way: "The country about Waterloo was prairie with small groves of oak, poplar and cherry timber, and oak

openings, which had the appearance of an old orchard and which could be plowed in the fall and the timber cut into rails in the winter"[8].

During the Black Hawk War, General Henry Atkinson's men camped south of the City of Waterloo and traces of the rifle pits they had dug remained evident for many years. By 1853 Waterloo had a population of 200. In 1858 the first train of the Milwaukee, Watertown, and Baraboo Valley Railroad passed through town.

Neighbors of the Garman Nature Preserve speak about the Fox Farm that was on the property in the 1950's, hence the name of Fox Lane. The owners lived in three homes along Fox Lane and shared the well that is located within the Preserve. They raised red fox and had foxhunts in the woods with the neighbors. A former Fox Lane resident found arrowheads in the woods when she was a child but did not know that there were Indian mounds. She remembers the fox and mink pens and playing in a pile of sawdust and thought the woods had been logged at one time. The Waterloo Canning Company and pickle farm once owned all of the farmland around the Preserve. McKay Nursery owned all the land on the west until some residential lots were sold. The Garmans bought the property in 1972.

Glacial Features and Topography

One of the three classic drumlin fields in the United States crosses northwestern Jefferson County. Drumlins are long elongated hills that some say look like whalebacks. The hills were formed by flowing ice during the Wisconsin glaciation and run in the direction of the ice movement. Around Waterloo the drumlins run from northeast to southwest. The Dr. J.S. Garman Nature Preserve is located on one of the drumlins. The Maunesha River runs between the hills just to the north of the Preserve. Wetlands are often found between the drumlins.

The drumlin that the Preserve is situated on is completely wooded today and parts of it are quite steep. Parts of the northwest face have slopes over 35 percent for short distances and some slopes on the east side of the hill are close to 30 percent. Trails on these slopes must be designed to minimize erosion during both construction and use. The terrain from the top of the hill to the southwest corner of the Preserve is relatively flat to gently rolling and erosion potential is minimal. The drumlins around Waterloo punctuate a gently rolling ground moraine. Ground moraines are deposits of rock debris called till, ranging in size from clay to boulders[9].

Quartzite boulders in the Garman Nature Preserve.

Geology

Waterloo is in an area of exposed bedrock composed of Precambrian red quartzite and a Paleozoic conglomerate of quartzite boulders[10]. The same rocks are exposed at the Baraboo Hills located 75 miles to the northwest.

The quartzite boulders were rounded by pounding waves in an ancient sea during the Cambrian and Ordovician times. Some of these boulders can be seen in the far southeast corner of the Preserve.

During the Wisconsin glaciation over 12,000 years ago, the boulders were moved and deposited by the glacier into a "boulder train" that extends southwestward from Waterloo. It is recognizable because the boulders are made of quartzite, which is a unique rock in this region of limestone and sandstone. The Waterloo boulder train is more than 60 miles long. It is fan-shaped, increasing in width from a narrow band to 20 miles wide near Sun Prairie and Lake Mills, and 50 wide miles near Whitewater and Madison.

Soils
Existing soil conditions should influence the location of trails, picnic areas, buildings, and other park amenities. The soils at the Dr. J.S. Garman Nature Preserve are in the Kidder-McHenry-Rotamer association[11]. These are well drained and moderately well drained soils on gently sloping to steep till plains and drumlins. They have a silty or loamy texture over sandy loam glacial till.

McHenry and St. Charles soils near the parking lot, entrance, and the buffer area next to DeYoung Farm are silt loam and loam in texture and deep, well drained, and moderately permeable. Surface run-off is medium. Kidder soils, found on the steep side slopes of the hill, are loamy, well drained and eroded. Run-off is rapid and erosion potential is severe. Dodge and Mayville soils, at the top of the drumlin, are deep, well-drained, moderately permeable silt loams and gently rolling. Surface run-off is medium.

Soil suitability and limitations were assessed for trails and picnic areas. Soil limitations can be slight, moderate or severe:

- **Slight Soil Limitations**: These soils are without significant limitations for construction of trails and picnic areas. The soils are generally level, have low erosion potential, and drain easily.
- **Moderate Soil Limitations**: Improvements can be built with additional restrictions and increased costs. These soils may be steeper, more prone to erosion, have lower strength or are poorly drained.
- **Severe Soil Limitations**: Development on these soils has additional impacts on natural resources and significant engineering costs and restrictions. These soils are on very steep slopes, have severe erosion potential or are already eroded, may have very low strength, or may flood periodically.

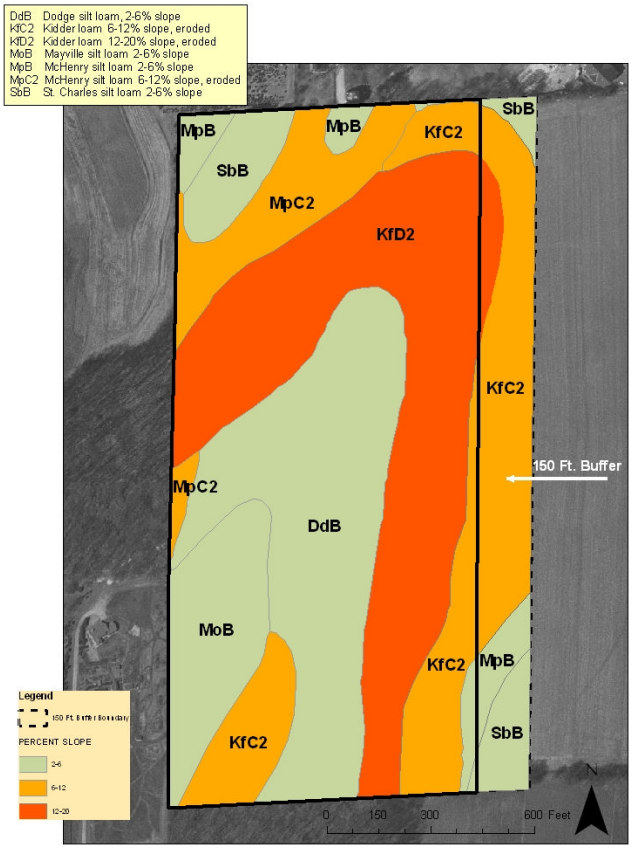
The following chart categorizes each soil type by the degree of limitations for trails and picnic areas. The first two letters in the soil type column indicate the soil name. The third letter indicates the degree of slope with "B" meaning a moderate slope of 2% to 6%, "C" indicating a slightly greater slope of 2% to 12%, and "D" being a severe slope over 12%. The number "2" in the fourth position indicates the soil is eroded.

Soil Limitation Chart

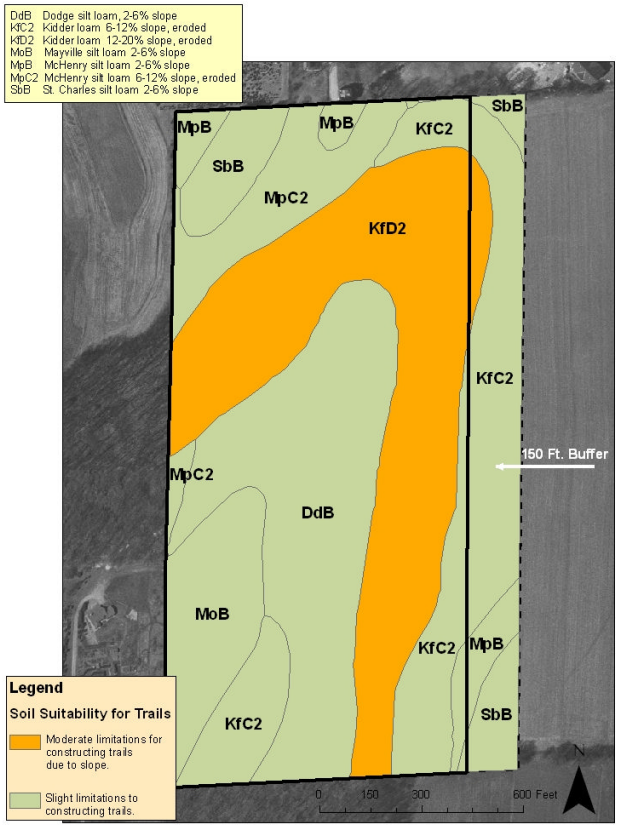
Soil Type	Soil Name	Trails	Picnic Areas
DdB	**Dodge Silt Loam 2-6%**	Slight	Slight
KfC2	**Kidder Loam 2-6%**	Slight	Moderate
KfD2	**Kidder Loam 12-20%**	Moderate	Severe
MoB	**Mayville Silt Loam 2-6%**	Slight	Slight
MpB	**McHenry Silt Loam 2-6%**	Slight	Slight
MpC2	**McHenry Silt Loam 6-12% eroded**	Slight	Moderate
SbB	**St. Charles Silt Loam 2-6%**	Slight	Slight

Development is most easily accomplished at the least financial cost and environmental damage on soils with slight and moderate limitations. These soils generally occur on the north side of the Preserve around the parking lot, on the east side in the more level areas, and at the top of the hill. Severe limitations arise along the very steep north and east hillsides due to slope and erosion potential.

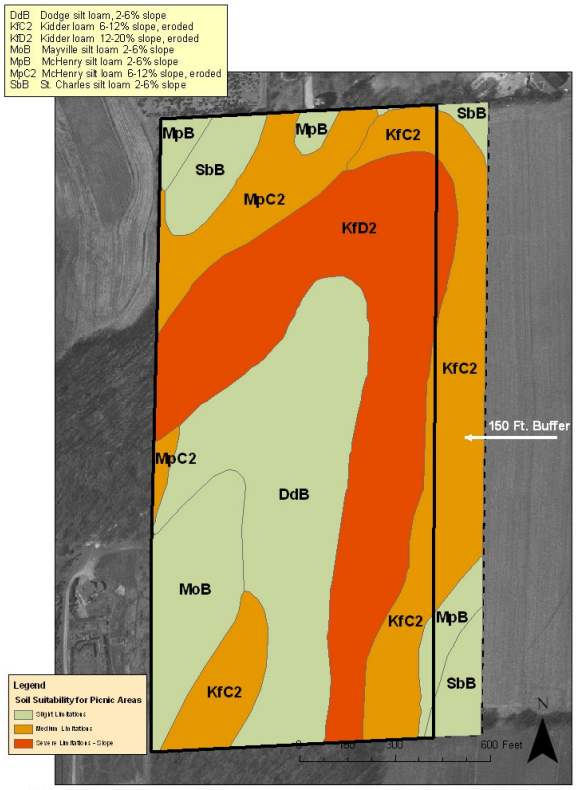
All of the soil types found at the Nature Preserve are suitable for trail construction and have slight to moderate limitations. The moderate limitations are in the steep northwest and east slope areas. Most of the soils are suitable for picnic areas except the steepest slopes. The best soils for picnic areas are at the entrance and at the top of the hill in the level areas. The maps on page 11 show the location of the various soil types, the slope, and the location of slight, moderate, and severe limitations for trails and picnic areas.



Dr. J. S. Garman Nature Preserve Percent Slope and Soils



Dr. J. S. Garman Nature Preserve Soil Suitabililty for Trails

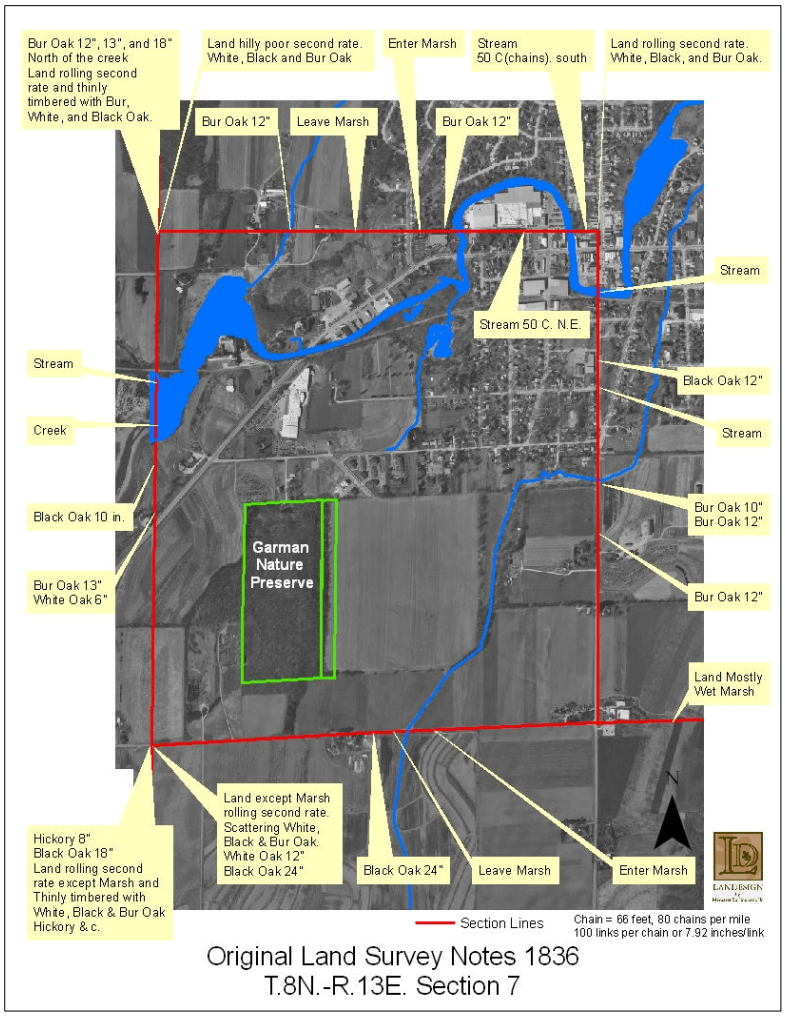


Dr. J. S. Garman Nature Preserve Picnic Area Soil Suitability

Vegetation and Wildlife

The first land surveys in Jefferson County were conducted in the mid 1830's. Surveyors walked the section lines throughout the County and used large trees as reference points. If a survey marker went missing, the section corner could be found again by measuring the distance and the direction to "marker" trees, which were recorded in their notebooks. Surveyors also made notes about the landscape they crossed. The original surveyor notes are used today to determine what plant communities existed in a given location in the 1830s.

The surveyor notes made at the section corners for Section 7 in the Township of Waterloo indicate that the land was "rolling second rate…Thinly timbered with White, Black, and Bur Oak, Hickory….". Along the section lines the surveyors encountered rivers, streams and marshes interspersed with land supporting black, bur, and white oak. These comments seem to indicate that there was a scattering of oak trees in the area, not the woodlands we see today at the Garman Nature Preserve.



Trees at the Garman Nature Preserve today are predominantly deciduous with a few planted pines and spruce, which are not native to southern Wisconsin but do provide winter color and habitat for wildlife. Evergreens have been planted along the north edge of the woods near the parking lot and within the woods on the east and west sides. The Preserve has an unusual set of tree species ranging from open grown white oak and hickory, which suggest a savanna plant community; and maple and basswood, which suggest a cooler, more mature tree community. An extensive vegetative inventory is recommended to determine the best management practices for this woodland.

Invasive shrubs such as honeysuckle, buckthorn, euonymus (burning bush), and prickly ash are found in scattered pockets. A large invasion of garlic mustard throughout the Preserve was found in the spring of 2004 and confirmed in 2005. Jefferson County Parks maintenance crews have removed non-native and invasive trees near the parking lot where it was impossible to enter the park due to a thicket of honeysuckle.

The top of the hill is quite easy to walk through without much underbrush. A large basswood tree with an unusual horizontal branch is located near the west property line along the trail.

The understory features common spring ephemerals such as Jack-in-the-pulpit, wild geranium, violets, Canada anemones, lady fern, sensitive fern, and Mayapple and others.

The yellow giant hyssop, *Agastache nepetoides*, a species on the Wisconsin State Threatened list is found in several patches in the Garman Nature Preserve. The hyssop can get to be six feet tall and features tiny yellow flowers on candelabra-like stems in July and August.

Several Wisconsin botanists have compiled a list of indicator species to help restorationists identify remnants of savanna (10-50 percent canopy) and open oak woodland (50 to 80 percent canopy) plant communities. The botanists believe that the presence of these light-dependent understory species indicate a recently closed tree canopy and that these sites have the highest potential for recovery as a savanna plant community if properly managed through the use of prescribed burns, mechanical canopy thinning, and other techniques.

The yellow giant hyssop is listed in Category 1 of the list, "which are the best indicators of former savannas and open woodlands because they tend to be limited to partial canopy conditions"[12].

A professional plant survey of the Preserve is recommended. The range of species that are present will inform the vegetative management plan for the Preserve. More savanna species may be present that have not yet been identified.

Typical Wisconsin wildlife is found in the woods. A hen turkey was observed on April 20, 2006 and evidence of deer is present. A winter walk in the snow revealed rabbit, turkey, deer, raccoon, and fox tracks. Raptors and song birds are common in the area.

Yellow giant hyssop, *Agastache nepetoides*, is a savanna indicator species and also on the State Threatened list.

Adjacent Land Use and Transportation

The Dr. J.S. Garman Nature Preserve is located on the west edge of Waterloo, less than 0.25 miles from the Dane County line. The Preserve is easily accessible from STH 19 by taking Knowlton Street to Fox Lane. STH 19 connects Watertown to Sun Prairie and points west. STH 19 also connects to STH 26 in Watertown, which is expected to become a limited access 4-lane from Janesville to central Dodge County.

Another route to Waterloo from the south is STH 89 from Whitewater, through Fort Atkinson, Jefferson, and Lake Mills (with an exit on Interstate 94) to Waterloo. STH 89 also extends to Columbus to the north.

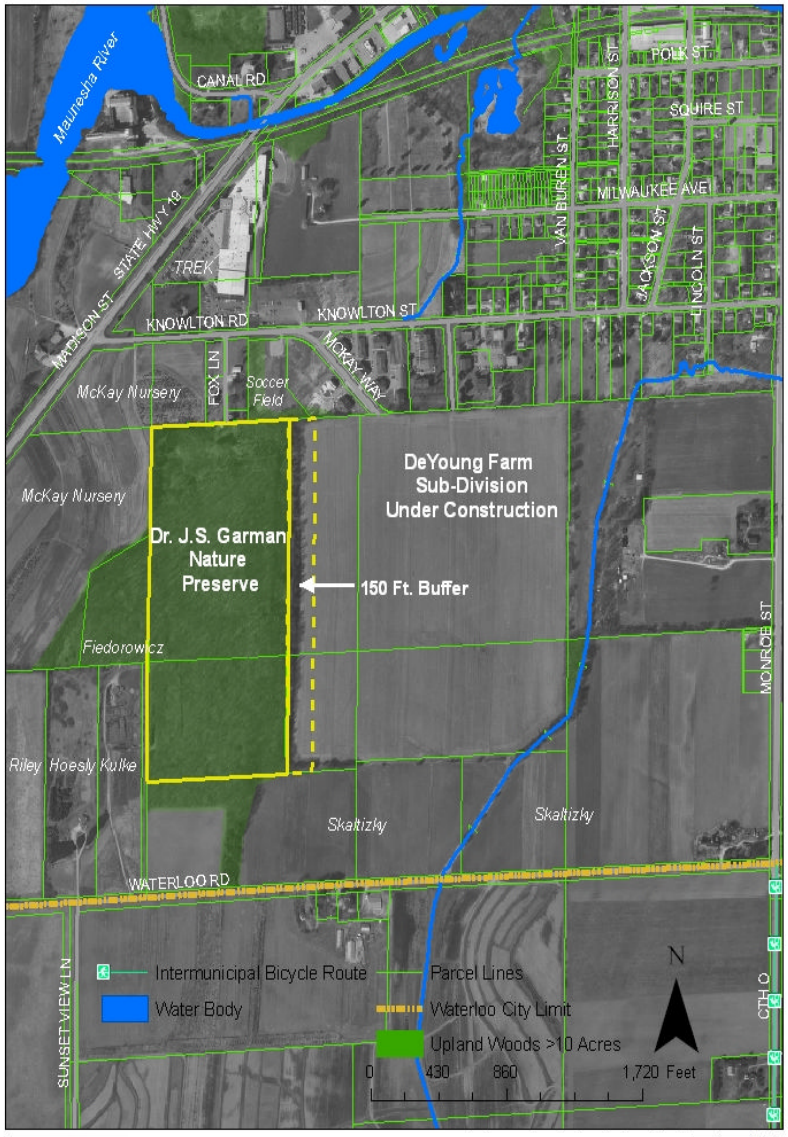
Waterloo residents can bike or walk to the Preserve on City streets and avoid busy highways. The Jefferson County Bicycle Map indicates that County Road O to the east is an inter-municipal route between Waterloo and Lake Mills.

The Preserve is within the City limits of Waterloo and the City is growing up around it. TREK Bicycle Company has a production facility and headquarters just to the north across Knowlton Street and STH 19. The DeYoung Farm subdivision will have 173 single and multi-family lots at build out immediately adjacent to the Nature Preserve.

McKay Nursery has tree and shrub production fields just to the west of the Preserve and the headquarters complex and more nursery areas are located east of the Preserve on County Road O. Rural residential home sites border the Preserve on the west. The landscape becomes rural and agricultural further south and west.

The City of Waterloo is undertaking comprehensive land use planning. The plans for the Nature Preserve should be integrated into the City land use plan and forthcoming local and regional park, bicycle, pedestrian, and natural areas plans.

Population growth in Waterloo and the Jefferson/Dane County area will increase the need for recreational areas. The challenge at the Garman Nature Preserve is to balance the desire of the public to access the natural area and Indian mounds with protection, preservation, and improvement of the natural and cultural resources.



Existing Land Use and Transportation

II. Site Analysis

The site analysis identifies the special features of the Garman Nature Preserve, and the opportunities and challenges at the site for creating a public park. This analysis is based on inventory and background information, public input, and expert advice on the Indian mounds and vegetation.

2.1 Garman Nature Preserve Site Features

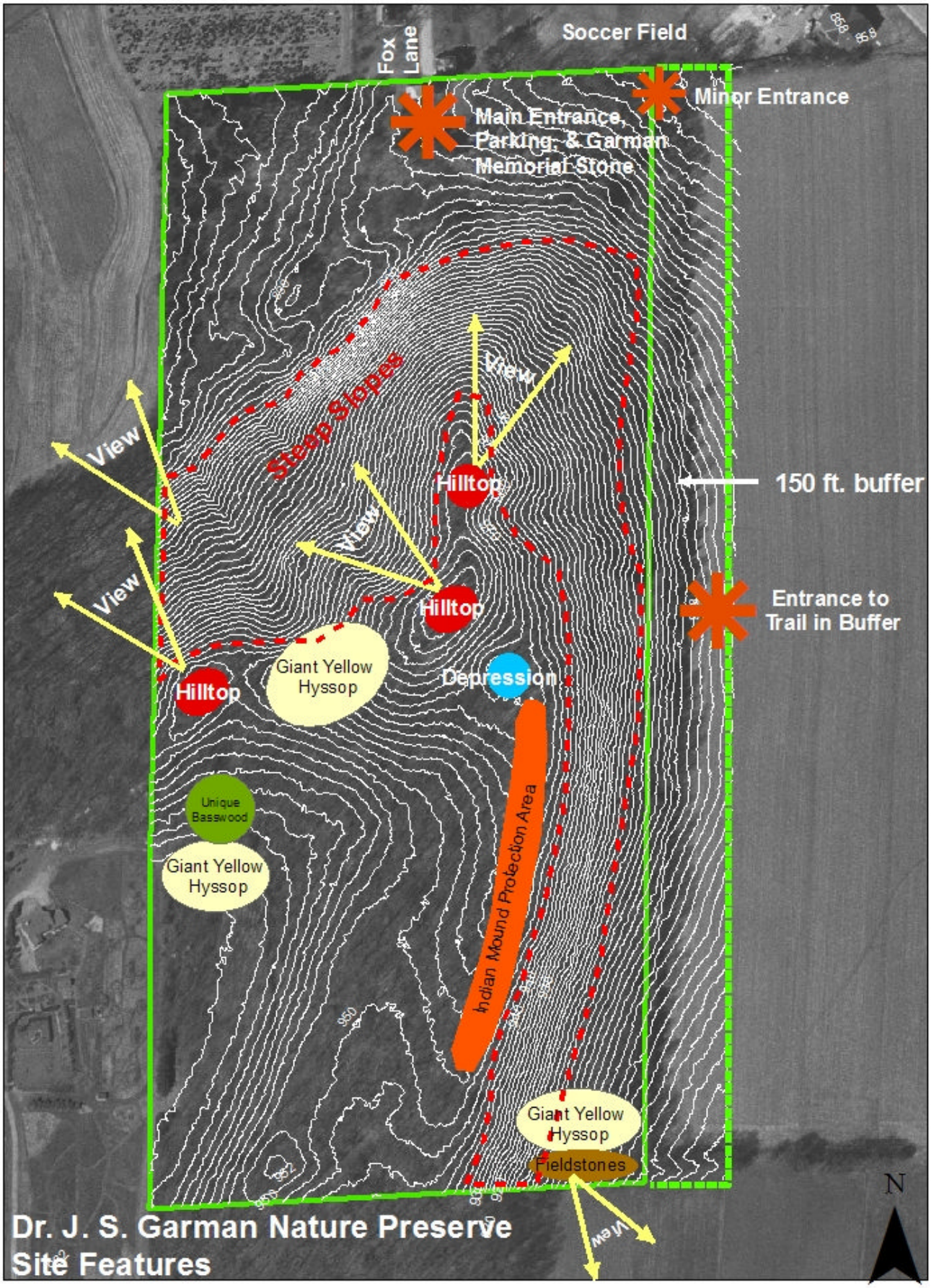
The unusual branching structure of a large basswood tree.

The features of the Garman Nature Preserve that make it unique are identified in the Site Features Map on page 16. These are features that should be enhanced and protected in the final master plan:

- The Dr. J.S. Garman Memorial stone at the entrance
- Indian Mounds
- Patches of yellow giant hyssop – a savanna indicator species
- A unique basswood tree with the straightened limb.
- Potential for overlooks of the countryside
- Large boulders in the southeast corner.
- Three hilltops – one of the highest hills in Jefferson County
- Geology and glacial history

These features can be connected to give visitors an interesting and educational experience as well as good exercise. Trails can be designed to be strenuous or easy and can loop for a variety of distances and activities such as hiking, cross-country skiing, and snowshoeing. Interpretive signs along the trails could explain to visitors the cultural history of the Indian mounds and the natural history of the Preserve.

Parks Committee member John Molinaro shows two hikers around the Garman Nature Preserve.


Soccer Field
Fox Lane
Minor Entrance
Main Entrance, Parking, & Garman Memorial Stone
Steep Slopes
View
View
View
View
Hilltop
Hilltop
Hilltop
150 ft. buffer
Entrance to Trail in Buffer
Giant Yellow Hyssop
Depression
Indian Mound Protection Area
Unique Basswood
Giant Yellow Hyssop
Giant Yellow Hyssop
Fieldstones
N
Dr. J. S. Garman Nature Preserve
Site Features

2.2 Opportunities and Challenges

Opportunities

Visitors to the open houses at the Preserve left few written comments but all said they wanted the Preserve to be protected and to remain natural with minimal trail and facility development. This unique Preserve offers several opportunities for preservation, recreation, and education despite restrictions on changing the Preserve.

Opportunities at the Garman Nature Preserve include:

- Protection and stabilization of the Indian Mounds.
- Education about Native American culture and history.
- Protection of the giant yellow hyssop, education, and restoration of savanna species.
- Education on glacial geology.
- Development of interpretive cultural and nature trails.
- Small picnic areas.
- Bicycle and walking connections to the City of Waterloo, the DeYoung Farm subdivision, and County bicycle routes.
- Removal and thinning of invasive tree species, which could open views from the top of the hill out to the surrounding countryside and within the Preserve.
- Invasive species removal, such as garlic mustard.

Challenges

Along with the opportunities that present themselves at the Garman Nature Preserve are challenges to providing amenities for users. Among those challenges are legal restrictions, natural and cultural restrictions, and impacts from surrounding land uses.

Legal Restrictions

Park development at the Garman Nature Preserve is limited by the rare cultural and natural resources that are present and by deed restrictions. The limitations include:

- Deed restrictions limit the use of the Preserve to hiking, cross-country skiing, snowshoeing, nature study, small picnic areas and associated structures, Indian mound protection, and plant community restoration.

- The Indian mounds are a Native American sacred site and may contain burials. The mounds are protected from disturbance by the Wisconsin Burial Sites Law. Jefferson County must notify the Wisconsin Historical Society Burial Sites Protection Program to obtain permission well in advance of starting any kind of work near, around, or on the mounds. The Ho Chunk Nation should be informed of planned work as well. Any trails, fences, signs, benches or other built elements near the mounds should be at least 15 feet away from the edge of the mounds and walking and sitting on the mounds is discouraged.

- The yellow giant hyssop, a species on the Wisconsin Threatened list, is found in several places in the Preserve. A "threatened" species in Wisconsin is "any species which appears likely, within the foreseeable future, on the basis of scientific evidence to become endangered"[13]. No one may sell or process a plant on this list without a permit. On public lands, such as the Garman Nature Preserve, the plants may not be cut, rooted up, severed, injured, destroyed, removed, transported, or carried away without a permit from the WDNR Bureau of Endangered Resources. This means

that the plants cannot be destroyed while building trails or other structures, or by visitors. New trail construction should avoid the patches of yellow giant hyssop.

Natural and Cultural Restrictions and Challenges

- Mrs. Theo Garman placed a large granite boulder at the entrance of Garman Nature Preserve to honor her late husband. The name of the Preserve is inscribed on the stone and it creates a focal point at the entrance to the trails. She wanted everyone to see the boulder as they entered the Preserve and requested a trail to encircle it. The memorial stone can be seen from Fox Lane as one approaches the parking lot. It draws people into the Preserve and depicts the geology of the Waterloo area where large quartzite boulders are common and bedrock is near the surface.

- The major restriction to creating trails and picnic areas at the Preserve is the presence of some very steep slopes on the north and east sides of the drumlin. Some of the slopes are over 30 percent. Slopes over six percent can be too steep for trails because of erosion potential and strenuous walking for some visitors. The most requested change to the existing trails, made by people attending the open houses, was to make the trail from the parking lot easier.

  Trails should be designed to minimize erosion during both construction and use. Some trails should be designed in level areas to provide slow, gradual slopes for those who cannot walk up steep slopes, especially to reach the Indian mounds. Some trails may be designated for the expert skier or hiker who wants a more strenuous experience.

The memorial stone to Dr. J.S. Garman, after whom the Nature Preserve is named.

- The soils are well drained, so trails should rarely become muddy; however there is a natural drainage swale at the base of the north slope near the parking lot that should be avoided.

- The yellow giant hyssop is protected and trails must go around patches of the plant so that it is not injured, removed, or severed. As invasive trees and shrubs are removed more yellow giant hyssop may be evident, along with other native savanna species.

- Invasive species are a concern at Garman Nature Preserve. Garlic mustard has been spreading rapidly and is shading the native spring ephemerals. This plant will need to be removed to have a successful ground layer restoration. Invasive tree and shrub species such as buckthorn, honeysuckle, prickly ash, euonymus, and box elder are found mostly on the north and east slopes but are scattered throughout the preserve. These species also shade the ground layer and prevent the regeneration of oak and hickory. Invasive species need to be removed during a vegetative restoration.

- Several rows of evergreen trees were planted in various places in the preserve. These trees are not native and can be a hazard if burning is used as a restoration tool.

Adjacent Land Use Challenges

- The DeYoung Farm subdivision is under construction just east of the Preserve with 173 single and multi-family lots proposed. The developer has agreed to designate a 150 foot wide buffer along the eastern border of the Preserve that will be reserved for a trail and complementary plantings. The trail will provide access for pedestrians from the subdivision to the northeast corner of the Preserve and may provide access to the adjacent City soccer field. The buffer strip

will be dedicated when Phase II of the subdivision is built and it will eventually become the property of the City of Waterloo.

Several issues arise with the buffer strip. It is not known when the buffer strip will be formally designated and the trail developed. There are concerns about controlling access to the Preserve from the subdivision. Bicycling in the Preserve is not allowed and how to keep bikes off the trails is an issue.

The buffer area will also provide access through a gate to the Preserve for County maintenance vehicles. A fence is proposed along the tree line of the Garman Nature Preserve with enough space for Park vehicles and equipment to travel along it. The material and exact location of the fence and gate are not known at this time.

- It is conceivable that the subdivision homes could be seen from the Indian Mounds, changing the character of the Preserve. Screening shrubs and taller savanna plants could be planted now in order to maintain the quality of the view and context by the time the homes are built.

- Adjacent landowners are concerned about trespassing on their land by visitors to the Preserve. Jefferson County has surveyed the property lines and put up boundary signs in the Preserve. Some neighbors have asked for fencing along their property line. Jefferson County wants to be a good neighbor and discourages visitors to the Preserve from venturing onto neighboring land.

- Neighbors next to the parking lot have concerns about use of the lot after hours and the northeast neighbor has requested some attractive fencing along the property line and possibly a light.

- The residents of Fox Lane maintain the street themselves. The City of Waterloo may reconstruct Fox Lane and install sewer and water when Knowlton Street is reconstructed. The three residences share a well, which is located in the Preserve to the west of the parking lot. Structures should not be located near the well casing.

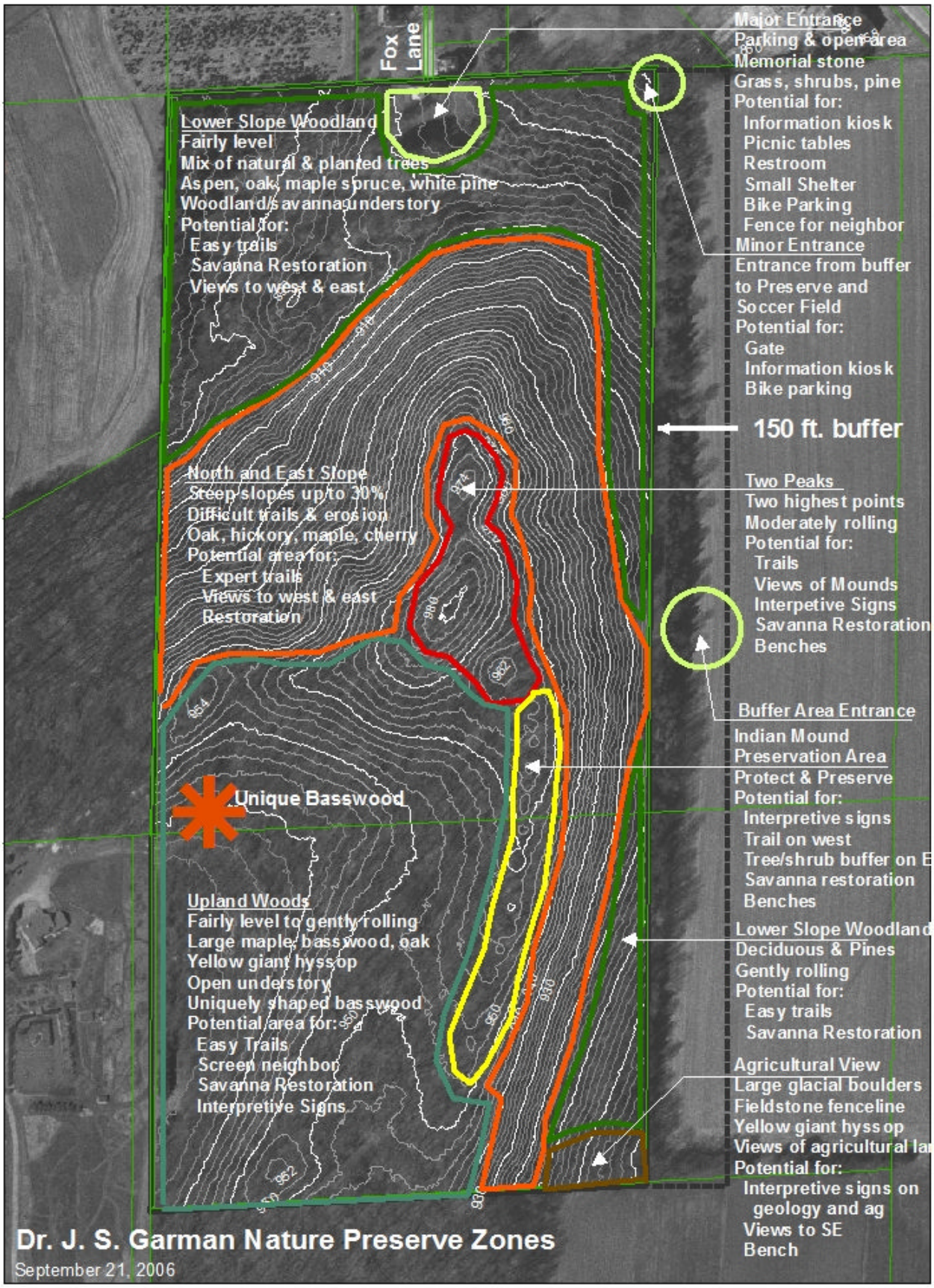
- McKay Nursery is concerned about pests that may infest trees in the Preserve and then infest nursery stock grown adjacent to the Preserve. The Jefferson County Parks Department has been working with McKays to coordinate spraying and to warn Preserve visitors when spraying may take place.

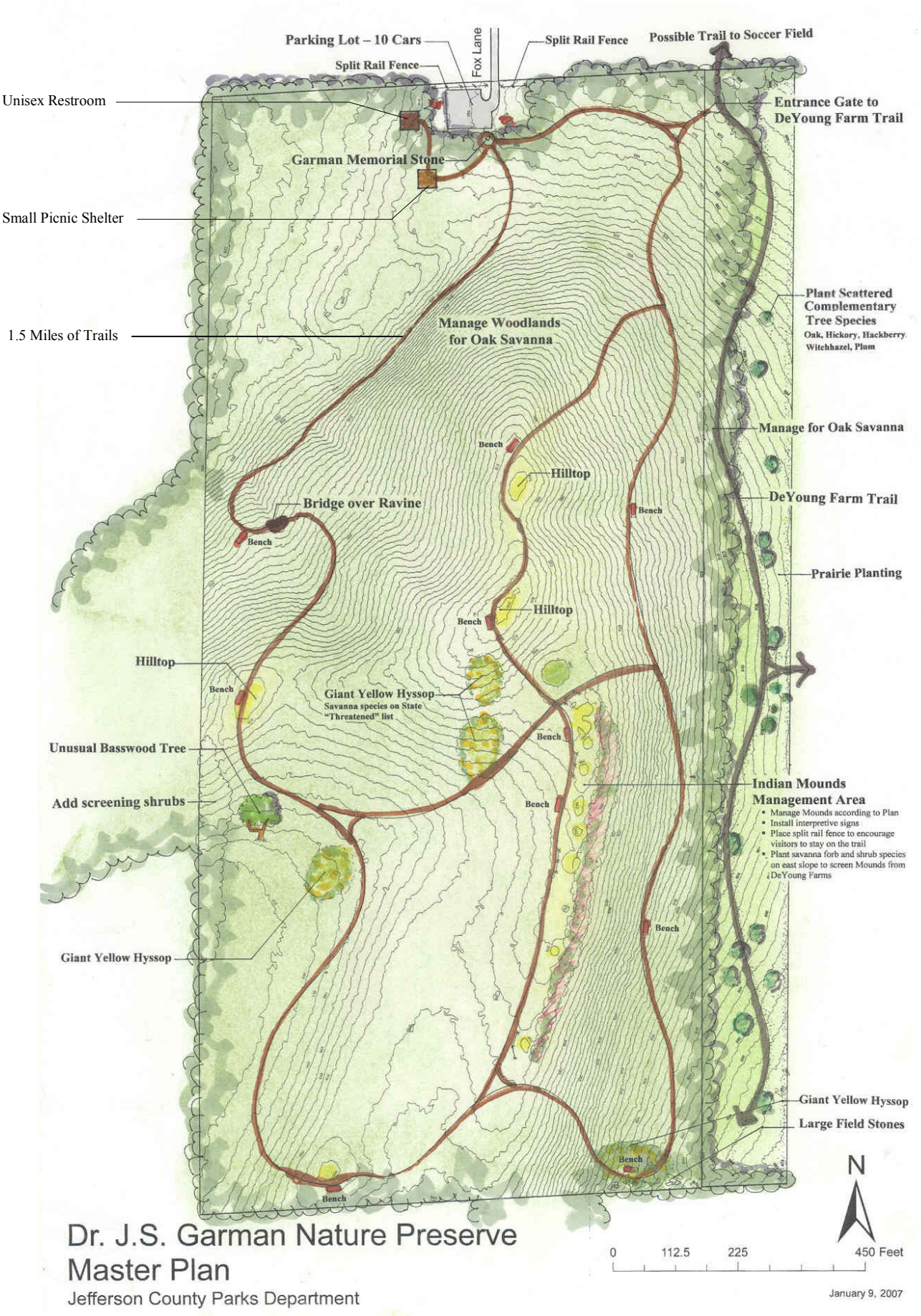
- Other subdivisions may abut the Preserve in the future.

The Master Plan strives to enhance the opportunities and character of the Preserve and find solutions to the challenges.

2.3 Garman Nature Preserve Activity Zones

The Garman Preserve Activity Zone Map is essentially a concept plan. Based on natural and cultural features, the Garman Nature Preserve was sectioned into seven zones with common characteristics. The natural and cultural character of each zone and activities that are appropriate to that zone are listed on the map on page 20.


Fox Lane
Major Entrance
Parking & open area
Memorial stone
Grass, shrubs, pine
Potential for:
Information kiosk
Picnic tables
Restroom
Small Shelter
Bike Parking
Fence for neighbor
Minor Entrance
Entrance from buffer to Preserve and Soccer Field
Potential for:
Gate
Information kiosk
Bike parking
150 ft. buffer
Lower Slope Woodland
Fairly level
Mix of natural & planted trees
Aspen, oak, maple spruce, white pine
Woodland/savanna understory
Potential for:
Easy trails
Savanna Restoration
Views to west & east
North and East Slope
Steep slopes up to 30%
Difficult trails & erosion
Oak, hickory, maple, cherry
Potential area for:
Expert trails
Views to west & east
Restoration
Two Peaks
Two highest points
Moderately rolling
Potential for:
Trails
Views of Mounds
Interpetive Signs
Savanna Restoration
Benches
Buffer Area Entrance
Indian Mound Preservation Area
Protect & Preserve
Potential for:
Interpretive signs
Trail on west
Tree/shrub buffer on E
Savanna restoration
Benches
Unique Basswood
Upland Woods
Fairly level to gently rolling
Large maple, basswood, oak
Yellow giant hyssop
Open understory
Uniquely shaped basswood
Potential area for:
Easy Trails
Screen neighbor
Savanna Restoration
Interpretive Signs
Lower Slope Woodland
Deciduous & Pines
Gently rolling
Potential for:
Easy trails
Savanna Restoration
Agricultural View
Large glacial boulders
Fieldstone fenceline
Yellow giant hyssop
Views of agricultural la
Potential for:
Interpretive signs on geology and ag
Views to SE
Bench
Dr. J. S. Garman Nature Preserve Zones
September 21, 2006


Parking Lot – 10 Cars
Split Rail Fence
Fox Lane
Split Rail Fence
Possible Trail to Soccer Field
Unisex Restroom
Entrance Gate to DeYoung Farm Trail
Garman Memorial Stone
Small Picnic Shelter
Plant Scattered Complementary Tree Species
Oak, Hickory, Hackberry Witchhazel, Plum
1.5 Miles of Trails
Manage Woodlands for Oak Savanna
Manage for Oak Savanna
Bench
Hilltop
Bridge over Ravine
DeYoung Farm Trail
Bench
Bench
Prairie Planting
Hilltop
Bench
Hilltop
Bench
Giant Yellow Hyssop
Savanna species on State "Threatened" list
Unusual Basswood Tree
Bench
Indian Mounds Management Area
Manage Mounds according to Plan
Install interpretive signs
Place split rail fence to encourage visitors to stay on the trail
Plant savanna forb and shrub species on east slope to screen Mounds from DeYoung Farms
Add screening shrubs
Bench
Bench
Giant Yellow Hyssop
Giant Yellow Hyssop
Large Field Stones
Bench
Bench
N
0
112.5
225
450 Feet
Dr. J.S. Garman Nature Preserve
Master Plan
Jefferson County Parks Department
January 9, 2007

III. Master Plan

The Dr. J.S. Garman Nature Preserve Master Plan gives the public access to the special and rare features in the Preserve, such as the Indian mounds and savanna plants, and also respects the legal, natural, and cultural restrictions on the property. A simple system of trails guides visitors around the Preserve and provides opportunities for walking or skiing trails of different lengths and difficulty. The Master Plan map is found on page 21.

Built features, such as the parking lot, a restroom, an information and map kiosk, and perhaps a small shelter will be located at the end of Fox Lane. Eventually a secondary entrance for pedestrians is expected at the northeast corner of the Preserve from the DeYoung Farm development. This entrance will provide access to easier trails for those who would like to see the Indian Mounds but cannot walk up steep hills and for residents of the subdivision.

Protection and stabilization of the Indian Mounds is of primary importance and an Indian Mound Management Plan is included in the master plan beginning on page 26. Managing the woodland toward an oak savanna or oak opening plant community would return the site to its condition in the 1800's and perhaps awaken dormant savanna species that are already here.

3.1 Master Plan Elements

Entrance

- The entrance to the Garman Nature Preserve will remain at the end of Fox Lane. The street may be reconstructed at some time by the City of Waterloo and provide City water to the residents. This could lead to abandonment of the well on Preserve property.

- The Dr. J. S. Garman memorial stone is the focal point of the entrance and Mrs. Garman requested that the entry trail encircle the stone. The stone could be naturalized by planting a low growing native ground cover at the base.

- A 10-car parking lot was built in 2005 and is not paved at this time. The lot may be paved in the future for easier maintenance. A light pole may be added to the parking lot for night security. TREK Bicycle Company has been generously allowing the Parks Department to use their parking lot on Knowlton Street for overflow parking during park events.

- A unisex restroom with a pit toilet is proposed to the west of the parking lot, away from the well.

- A small picnic shelter may be added to the south and west of the parking lot in a small grove of trees. It should be situated so that the Garman memorial stone, not the shelter, remains the focal point of the entrance. The shelter should be built of natural materials that complement the natural setting and the character of the park.

- Picnic tables will be provided in the shelter and on the grass by the parking lot.

- A map and information kiosk could be placed near the restroom.

- A split rail fence is recommended between the neighbor on the northeast and the parking lot as the lot line is not clear. Also users of the soccer field to the east should be discouraged from crossing private property to reach the trails at the Nature Preserve.

- The Preserve is accessible from City streets and a bicycle rack should be provided near the entrance.

Trails

- 1.5 miles of trails about 10 feet wide are proposed throughout the Preserve. The trails will be design for hiking, cross-country skiing, and snowshoeing. The existing trail goes straight up one of the steepest hills near the parking lot. This plan recommends that the existing trail up the hill be abandoned. A new trail should veer to the west at the north base of the drumlin and slowly make its way upward along the west side of the Preserve.

- When invasive trees are removed, visitors will be able to see expansive views of the surrounding countryside. Wooded hills, farmland, and nursery beds can be seen from the Preserve. These views can also provide educational opportunities on agricultural land use. Most of the trails will have a woodchip surface, unless there is enough sunlight for grass. A wooden bridge is suggested over one of the ravines on the west side of the Preserve to create a pleasurable walking experience and prevent erosion in the steep ravine. Benches will be placed along the trails so visitors can enjoy the views, nature, and the woods. The yellow giant hyssop cannot be removed or cut during trail construction so trails must go around the patches of this rare plant.

- The trail, fencing, signs, and benches along or near the Indian Mounds must remain 15 feet away from the mounds. Short sections of split rail fence will be installed along the trail to discourage walking and sitting on the mounds. The fence could be knee high, to maintain good views of the mounds from benches, or higher. A few benches for viewing the mounds will be available. Interpretive signs about Native American culture and the history of the mounds will be placed along the trail. Eventually the Indian mounds may be accessible from northeast corner of the Preserve by a 0.44-mile trail on fairly level terrain that joins the DeYoung subdivision buffer trail, in addition to a more strenuous 0.42-mile trail from the parking lot on Fox Lane.

Overlooks

Overlooks are provided on the edge of the Preserve where visitors can see the surrounding countryside. Benches can be placed in these places for resting and enjoying the view. There are two peaks to the drumlin in the central part of the north half of the Preserve. Benches on these peaks provide a place to contemplate nature and a view down to the Indian Mounds. The overlook in the southeast corner of the Preserve is placed in an area where there are many large quartzite boulders and stones. The boulders are part of the Waterloo boulder train left by the last glacier about 12,000 years ago. Some of the stones may have been placed here by the adjoining farmers over the years "picking rocks" in their fields each spring.

DeYoung Farm Development Buffer Strip

- The City of Waterloo has a developer's agreement with the DeYoung Farm subdivision that states that a 150 foot buffer strip between subdivision lots and the Preserve will be dedicated as part of Phase II of the development. The buffer strip is meant to protect the Preserve from dumping and uncontrolled access. It is not known when Phase II of the development will begin.

- The developer is to provide fencing, an asphalt path (for pedestrians and bikes), and a landscape plan for the 150 foot buffer. A north-south fence is to be built near the Preserve's east tree line, leaving enough space between the fence and the trees for maintenance vehicles and equipment. The developer is required to provide gates into the Preserve and seed any disturbed ground. The City of Waterloo will maintain the buffer area and expects to seed any undeveloped areas with a woods edge/savanna species seed mix.

- A trail in the buffer area may eventually provide access to the Preserve at the northeast corner. The trail may access the soccer field to the north as well. Bikes will not be allowed on Preserve trails so a gateway of bollards is proposed between the Preserve and the buffer area. The bollards could be made of heavy cedar posts (to complement the natural setting) that are close together to prevent bicycles from entering the Preserve easily. A bicycle rack should be provided near the gateway.

- When the trail in the buffer area is built, roadside parking in the DeYoung subdivision near the buffer strip should be available for people who want to access the Preserve from that direction because the trail to the Indian Mounds from the subdivision will be less strenuous than the trail from the Preserve parking lot on Fox Lane.

- County maintenance and construction vehicles will enter the Preserve from this buffer area through a farm-type gate. Bringing Parks equipment into the Preserve from the east is more feasible than from the parking lot because the slopes are shorter and not as steep, the soil is better drained, and entry from the east will not disturb the trailhead and facilities at the Fox Lane entrance.

- The following tree species planted in the buffer strip would complement the plants in the Preserve: oak, hickory, hackberry, witchhazel, plum, and amelanchier (sometimes called serviceberry or Juneberry). Part of the buffer area will be planted to woods edge, savanna, or prairie species as well.

Vegetation Management

- The vegetation at the Garman Nature Preserve has changed greatly since the early 1800's. Surveyor notes from 1836 suggest that the area was thinly wooded with bur, black, and white oak. The presence of yellow giant hyssop indicates that this hill may have been covered with savanna. Conducting an expert plant survey is recommended to document the existing species before starting a vegetative management plan.

- The Preserve will be managed with a savanna in mind. Restoring a savanna plant community takes a commitment of time and resources and involves removing undesirable trees, removing invasive species, and seeding savanna species if they don't come back on their own when the tree canopy is thinned. Invasive and dangerous trees will be removed first and over time only savanna species, primarily oak and hickory, will be retained. Savanna groundlayer species will be seeded as openings in the canopy are created.

- Garlic mustard is spreading throughout the Preserve and a good control has not been developed. Garlic mustard should be removed through pulling, spraying, and/or mowing prior to seeding savanna species to give the new seedlings the best possible start.

- Savanna plant communities depended on fire to kill woody vegetation and retain their open nature. Periodic controlled burning of the Preserve is recommended to maintain a savanna ecosystem.

3.2 Surrounding Land Use and Potential Acquisition Areas

Surrounding land uses can impact the Dr. J.S. Garman Nature Preserve and all its natural and historic qualities. Future development around the Preserve will attract more use and change the current landscape of farm and nursery fields. Many of the neighbors have grown up with the Preserve in their backyard and explored it during their youth. The City of Waterloo is, at the writing of this report, undertaking comprehensive land use planning to determine what type of development may occur in the future around the Preserve. Jefferson County zoning does not apply to land that is within the City Limits of Waterloo but does currently apply, with approval by the City, to land south of Waterloo Road in the Town of Waterloo.

Residential development in the City of Waterloo surrounding the Preserve could negatively impact this ecological resource and reduce water infiltration areas. Possible impacts of increased use include to erosion, vandalism, inappropriate or unauthorized activities, littering, increased vehicle emissions, and increased noise that could change the whole atmosphere of the Preserve. Purchase or donation of agricultural conservation easements could limit development in this area. Under a conservation easement, the landowner retains ownership and use of the property but agrees to limits on the development potential in exchange for a payment or tax deduction. The farmland to the south and the lands owned by McKay Nursery are candidates for conservation easements.

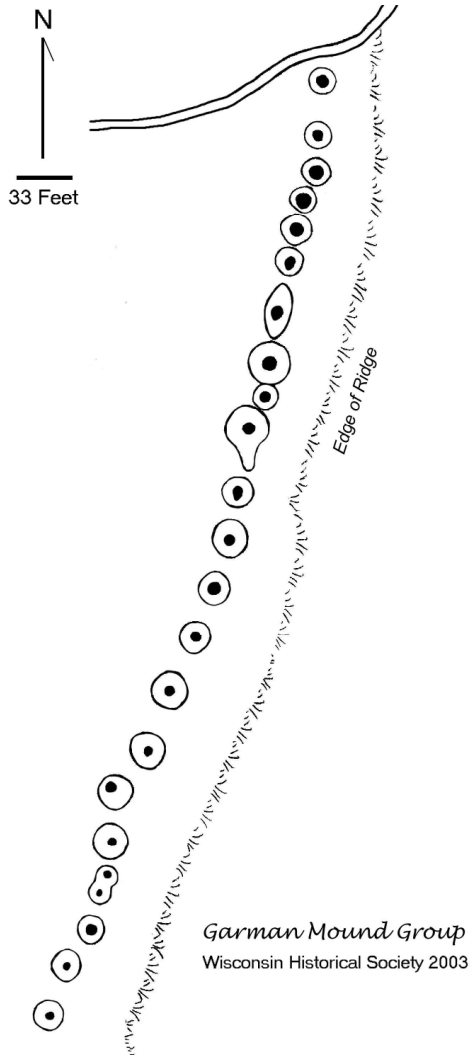
Expansion of the Garman Nature Preserve beyond its current boundaries could provide opportunities for more recreational facilities and trails, a park drive, different habitat types, open space, and groundwater infiltration areas. Jefferson County purchases land only from willing sellers.

Additional bicycle links to Waterloo Road and County Road O could also connect to other parks and communities. There has been some discussion about an off road trail that could allow cyclists and pedestrians to experience agricultural and nursery lands in the area. Expansion of the Preserve would be the most likely be to the south and the west on agricultural or nursery land.

IV. Indian Mounds Management Plan

4.1 Planning Context

About twenty two Indian mounds are located at the top of the east face of the drumlin in the Dr. J.S. Garman Nature Preserve. Most of the mounds are conical in shape and are situated in a line that follows the natural north-northeast – south-southeast curve of the ridge. One of the mounds toward the middle of the group may be a turtle effigy but that is uncertain at this writing.



Conical mounds were built by various communities between 800 B.C and A.D. 1200. This group has endured for at least 1000 years. Native Americans built groups containing a few to several hundred mounds in various configurations throughout the state. The round, conical mounds in the Preserve are believed to be the earliest mound form to be made, and the form made for the longest time. For that reason, it is difficult to precisely date the Garman group.

Conical mounds almost always contain human burials. Burials may have occurred around the mounds as well. These mounds are a sacred site for the people of the Ho-Chunk Nation and were the center of Native American life.

The mounds were built with great care as an expression of religious faith. They were purposefully placed at the top of the eastern ridge of the drumlin in a position of prominence on the landscape to be seen by anyone approaching from the east. The Maunesha River is close by to the northwest and access to water may have also influenced the location of the mounds.

Long rows of conical mounds were built in a few areas of Wisconsin, including this part of Jefferson County. It is unusual to find a row of this size still intact. Another row of conical mounds is located to the southeast of the Garman Preserve. The construction of Hwy O cut through this mound group and farmsteads were built around or through them as well.

Indian mounds were often built in oak savanna locations. Notes from the original land survey of this area in 1835-1836 support the existence of a savanna plant community. The notes say that the land where Waterloo Road is now, just south of the Preserve, was "rolling second rate, thinly timbered with white, black, bur oak and hickory". Yellow giant hyssop, a savanna indicator species on the Wisconsin threatened species list, is found throughout the Preserve.

Prairies and savannas were maintained by relatively frequent fire at the time of Native American habitation. The fires would course quickly up the side of the east facing slope and then die out near the crest, just to the west of the mounds.

The fires were ignited by lightening or by Native Americans to improve grazing for game animals, keep woody plants from becoming established, and to encourage the growth of a variety of food plants. The fires maintained the open nature of the savanna by killing brush and thin-barked trees. Thick barked bur and white oak and hickory survived. Since the disturbance regime of periodic fires stopped with European settlement, woody vegetation has thrived on this drumlin and the woodlands now are a mix of oak, hickory, sugar maple, basswood, and cherry. The surrounding savannas and prairies were converted to agricultural fields.

4.2 Indian Mounds Management Recommendations

The management plan for the Indian mounds is based on recommendations by the following group of experts:

Jay Toth, Ho-Chunk Nation Archaeologist
John Broihahn, Wisconsin State Archaeologist
Leslie Eisenberg, Burial Sites Preservation Program, Wisconsin Historical Society
Brian Nicholls, Historic Resource Management Services, UWM and Wisconsin Archaeology Society
Joe O'Hearn, Rock River Archaeology Society
Kira Kaufmann, Department of Anthropology, UWM

Joe Nehmer, Jefferson County Parks Director and Steve Hoeft, Jefferson County Parks Supervisor also provided input into the plan.

The mounds were first reported to the Wisconsin Historical Society in the 1970's by the county forester who was working with the Garman Family. All of the mounds have been looted and damaged. People searching for artifacts and valuables excavated craters that can be seen today in the center of each mound. It is unlikely that any artifacts were found since mounds in Wisconsin rarely contain grave goods.

Native American artifacts have not been found recently at the Garman Preserve; however, archaeological surveys with shovel tests should be conducted by a qualified archaeologist prior to disturbance or construction activities. The Wisconsin Historical Society can provide a list of archaeologists who meet potential state and federal grant guidelines for implementation.

Joe O'Hearn of the Rock River Archaeological Society investigated five of the mounds in October 2005 and found no Native American artifacts on the surface or within the craters. He did find typical modern refuse such as pieces of shingle and glass.

Burial mounds such as these are protected in Wisconsin under a 1985 law (State Statutes 157.7) to prevent disturbance to the mounds. The law is administered by the Burial Sites Protection Program (BSPP) of the Wisconsin Historical Society.

"The law requires the BSPP to identify/locate and catalog burials, respond to burial disturbances as they occur, regulate the permit process for disturbing burial sites, analyze human remains and work with owners of burial sites and Native American Tribes and Nations in our common mission to preserve and protect these important sites."[1]

[1] Wisconsin Historical Society Burial Sites Office.

The Office of the State Archaeologist, the Ho-Chunk Nation Archaeologist, and the Burial Sites Protection Program must be contacted prior to any construction or disturbance around or on the mounds, including the removal of large trees, so that a permit determination can be made. All construction and disturbance activities should be documented and saved as a historical record.

Mound Stabilization

Definitions
The National Park Service has established definitions for the restoration and reconstruction of Native American mounds. John Broihahn, State Archaeologist, has developed a definition for stabilization. In the interest of consistency these terms and definitions should be used when referring to maintenance activities on and around the mounds. These terms are particularly important if federal funds become available or are applied for to preserve of the mounds.

Stabilization is defined as:
The act or process of carefully removing potentially detrimental vegetation, re-vegetating, and filling in looter holes or erosional scars to stabilize the mounds or features to insure their long-term preservation in their current configuration. These activities should be done in such a way that they do not disturb the existing surface contours/characteristics of the mound or other feature**s** outside of the looter/erosion zones.

The Jefferson County Parks Department will undertake stabilization activities, rather than restoration or reconstruction.

Restoration is defined as:
As the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and the reconstruction of missing features from the restoration period.

Reconstruction is defined as:
As the act or process of depicting, by means of a new construction, the form, features, and detailing of a non-surviving site, landscape, building structure, or object, for the purpose of replicating its appearance at a specific period of time and in its historic location.

Initial Vegetative Stabilization
The growth of trees and brush threatens the integrity of the mounds. Thickly rooted prairie grasses prevent erosion of the mounds better than tree roots and canopy. Wind falls (trees that fall during a storm) can create craters with loose soil that can wash away with rainfall, destroying parts of the mounds. Initial stabilization of the mounds depends on the phased removal of all trees within 15 feet of the mounds to increase natural light to levels that are needed for the grass. The holes created by looters are addressed under Mechanical Stabilization.

The Ho-Chunk Nation recommends the following phased tree maintenance approach for their sacred ancient sites:

Tree Removal Benefits
- Promote light for growth of protective grass
- Prevent tree falls and loss of integrity of mound

Tree Removal Plan

Phase I Remove brush and invasive species.
Phase II Remove all hazard dead leaning trees, decayed trees, tress with excessive branch loss.
Phase III Remove all trees 4”-6” in diameter.
Phase IV Remove all remaining trees on mounds.
Phase V Remove all trees within fifteen feet of mounds
Phase VI Create an oak savanna area by controlled burns or selective cutting of woody vegetation.

Tree Removal Recommendations

- All cutting is done when the ground is frozen to minimize ground disturbance.
- Trees should be cut as low as possible and so that they fall away from the center of the mound.
- All material removed should be scattered or piled at a minimum of 15 feet away from the mounds. Limbs could be used to define trails adjacent to the mounds.
- No removal of stumps.

Ground Cover establishment

Native Seeding Option

Native grasses and forbs have thick fibrous root systems that hold the soil and prevent erosion. Seeding the mounds to a low prairie or savanna grass mixture, possibly with some low forbs, will protect the mounds and discourage visitors from walking or sitting on the mounds. Species should be of local genotypes that are suitable to soil, light, and moisture conditions.

Existing Ground Cover Option

Opening the tree canopy to light will encourage the grasses already on the mound to grow. Periodically removing the woody vegetation and a low mowing once or twice a year could be enough to encourage the exiting grass and forb seed bank to establish a low ground cover over the mounds. Care should be exercised to prevent further damage to the mounds when mowing.

Ground Cover Maintenance Plan

Options:

1. Natural Prescribed Burn – setting the area to fire.
   - Reduces the woody plants
   - Lowers the pH
   - Promotes growth of protective grasses
   - Low cost
   - Negatives: Not always possible due to fire hazards.

2. Mechanical means - mowing
   Mowing should be limited or avoided to prevent damage to the mounds. If mowing is necessary, use the appropriate equipment to avoid compaction and damage to the mounds, including the lower edges; either and mow at a high setting to minimize ground disturbance or mow around the mounds regularly and hand mow mounds only in early spring to promote grasses and to remove emergent seedlings.
   - Maintain high grass on the mounds to discourage pedestrian traffic and provide a protective cover.
   - Negative: Labor costs.

3. Chemical Means
   Chemicals to control woody vegetation or invasive species should be limited but may be necessary. The appropriate chemical should be used for the species. Spot applications are preferred over broadcasting the chemical. Apply stump treatment to cut trees with a brush. A distinction should be made between the uses of chemicals on the mounds verses the surrounding area. Removal of woody vegetation by hand is preferred.

Mechanical Stabilization

The Indian mounds today do not look exactly as they did when they were first built because 800 to 1200 years of weathering has occurred and looters have removed soil from the center of all or nearly all the mounds to a depth of 6 inches to 2 feet and tossed the soil they removed out over other portions of the mounds making them taller.

These additional steps for stabilizing the structure of the mounds should be undertaken after tree removal and grass or vegetation establishment on the mounds has been complete.

Stabilization of the structure of the mounds involves filling the holes with soil to eliminate erosion hazards and discourage additional digging. While filling the holes, it is important to maintain the integrity of the portions of the mounds that are still intact to preserve the soil layers, structure, and any artifacts that may remain.

Jay Toth, John Broihahn, Brian Nicholls, Steve Hoeft, and Joe Nehmer met at the mounds on August 15, 2006 and made the following recommendations:

Stabilization

An archeological survey should be conducted before the stabilization efforts and before other developments in the park occur. This entire procedure should be documented for each mound and on file with the Ho-Chunk Nation and the Wisconsin Historical Society.

The mounds can be stabilized by filling the looting holes using the flowing procedure: first lay down a landscape fabric or geo-textile in the hole to keep new soil and the original mound soil separate and intact. Leslie Eisenberg of the Burial Sites Preservation Program suggests throwing in a new coin or adding metal tags with dates and other information to date the stabilization. Gently filled the hole with soil brought in from elsewhere and recreate the original contour of the mound.

Ground Cover Seeding

The mound should immediately be seeded with a ground cover of low prairie species or low-mow grass. Jay Toth recommended adding some lime before seeding the grass to raise the pH and get the grass off to a good start. Mark Martin of the WDNR Bureau of Endangered Resources recommends bottle brush grass and a few other grasses such as silky wild rye, woodland rye, and woodland brome. Local sources of the seed are available.

Mound Restoration

Mound restoration involves finding the exact soil that was removed by looters and recreating the soil layers as they once were. It may result in the exposure of human remains. This is a very technical and time consuming operation that is rarely done and should not be performed here.

4.3 Volunteer Opportunities

The Ho-Chunk Nation will provide educational signs about the mounds and the significance of the mounds to their culture and religious beliefs. The Ho-Chunk are stabilizing mounds at Kingsley Bend Mounds and documenting the procedure. Jay Toth has been instrumental in developing this Garman mound management plan and the Ho-Chunk will be an integral part of the stabilization and maintenance processes.

Volunteers may provide many hours of assistance in documenting and stabilizing the mounds. Archaeological students from the University of Wisconsin-Milwaukee may be available to document the location and measurements of the mounds and to do shovel tests for artifacts and research on the mounds.

Jefferson County Parks volunteers could assist in small brush removal. These volunteers should receive educational materials and instruction on the significance of the mounds and proper work techniques that show respect to the mounds and prevent further damage.

The Wisconsin Archaeological Society, the Rock River Archaeological Society, and the Friends of Aztalan could all be of assistance in volunteer efforts.

4.4 Trails Near the Mounds

The Indian mounds are a touchstone for Native communities as they move into the future. They represent not only the heritage of Native peoples, but are still considered sacred ground by many of Wisconsin's citizens. The mounds are a cemetery and deserve our respect. Visitors to the park should be encouraged to view the line of conical mounds and imagine what the Preserve was like 1000 years ago. Unobtrusive interpretive signs may be placed along the trail to educate visitors. A few benches may encourage people to sit and reflect on the history of this part of Wisconsin and the different cultures that shaped it.

Members of the Ho-Chunk Nation may visit this sacred site. No designated woodland opening or activity area is needed for the Native Americans who may return here for private ceremonies.

The archaeologists recommended a trail for visitors along the west side of the mounds. A deer trail already exists on this side and the land is more level on the west than the eastern slope. The trail should be about 15 feet away from the mounds and not cross the mounds.

The existing trail to the north of the first mound has damaged that mound and should be moved further north away from the mound. A short length of split rail fence may protect this mound. Additional fencing may be placed in strategic locations to encourage people to stay off the mounds. The fence could be knee high and unobtrusive.

The State Archaeologists office or UW-Milwaukee archaeologists can arrange for shovel testing for artifacts at the same time that fence posts are dug.

4.5 Implementation

Management of the Indian Mounds is included in Chapter V, Garman Nature Preserve Master Plan Implementation on page 32.

V. Garman Nature Preserve Master Plan Implementation

Implementation of the master plan for the Dr. J.S. Garman Nature Preserve includes implementation responsibilities, a timeline for implementation, and funding sources.

Jefferson County has partnered with many organizations in park development. This trend is expected to continue and, to some extent, defray costs. Potential partners include the Wisconsin Department of Natural Resources; Madison Audubon Society for prairie and savanna seed; and the Ho Chunk Nation, the Wisconsin State Historical Society, and University of Wisconsin-Milwaukee archaeologists and anthropologists for consultation on the Indian mounds and archaeological surveys.

A chart listing responsibilities for implementation is given on page 34. The Parks Department can do most of the trail and building construction and vegetative managements with assistance from other County departments and the partners listed above.

The Jefferson County Parks Department has a volunteer coordinator who organizes activities and work days at the parks. Volunteers could help with invasive species removal, planting, and building small projects. Writing grants is also one of the duties of the volunteer coordinator. A list of potential grants for development and preservation activities is given starting on page 35.

5.1 Timeline

Building trails, stabilizing the Indian mounds, and restoring savanna vegetation will take time. A time table for accomplishing tasks and budgeting is given here.

Years 1 – 5

- Install entrance sign
- Remove trees from Indian mounds
- Stabilize Indian Mounds and seed short prairie grasses on Indian Mounds
- Install split rail fence at Indian Mounds
- Install interpretive signs at Indian mounds
- Install split rail fence at parking lot along east neighbors lot line
- Install information kiosk and map at parking lot
- Install restroom at parking lot
- Connect to DeYoung Farm subdivision trail
- Construct all trails
- Install benches along trail
- Remove dead trees that pose a danger to visitors
- Control garlic mustard and other invasive plants

Years 5 – 10

- Build small shelter at parking lot
- Pave parking lot
- Add bridge to trail
- Install interpretive signs along trails
- Plant vegetative buffer near west neighbor and to east of Indian Mounds
- Remove trees that are invasive species
- Control garlic mustard and other invasive plants
- Plant savanna species in openings

Year 10 and Beyond

- Continue to remove unwanted tree species
- Control garlic mustard and other invasive plants
- Start prescribed and controlled burns to favor savanna species
- Continue to maintain the Preserve to a high standard

5.2 Potential Funding Sources

Potential funding sources to implement the master plan include the annual Park Department budget, donations, volunteer work, and in-kind work by other County departments. In addition, an extensive list of Federal and private grant funding sources is provided on pages 35 through 43.

Dr. J.S. Garman Nature Preserve Implementation Plan		
Element	**Quantity**	**Implementation**
Park Entrance		
Entry Sign - stone and timber	1	Parks Dept.
Pave Parking Lot	80 tons asphalt	Other Contractor (1)
Shelter 14x18 concrete floor	1	Parks Dept.
Restroom - Unisex	1	Parks Dept.
Split-rail fence along north property line and east neighbor.	70 feet	Parks Dept.
Picnic Tables	3	Commercial Purchase
Information/Trailhead Kiosk	1	Parks Dept.
Well, Pump, and Hydrant	1	Commercial Driller
Parking Lot Light	1	Parks Dept.
Electrical Service, pedestal, & permit	1	Utility
Trails		
1.5 miles of trails - make base and woodchip.	1.5 miles	Parks Dept.
Benches	8	Commercial Purchase
Wood Bridge	1	Parks Dept.
Interpretive Signs - holder and info	4	Commercial Purchase
Indian Mounds		
Split-rail fence	175 feet	Parks Dept.
Interpretive Signs	2	Commercial Purchase
Stabilize Indian mounds - landscape fabric	6000 sq. ft.	Commercial Purchase
Stabilize Indian Mounds - soil & labor	22 mounds	Parks Dept.
Tree removal and clearing	3 people for 1 week & 1 contracted tree climber	Parks Dept.
Seed-low savanna grasses	0.50 acre	Other (2)
Seeding-mix and spread	0.50 acre	Parks Dept.
Archeological Survey prior to disturbance around mounds	22 mounds	Expert Consultant
Screening shrubs on east	100 shrubs	Commercial Purchase
Plant shrubs	100 shrubs	Parks Dept.
DeYoung Farm Entrance		
Gate to DeYoung Trails-cedar bollards	1	Parks Dept.
Maintenance vehicle access-farm gate	1 - 16 feet wide	Commercial Purchase
Vegetative Management		
Vegetative Survey	40 acres	Expert Consultant
Tree removal	5 people for one month	Parks Dept.
Invasive species removal	3 people for 10 days	Parks Dept.
Burning-initial	4 people for 4-6 hour days	Parks Dept.
Savanna Seed	25 acres	Other (2)
Seeding-mix and spread	25 acres	Parks Dept.
General		
Screening for west neighbors	50 trees and shrubs	Commercial Purchase
Plant trees and shrubs	50	Parks Dept.
(1) The Jeff. Co. Hwy. Dept. may be able to assist with paving.		
(2) The Parks Dept. has partnered with the Audubon Society and Friends of Korth Park to obtain and pick seed.		

Source Type	Funding Source	Program Name	Internet Address	Uses						Eligibility		
				Admin	*Conserv*	*Research*	*Educ*	*Acquisit*	*Tech*	*Non-Profit*	*Town*	*County*
Federal Grants			**www.grants.gov**									
Dept. of Agriculture (USDA)	Cooperative State Research Education and Extension Service	Competitive Grants Program	http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1112			X	X			X	X	X
Dept. of Agriculture (USDA)	Cooperative State Research Education and Extension Service	Land Cover/Land Use Change Research	http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1360			X	X			X	X	X
Dept. of Agriculture (USDA)	Cooperative State Research Education and Extension Service	Managed Ecosystems	http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1104		X	X				X	X	X
Dept. of Agriculture (USDA)	Cooperative State Research Education and Extension Service	Pest Management Alternatives Research	http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1114		X	X	X			X	X	X
Dept. of Agriculture (USDA)	Cooperative State Research Education and Extension Service	Water and Watersheds	http://www.csrees.usda.gov/fo/fundview.cfm?fonum=1135		X	X				X	X	X
Dept. of Agriculture (USDA)	Natural Resources Conservation Service	Conservation Innovation Grants	http://www.nrcs.usda.gov/programs/cig/		X	X			X	X	X	X
Dept. of Agriculture (USDA)	Natural Resources Conservation Service	Cooperative Conservation Partnership Initiative	http://www.nrcs.usda.gov/programs/ccpi/		X				X	X	X	X
Dept. of Agriculture (USDA)	**Natural Resources Conservation Service**	Wetlands Reserve Program	http://www.nrcs.usda.gov/programs/wrp/		X					X		
Dept. of Agriculture (USDA)	**Natural Resources Conservation Service**	Wildlife Habitat Incentive Program	http://www.nrcs.usda.gov/programs/whip/		X					X	X	X
Environmental Protection Agency (EPA)	**Watershed Academy**	Bring Back the Natives Grant Program	http://cfpub.epa.gov/fedfund/search2.cfm?prog_num=2	X	X					X	X	X

Source Type	Funding Source	Program Name	Internet Address	Uses						Eligibility		
				Admin	*Conserv*	*Research*	*Educ*	*Acquisit*	*Tech*	*Non-Profit*	*Town*	*County*
Federal Grants			**www.grants.gov**									
Environmental Protection Agency (EPA)	**Watershed Academy**	Clean Vessel Act Grant Program	http://cfpub.epa.gov/fedfund/search2.cfm?prog_num=10								X	
Environmental Protection Agency (EPA)	Watershed Academy	Coastal Program	http://cfpub.epa.gov/fedfund/search2.cfm?prog_num=12		X			X		X	X	X
Environmental Protection Agency (EPA)	Watershed Academy	Community- based Restoration Program	http://cfpub.epa.gov/fedfund/search2.cfm?prog_num=17		X			X		X	X	X
Environmental Protection Agency (EPA)	Watershed Academy	Emergency Watershed Protection	http://cfpub.epa.gov/fedfund/search2.cfm?prog_num=92		X			X		X	X	X
Environmental Protection Agency (EPA)	Watershed Academy	Environmental Education Grant	http://cfpub.epa.gov/fedfund/search2.cfm?prog_num=25	X			X			X		
Environmental Protection Agency (EPA)	Watershed Academy	Flood Mitigation Assistance Program	http://cfpub.epa.gov/fedfund/search2.cfm?prog_num=31		X			X	X	X	X	X
Environmental Protection Agency (EPA)	Watershed Academy	Land and Water Conservation Fund	http://cfpub.epa.gov/fedfund/search2.cfm?prog_num=39					X			X	X
Environmental Protection Agency (EPA)	Watershed Academy	Learn and Serve America	http://cfpub.epa.gov/fedfund/search2.cfm?prog_num=40	X			X			X	X	X
Environmental Protection Agency (EPA)	Watershed Academy	Migratory Bird Conservancy	http://cfpub.epa.gov/fedfund/search2.cfm?prog_num=85	X	X	X	X	X		X	X	X
Environmental Protection Agency (EPA)	Watershed Academy	National Fish & Wildlife Foundation General Matching Grants	http://cfpub.epa.gov/fedfund/search2.cfm?prog_num=81		X		X			X	X	X

Source Type	Funding Source	Program Name	Internet Address	Uses						Eligibility		
				Admin	*Conserv*	*Research*	*Educ*	*Acquisit*	*Tech*	*Non-Profit*	*Town*	*County*
Federal Grants			**www.grants.gov**									
Environmental Protection Agency (EPA)	Watershed Academy	National Sea Grant College Program	http://cfpub.epa.gov/fedfund/search2.cfm?prog_num=43			X	X		X	X	X	X
Environmental Protection Agency (EPA)	Watershed Academy	Native Plant Conservation Initiative	http://cfpub.epa.gov/fedfund/search2.cfm?prog_num=86		X	X	X			X	X	X
Environmental Protection Agency (EPA)	Watershed Academy	Natural Resources Conservation Service: Conservation on Private Lands	http://cfpub.epa.gov/fedfund/search2.cfm?prog_num=87		X					X	X	X
Environmental Protection Agency (EPA)	Watershed Academy	Partners for Fish and Wildlife Program	http://cfpub.epa.gov/fedfund/search2.cfm?prog_num=46		X					X	X	X
Environmental Protection Agency (EPA)	Watershed Academy	Targeted Watershed Grant Programs	http://cfpub.epa.gov/fedfund/search2.cfm?prog_num=95		X				X	X	X	X
Environmental Protection Agency (EPA)	Watershed Academy	Wetlands Program Development Grants	http://cfpub.epa.gov/fedfund/search2.cfm?prog_num=65	X	X	X				X	X	X
Environmental Protection Agency (EPA)	Watershed Academy	Wildlife Habitat Incentives Program	http://cfpub.epa.gov/fedfund/search2.cfm?prog_num=68	X						X		
Department of the Interior (DOI)	U.S. Fish and Wildlife Service	Endangered Species Grants to State, Territories and Private Landowners	http://www.fws.gov/endangered/grants/index.html		X					X		
Department of the Interior (DOI)	U.S. Fish and Wildlife Service	The Neotropical Migratory Bird Conservation Act Grant Program	http://www.fws.gov/birdhabitat/NMBCA/eng_neo.htm	X	X	X	X			X	X	X

Source Type	Funding Source	Program Name	Internet Address	Uses						Eligibility		
				Admin	*Conserv*	*Research*	*Educ*	*Acquisit*	*Tech*	*Non-Profit*	*Town*	*County*
Federal Grants			**www.grants.gov**									
Department of the Interior (DOI)	U.S. Fish and Wildlife Service	North American Wetlands Conservation Act Small Grants	http://www.fws.gov/birdhabitat/NAWCA/USsmallgrants.html		X			X		X	X	X
Department of the Interior (DOI)	U.S. Fish and Wildlife Service	Multi-State Conservation Grants	http://www.iafwa.org/multistate_grants.htm		X	X	X		X	X		
Department of the Interior (DOI)	U.S. Fish and Wildlife Service	Private Stewardship Grants Program	http://www.fws.gov/endangered/grants/private_stewardship/index.html	X	X	X	X			X	X	X
U.S. General Services Administration (GSA)	U.S. General Services Administration (GSA)	Surplus Federal Property is a Good Deal	http://www.gsa.gov/Portal/gsa/ep/contentView.do?contentType=GSA_BASIC&contentId=14360&noc=T						X	X	X	X
National Endowment for the Humanities (NEH)	National Endowment for the Humanities	Implementation Grants for Special Projects	http://www.neh.gov/grants/guidelines/implement-special.html	X			X			X	X	X
National Oceanic and Atmospheric Administration (NOAA)	NOAA / National Fish and Wildlife Foundation / National Association of Counties	Coastal Counties Restoration Initiative	http://www.nfwf.org/programs/ccri.cfm		X		X			X	X	X
National Oceanic and Atmospheric Administration (NOAA)	NOAA /Trout Unlimited * Apply through local TU chapters	Embrace-A-Stream Grant Program	http://www.nmfs.noaa.gov/habitat/restoration/projects_programs/crp/partners/troutunlimited.html	X	X	X	X			X	X	X
National Oceanic and Atmospheric Administration (NOAA)	NOAA Office of Education	Environmental Literacy Grant Program	http://www.oesd.noaa.gov/funding_opps.html				X			X	X	X

Source Type	Funding Source	Program Name	Internet Address	Uses						Eligibility		
				Admin	*Conserv*	*Research*	*Educ*	*Acquisit*	*Tech*	*Non-Profit*	*Town*	*County*
Federal Grants			**www.grants.gov**									
National Oceanic and Atmospheric Administration (NOAA)	NOAA /Gulf of Maine Council * For States of: ME, MA, and, NH only	Habitat Restoration Grants Program	http://www.gulfofmaine.org/habitatrestoration/		X					X	X	X
National Oceanic and Atmospheric Administration (NOAA)	NOAA /The Nature Conservancy	Community-Based Habitat Restoration Grants	http://www.nmfs.gov/habitat/restoration/projects_programs/crp/partners/tnc.html		X	X	X			X	X	X
National Oceanic and Atmospheric Administration (NOAA)	NOAA /American Sportfishing Association /Fish America Foundation	Community-Based Habitat Restoration Projects	http://www.fishamerica.org/faf/grants/index.html		X					X	X	X
National Oceanic and Atmospheric Administration (NOAA)	NOAA /National Marine Fisheries Service	Community-Based Marine Debris Prevention and Removal Projects Grants	http://www.nmfs.noaa.gov/habitat/restoration/projects_programs/crp/partners_funding/callforprojects2.html		X	X	X			X	X	X
National Oceanic and Atmospheric Administration (NOAA)	NOAA /National Marine Fisheries Service	Community-Based Restoration Projects Grants	http://www.nmfs.noaa.gov/habitat/restoration/projects_programs/crp/partners_funding/callforprojects.html		X	X				X	X	X
USA Freedom Corps	Corporation for National & Community Service	Senior Corps, Ameri Corps, Learn & Serve America	http://www.nationalservice.gov/Default.asp	X						X	X	X

Source Type	Funding Source	Program Name	Internet Address	Uses						Eligibility		
				Admin	*Conserv*	*Research*	*Educ*	*Acquisit*	*Tech*	*Non-profit*	*Town*	*County*
Private Grant Sources												
Endowment	The Heinz Endowment	Environment Program	http://www.heinz.org/nav.asp?sec=E&whr=n#		X	X	X			X		
Foundation	American Express Foundation	Cultural History	http://home3.americanexpress.com/corp/gb/cult_her.asp		X		X			X		
Foundation	The Annenberg Foundation	Community and Civic Grants	http://www.annenbergfoundation.org/grants/				X			X		
Foundation	The William and Flora Hewlett Foundation	Community-Based Collaboratives Research Consortium	http://www.cbcrc.org/grants.html			X				X	X	X
Foundation	Fish America Foundation	General Conservation Projects General Research Projects	http://www.fishamerica.org/faf/grants/index.html		X	X			X	X		
Foundation	The Home Depot Foundation	Healthy Community and Wildland Forests	http://homedepotfoundation.org/hfus/enus/programs.html		X		X			X		
Foundation	Mitsubishi International Corporation	MIC Foundation	http://www.micusa.com/corporatecitizenship_micfoundation.shtml				X			X		
Foundation	National Fish and Wildlife Foundation	General Matching Grant Program Special Grant Program	http://www.nfwf.org/programs.cfm		X	X	X	X		X	X	X
Foundation	Project Aware Foundation	Project Aware Foundation Grant Program	http://www.projectaware.org/americas/english/grants.asp	X	X	X	X			X		
Foundation	Surdna Foundation	Environment Program	http://surdna.org/programs/programs_show.htm?doc_id=314245&attrib_id=12037		X					X		
Foundation	The Moneypaper, Inc.	Temper of the Times Foundation, Inc.	http://www.temperfund.org/	X						X		

Source Type	Funding Source	Program Name	Internet Address	Uses						Eligibility		
				Admin	*Conserv*	*Research*	*Educ*	*Acquisit*	*Tech*	*Non-profit*	*Town*	*County*
Private Grant Sources												
Foundation	Toyota	Toyota USA Foundation	http://www.toyota.com/about/community/fundguidelines/index.html		X		X			X		
Foundation	Trout Unlimited	Home Rivers Initiative	http://www.tu.org/site/pp.asp?c=7dJEKTNuFmG&b=356129	X	X	X	X			X		
Fund	American Hiking Society	National Trails Fund	http://www.americanhiking.org/alliance/fund.html	X				X	X	X		
Fund	American Water	Environmental Grant Program	http://www.amwater.com		X		X			X	X	
Fund	Banrock Station Wines	Wetlands Conservation Program	http://www.conservationfund.org/?article=2831		X	X		X		X		
Fund	Bush Gardens -Sea World Adventure Park	Sea World & Bush Gardens Conservation Fund	http://www.swbg-conservationfund.org/default.htm	X	X	X	X			X	X	X
Fund	The Conservation Fund	Kodak American Greenways Awards Program	http://www.conservationfund.org/?article=2106	X	X	X			X	X		
Fund	The Conservation Fund	Land Acquisition	http://www.conservationfund.org/?article=2016					X		X		
Fund	The Conservation Fund	Watershed Action Grants	http://www.conservationfund.org/?article=2829		X	X			X	X		
Fund	Disney Worldwide Outreach	The Disney Wildlife Conservation Fund	http://disney.go.com/disneyhand/environmentality/dwcf/index.html		X	X	X			X		
Fund	DuPont	Community Outreach	http://www2.dupont.com/Social_Commitment/en_US/outreach/		X		X			X		
Fund	Environmental Systems Research Institute	ESRI Conservation Program	http://www.conservationgis/aaesrigrants.html						X	X		

Source Type	Funding Source	Program Name	Internet Address	Uses						Eligibility		
				Admin	*Conserv*	*Research*	*Educ*	*Acquisit*	*Tech*	*Non-profit*	*Town*	*County*
Private Grant Sources												
Fund	Funding Factory	Funding Factory	http://www.fundingfactory.com						X	X		
Fund	L.L. Bean	Charitable Giving Program	http://www.llbean.com/customerService/aboutLLBean/charitable_giving.html		X				X	X		
Fund	Microsoft	Microsoft Grants	http://www.microsoft.com/industry/publicsector/grants.mspx						X	X		
Fund	The National Urban and Community Forestry Advisory Council	Challenge Cost-Share Grant Program	http://www.treelink.org/nucfac/		X		X			X		
Fund	New England Environmental Finance Center	Directory of Watershed Resources	http://efc.boisestate.edu/index.asp	X	X	X	X	X	X	X	X	X
Fund	Patagonia	Environmental Grants	http://www.patagonia.com/enviro/enviro_grants.shtml		X					X		
Fund	Pepsico	Pepsico Community Affairs	http://www.pepsico.com/PEP_Citizenship/Contributions/index.cfm	X					X	X		
Fund	REI	REI Gives	http://www.rei.com/aboutrei/gives02.html	X	X		X		X	X		
Fund	Rockefeller Family Fund	The Environment	http://www.rffund.org/environment.cfm	X	X					X		
Fund	International Association of Fish and Wildlife Agencies	Projects and Grants	http://www.iafwa.org/projects_grants.htm		X	X					X	X

Source Type	Funding Source	Program Name	Internet Address	Uses						Eligibility		
				Admin	*Conserv*	*Research*	*Educ*	*Acquisit*	*Tech*	*Non-profit*	*Town*	*County*
Private Grant Sources												
Fund	Wal-Mart Good Works	Environment	http://www.walmartfoundation.org/wmstore/goodworks/scripts/index.jsp		X				X	X	X	X
Trust	National Geographic	Conservation Trust	http://nationalgeographic.com/conservation/index.html		X	X	X			X		
Trust	National Tree Trust	Roots Program for Community Action	http://www.nationaltreetrust.org/index.cfm?cid=43000	X	X		X		X	X		
Trust	National Tree Trust	Seeds program for Organizational Support	http://www.nationaltreetrust.org/index.cfm?cid=41000	X					X	X		
Trust	The Pew Charitable Trusts	Advancing Policy Solutions	http://www.pewtrusts.com/ideas/area_index.cfm?area=2		X	X	X			X		

Uses The *Uses* categories, as listed above, may include the following funding opportunities:

Admin – Administrative cost, volunteers or staff salaries, training, and marketing

Conserv – Conservation and restoration of: land, water, air, birds, fish, wildlife, and preservation of cultural history

Research – Research, monitoring, surveys, consultations, and planning

Educ – Environmental education programs, outreach programs, and continuing professional education

Acquisit – Land acquisitions

Tech – Technology (computers, software, GPS, office supplies, etc.)
– Equipment (canoes, outdoor gear, tools, office furniture, etc.)
– Construction (structural assistance and equipment, and building supplies)
– Trails (assistance or funding for the construction trail)

Garman Deed Restrictions

000024

EXHIBIT A
TO
TRUSTEE'S DEED

Grantor: Theo Z. Garman Revocable Trust u/a dated 1/31/97
Grantee: Jefferson County, Wisconsin
PIN: 290-0813-0731-001 and 290-0813-0734-001

Legal Description

All of the N.E. 1/4 S.W. 1/4 of Section 7. Also the N. 1/2 S.E. 1/4 of S.W. 1/4 of said Section 7. All in Township 8 North, Range 13 East, in the town of Waterloo and containing in all 60 acres of land, more or less according to Government Survey. Exception the E. 20 acres thereof. Also the right to use with others a 1 rod right of way in the Southeast Quarter of the Northwest Quarter of Section 7, Town 8 North, Range 13 East, as sown on an actual field survey by Waterman, Fuge & Associates, Inc. described as follows:

Commencing at the Southeast corner of the Northwest Quarter of said Section; thence South 86° 28' West 841.50 feet (12.75 chains) along the Quarter Section line to an iron T-Bar stake at the point of beginning; continuing thence South 86° 28' West 8.25 feet to a point; thence North 0° 36' West 470.2 feet to the Southerly side of Knowlton Street; thence Easterly along the Southerly line of said Street 16.5 feet to a point; thence South 0° 36' East 470.2 feet to a point 8.25 feet from the place of beginning; thence South 86° 28' West 8.25 feet to the place of beginning.

Acceptance of this conveyance by Jefferson County, Wisconsin, shall constitute Jefferson County's agreement to the following conditions and restrictions on use of the land:

1. The property will be maintained in perpetuity as a nature preserve.
2. Jefferson County shall limit development to walking paths, and picnic areas with related structures.
3. The County shall prohibit camping, hunting, and motorized vehicles in the preserve except in the designated parking area. This prohibition shall not preclude County action to reduce the population of any overabundant species, nor use by County authorized personnel of motor vehicles for trail construction, forest management or general maintenance.
4. On the north end of the preserve, Jefferson County will designate a location at the entrance where Mrs. Garman wishes to place a stone monument in honor of her late husband designating the preserve as the "Dr. J. S. Garman Nature Preserve".
5. This property may not be conveyed for monetary consideration.
6. The restrictions and conditions applicable to the County shall be binding on the successors and assigns of Jefferson County.

Footnotes

[1] Wisconsin Department of Natural Resources. February 20, 2006. *Glacial Heritage Area Feasibility Study Background.*
[2] Wisconsin Department of Natural Resources and University of Wisconsin Extension. *Glacial Heritage Area: Background on the Proposal and Feasibility Study.*
[3] Wisconsin Department of Administration, Demographic Services Center. October 10, 2005. January 1, 2005 Final Population Estimates.
[4] Wisconsin Department of Administration, Demographic Services Center. January 2004. Final Population Projections for Wisconsin Municipalities: 2000-2025.
[5] Birmingham, Robert A. and Leslie E. Eisenberg. 2000. *Indian Mounds of Wisconsin*. The University of Wisconsin Press. Madison, WI.
[6] Wisconsin State Historical Society Flyer. 2006. State Archeology and Maritime Preservation Program.
[7] Cassidy, Frederic G. 1968. *Dane County Place-Names*.
[8] Swart, Hannah. 1975. *Koshkonong Country: A History of Jefferson County Wisconsin*. W.D. Hoard & Sons Co., Fort Atkinson, Wisconsin.
[9] Borman, R.G. and L.C. TRotta. 1975. *Ground Water Resources and Geology of Jefferson County*, Wisconsin. UW-Extension and the Geological and Natural History Survey. Information Circular Number 33.
[10] Dott, Robert H. J. and John W. Attig. 2004. *Roadside Geology of Wisconsin*. Mountain Press Publishing Company, Missoula, Montana.
[11] National Cooperative Soil Survey. 1979. *Soil Survey of Jefferson County, Wisconsin*
[12]Pruka, Brian W. 1995. *Indicator Plant Species of Recoverable Oak Savannas and Open Oak Woodlands in Southern Wisconsin.* The other authors of the indicator species list are Brian Bader, Ted Cochrane, Eric Epstein, Rich Henderson, Randy Hoffman, and Mark Leach.
[13] Wisconsin Department of Natural Resources. Rev. February 2004Wisconsin Endangered and Threatened Laws and List.